تحت رعاية صاحب السمو الشيخ محمد بن زايد آل نهيان، رئيس دولة الامارات العربية المتحدة

Under the patronage of His Highness Sheikh Mohamed Bin Zayed Al Nahyan, President of the United Arab Emirates

Host

أديبك ADIPEC

أدنوك ADNOC

4-7 November 2024
Abu Dhabi, UAE

Decarbonisation Guide

DECARBONISING ENERGY SYSTEMS FOR A SUSTAINABLE TOMORROW

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As energy demand increases, we are integrating cutting edge AI solutions and revolutionary technologies from the control room to the boardroom to provide secure, reliable, and responsible products to our customers.
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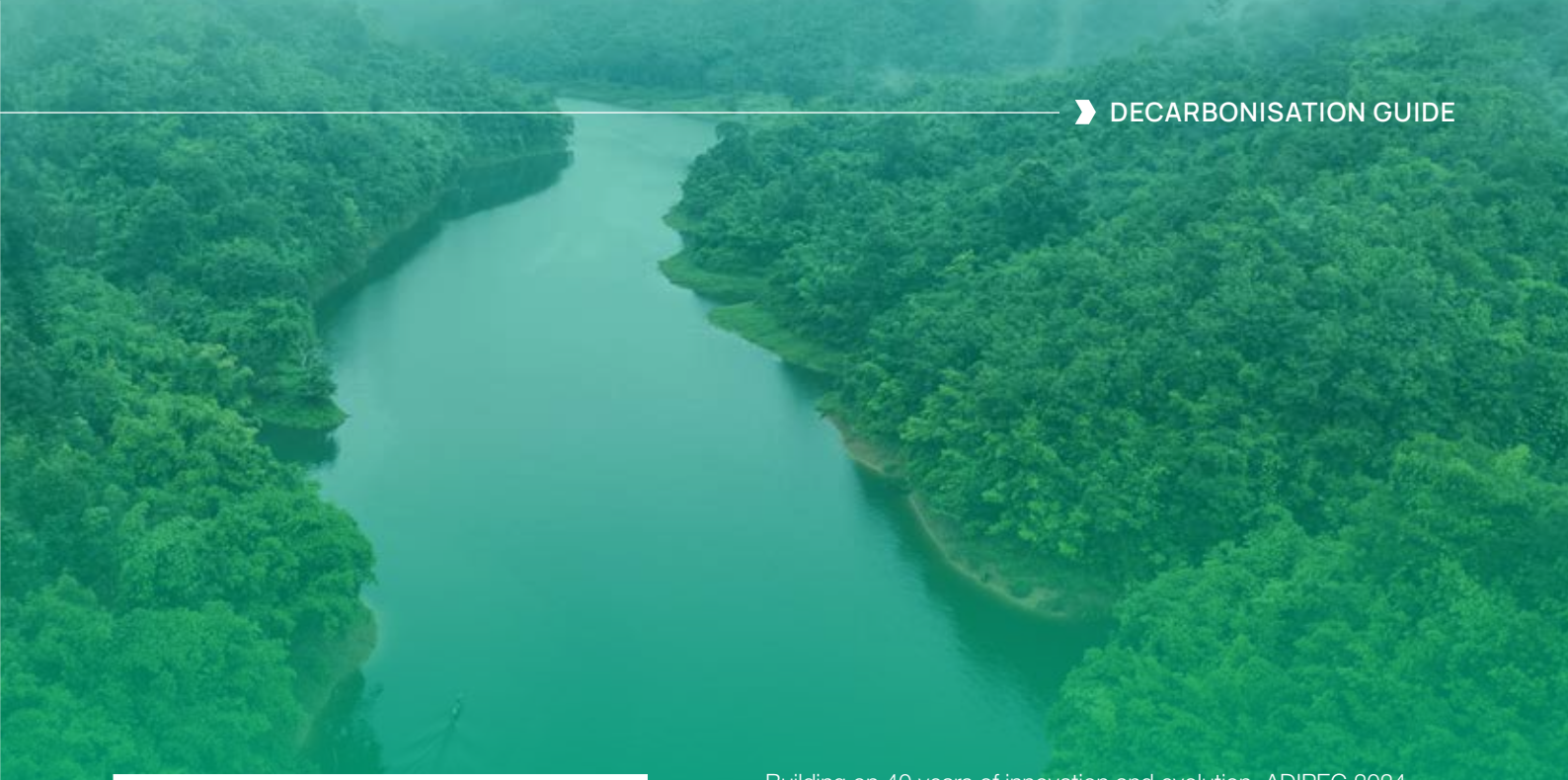


THE DECARBONISATION GUIDE AT ADIPEC 2024

Building on 40 years of innovation and evolution, ADIPEC 2024 takes place under the theme, 'Connecting Minds. Transforming Energy.' This year's event aims to harness innovation and accelerate action, exploring how the intersection of energy and artificial intelligence (AI) can drive the global energy transition and support decarbonisation goals, delivering global impact.

ADIPEC's central focus on decarbonisation underscores its commitment to a cleaner, more secure, and sustainable future. As part of this, ADIPEC 2024 proudly introduces the second edition of the ADIPEC Decarbonisation Guide. The guide is designed to highlight the decarbonisation offerings of ADIPEC's exhibitors and reflect the latest low-carbon trends sweeping the industry. By showcasing these decarbonisation products and solutions, this guide is an essential part of increasing awareness, engagement and adoption of industry-wide decarbonisation measures.

As an integral part of the world's largest and most influential energy event, the ADIPEC Decarbonisation Guide 2024 will help attendees locate and identify the decarbonisation-related products and solutions they need. Visitors will also be able to learn more about new areas of decarbonisation, and hear from industry leaders on their strategies and insights towards reducing carbon emissions.

ADIPEC's mission this year is clear: to unite a global community transcending demographics, borders, and industries, embracing representation from the Global North and South, innovators, youth, and engineers. ADIPEC is dedicated to shaping the energy system of tomorrow — one that prioritises decarbonisation, leverages the power of AI, and champions a collaborative, inclusive approach to secure and sustainable global energy progress. We hope this guide is a critical part of your journey towards that goal.

ADIPEC'S SUSTAINABILITY COMMITMENT AND ACTIONS

Every government, industry, business and individual has a role to play in tackling climate change and creating the energy system of the future. ADIPEC recognises the need for collaborative action and tangible solutions to tackle critical climate and energy challenges the world faces today. Towards this end, ADIPEC remains committed to championing a cleaner, more secure future, placing utmost priority on advancing climate action and ensuring that sustainability runs through the entirety of the event, from our own offerings and operations to that of our participants and stakeholders.

Long-term commitment to climate action

In addition to aligning our conference and exhibition to support the industry in its path to decarbonisation and a future-proofed energy system, we recognise that tangible action must begin from within. With this in mind, ADIPEC has embarked on its climate neutrality journey, taking concrete steps to address global climate goals through strategic actions and sustainable practices towards a greener and more sustainable future.

In 2021, ADIPEC's organiser dmg events signed the Net Zero Carbon Events pledge, which impacts all of its 95 events globally. Through the pledge, dmg events is committed, by the end of 2024, to publish its pathway to achieve net zero by 2050 at the latest, with an interim target in line with the Paris Agreement's requirement to reduce greenhouse gas (GHG) emissions by 2030. dmg events is collaborating with partners, suppliers, and customers to drive change across the value chain, measure and track its Scope 1, 2 and 3 GHG emissions and report its progress.

In 2023, ADIPEC became a signatory of UNFCCC's Climate Neutral Now Pledge, a global programme to increase climate action amongst companies, organisations, individuals and the public sector. The pledge encourages organisations to act now to achieve a climate-neutral world by 2050, as enshrined in the Paris Agreement, by measuring, reducing, and reporting GHG emissions and contributing to the reduction of emissions by supporting projects that reduce, avoid or capture emissions beyond the organisation's value chain.

Reducing operational environmental footprint

ADIPEC has implemented a series of impactful initiatives and formed strategic partnerships to reduce the environmental impact of the event.

ADIPEC strongly focuses on preserving resources and reducing waste during the event, which includes the use of recycled paper and plastic materials onsite, composting of food waste within ADNEC kitchens, use of food waste reduction software Winnow in menu planning in ADNEC kitchens, and provision of recycling bins throughout the venue.

Other examples include:

- Air-to-water technology integrated across the venue to provide sustainable drinking water.
- Shuttle buses: A complimentary bus service shuttled exhibitors and visitors to and from hotels and ADNEC to reduce the use of cars and taxis.
- GES Events: ADIPEC has partnered with GES Events to offer reusable stand materials and furniture, shell scheme stands, recyclable carpet and eco-flooring to stand contractors.
- MediaPro: For audio/visual services, ADIPEC has partnered with MediaPro, which ensures all technical equipment purchased and used during ADIPEC is reused on future events, minimising waste and reducing the need for new equipment.
- Middle East Energy Club (MEEC) is a purpose-built temporary structure outside the main ADIPEC exhibition halls. Almost 60% of the structure's materials are reused, cutting down on the use of virgin resources, minimising waste and reducing carbon footprint.

Promoting sustainable practices among ADIPEC stakeholders

Rooted in the firm belief that transformational progress can be achieved solely through collaborative action, ADIPEC advocates for our valued stakeholders – including attendees, vendors, suppliers, and participants – to embrace sustainable methodologies and practices to improve the environmental impact of the event.

Minimising the carbon footprint of an event involves a range of global best practices to reduce environmental impact, promote social responsibility and leave a positive legacy. ADIPEC has introduced detailed sustainability guidelines in our Exhibitor Manual to encourage our more than 2,200 exhibitors to adopt environmentally responsible behaviours and practices.

Ensuring global prosperity, driving economic growth, and empowering individual livelihoods in 2024

Continuing its 40-year legacy of energy leadership and evolution, ADIPEC 2024 is a driving force for accelerated energy action. This year, the event sets out a renewed vision, gathering diverse voices from communities, nations, and industries to find collective solutions that can deliver affordable, secure, and sustainable energy for all.

DECARBONISING ENERGY SYSTEMS TO DRIVE THE TRANSITION

To advance the world's decarbonisation goals, businesses, political decision makers and innovative thinkers will need to come together to mobilise their collective knowledge, expertise and the resources required to move from commitment to action on emissions reduction.

The dedicated Decarbonisation Zone at ADIPEC can spark the disruptive thinking needed to deliver tangible, high-impact solutions for energy sustainability and decarbonisation, bridging the gap between finance and innovation to unlock unprecedented new investments in our collective energy future.

By spotlighting transformational energy solutions, from opportunities in new energy adoption, storage, carbon capture, infrastructure and utilities, to the decarbonisation of heavy industries and advances in methane emissions reduction, the zone provides a platform for businesses working to tackle these critical challenges with new pathways to scale and grow.

In addition, the Decarbonisation Conference will tackle topics including the transition to renewable energy sources, enhancing energy efficiency across sectors, implementing carbon pricing mechanisms, investing in carbon capture technologies, and optimising, electrifying and decarbonising energy systems.

With more than 2,200 exhibitors and a dedicated conference track as part of the ADIPEC Decarbonisation Zone, ADIPEC 2024 presents an unparalleled opportunity to explore the many innovations that are accelerating energy transformation.

INDUSTRY OVERVIEW

CCUS can reduce global emissions by up to 15% by 2070, with its deployment needing to increase by more than 100 times current levels by 2050 to meet global climate goals.

US$570bn

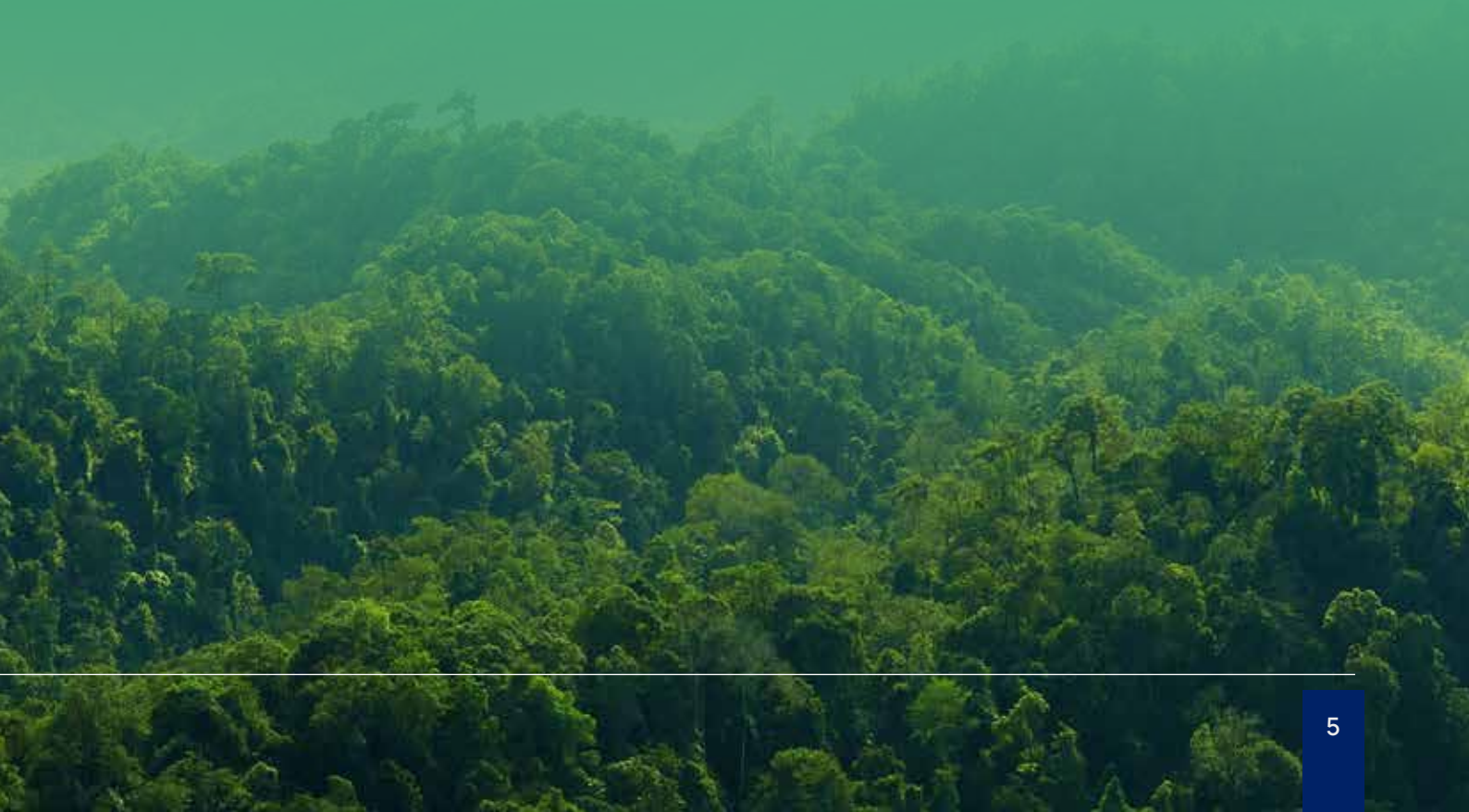
is the estimated investment pipeline for hydrogen globally, expanding to more than 1,400 projects globally.

3

times more annual investments needed in clean energy by 2030 to achieve net-zero emissions by 2050, focusing on renewables, CCUS and hydrogen.

15%

reduction in CO2 emissions and 10% reduction in global energy consumption by 2030 possible due to digital technologies.



DELIVERING SECURE, EQUITABLE AND SUSTAINABLE ENERGY THROUGH DECARBONISATION

By Christopher Hudson
President - dmg events

As we convene for ADIPEC 2024, the global energy landscape sits at a pivotal juncture, with the need to transition to more sustainable, low-carbon energy systems more urgent than ever. This transition is not just a goal but a necessity, requiring collective efforts from governments, businesses, and communities worldwide.

This year marks a special milestone as ADIPEC celebrates 40 years of innovation and energy leadership. It has been inspiring to witness ADIPEC's evolution into the world's leading global energy event, convening policymakers, engineers, innovators, and youth to accelerate the transition toward a secure, equitable, and sustainable energy future.

At the heart of ADIPEC's legacy is a commitment to innovation as a catalyst for transformation. This year, we take that commitment further, placing innovation at the center of everything we do, recognising it as a key enabler of energy progress.
Decarbonisation remains a core focus for our industry, driving technological innovations, reshaping business models, and creating new opportunities for investment.

ADIPEC 2024 offers a unique opportunity to demonstrate how the industry is moving from commitments and targets to action and tangible progress.
Guided by the understanding that global challenges require global solutions, ADIPEC connects people, policy, technology, and capital to enable impactful relationships, enact game-changing innovation, cross-sector partnerships, and new economic opportunities arising from the decarbonisation and transformation of the global energy industry.

The ADIPEC Decarbonisation Guide 2024 highlights the innovations, initiatives, and strategies being implemented by leaders across the energy sector, from cutting-edge carbon-reduction technologies to groundbreaking projects in energy storage and low-carbon fuels.

Featuring contributions from global thought leaders and pioneers of decarbonisation – as well as scores of exhibitors – the guide provides a comprehensive snapshot of the industry's collective progress and ambition.

With more than 2,200 exhibitors and a dedicated conference track as part of the ADIPEC Decarbonisation Zone, ADIPEC presents an unparalleled opportunity to explore the many innovations that are accelerating energy transformation.

By working together, we can accelerate the transition to a lower-carbon world, ensuring energy security, genuine sustainability, and economic prosperity for generations to come.

Thank you for being a part of this vital mission.

By working together, we can accelerate the transition to a lower-carbon world, ensuring energy security, genuine sustainability, and economic prosperity for generations to come.

Christopher Hudson

ENERGY TRANSITION: A STEP TOWARDS A MORE PROSPEROUS, RESPONSIBLE, AND RESILIENT WORLD

By Musabbeh Al Kaabi
Executive Director of Low Carbon Solutions & International Growth Directorate, ADNOC Group

As a global progressive energy company, we are committed to accelerating the decarbonisation of our oil and gas operations, while growing our portfolio of low-carbon ammonia, as well as investing in low-carbon hydrogen and renewables through our shareholding in Masdar. Our 2023 upstream emissions performance confirms our position as one of the least carbon-intensive producers in the world.

ADNOC embraces the energy transition and our important role in providing low-carbon energy the world needs today, while building the energy system of tomorrow.

Global energy systems must be transformed to achieve a just, orderly and equitable energy transition. ADNOC is reducing emissions while providing the secure, reliable energy the world needs to drive progress.

We are leading the industry through our ambition to achieve net-zero emissions in our operations by 2045, while continuing to provide affordable, lower-carbon-intensity energy to meet global demand. By 2030, we aim to reduce our carbon intensity and target near-zero methane emissions. To support our ambitions, we have allocated US$23 billion (AED84.4 billion) to accelerate investments in renewables and low-carbon solutions.

In partnership with technology providers and industry peers committed to a just transition, we are investing in AI and transformative climate technologies. These include innovative carbon capture and storage technologies, geothermal, hydrogen, renewables, and sustainable fuels, which have the potential to significantly reduce our operational emissions and help our customers progress on their decarbonisation pathways.

> **Transformative climate technologies like innovative carbon capture and storage, geothermal, hydrogen, renewables, and sustainable fuels have the potential to significantly reduce operational emissions and help customers progress on their decarbonisation pathways.**
>
> Musabbeh Al Kaabi

ADNOC'S PATH TO DECARBONISATION

Decarbonising our operations
Reducing our carbon intensity by 25% by 2030 and achieving net zero by 2045.

Helping our customers reduce their emissions
Supporting our customers' net zero journey by investing in new energy solutions and lower-carbon technologies.

Deploying pioneering technologies to accelerate impact
Building on our track-record of global cross-industry partnerships, operational capabilities, and technology for an inclusive transition.

Supporting nature-based solutions
Adopting nature-based solutions to protect sustainably, manage and restore nature, and minimise impacts of climate change.

International Energy Forum

TURNING THE CORNER: OIL AND GAS INDUSTRY IS MAKING STRIDES IN CUTTING EMISSIONS

By Joseph McMonigle, Secretary General of the International Energy Forum (IEF)

As the world confronts the urgent need to reduce greenhouse gas emissions, the oil and gas industry finds itself at a crucial juncture. The task ahead is clear: reducing the emissions intensity of oil and gas production is not just a viable option but a cost-effective and essential opportunity to combat climate change. According to the International Energy Agency (IEA), halving the emissions intensity of oil and gas operations by 2030 would require an investment of around $600 billion. This figure, while significant, is relatively modest compared to the costs associated with other decarbonisation efforts.

Tackling Methane Emissions: A Priority

One of the most pressing challenges in reducing the emissions intensity of oil and gas operations is addressing methane. In 2022, greenhouse gas emissions from the production, transport, and processing of oil and gas — known as Scope 1 and 2 emissions — accounted for approximately 15% of total energy-related emissions globally, equivalent to around 5.1 billion tonnes, according to the IEA. Of these emissions, methane — a potent greenhouse gas with a much higher climate warming effect than carbon dioxide — constitutes nearly half, or around 2 gigatonnes of carbon dioxide equivalent annually.

At the corporate level, companies that signed the Oil and Gas Decarbonisation Charter - responsible for 40% of global oil output - at COP28 have committed to setting interim targets to reduce methane emissions to 0.2% of oil and natural gas production by 2030. However, one of the main challenges in reducing methane emissions is tracking them effectively. Investment in methane detection technologies needs to increase significantly. Companies such as Shell, Saudi Aramco, and ExxonMobil, as part of the Oil and Gas Climate Initiative, have expanded their satellite monitoring campaigns to detect emissions, particularly in emerging economies.

This has already resulted in the identification and plugging of leaks from two operators, highlighting the potential of advanced detection technologies.

Firm policy action is crucial to driving further progress in reducing methane emissions, which remain stubbornly high. The US Inflation Reduction Act serves as a model in this regard, offering financial incentives for methane monitoring and mitigation and imposing penalties on owners and operators of facilities where methane emissions exceed certain thresholds.

Electrification of Operations: A Game Changer

Beyond methane reduction, the electrification of oil and gas operations presents another significant opportunity to lower emissions intensity. The industry is increasingly investing in clean energy technologies to power extraction, refining, and transportation activities, which are traditionally energy-intensive. Gas turbines, typically used to generate electricity for drilling rigs, pumps, and other equipment, can be replaced with more energy-efficient equipment or electrified using low carbon energy sources.

Norway has emerged as a leader in this area, with an estimated 60% of its production as of 2023 partly or fully electrified and powered by renewable energy sources from shore or offshore wind. This has given Norway the lowest emissions intensity among major oil and gas-producing countries. Similarly, Abu Dhabi National Oil Company (ADNOC) has announced a $3.8 billion subsea transmission network to connect its offshore operations to a low-carbon power network, supported by nuclear energy, potentially reducing the company's offshore carbon footprint by up to 50%. bp is also making strides in this direction, having electrified large parts of its operations in the Permian Basin in Texas. As more producers follow suit, the industry will make significant progress towards meeting its decarbonisation targets.

Carbon Capture and Storage: Unlocking Potential

Carbon capture and storage (CCS) is another critical tool in the industry's decarbonisation toolkit. The global market for oil and gas CCS was valued at $3.7 billion in 2023 and is expected to grow by nearly 15% annually from 2024 to 2032, according to Global Market Insights.

However, realising the full potential of CCS in decarbonising oil and gas operations will require overcoming several challenges, including logistical, technological, and economic barriers. Reducing the costs associated with installation and retrofitting with CCS will be essential for scaling up the technology more widely.

By prioritising the reduction of emissions intensity, particularly through methane mitigation, electrification of operations, and the expansion of CCUS, the industry can play a vital role in the global transition to a low-carbon economy.

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Joseph McMonigle

Ipieca

DECARBONISATION: HOW OIL AND GAS INDUSTRY CAN LEAD THE WAY

By Brian Sullivan
Chief Executive Officer, Ipieca

With a history of bringing to market cutting-edge technology, delivering some of the most challenging engineering projects and managing complex supply chains, the oil and gas sector has all the prerequisites to support a just energy transition which also delivers sustainable global growth, explains Brian Sullivan, Chief Executive Officer, Ipieca.

Enabling other sectors to decarbonise

Oil and gas companies are leading the development of key energy transition technologies such as CCUS - where of the 15 large scale projects in operation, 11 are oil and gas based - and hydrogen, which can be most efficiently produced from gas and also make use of existing gas pipelines and infrastructure. Importantly, CCUS and hydrogen are not only helping oil and gas companies to decarbonise, but are vital for lowering the emissions of 'hard-to-abate' (HTA) sectors such as aviation, long-haul transport, shipping, cement, plastics and steel, which cannot be done through electrification alone, and are key drivers of the global economy. As well as leading on the development of these technologies, oil and gas companies are also supporting companies in these HTA sectors to use them in their operations and projects.

Enhancing energy efficiency

While technologies such as CCUS and hydrogen get the most headlines, an often overlooked – and key – energy transition lever is energy efficiency. Analysis from the IEA demonstrates that up to 40% of the emissions abatement required by the Paris Agreement could be delivered by energy efficiency. And energy efficiency not only reduces emissions, it can drive down operational costs. Our energy efficiency compendium shares technologies and practices which can be used by upstream and downstream oil and gas companies, giving advice on implementation and the business case for adopting the suggested measures.

Supporting the sustainable up scale of renewables

Over the last few decades oil and gas companies have been increasingly using, investing in and producing energy through technologies such as wind and solar.

While the up scale of renewables is necessary if we are to meet the goals of the Paris Agreement, it needs to take into account environmental and social risks associated with their development and use.

The oil and gas industry has vast experience in developing large energy projects that are environmentally and socially responsible that it can share with the renewables sector. You can find examples of good practice developed by Ipieca members, which can be used by renewables companies, here.

As renewables have ramped up, so has the demand for minerals such as copper, lithium and zinc needed by these projects. The oil and gas sector is well placed to support the development of the supply chains of these minerals in a way that respects human rights, supports local communities and protects the surrounding environment – something Ipieca covered in a recent webinar series.

The UN Sustainable Development Goals

The world's plan of action for overcoming poverty while protecting the planet and ensuring all people enjoy peace and prosperity, the Sustainable Development Goals (SDGs) provide a framework to support economic growth accompanied by social fairness and environmental sustainability. The Ipieca-UN Development Programme-International Finance Corporation SDG Atlas demonstrated that oil and gas companies can contribute to every one of the 17 SDGs, while the Ipieca-WBCSD SDG Roadmap provides suggested actions to contribute to the SDGs, with the hope that by developing shared sector pathways, we can accelerate SDG action.

Collaborative transformation

Multiple science-based pathways to net zero show that achieving the ambitions of the SDGs will require contributions from all energy sources, including oil and gas, for the foreseeable future.

Collective action involving all parties and solutions will be essential to developing the new value chains and products necessary to deliver the aims of the Paris Agreement while also ensuring sustainable social and economic development of communities and countries around the world.

As we move towards a net-zero future, Ipieca will continue to work with its members to raise awareness of technologies and good practices that can support the industry continue to provide the energy the world needs, while contributing to a transition that delivers for people and the planet.

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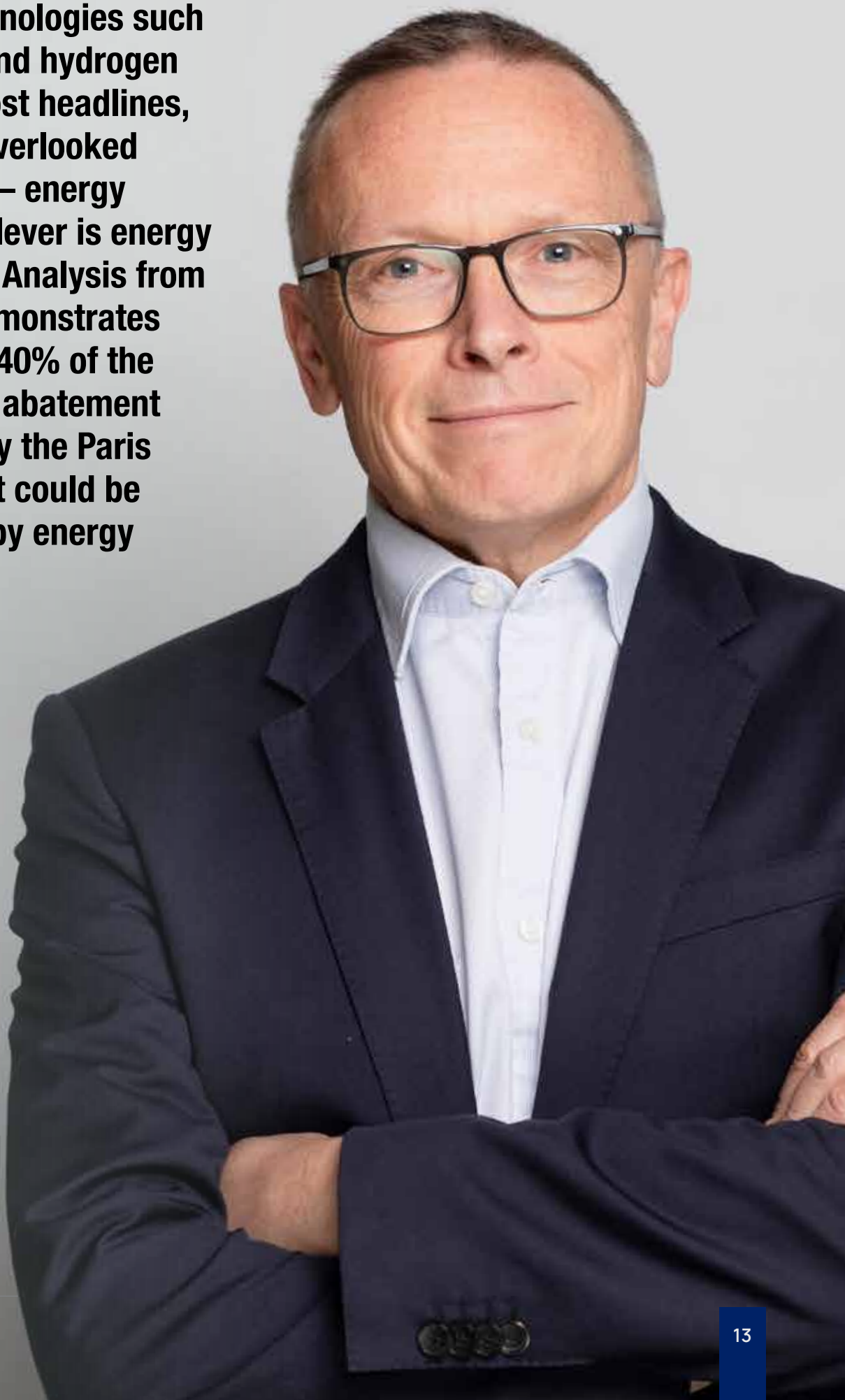
Brian Sullivan



Korea National Oil Corporation (KNOC)
Stand no. 8320
Hall 8

FUELLING A GREENER TOMORROW: HOW DECARBONISATION IS SHAPING THE ENERGY LANDSCAPE

In an exclusive interview with Dong Sub Kim, Chairman and CEO of Korea National Oil Corporation (KNOC), emphasises the company's dedication to securing oil reserves, advancing low-carbon solutions, and developing clean energy infrastructure through key initiatives like the Gwanggaeto exploration project, a large-scale carbon capture and storage (CCS) initiative, and an offshore floating wind farm.

Can you tell us more about Korea National Oil Corporation and its recent projects?
As a state-run company, Korea National Oil Corporation (KNOC) was founded in 1979 for the reliable supply of oil. Since its establishment, KNOC has been participating in domestic as well as overseas E&P projects (32 projects in 16 countries) to secure oil reserves for national energy security reasons. Also, KNOC has strategic oil stockpiles equivalent to 130 days of domestic consumption, ready to be released in case of emergency. In total, it has stockpiling facilities capable of storing 146 million barrels of oil equivalent.

Korea relies entirely on oil imports for its primary energy consumption and so it is critical for KNOC to mitigate potential risks rising from supply disruptions by adding more reserves to the pipeline. In line with this, it has launched the Gwanggaeto project which is a plan for exploration activities in the domestic continental shelf over a period of 10 years. The project includes exploring the deep sea area and is expected to create a new energy resource map for Korea if proven to be successful. By acquiring additional geological data recently, KNOC has identified a couple of prospective areas for the deep waters of the East Sea and are to be drilled starting from the end of this year.

How is KNOC preparing for a lower carbon future?
The world is evolving towards net zero and accelerating towards energy transition, and KNOC also needs to find solutions for cutting down CO2 emissions.

We anticipate that it will take a certain amount of time for the low-carbon solutions to replace fossil fuels entirely. So smooth and gradual energy transition for companies like KNOC will be a key to a lower-carbon future. The gradual variation in business portfolio linked to investment decisions that are aligned with long-term perspectives will also be essential. As a responsible member of the international community, South Korea aims to make its best efforts to achieve carbon neutrality and, as a state-owned company, KNOC is obliged to endorse the policy to pursue low-carbon solutions projects while carrying on with exploration activities.

In fact, KNOC is the only company in Korea which has the skills and site at hand to store CO2 underground. It is working on a project which is Korea's first large-scale carbon capture and storage (CCS) demonstration project. The initiative involves injecting 1.2 million tonnes of CO2 into Donghae gas field that stopped production in late 2021. By doing so, KNOC will contribute to Korea's Nationally Determined Contribution (NDC) to reduce 4.8 million tonnes of CO2 by 2030. KNOC has already completed the storage capacity evaluation and safety (risk) analysis for the project. After the facilities get constructed in 2027, the first CO2 injection is scheduled in 2028.

Moving onto our ammonia project, KNOC is developing an infrastructure capable of receiving, storing, and distributing low-carbon ammonia from overseas at coal-fired power plants near the East Sea, West Sea, and South Sea of South Korea. The goal is to provide affordable clean hydrogen and ammonia in our homeland and start supplying fuel from 2027-2028 in accordance with the government's clean hydrogen-based power generation plan. Taking the opportunity of the geological advantage of Ulsan, where KNOC's head office is located, KNOC is also involved in developing an offshore floating windfarm with a capacity of 200MW. This is expected to be starting power generation in 2028.

What do you expect to see from ADIPEC this year?
ADIPEC takes a leading role in energy industries every year. It brings people together to share experiences and insights in the comprehensive platform. It derives actionable solutions to reduce CO2 in the midst of geopolitical and economic challenges while we maintain energy security and

affordability. Matching and connecting the dots and bringing clever minds of the energy industry together to synergise the limited resources for the optimal outcome will continue to be ADIPEC's main role. Given the fact that this year's most notable issue has to do with geopolitical risks in the Middle East, I am thrilled to witness how ADIPEC manages to conclude yet another challenging year, inspiring leaders and creative minds.

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Dong Sub Kim
Chairman and CEO of Korea National Oil Corporation (KNOC)

MAIRE
Stand no. 5240
Hall 5

PIONEERING CARBON CAPTURE AND LOW CARBON SOLUTIONS

By Alessandro Bernini,
CEO of MAIRE

As the energy transition industry works to meet its decarbonisation goals, it requires trusted technological partners to select the best solutions for achieving net-zero emissions. To serve the market in this evolving energy landscape, MAIRE has developed a synergistic approach across its two business units: Integrated E&C Solutions, led by TECNIMONT, which leverages the group's unparalleled engineering capabilities and historical track record, and Sustainable Technology Solutions, headed by NEXTCHEM, offering a broad portfolio of technologies ranging from low-carbon energy vectors for new mobility to sustainable fertilisers and circular economy solutions.

Carbon Capture Storage (CCS) has proven globally to be a key technology in reducing the environmental impact of emissions from hard-to-abate industrial activities. This solution is seeing strong global investment trends, recognised as one of the most mature technologies to support the much-needed energy transition, which must gradually shift the global energy paradigm to sustain future economic development. International organisations such as the Intergovernmental Panel on Climate Change (IPCC), the International Energy Agency (IEA), and the International Renewable Energy Agency (IRENA) have acknowledged CCUS as playing a key role in a credible medium- and long-term decarbonisation strategy. The European Union, for instance, has set a target to equip member states with a CO2 storage capacity of at least 50 million tonnes per year by 2030.

According to the IEA, approximately 45 facilities worldwide are currently using CCUS for industrial processes, fuel transformation, and power generation, with over 700 projects at various stages of development globally. In this context, NEXTCHEM is implementing an innovative, integrated process design for the hydrogen and carbon dioxide capture unit of ADNOC's Hail and Ghasha gas development project. This initiative is one of the most strategic global efforts to decarbonise the energy processing industry, aiming to operate with net zero CO2 emissions. NEXTCHEM's contribution to Hail and Ghasha is part of a larger package awarded to TECNIMONT in October 2023, valued at US$8.7 billion, showcasing MAIRE's strong integrated approach as its two business units work together to help clients achieve their decarbonisation objectives.

Closer to home, NEXTCHEM has contributed to the implementation of Europe's first plant to use CCS technology, which became operational at a natural gas treatment complex in September. The facility is designed to separate, purify, and compress an estimated 25,000 tonnes of carbon emissions per year. NEXTCHEM developed an innovative process design to enable effective CO2 capture from emission gases with high efficiency and low power consumption, even at very low concentrations.

MAIRE's expertise in carbon capture is also strategic for other hard-to-abate industries. Decarbonising steel manufacturing, for instance, relies primarily on hydrogen-based production techniques or the application of carbon capture technologies. Similarly, in the chemical industry, carbon capture remains critical for reducing carbon emissions.

NEXTCHEM's extensive technological expertise also includes solutions for producing synthetic fuels, notably its proprietary NX SAF and NX CPO technologies. The latter is an advanced process for producing synthesis gas via controlled partial oxidation. When applied to synthetic fuel production, this versatile technology enhances carbon efficiency and the overall yield of the process.

In the context of fuel alternatives, low-carbon ammonia could play a key role in decarbonising the maritime industry, as it can be used as a low-carbon fuel with multiple additional energy applications. This summer, MAIRE announced the commencement of construction on a low-carbon ammonia plant in the Ruwais region near Abu Dhabi, UAE. The plant will produce ammonia with 50% lower carbon intensity compared to conventional methods, and in its second phase, it will further reduce its carbon intensity by capturing and sequestering carbon dioxide emissions.

In this constantly evolving energy landscape, MAIRE continues to expand its technological portfolio while ensuring impeccable execution in its integrated engineering and construction projects, enabling clients to progress along their decarbonisation journeys globally.

In the context of fuel alternatives, low carbon ammonia could play a key role in decarbonising the maritime industry, as it can be used as a low-carbon fuel with multiple additional energy applications.

Alessandro Bernini

OMV
Stand: 4435
Hall: 4

LEADING WITH SUSTAINABILITY: THE CORE OF INNOVATION AND GROWTH IN THE UAE AND THE WORLD

By Alfred Stern
CEO of OMV

The year 2024 marks two important anniversaries for the OMV Group. It has been 50 years since the United Arab Emirates and Austria established diplomatic relations. Fast forward to today, the UAE stands as Austria's primary economic and trade partner in the Gulf region. This 50-year diplomatic anniversary coincides with the UAE's decision to extend the 'Year of Sustainability' into 2024. We take pride in being an active contributor to the UAE's vision for a sustainable future. Collaboration and a shared vision for a circular economy are essential to achieving this goal.

We also commemorate our very own anniversary, spanning 30 years of partnership between OMV and Abu Dhabi. OMV has been driving progress towards sustainability through partnerships with iconic companies like ADNOC and Masdar, strengthening our long-standing presence in the Gulf region and beyond. Over three decades, we have nurtured a lasting friendship that was anchored in new ideas, learning from each other and a shared vision for the future, culminating in impressive joint ventures like Borouge. Our breadth of strategic alliances encompasses our entire business value chain and continues to flourish. This fills me with great optimism towards the future.

For us at OMV, sustainability is a key driver for growth. We are working on innovative projects that contribute to our purpose "re-inventing essentials for sustainable living". With our Strategy 2030, we are striving to become an integrated sustainable chemicals, fuels and energy company. It is the biggest transformation in the history of our organisation.

As we aim to create long-term value and establish financial resilience throughout the economic and industrial cycles, we maintain a laser-sharp focus on the development of low-carbon solutions in successfully navigating the energy transition. Currently, we are seeing an energy market upcycle in Europe and other parts of the world. At the same time, we foresee gas demand continuing to be robust and imports remaining a necessity in Europe for the foreseeable future. We will increase the share of gas to 60% in our traditional portfolio by 2030. Furthermore, we will grow our chemicals business and leverage the potential of our speciality products where our group company Borealis has a strong position based on its leading technological prowess and rich patent pipeline. Also, we aim to become a leading European producer of renewable fuels, while OMV Petrom is uniquely positioned to become an energy transition leader for Romania and Southeastern Europe.

Sustainability is at the heart of our strategy, with the goal to be a net-zero company latest by 2050. The goal of our responsible transformation is to be a reliable supplier of affordable chemicals, fuels and energy today, while innovating to make these essential products more sustainable. We are on track and consistently develop our transformation lighthouses – circular chemicals, sustainable aviation fuel (SAF) and geothermal energy. In the Chemicals segment, we are building the largest sorting plant for mixed plastic waste in Europe. The recycled material can be converted into valuable secondary raw materials using OMV's patented ReOil chemical recycling technology. In our Fuels and Feedstock segment, we produce SAF from used cooking oil. So far, we have signed several offtake agreements with major airlines and taken the final investment decision for a dedicated SAF/HVO plant in Romania. In the Energy segment, we aim to make climate-neutral geothermal district heating a reality for up to 200,000 households in Vienna in the next years.

OMV's mission is to stay agile and put our strategic objectives into practice. And while OMV takes the next steps, our new corporate identity - unveiled just a few months ago - now fully reflects our Strategy 2030. The core element of our brand design is the Loop. This symbol signifies our progress moving towards circularity and sustainability, and our strength as an integrated company. The new brand identity is our commitment to creating a world where sustainable energy, mobility and lifestyle become a reality for everyone. With our claim "Forward for Good", we underpin the attitude of our 20,600 employees: always progressing, always moving forward. We are leading step by step through a responsible energy transition. With this in mind, I am very much looking forward to ADIPEC 2024.

Sustainability is at the heart of our strategy, with the goal to be a net-zero company latest by 2050 ... we are striving to become an integrated sustainable chemicals, fuels and energy company. It is the biggest transformation in the history of our organisation.

Alfred Stern

Tree Energy Solutions

ELECTRIC NATURAL GAS: A GAME CHANGER IN THE PURSUIT OF A LOW CARBON FUTURE

By Marco Alverà
CEO of Tree Energy Solutions (TES)

In an exclusive interview, Marco Alverà, CEO of Tree Energy Solutions (TES), talks about how the company is helping advance reliable and affordable green energy through giga-scale projects, the role of electric natural gas (e-NG) as a game-changer for a low-carbon future, and how ADIPEC creates an environment where bold ideas can be shared, challenged, and refined for the industry.

How is TES working to support the energy transition and mitigate the impacts of climate change?

TES is on a mission to democratise access to reliable and affordable green energy through giga-scale projects. By advancing and scaling e-NG (electric natural gas) initiatives worldwide, TES aspires to become the global leader in e-NG production. Our efforts include building a diverse portfolio of large-scale e-NG projects across North America, Europe, and the Middle East. This way, we want to deliver reliable, affordable and sustainable green energy solutions that can seamlessly integrate into existing energy infrastructures, helping industries and consumers transition to cleaner alternatives without significant changes to their operations. TES's efforts are further strengthened by strategic partnerships with major energy companies such as TotalEnergies, Osaka Gas, Tokyo Gas, Toho Gas, and Fortescue Future Industries. These collaborations are essential for scaling our e-NG projects and ensuring that the energy transition is both effective and economically viable.

Innovation and research are critical to advancing clean energy solutions. Can you share some recent examples of innovative collaborations and partnerships by TES?

TES has been actively forging strategic partnerships and collaborations to drive the adoption and development of e-NG as a key clean energy solution globally. A notable recent example is our partnership with Saibu Gas in Japan, where we are working together to integrate e-NG into Japan's energy supply chain. This collaboration is aimed at supporting Japan's ambitious goal of using e-NG for 90% of its city gas consumption by 2050, thereby significantly reducing carbon emissions in the region.

In another strategic move, TES has teamed up with Itochu Corporation, one of Japan's leading trading companies, to expand the production and distribution of e-NG. This partnership focuses on decarbonising hard-to-abate sectors, leveraging Itochu's vast market knowledge and investments in green hydrogen production to scale up e-NG projects, particularly in North America, Europe, and Japan. Together, we are exploring potential long-term offtake agreements and regulatory advancements that will bolster the adoption of e-NG. TES is also collaborating with Kawasaki Kisen Kaisha ("K" LINE) to revolutionise the maritime shipping sector. Our partnership is focused on using e-NG as a sustainable bunker fuel, aligning with "K" LINE's goal of achieving net-zero greenhouse gas emissions in maritime transport by 2050.

We have also collaborated with RWE. These collaborations are just a few examples of how TES is driving innovation and working with global partners to create a sustainable energy future. Another key example of this is our partnership with TotalEnergies in the US, where we are jointly developing a large-scale production unit for e-NG. This project, which aims to produce 100,000 to 200,000 metric tonnes of e-NG annually, leverages a 1GW electrolyser powered by 2GW of wind and solar energy.

All these collaborations underscore our commitment to scaling up e-NG production using existing infrastructure, making it easier for industries to adopt cleaner energy.

What are your thoughts on e-NG and how critical is its role in a low-carbon future?

e-NG is a game-changer in the quest for a low-carbon future. It offers a viable solution to decarbonising hard-to-abate sectors, such as heavy industry, shipping, and aviation. e-NG, produced by combining renewable hydrogen with climate-neutral CO2, can be used in existing natural gas infrastructure, enabling the defossilisation of the industry without major conversion measures. As one of the fastest to be implemented and cost-effective renewable fuels of non-biological origin (RFNBO), e-NG is the green equivalent of natural gas. In this context, TES partnered with seven large international companies such as Engie, Mitsubishi Corporation, Osaka Gasa, Sempra Infrastructure, Tokyo Gas, Toho Gas, and TotalEnergies to create a global e-NG coalition to raise awareness on e-NG and bolster collaboration across geographies and stakeholders along the e-NG value chain. At TES, we believe that e-NG will play an increasingly critical role

We believe that e-NG will play an increasingly critical role as countries and companies accelerate their decarbonisation efforts, and we are committed to advancing its development and integration into the global energy mix.

Marco Alverà

as countries and companies accelerate their decarbonisation efforts, and we are committed to advancing its development and integration into the global energy mix.

How do you see the role of ADIPEC in sparking the disruptive thinking needed to deliver high-impact solutions for a sustainable future?

By bringing together industry leaders, policymakers, and innovators from across the globe, ADIPEC creates an environment where bold ideas can be shared, challenged, and refined. For TES, ADIPEC provides an invaluable opportunity to showcase our latest advancements in e-NG and to engage with partners who are equally committed to a sustainable future. The cross-industry collaboration fostered at ADIPEC is essential for developing and implementing the high-impact solutions that will define the future of energy.

Mitsui & Co.
Stand: 7234
Hall: 7

COLLABORATIVE POWER: HOW MITSUI IS PAVING THE WAY FOR A SUSTAINABLE ENERGY TRANSITION

By Ken Yamaguchi
COO of Energy Business Unit II
(Global LNG), Mitsui & Co.

Mitsui is a prominent global trading and investment company with 125 offices in 61 countries. The company leverages its extensive global presence, networks, and information resources to pursue business opportunities ranging from product sales and worldwide logistics to financing and the development of major international infrastructure projects across a variety of sectors, including energy and chemicals.

The Japanese firm has been operating in Abu Dhabi, UAE, since the mid-1960s, with significant investments made in 1973 when it became the largest foreign shareholder of ADNOC LNG. Since then, Mitsui has expanded its portfolio in the region, moving into sectors such as steel products, sulphur, oil, liquefied natural gas (LNG) trading, and more recently, next-generation energy solutions like hydrogen and ammonia.

Mitsui's strong relationship with Abu Dhabi has revolved around ADNOC LNG, with a legacy of providing a reliable and stable supply to the LNG market for over 50 years. We are now expanding our business portfolio and strategic collaborations with our long-standing partner, ADNOC, particularly in decarbonisation efforts.

In 2024, Mitsui, along with ADNOC, bp, Shell, and TotalEnergies, announced the final investment decision on Ruwais LNG, a lower-carbon LNG project in Abu Dhabi. The project is a midstream natural gas liquefaction project with an annual production capacity of 9.6 million metric tonnes that is scheduled to commence production in 2028. The development costs for the project primarily consist of the engineering, procurement, and construction (EPC) cost for the LNG plant.

This initiative highlights our commitment to balancing the need for a stable energy supply with addressing climate change, aligning with Mitsui's broader corporate strategy. As a company deeply involved in the entire value chain of energy resources, we aim to take a proactive role alongside ADNOC and other partners in driving the global energy transition over the coming decades.

Mitsui has identified Global Energy Transition as one of its Key Strategic Initiatives in its Medium-term Management Plan 2026. The company considers natural gas and LNG to play an important role during this transition and sees them as real solutions.

In addition to contributing to the long-term stable earnings base, the project with ADNOC will also be a low-carbon LNG project that will have measures to reduce GHG emissions at the LNG production stage by adopting an E-Drive design and utilising clean power, contributing to the sustainable transition to a decarbonised society.

Mitsui will continue to contribute to the stable supply of energy, the enhancement of quality of life, and sustainable social development through pushing forward its global natural gas and LNG business.

ADIPEC represents a valuable opportunity for us to engage with industry leaders, showcasing our expertise and exploring areas where Mitsui can provide unique solutions to create new value. We look forward to connecting with energy professionals and discussing how we can contribute to shaping the future of the industry during this prestigious event.

We are committed to pursuing a pragmatic solution for both securing a stable energy supply and responding to climate change, which is also in line with Mitsui's corporate strategy.

Ken Yamaguchi

ADIPEC conferences overview

The ADIPEC Conferences seek to advance tangible action and demonstrate collaborative industry progress, emphasising the need for an economy-wide transformation for people and the planet. The conference programme aims to catalyse innovation and energy action by connecting the ideas, ambition, technology,and capital necessary to foster innovative solutions and drive actionable outcomes. Through its dynamic portfolio of conferences, ADIPEC will provide an inclusive stage for more than 1,800 speakers to address the most urgent global energy challenges. These leaders and innovators will offer diverse perspectives and approaches, sharing impactful insights from across the energy, finance, technology, manufacturing,transport and construction sectors.Welcoming more than 16,500 delegates, the conferences will encourage crosssector collaboration and explore pivotal strategies and innovations essential to addressing the energy trilemma.

STRATEGIC CONFERENCES

- Strategic Conference
- Decarbonisation Conference
- Hydrogen Conference
- Maritime & Logistics Conference
- Finance & Investment Conference - **New**
- Digitalisation & Technology Conference - **New**
- Voices of Tomorrow - **New**

TECHNICAL CONFERENCES

- Technical Conferences
- Downstream Technical Conference

ADIPEC Conferences in numbers

16,500+
Delegates

1,800+
Speakers

370+
Sessions

Decarbonisation Conference programme

The ADIPEC Decarbonisation Conference offers an inclusive forum dedicated to finding credible solutions that can deliver the energy system of the future while rapidly decarbonising today's energy systems. This year's conference programme explores international collaboration, clean energy investment, digitalisation and innovation, and operational excellence as key enablers of progress.

DAY 1 Monday 4 November 2024

STRATEGIC PANEL

13:00 - 14:00 **Location: Decarbonisation Theatre**

Role of policy and regulation in ending routine flaring and achieving near zero methane emissions

Flaring operations contribute significantly to climate change by releasing both carbon and methane into the atmosphere. However, by implementing robust policies and regulations that mandate monitoring, reporting, and abatement of emissions, countries can effectively eliminate routine flaring, minimise non-routine flaring, and achieve near zero methane operations. This not only helps combat climate change but also creates opportunities to bolster energy supply by utilising the natural gas that would otherwise have been flared, whether for on-site power generation or sale on the market. Addressing flaring and methane in tandem is essential to attain sustainable and energy-efficient operations.

LEADERSHIP PERSPECTIVES

14:00 - 14:45 **Location: Decarbonisation Theatre**

Partnering with the Global South to advance global decarbonisation

Despite the relatively low contributions to global GHG emissions by most countries in the Global South, these countries are often the most vulnerable to rising sea levels, floods and extreme temperatures. Additionally, these countries face additional challenges including limited access to financial resources, lack of infrastructure and heavy dependence on climate-sensitive sectors like agriculture. To accelerate an equitable energy transition across the Global South, collaboration with the Global North will be needed across finance and investment, digital integration, technology development and innovation, and capacity-building while also enabling sustainable energy sources and reduced carbon emissions. Global energy's future hinges on collaboration. Governments, businesses, and civil society must unite to dismantle obstacles. Their joint efforts can propel an equitable shift for developing nations while fostering worldwide sustainability and decarbonisation.

LEADERSHIP INTERVIEW

14:45 - 15:15 **Location: Decarbonisation Theatre**

Scaling sustainable biofuels supply to deliver decarbonisation

Biofuels could potentially contribute to about 2-5% reduction in global GHG emissions. Their applicability could be the largest in transportation. However, while biofuels offer a solution, it is crucial to ensure their production is sustainable. Building a resilient biofuel supply chain requires a focus on the right feedstocks and advanced production technologies. Biofuels manufacturing must aim to diversify their feedstock beyond purpose-grown energy crops to ensure a more efficient, net-zero biofuels supply.

STRATEGIC PANEL

15:15 - 16:15 **Location: Decarbonisation Theatre**

Optimising operations to advance decarbonisation: a digital and cultural shift

The operating environment for energy-related stakeholders is rapidly evolving, with increasing pressure for transparency and accountability around emissions, sustainability metrics, and net-zero progress. By adopting a digital-first mindset, that leverages data analytics and emerging technologies, and fostering a culture of innovation and collaboration, organisations can optimise operations for decarbonisation and contribute to a sustainable future. However, there are challenges in leveraging operational excellence including establishing accurate emissions baselines, accounting for value chain emissions, aligning incentives, and engaging the entire organisation in decarbonisation efforts. Overcoming these challenges requires companies to take a holistic, collaborative approach that embeds decarbonisation into their core operating model and gives it the same importance as improving efficiencies and reducing costs.

DAY 2 Tuesday 5 November 2024

ACTION SESSION

09:40 - 10:10 **Location: Decarbonisation Theatre**

Nuclear energy as a lower-carbon energy source

The ability of nuclear energy to provide low-carbon electricity, hydrogen, and high-grade heat makes it a versatile source that can contribute significantly to decarbonising heavy-emitting sectors and helping achieve global climate goals. With more than 20 nations signing the Declaration to Triple Nuclear Energy, this joint commitment underscores the global recognition of nuclear energy's part in global net-zero greenhouse gas emissions by 2050. However, risks such as safety, environmental and geopolitical issues must be addressed to secure its place as a reliable source of energy given its steady baseload power, 24/7 availability, and long operating lifetime.

STRATEGIC PANEL

10:00 - 11:00 **Location: Decarbonisation Theatre**

Investing in reliable grid infrastructure to deliver renewable capacity and energy efficiency commitments

Tripling renewable capacity and doubling energy efficiency by 2030 is seen as critical to achieving a sustainable and low-carbon energy future. However, this initiative faces a unique set of challenges for each goal, including the lack of investment in the grid infrastructure needed to deliver renewable energy from generation sources to end-users, as well as driving operational excellence through the adoption of efficient electric technologies like heat pumps, EVs, etc. While long-term operational costs are lower compared to traditional fuels, the initial investment can be a barrier for investors as can long ROI windows. Collaboration across all stakeholder groups including utilities, grid technology vendors, investors and others will be needed to de-risk investment and deliver a reliable grid infrastructure that will enable increased renewable capacity and energy efficiency.

STRATEGIC PANEL

11:00 - 12:00 **Location: Decarbonisation Theatre**

The promise of wind and solar energy in the climate change journey

Wind and solar energy hold immense promise to diversify the world's energy mix and contribute to the net-zero transition. The costs of wind and solar power have dropped dramatically in recent years, making them increasingly cost-competitive with traditional fuels. Continued innovation, supportive policies, and scale-up of renewable energy deployment will be key to realising this potential and transitioning to a sustainable, zero-emissions energy future. However, challenges such as the intermittent nature of wind and solar power, significant upfront investment requirements, energy storage solutions and grid transmission upgrades must be addressed.

LEADERSHIP PERSPECTIVES

12:00 - 12:45 **Location: Decarbonisation Theatre**

Decarbonising industry with small modular reactors

Small modular reactors (SMRs) are a new generation of nuclear reactors designed to provide clean and reliable baseload power complementing renewables like solar and wind. While SMRs hold great potential, they also face technical hurdles such as the untested nature of their novel safety systems and components that are not used in conventional large nuclear power plants, not to mention the need for effective waste management solutions. Regulatory frameworks for traditional reactors may need adaptation to account for the unique characteristics of SMRs in terms of design and size, as well as public concerns that require transparent communication on SMR safety. Significant investment and collaboration among governments, SMR developers, the private sector, research institutions, and end-users are essential to address these challenges for the successful large-scale deployment of SMRs.

LEADERSHIP INTERVIEW

14:00 - 14:30 **Location: Decarbonisation Theatre**

Solar home systems and mini-grids: the opportunity for solar to deliver just and equitable energy access

According to the IEA, 685 million people live with no access to energy, particularly those in remote and underserved communities. Research shows access to reliable energy positively impacts socio-economic opportunity and development, including increased availability of education and health resources, job creation and economic diversification. Advances in solar solutions open paths to clean, reliable, and affordable energy access through solar home systems and at the community level through mini-grids. Some of the challenges in scaling the capacity of solar home systems and mini-grids include the optimisation of design, improving affordability, grid integration, and enabling regulatory environments. To unlock the full potential of solar solutions, policymakers, grid operators, investors, and rural electrification agencies must work together to create the right supporting frameworks.

DAY 3 Wednesday 6 November 2024

STRATEGIC PANEL

10:00 - 11:00 **Location: Decarbonisation Theatre**

Scaling CCUS and DAC: assessing technology availability and readiness

Carbon Capture, Utilisation and Storage (CCUS) and Direct Air Capture (DAC) are among the leading carbon capture technologies being developed and deployed to reduce emissions from various industrial sources, supporting the transition to a net-zero economy. However, the availability of CCUS and DAC technology is still limited globally, and while its availability is increasing in certain regions, particularly North America and Europe, more R&D and investment are needed to ensure their wider use. In addition, these are expensive technologies that come with challenges not all companies are willing to take or have the right tools to overcome.

STRATEGIC PANEL

11:00 - 12:00 **Location: Decarbonisation Theatre**

The role of carbon markets in accelerating decarbonisation

Carbon markets have a pivotal role in accelerating the energy transition, supporting large-scale climate goals, and aiding countries and businesses in achieving their net-zero emissions targets. While carbon markets hold immense promise, challenges such as fragmentation and the lack of standardised crediting mechanisms can undermine both the credibility and effectiveness of carbon markets. Establishing clear guidelines on the accepted uses of carbon credits, along with improved standards and infrastructure for their development and sale, can make carbon markets a more effective tool for driving the rapid emissions reductions needed to limit global warming to 1.5°C. However, they should be seen as a complement to, not a substitute for, strong climate policies and corporate action to decarbonise operations

SPOTLIGHT DISCUSSION

12:00 - 12:45 **Location: Decarbonisation Theatre**

Building a diversified energy mix to meet rising energy demand

According to the Energy Institute's Statistical Review of World Energy, traditional fuels continue to meet more than 80% of the world's energy needs despite record growth in renewable energy. Building a resilient, diversified clean energy supply necessitates expanding production and sourcing capabilities across multiple countries and regions to minimise reliance on any single source. Economies built on production are seizing the chance to rethink their infrastructure, resources and skills. Their focus is shifting to create clean energy supply chains, driven by low-carbon solutions such as LNG and other new energy sources. This change brings huge advantages: stronger economies, new jobs, and fresh market opportunities.

LEADERSHIP INTERVIEW

12:45 - 13:15 **Location: Decarbonisation Theatre**

Scaling investment in clean technology

The International Energy Agency estimates clean energy investment must reach $4.5 trillion per year by the early 2030s to achieve net-zero emissions by 2050. Despite the rapid growth of the clean tech sector and the new opportunities it creates for businesses and investors, clean energy investment remains significantly lower than required, due to the capital-intensive nature of clean energy projects and their long payback periods. Additionally, many of the technologies and solutions have not yet been proven in the market, adding another layer of investment risk. Supportive policies such as tax incentives, and financial innovations such as large public funding programmes, will pave the way for innovative cleantech projects to thrive.

LEADERSHIP PERSPECTIVES

14:00 - 14:45 **Location: Decarbonisation Theatre**

The role of startups in delivering the new clean energy future

Startups are at the forefront of developing affordable, efficient and reliable clean energy technologies driving innovation, securing investment, influencing policy, developing talent, and embracing digitalisation and sustainability – all of which are critical to meeting global climate goals. However, startups face challenges such as high upfront capital to develop, test, and scale their technologies, limited access to investment and funding, high levels of competition, and digital technology scalability. With the right investors, partners and collaborators, many companies considered startups today could be key players in the new clean energy system.

DAY 4 Thursday 7 November 2024

SPOTLIGHT DISCUSSION

10:00 - 10:45 **Location: Decarbonisation Theatre**

Decarbonising electricity for AI-driven data centres

Data centres currently account for 1-1.5% of global electricity consumption. As the demand for AI, data and cloud computing grows, it is crucial to address the need for energy-efficient practices and technologies to combat the challenge of high demand in energy consumption and cooling. While efforts are being made to decarbonise data centre operations, more collaboration and digital innovation are needed to make significant progress. Initiatives like the Net Zero Innovation Hub, in Denmark, are bringing stakeholders together to develop and implement solutions for sustainable data centres. Data-grounded and AI-powered capabilities have the potential to accelerate the energy transition for all, however, the question remains as to whether the benefits will justify the increased power demand.

STRATEGIC PANEL

10:45 - 11:45 **Location: Decarbonisation Theatre**

Decarbonising heavy-emitting industry operations

According to IEA, the demand for heavy industry products is expected to rise given the requirements for constructing and maintaining nuclear power plants, wind turbines, and other clean energy infrastructure. Accounting for at least 70% of industrial emissions per year, heavy industry sectors must work pragmatically towards decarbonising their operations and operational excellence. Challenges and potential bottlenecks include retiring or retrofitting long-lived plant assets, electrifying inherent industrial production methods where possible, innovating solutions for high emissions and high heat intensity processes, and scaling emerging and new technologies for commercial viability. Significant investment and coordinated policy support will be required to activate significant and timely progress toward decarbonisation.

STRATEGIC PANEL

11:45 - 12:45 **Location: Decarbonisation Theatre**

Sustainable aviation fuel (SAF) take-off: ensuring financing and production scaling

Sustainable aviation fuel (SAF) is gaining recognition as a sustainable alternative to traditional jet fuel. Despite considerable interest and investment, challenges hinder its widespread adoption including the high cost of production compared to conventional jet fuel, limited availability of sustainable feedstocks, lack of clear and consistent government policies for production, and infrastructure. Scaling SAF production can play a key role in meeting the aviation industry's need to decarbonise. To achieve this, significant R&D investment will be required to optimise SAF production from emerging feedstocks as well as consistent international policies to provide clear, long-term signals to incentivise the necessary capital investments by SAF producers.

LEADERSHIP INTERVIEW

12:45 - 13:15 **Location: Decarbonisation Theatre**

Reducing demand for critical minerals through circular economy measures

Decarbonising the energy system will require a significant amount of critical minerals including lithium, cobalt, copper, and rare earth elements, to produce technologies such as solar PV, wind turbines and EV batteries. Modelling shows the use of advanced technologies with lower mineral demand combined with ambitious circular economy measures could reduce the cumulative demand for these critical minerals. However, significant challenges must be addressed to enable the benefits, including critical mineral recycling infrastructure, economic incentives for modular product designs that allow disassembly and reuse, and new thinking by end-users. Governments and businesses will need to consider implementing circular economy strategies like lifetime extension, and material efficiency to further decrease mineral demand.

A selection of decarbonisation products and solutions from ADIPEC's 2,200 exhibitors

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AD PORTS GROUP | STAND: **A405** | HALL: **ATRIUM**

AD PORTS GROUP

LEADING WITH INNOVATION, VISION, AND RESULTS

AD Ports Group is an industry leader in decarbonisation of maritime, shipping, and industrial development operations

AD Ports Group, an integrated trade, transport, and logistics entity, is a leader in the decarbonisation of its maritime, shipping, and industrial development operations. The group has embedded sustainability principles across all local, regional, and international operations, covering the primary verticals of the global trade and transport ecosystem. The commitment to reducing our carbon footprint extends throughout our five business clusters: Ports, Maritime and Shipping, Economic Cities and Free Zones (EC&FZ), Logistics, and Digital Solutions.

Each year, we publish a Sustainability Report that measures our decarbonisation progress against standards aligned with the UN Sustainable Development Goals (SDGs) and the sustainability objectives set by Abu Dhabi and the UAE. This underscores our pivotal role in fostering positive environmental, social, and economic impacts. The report, developed with reference to the Global Reporting Initiative (GRI) standards, offers general and topic-specific disclosures relevant to our operations across more than 50 countries on five continents.

Our 2023 Sustainability Report, published in September, highlighted our success in reducing the carbon intensity of greenhouse gas emissions from global operations through efficiency gains, energy savings, and decarbonisation efforts. The group's greenhouse gas (GHG) emission intensity fell by 2% to 11.67 kg of carbon dioxide equivalent per TEU (twenty-foot equivalent unit) in 2023, down from 11.93 kgCO2e per TEU in 2022. Furthermore, we achieved a 7% reduction in electricity consumption intensity, alongside a 174% increase in the quantity of solid waste recycled.

The solar photovoltaic (PV) capacity integrated into our 2023 operations contributed to a reduction of 5,000 tonnes of CO2 equivalent through clean energy. Decarbonisation

significantly supports the synergistic growth of our five-cluster business model, which enhances efficiencies in transport, logistics, and industrial development, enabling international expansion. Recently, the group has expanded into the Red Sea, Africa, the Arabian Gulf, and Central Asia.

> The value of technology in collecting and analysing GHG emissions has become increasingly evident. This has led to the development of the Maritime Emissions Portal to track vessel movements.

All sectors within our group are led by innovators in the Middle East focusing on solar energy, green hydrogen, and advanced technologies. KEZAD Group, part of AD Ports Group, operates the largest integrated economic zones in the region. UAE-based Abundance Solar Panels has signed a 50-year land lease agreement to establish a sophisticated solar panel plant, manufacturing solar panels and integrated photovoltaic modules for diverse industries.

SAFEEN Group, also part of AD Ports Group, is trialling an electric tug in its Marine Services fleet, the first of its kind in the Middle East, to be deployed at Khalifa Port. This trial is expected to pave the way for a formal electrification strategy for our marine services fleet.

In the maritime industry, fuels play a significant role. AD Ports Group, alongside Transmar, a leading container shipping line and terminal operator in the MENA region, and Orascom Construction, a prominent global engineering and construction contractor, has signed a memorandum of understanding (MoU) for developing a green methanol storage and export facility. This facility will supply low-carbon fuel for maritime transport, supporting our decarbonisation strategy and expansion into clean energy liquid bulk storage.

The value of technology in collecting and analysing GHG emissions has become increasingly evident. This has led to the development of the Maritime Emissions Portal (MEP), utilising Automatic Identification System (AIS) data to track vessel movements and provide unique insights specific to each vessel. This innovative approach enables us to offer a comprehensive emissions profile for our ports, enhancing our environmental oversight and decarbonisation efforts.

AD Ports Group values its involvement with ADIPEC as a crucial part of our decarbonisation journey, providing opportunities to learn from leaders in the energy industry. Global cooperation is essential for transitioning to low-carbon energy. By bringing leaders together, we can tackle these challenges through innovation and technology.

ENI | STAND: **A300** | HALL: **ATRIUM**

GREENER TOMORROW: DRIVING THE GLOBAL ENERGY SHIFT FORWARD

Eni has the experience, knowledge, and innovative solutions to drive the energy transition and create a more sustainable future

Eni, a global tech-energy company, is dedicated to leading the energy transition towards a low-carbon future. By leveraging its expertise and innovation, Eni is actively pursuing a decarbonisation strategy that encompasses a wide range of products, services, and initiatives, including:

Renewables: Solar and wind power, aiming to diversify Eni's energy mix and reduce carbon emissions.

Biorefining: Enilive, Eni's company dedicated to more sustainable mobility, produces and distributes biofuels (renewable diesel and SAF).

Carbon Capture and Storage (CCS): Eni is actively involved in CCS projects, capturing and storing CO_2 to support the decarbonisation process of hard-to-abate industries.

Hydrogen: Exploring the potential of hydrogen as a clean energy source.

Decarbonised Products: Developing and commercialising even more decarbonised products, such as low-carbon fuels and chemicals, to support its customers in reducing their emissions.

> Enilive's biofuels are essential for decarbonising the transportation sector and reducing emissions. Enilive aims to provide progressively decarbonised services and products for the energy transition, contributing to Eni's goal of achieving carbon neutrality by 2050.

Eni's decarbonisation efforts have yielded significant results. In a joint venture with Snam, Eni announced the commencement of CO_2 injection activities in the reservoir for Phase 1, estimated at approximately 25,000 tonnes of CO_2 per year, at Ravenna CCS. The project delivers a reduction of over 90% in CO_2 emissions, making Ravenna CCS the world's first industrial-scale project with such high levels of carbon capture efficiency, given a carbon concentration of less than 3% and low atmospheric pressure. In the coming years, with Phase 2, the industrial-scale development of the project will be able to store up to 4 million tonnes of CO_2 per year by 2030, increasing to up to 16 million tonnes per year in subsequent development phases after 2030. Designed to support industrial decarbonisation, Ravenna CCS is Italy's first project for the capture, transport, and permanent storage of CO_2 created solely for environmental purposes, positioning it as a potential CCS hub for the Mediterranean area.

In the UK, Eni operates the CO_2 transport and storage system for one of the country's most advanced CCS projects: HyNet. With an initial storage capacity of 4.5 million tonnes of CO_2 per year in the first phase, and the potential to increase to 10 million tonnes per year after 2030, the project will significantly contribute to reducing emissions from hard-to-abate industries in North West England and North Wales, transforming one of the UK's most energy-intensive industrial regions into one of the world's first low-carbon industrial clusters.

Additionally, Enilive's biofuels are essential for decarbonising the transportation sector and reducing emissions. Enilive aims to provide progressively decarbonised services and products for the energy transition, contributing to Eni's goal of achieving carbon neutrality by 2050. Enilive has strategic agreements, innovative technologies, and diversified solutions to make mobility increasingly sustainable.

At ADIPEC 2024, Eni looks forward to collaborating with industry leaders, policymakers, and technology providers to accelerate decarbonisation efforts. The company aims to share its experiences, knowledge, and innovative solutions to drive the energy transition and create a more sustainable future.

FIPI | STANDS: 10130 & 10121 | HALL: 10

FIPI
Federation of Indian Petroleum Industry

FOSTERING AN ECOSYSTEM THAT NURTURES INNOVATION IN INDIA

As India's energy sector embraces decarbonisation, the Federation of Indian Petroleum Industry (FIPI) plays a pivotal role in driving innovation, knowledge sharing, and policy advocacy

The Federation of Indian Petroleum Industry (FIPI) is the apex body representing entities in India's hydrocarbon sector. As a key interface between the industry, government, and regulatory authorities, FIPI plays a vital role in shaping policies, sharing knowledge, and fostering innovation in the energy sector. Through seminars, webinars, conferences, and workshops, FIPI promotes knowledge exchange and collaboration, essential for advancing the decarbonisation agenda.

EMBRACING THE ENERGY TRANSITION

The global energy landscape is undergoing a significant transformation, with India leading in its commitment to clean energy technologies. Areas like green hydrogen, renewables, biofuels, and carbon capture, utilisation, and storage (CCUS) are now seen as concrete investment pathways. FIPI supports these industry efforts by providing insights into global best practices through expert studies, facilitated by knowledge partners.

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INDIA ENERGY WEEK: A GLOBAL PLATFORM FOR DECARBONISATION

FIPI has successfully conceptualised and organised India Energy Week (IEW) over the past two years, establishing it as a global platform for energy dialogue and decarbonisation. Building on this success, IEW 2025 promises to be a significant leap forward. This platform gathers top global energy companies, C-suite executives, leading academics, and pioneering innovators, offering invaluable insights into the future of energy security and transition.

IEW has transformed global energy dialogue by breaking down traditional knowledge silos in energy sustainability. This innovative platform transcends geographical and institutional boundaries, highlighting solutions from the Global South. By facilitating the exchange of diverse innovations, FIPI is catalysing practical applications of sustainable energy practices that extend far beyond India.

FIPI'S ONGOING ADVOCACY FOR DECARBONISATION

FIPI's advocacy for decarbonisation continues through several initiatives:

1. Sustainable Aviation Fuel (SAF): A webinar featuring experts from Axens addressed technology pathways for SAF production, responding to the aviation industry's need for sustainable alternatives.

2. CCUS and LNG: A webinar on 'Energy Transition & Decarbonisation' underscored the critical role of CCUS and LNG in reducing CO_2 emissions.

3. R&D Conclave: The 5th R&D Conclave, themed 'India's Journey towards Net Zero,' brought together industry players to promote innovation in addressing climate change.

4. Hydrogen Market Study: In collaboration with major oil and gas entities, FIPI initiated a study on India's emerging hydrogen market, assessing consumption patterns and innovative applications of low-cost hydrogen.

5. Natural Gas for Industrial Air Pollution: An ongoing study focuses on the potential of natural gas in mitigating industrial air pollution, providing evidence-based recommendations to policymakers.

DRIVING IMPACT ACROSS INDUSTRIES

FIPI's role in the decarbonisation journey is multifaceted, with a focus on advocacy and promoting policies that support cleaner technologies. These initiatives create an environment conducive to adopting decarbonisation strategies across various sectors, including power generation, transportation, manufacturing, and petrochemicals.

A prime example of FIPI's influence is its representation to India's Ministry of Petroleum and Natural Gas, advocating for the integration of renewables with natural gas for power generation, addressing intermittency issues.

LOOKING FORWARD TO ADIPEC 2024

At ADIPEC 2024, FIPI anticipates further collaboration and knowledge sharing, focusing on latest advancements in CCUS technologies, scaling up green hydrogen production and utilisation, innovative financing models for decarbonisation projects, and cross-sector collaborations for achieving net-zero goals.

CONCLUSION: A COLLECTIVE JOURNEY

The path to decarbonisation requires collective effort, shared knowledge, and a unified vision. FIPI is committed to being a catalyst in this transformative journey. By bridging the gap between industry, government, and academia, FIPI is fostering an ecosystem that nurtures innovation and drives sustainable practices.

KENT I STAND: 8230 I HALL: 8

EMPOWERING CLIENTS TO MEET THEIR EMISSION REDUCTION TARGETS

Kent is leading the charge in engineering services and decarbonisation with its comprehensive suite of solutions

Kent is a global force in engineering services, fiercely committed to fast-tracking the energy transition and championing decarbonisation. With a diverse portfolio covering every stage of the energy asset lifecycle, from concept to decommissioning, Kent harnesses cutting-edge technology to empower clients in meeting their GHG reduction targets.

DRIVING DECARBONISATION: INNOVATIVE SOLUTIONS, PROVEN SUCCESS

At the core of Kent's decarbonisation mission lies a comprehensive suite of services that optimises asset performance while slashing emissions. A flagship innovation in this effort is the Carbon Intensity Reduction

> Kent's forward-thinking strategies and stellar track record solidify its role as a driving force in the global effort to achieve a low-carbon future.

Tool. This game-changing tool delivers data-driven, actionable strategies for reducing GHG emissions, helping clients identify and prioritise impactful measures like electrification, carbon capture, and fuel switching, while also evaluating their economic feasibility.

Kent's expertise in carbon capture, utilisation, and storage is unmatched, with over 50 global projects. Among these is the world-first Boundary Dam 3 Project in Canada, that brought CCUS technology to commercial-scale power plants.

On the UK's HyNet project, their expert assessments guided the selection of carbon capture technologies for one of the country's most significant hydrogen cluster developments. Kent's influence also spans the Middle East, where they are currently delivering a CO2 capture project for a national energy giant, offering top-tier FEED and EPCM services.

Kent's expertise covers the full CO2 chain, demonstrated by a project in the UK involving the safe and efficient design of CO2 transportation networks, ensuring seamless transfer from capture to sequestration. As further evidence of their reputation in this field, Kent was appointed by the UK Department of Energy and Climate Change as the Technical Advisor for the nation's Carbon Capture and Storage Commercialisation Programme, driving forward CCS infrastructure and technology development.

DECARBONISATION AT ADIPEC 2024

At ADIPEC 2024, Kent will proudly showcase its cutting-edge decarbonisation solutions while exploring how to fast-track the energy sector's journey to net zero emissions. Key topics such as electrification, alternative fuels, and CCUS will lead the conversation, with Kent focused on forging powerful partnerships with industry leaders to accelerate the shift towards cleaner energy.

Kent's forward-thinking strategies and stellar track record solidify its role as a driving force in the global effort to achieve a low-carbon future.

LUKOIL | STAND: A400 | HALL: ATRIUM

PIONEERING GREEN POWER EXPANSION TO EVERY CORNER OF THE WORLD

Since its foundation in 1991, LUKOIL has aimed to balance environmental sustainability with social and economic development

LUKOIL is one of the largest private, vertically integrated energy companies in the world, accounting for over 2% of global oil production and about 1% of proven hydrocarbon reserves. The company employs around 110,000 people and focuses on the exploration, production, and marketing of oil, gas, petroleum, petrochemical products, and electricity, including renewable energy.

Since its foundation in 1991, LUKOIL has aimed to balance environmental sustainability with social and economic development. In line with this goal, the company has committed to reducing its controlled greenhouse gas emissions (Scope 1 and 2) by 20% by 2030, compared to 2017 levels. Key strategies to achieve this include optimising the use of associated petroleum gas, modernising equipment, improving energy efficiency, and increasing the share of power generated from renewable energy sources (RES).

LUKOIL began developing RES-based power generation in 2006 and has since expanded its green power capacity to 631MW across seven countries: Austria, Belgium, Bulgaria, Croatia, Kazakhstan, Russia, and Uzbekistan. This includes 293MW of hydro-generation, 292MW of wind power, and 46MW of solar energy. The company not only consumes green energy, but also supplies it to external consumers via the grid.

As a member of the UN Global Compact, LUKOIL supports global sustainability initiatives and aligns its practices with the UN's 11 priority Sustainable Development Goals. In 2023, the company joined the Oil & Gas Decarbonisation Charter at the COP28 summit in the UAE. LUKOIL also backs the World Bank's "Zero Routine Flaring of Associated Petroleum Gas by 2030" initiative and already utilises nearly all associated petroleum gas produced.

LUKOIL has made significant efforts to reduce its carbon footprint, including projects to capture and utilise CO2, upgrade refineries, and adopt energy-saving technologies. For instance, it has employed "Huff and Puff" technology for CO2 injection during oil production, aiming to both intensify production and reduce emissions. The company is also exploring advanced technologies such as utilising flue gases with microalgae and processing biomass into biooil. In 2023, LUKOIL developed an experimental prototype for a methane pyrolysis unit, further advancing its research in hydrogen production from associated petroleum gas.

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One of the company's most prominent initiatives in renewable energy is the Kola Wind Farm (Kola WF), located beyond the Arctic Circle. With a capacity of 202MW and an estimated output of 750 million kWh per year, the Kola WF is the second-largest wind farm in Russia. Its operations produce no fuel or water waste, and the facility is expected to prevent significant CO2 emissions each year. The wind farm has been designed to coexist harmoniously with the Arctic tundra environment, preserving the natural beauty and ecological integrity of the region.

In addition to its energy projects, the Kola WF also hosts the Energo Trail, a unique race event that combines athleticism with renewable energy education. In 2024, more than 800 participants took part in the event, which raised significant funds for charitable causes.

LUKOIL's efforts in sustainability have been recognised globally. Its annual Sustainability Report has won numerous awards, including the Hong Kong ESG Reporting Award for best report among companies not listed on the Hong Kong Stock Exchange, a silver rating at the Asia Sustainability Reporting Rating, and a bronze award at the Global Corporate Sustainability Awards. These accolades reflect the company's commitment to transparency and progress in reducing its environmental impact.

MICROSOFT | STAND: 14250 | HALL: 14

DRIVING A SUSTAINABLE AND LOW-CARBON FUTURE IN THE ENERGY INDUSTRY

Through innovations in AI, cloud computing, and IoT, Microsoft is empowering energy companies to reduce their environmental impact while maintaining operational excellence

As the world confronts the climate crisis, the energy industry faces increasing pressure to reduce emissions and transition to sustainable sources. Microsoft is dedicated to leading this change through innovation and collaboration, empowering the energy sector to decarbonise, enhance efficiency, and invest in future-ready solutions. By providing advanced technologies like AI, cloud computing, and IoT, Microsoft is not only facilitating the energy transition but also inspiring further innovation for a lower-carbon, higher-growth future.

MICROSOFT'S COMMITMENT TO DECARBONISATION

Central to Microsoft's sustainability efforts is its goal to become carbon-negative, water-positive, and zero-waste by 2030. This ambition is part of a broader mission to assist industries, including oil and gas, in achieving their sustainability targets. Microsoft offers various technologies aimed at accelerating this transition, including the Microsoft Cloud for Sustainability, which helps organisations measure, report, and reduce carbon emissions.

Through cloud-powered data and AI solutions, Microsoft enables organisations to optimise operations and drive efficiency. Initiatives are rooted in advanced technologies such as digital twins, IoT, and predictive and generative AI, allowing energy companies to make data-driven decisions that lower emissions while enhancing productivity.

TRANSFORMING THE ENERGY INDUSTRY THROUGH DATA AND AI

Microsoft's AI-powered technology and cloud platform are making significant strides in decarbonising the energy sector. Notable examples include:

> By fostering partnerships and harnessing the power of data and AI, Microsoft aims to inspire innovation across the energy sector. The message for ADIPEC 2024 is clear: the future of energy is both digital and sustainable, with Microsoft's technologies leading the way.

- SLB and Microsoft Partnership: This collaboration is transforming data management and carbon capture and storage (CCS) using Azure Data Manager for Energy. It allows for seamless data integration, real-time monitoring, and predictive analytics, enhancing carbon storage forecasting and optimisation.
- Shell: By leveraging Microsoft's AI-powered IoT technology, Shell monitors and reduces gas flaring while detecting leaks in real time. This proactive

approach lowers emissions and enhances safety, demonstrating the immediate benefits of AI on operational sustainability.

- BHP: Utilising Microsoft Azure AI, BHP analyses data from its copper mining operations to optimise energy use and significantly reduce emissions, showcasing the role of data and AI in sustainable resource management.
- Accenture and Microsoft: Their partnership targets methane emissions using Accenture's Methane Emissions Monitoring Platform (MEMP), which measures baseline methane emissions in near real-time and detects leaks through various technologies, optimising venting and flaring.

MEASURING AND IMPROVING SUSTAINABILITY

To ensure long-term success in decarbonisation, tracking the impact of efforts is crucial. Microsoft provides two robust solutions for energy companies to measure and manage their carbon footprints:

- Microsoft Sustainability Manager: This tool tracks Scope 1, 2, and 3 emissions in real time, offering organisations insights to understand and reduce their environmental impact comprehensively.
- ESG Value Chain Solution: Part of Microsoft Sustainability Manager, this feature streamlines data collection and secures the process for suppliers, enabling advanced analytics on emissions reduction opportunities.

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DECARBONISATION AT ADIPEC 2024

At ADIPEC 2024, Microsoft will showcase how digital technology drives decarbonisation. The focus will be on emerging technologies like predictive and generative AI and cloud services, demonstrating their role in helping the energy sector achieve carbon neutrality.

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NMDC GROUP | STAND: 6130 | HALL: 6

NMDC GROUP: SUPPORTING THE UAE'S GREEN ENERGY TRANSITION

Through partnerships, innovative technology, and a commitment to environmental stewardship, the group is setting the standard for decarbonisation in the energy industry

NMDC Group is committed to advancing the energy transition and supporting decarbonisation through a range of innovative projects and initiatives. The company has formed key partnerships, implemented energy-saving strategies, and prioritised environmental and biodiversity conservation.

Here is an overview of how NMDC is driving decarbonisation across various areas:

Energy Transition: The group has partnered with Masdar to advance renewable energy projects. Notable among these is the UAE's first green hydrogen facility, as well as an offshore wind farm in Taiwan. These initiatives underscore the company's dedication to creating sustainable energy infrastructure and accelerating the global shift to renewable energy.

Energy Efficiency: NMDC Group has optimised its energy performance by adopting an Energy Savings Action Plan. This plan focuses on upgrading infrastructure, integrating renewable energy sources, and implementing water conservation measures, all aimed at achieving maximum energy efficiency.

Environment and Biodiversity: The company is committed to preserving local biodiversity and has implemented measures such as installing 135 nesting platforms for ospreys and ensuring that sensitive habitats, like turtle nesting areas, are safeguarded during project development.

Community Engagement: NMDC actively promotes a balance between urban development and nature conservation. By participating in community-driven environmental initiatives, the company supports the UAE's Sustainable Development Goals, demonstrating its commitment to sustainable growth.

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NMDC Group's efforts have made a tangible impact on the industry, offering innovative solutions to help energy companies reduce their carbon footprint:

1. Electrification of Operations: Significant investments in yard electrification allow NMDC to operate more efficiently, reducing carbon emissions and advancing the company's goal of a greener future.

2. Circularity in Projects: NMDC Energy applies circular design principles, using environmentally friendly materials that are easier to recycle at the end of their

lifecycle. This not only reduces waste but also helps minimise environmental impact.

3. Value Engineering: The company's engineering department focuses on delivering projects efficiently by using fewer materials without compromising on quality, enabling smarter, more sustainable outcomes.

4. Digitalisation: NMDC delivers fully digitised projects that leverage advanced tools like digital twins and AI solutions to enhance efficiency, reduce travel needs, and improve maintenance processes.

MEASURING DECARBONISATION IMPACT

NMDC Group's approach to measuring the impact of its decarbonisation efforts is aligned with the GHG Protocol Corporate Accounting and Reporting Standard. The company tracks greenhouse gas emissions across its subsidiaries and joint ventures using Scope 1, 2, and 3 (Categories 1-15) protocols. By adopting a rigorous emissions inventory system, NMDC is able to set clear benchmarks for reducing emissions in line with the Science Based Targets Initiative (SBTi). This ensures the company remains on track to meet its ambitious sustainability goals.

Overall, NMDC Group is playing a crucial role in helping the energy sector transition to a sustainable future through its wide range of decarbonisation solutions. At this year's ADIPEC, NMDC Group is eager to explore innovative technologies and collaborative strategies to further advance decarbonisation in the energy sector. By connecting with industry leaders, NMDC hopes to share best practices and insights that will drive the next wave of sustainable energy solutions.

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The group's initiatives not only support its own sustainability objectives but also enhance the energy sector's ability to transition to a low-carbon future. Through partnerships, innovative technology, and a commitment to environmental stewardship, NMDC is setting the standard for decarbonisation in the energy industry.

NESMA & PARTNERS I STAND: 5354 I HALL: 5

Nesma & Partners نسما وشركاهم

USHERING A NEW ERA IN SUSTAINABLE CONSTRUCTION

As a leading contractor in Saudi Arabia, Nesma & Partners adopts a holistic approach to minimising emissions, focusing on the entire lifecycle of each project

Nesma & Partners is dedicated to advancing sustainability in construction, aligning with Saudi Arabia's Vision 2030 and the goal of achieving net-zero carbon emissions by 2060. Our framework aims for a 30% reduction in emissions by 2030 and net-zero by 2050. By integrating renewable energy, utilising low-carbon materials, and optimising water management, we are directing the construction landscape towards a more sustainable future.

Key Initiatives in Decarbonisation: We have implemented sustainable practices across projects, including solar energy, hybrid power systems, energy-efficient designs, and sustainable material choices, driving significant CO2 reductions and noteworthy energy savings.

Decarbonisation in Action: We take a holistic approach to minimising emissions, embedding sustainability into every project stage, from inception to completion.

Sustainable Design and Materials: We prioritise sustainability by optimising designs to minimise waste and maximise efficiency, using recycled and

sustainably sourced materials like low-carbon cement, high-recycled concrete, and FSC-certified wood. All materials meet stringent environmental standards, promoting transparency and accountability throughout the supply chain.

Building for Durability and Longevity: Nesma & Partners is committed to designing enduring structures with durable materials aligned with circular economy principles. By focusing on longevity, we reduce the need for frequent repairs and lower overall energy consumption, reaffirming our commitment to clients and the environment.

> At Nesma & Partners, sustainability is integral to how we build the future. As we lead the construction sector, we remain focused on making meaningful contributions to a sustainable, low-carbon future for Saudi Arabia and the world.

A SELECTION OF PROJECTS:

- **The Connector Project at NEOM:** This project, covering earthworks for the High-Speed Rail West, Freight Rail West, and related infrastructure, integrates a hybrid power system combining solar energy with diesel generators. This system has successfully met 20% of the project's energy demand through renewable sources.
- **NEOM Construction Villages (5K & 10K):** We designed and constructed two villages incorporating solar farms with capacities of 2.5 MW and 4.5 MW, supplying 25% of the villages' power needs and reducing reliance on fossil fuels.
- **NEOM Oxagon:** We implemented an advanced water reuse system at NEOM's Oxagon site, repurposing excess water for irrigation and conserving over 537.87 cubic metres of fresh water.

Measuring Impact and Progress: We track and report environmental impacts across 22 projects, focusing on emissions, water usage, and waste management. Our strategy is evaluated using key performance indicators (KPIs) such as carbon emissions reductions, energy output from efficient designs, and savings in potable water and energy consumption through desalination.

Empowering Industries with Decarbonisation Solutions: The construction sector, responsible for 39% of global CO2 emissions, benefits from our efforts. By integrating renewable energy, low-carbon materials, and energy-efficient practices, we reduce the environmental impact of the built environment. Other industries involved in large infrastructure projects can also gain from adopting similar measures, accelerating progress towards a low-carbon future.

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PATTERSON-UTI | STAND: 7552 | HALL: 7

PATTERSON-UTI

ADVANCED INTEGRATED POWER SERVICES FOR UNPARALLELED EFFICIENCIES

Patterson-UTI's automated and integrated power services platform enables the most energy-efficient and cost-effective means of powering operations

Patterson-UTI combines its portfolio of power equipment—including CNG and field gas processing and handling, high-line power substation skids, and battery storage—with intelligent automation for multi-source energy management. This ensures the lowest fuel consumption and emissions at any given time and location, even in remote areas.

Our structured yet flexible approach delivers the right power in the right place at the right time across diverse operating environments and regions. The advanced natural gas and electric-drive drilling rigs and fracturing fleets facilitate the reduction of emissions and operational costs. Companies can realise the benefits by configuring the optimal combination of infrastructure and cutting-edge technology.

INTELLIGENT BY DESIGN

Patterson-UTI's world-class data science capabilities optimise power management by integrating available power from various sources, including high-line power, battery storage, and a range of natural gas and compressed natural gas (CNG) generator options, to provide the most effective combination.

We are equipped to meet the current demands and future needs for well operations with a suite of integrated energy solutions.

NATURAL GAS SOLUTIONS

Finding the optimal natural gas fuelling solution for every scenario is crucial. The variability in field gas quality can limit its use in natural gas engines. Patterson-UTI can process and blend field gas into usable fuel onsite. Our expertise ensures that even high-BTU gas can be effectively utilised, helping operators optimise fuel use, reduce costs, and lower emissions. This is supported by one of the most advanced and largest CNG fuelling infrastructures in the industry, capable of high-flow delivery and built for maximum fuelling reliability. By combining advanced automation and data science, Patterson-UTI's intelligent gas platform provides the optimal blend of field gas and CNG, minimising diesel fuel usage for the lowest emissions and costs.

> Patterson-UTI is a preferred partner for reducing costs, improving energy efficiency, and lowering emissions.

ENERGY MANAGEMENT SYSTEMS

Patterson-UTI's energy management systems easily integrate various electric options, such as lithium-ion battery storage with instantaneous power, onsite generation, and high-line power connected via substation skids. These solutions can supplement or replace traditional engine-driven sources without impacting operations. Battery storage systems balance power demands, reducing fuel consumption and emissions from generators. They continuously charge, enhancing power supply flexibility from either grid power or generators. Our system autonomously shifts between power sources, ensuring continuous power for drilling rigs at the lowest emissions, fuel, and electricity costs.

ELECTRICAL CONTROLS AND AUTOMATION

Our automated control systems seamlessly balance load inputs between available power sources to achieve the least energy consumption and the highest efficiency. This solution also includes high-power electrical equipment with automation capabilities to perform in demanding environments. We design and manufacture a full line of electrical and automation equipment, enabling the latest high-spec drilling rigs and next-generation frac fleets to harness grid power.

The Patterson-UTI power management dashboard provides real-time visualisation and analytics of power solutions. This intuitive tool monitors engine performance, tracks fuel consumption and emissions, and triggers predictive maintenance alerts via REX (Rules Engine Exchange).

EMPOWERED BY DIGITAL INTEGRATION

Our platform is driven by remote monitoring, real-time data analysis, and autonomous operation to ensure equipment runs efficiently. The system's digital integration allows real-time adjustments, reducing costs and emissions. Regardless of the power or fuel options, we make it all work better together.

NEXT GENERATION OF WELLSITE OPERATIONS

Today's operators must adapt and innovate to meet even greater demands. This integrated Power Services solution elevates operations to the next level.

> The Patterson-UTI power management dashboard provides real-time visualisation and analytics of power solutions. This intuitive tool monitors engine performance, tracks fuel consumption and emissions, and triggers maintenance alerts.

Patterson-UTI is a preferred partner for reducing costs, improving energy efficiency, and lowering emissions. We offer a smarter, more effective approach to power management and emissions reduction, helping operators reach their full potential.

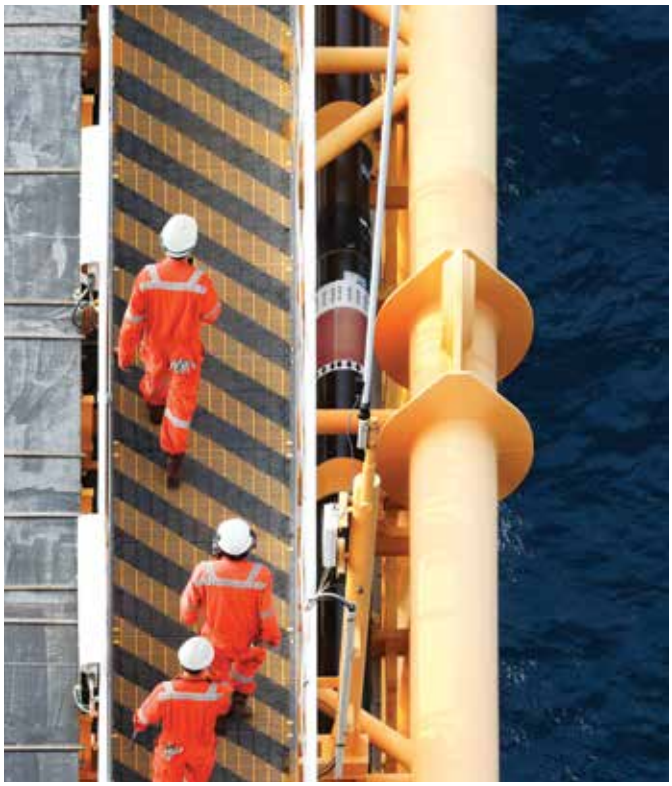
PTTEP | STAND: 5220 | HALL: 5

SHAPING A GREENER FUTURE FOR THAILAND AND BEYOND

As Thailand's national energy company, PTTEP is balancing energy security with sustainability through innovative technologies and clean energy initiatives

Embracing the global shift towards sustainable energy, PTT Exploration and Production Public Company Limited (PTTEP), Thailand's national energy company under the PTT Group, is dedicated to balancing energy security and sustainability. As Thailand relies heavily on natural gas, PTTEP is crucial in maintaining the country's energy supply while promoting cleaner exploration and production (E&P) practices. With a goal of achieving net zero greenhouse gas (GHG) emissions by 2050, PTTEP is transitioning towards a low-carbon future.

At the core of PTTEP's strategy are three pillars: Drive Value, Decarbonise, and Diversify. The first pillar, Drive Value, maximises PTTEP's core business through advanced technologies and innovative solutions to stay at the forefront of the cleaner energy sector. The second pillar, Decarbonise, focuses on reducing GHG emissions across operations. The third, Diversify, signifies PTTEP's bold expansion beyond E&P, exploring future energy solutions and advanced technologies for long-term growth.



Dual Mission: Eco-Balancing Operations

Striving towards net zero, PTTEP is actively working to reduce GHG emissions throughout its operations. Key initiatives include flare gas recovery and utilisation, energy efficiency improvements, integrating renewable energy into operations, and managing cleaner logistics fleets. These efforts aim to minimise environmental footprint while maintaining operational excellence.

Solar Power Initiative at Thailand's Largest Onshore Oil Field

A significant demonstration of PTTEP's commitment to clean energy is the 'Lan Sang Arun' solar power project, operated by its subsidiary, Future Tech Energy Ventures Co., Ltd. (FTEV). Located in Lan Krabue District, Kamphaeng Phet Province, this area is home to the S1 Project, Thailand's largest onshore oil field. By generating 10 megawatts of solar power, Lan Sang Arun replaces the natural gas used for electricity generation at the S1 Project. Since July 2023, it has cut GHG emissions by approximately 13,000 tonnes of CO2 equivalent per year.

Carbon Capture and Storage: Shaping the Nation's Green Future

In addition to renewable energy, PTTEP is pioneering Carbon Capture and Storage (CCS) technology to mitigate emissions from its E&P operations. PTTEP initiated Thailand's first CCS project study at the Arthit Project, an offshore gas field in the Gulf of Thailand,

aiming to implement CCS by 2027. This project could capture and store 700,000 to 1,000,000 tonnes of CO2 per year, aligning with Thailand's goal of achieving carbon neutrality by 2050 and targeting a reduction of 40 million tonnes of CO2 annually. The 'Eastern Thailand CCS Hub' initiative aims to capture and store CO2 from industrial emitters in the Map Ta Phut Industrial Estate, showcasing PTTEP's strategic commitment to significant national impact.

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Scaling up Clean Energy Investment Beyond Thailand

Through FTEV, PTTEP has also ventured into the wind power sector with the Seagreen Offshore Wind Farm in the North Sea, Scotland. As a key investor in Scotland's largest offshore wind project, featuring 114 turbines and a generating capacity of 1.1 gigawatts, PTTEP is making strides in international clean energy. Additionally, the company is developing a green hydrogen project through Hydrogen Duqm LLC in Oman, set to begin operations by 2030 and produce 1.2 million tonnes of green hydrogen annually.

Collaborative Approach to a Cleaner Future

With a focus on reducing greenhouse gas emissions and embracing clean energy solutions, PTTEP is committed to achieving net zero by 2050. The company is fostering collaboration with stakeholders across its value chain, including employees, suppliers, contractors, and local communities, ensuring a just transition to a clean energy future that leaves no one behind.

ROCK RIGID | STAND: AI-6 | HALL: ENERGY AI BY ADNOC

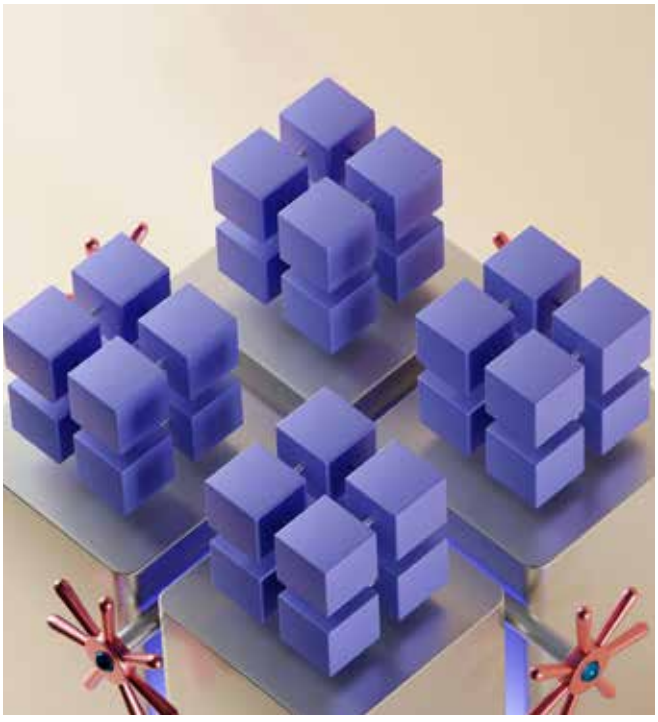
ROCK RIGID

ADDRESSING COMPLEX CHALLENGES IN OFFSHORE AND ONSHORE OILFIELDS

Rock Rigid's DerekSuite is helping energy companies achieve their net zero ambitions by making decarbonisation measureable and actionable

Rock Rigid, headquartered in Houston, USA, specialises in hydrocarbon production measurement and allocation. The company also boasts significant operations in Kazakhstan and the UAE, contributing to its global footprint in the energy sector.

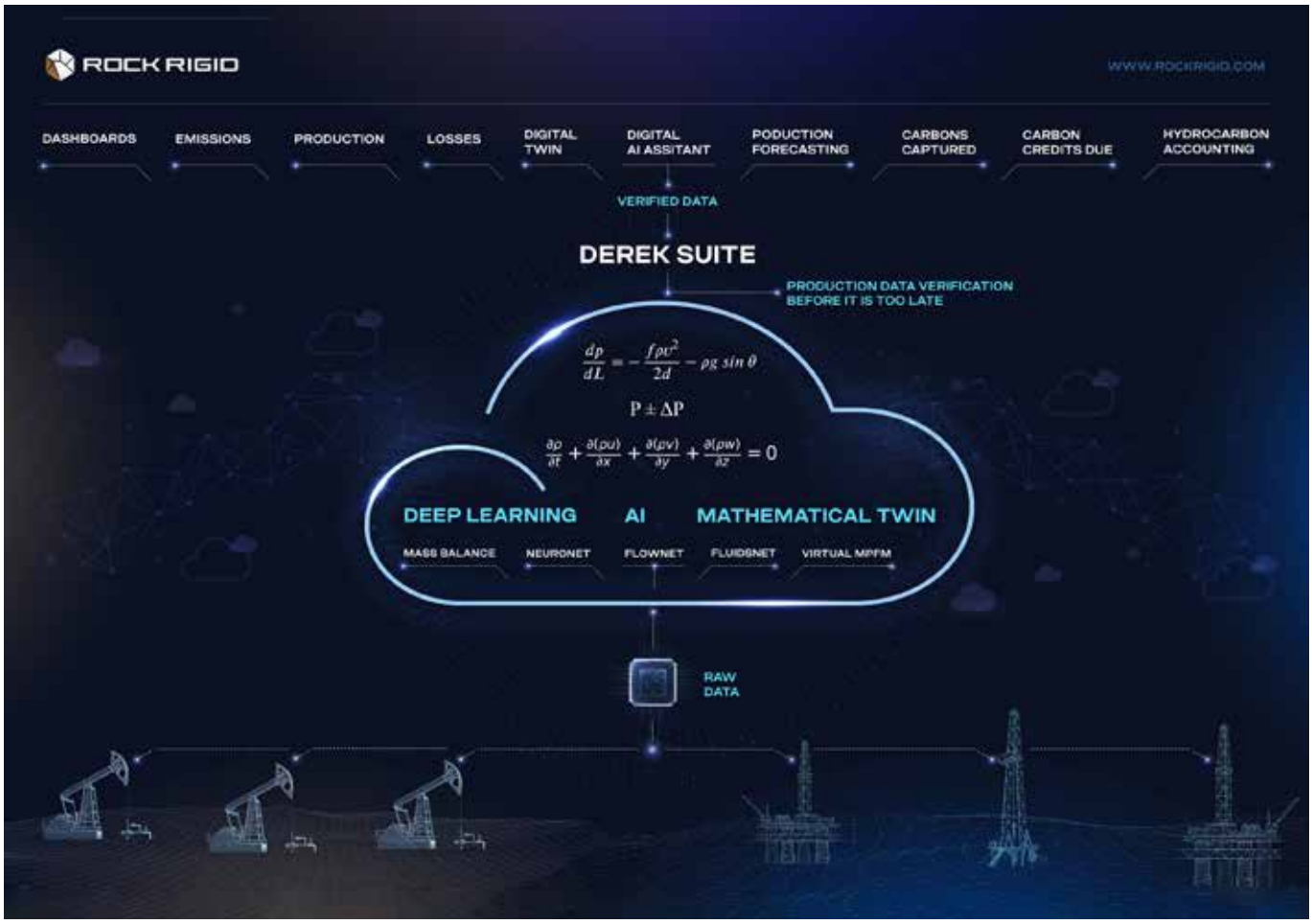
At the heart of our business is our proprietary software, DerekSuite, developed entirely in-house. This sophisticated platform features a range of modules specifically designed to streamline oilfield calculations, including emissions assessments. By integrating complex mathematics and physics with advanced deep learning technologies, DerekSuite provides a robust solution to the intricate challenges faced in hydrocarbon extraction.



> We look forward to engaging with industry leaders and demonstrating how our technologies can play a pivotal role in aiding energy companies to achieve their net zero ambitions, making decarbonisation measurable and actionable.

Our primary markets encompass the GCC countries and the Caspian Oil and Gas Basin, with plans for further expansion into the North Sea and Permian Basins. Rock Rigid is distinguished by our ability to address complex challenges in both offshore and onshore oilfields, particularly in gas-condensate fields operating under extreme conditions — such as high pressure, elevated temperatures, and significant sulfur concentrations. This focus aligns seamlessly with the specific requirements of many UAE oilfields.

Recently, we successfully deployed our DerekSuite platform on an offshore oilfield, integrating the MassBalance module into their existing ecosystem. This integration enabled our client to accurately align their gas balance, oil balance, and overall mass balance.



By conducting real-time calculations, they are now empowered to make critical operational decisions promptly and effectively.

With these balances properly aligned, our client can now identify discrepancies from which emissions and losses can be quantified. These meticulously calculated measurements will inform the next phase of the project — accurately determining emissions figures, which is vital for compliance and sustainability reporting.

We firmly believe that the pathway to achieving net-zero goals hinges on precise, data-driven calculations. After all, what is measured can indeed be achieved. At ADIPEC, we are eager to showcase our DerekSuite platform, which not only simplifies oilfield calculations but also creates a 'mathematical twin' of the oilfield or plant. By leveraging complex mathematics, physics, and domain expertise alongside AI-powered tools, our platform becomes an essential asset for measuring emissions, carbon credits, and offsets.

We look forward to engaging with industry leaders and demonstrating how our technologies can play a pivotal role in aiding energy companies to achieve their net-zero ambitions, making decarbonisation measurable and actionable.

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SAMSUNG I STAND: 9420 I HALL: 4

SAMSUNG E&A

ACHIEVING NET ZERO TARGETS WITH INNOVATIVE SOLUTIONS

Samsung E&A offers solutions that optimise existing assets and develop new low-carbon plants to reduce carbon emissions

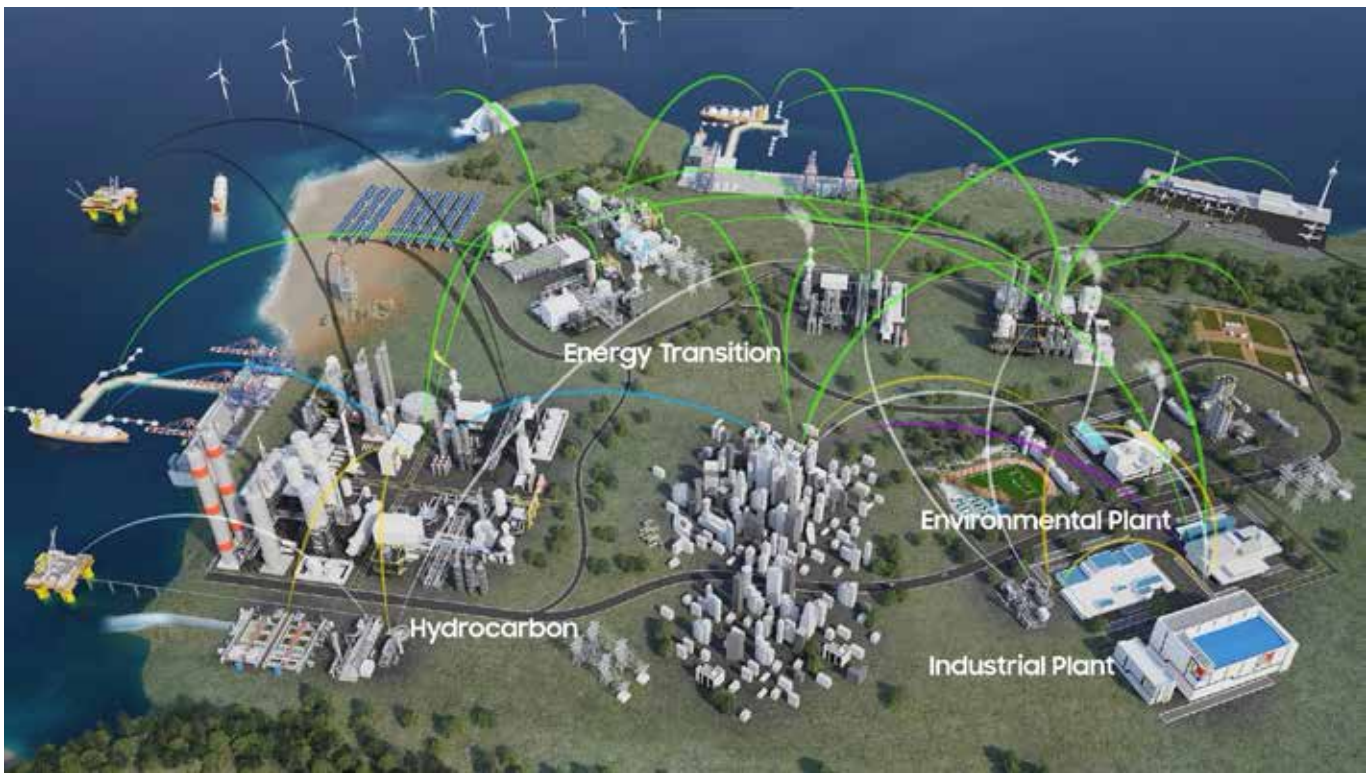
As global industries transition to a carbon-neutral future, decarbonisation is no longer a choice. Samsung E&A recognises this imperative and is collaborating with businesses to accelerate their path to net zero. With decades of industry-leading engineering, procurement, and construction (EPC) execution, coupled with robust project development capabilities in the low-carbon sector, Samsung E&A is uniquely positioned to offer practical and innovative solutions that reduce carbon emissions while optimising operational efficiency and economic viability. Our two consulting services, Efficien-CTM and Intelligen-CTM, pave the way for a sustainable future.

MEETING THE GLOBAL DECARBONISATION CHALLENGE

Today, businesses face the daunting task of adapting operations to meet decarbonisation targets while ensuring shareholder returns. This challenge is particularly pronounced for industries reliant on legacy assets and infrastructure. At Samsung E&A, we understand the unique requirements of each sector and offer tailored solutions to mitigate emissions from traditional processes while integrating new technologies to support energy transition products. Our low-carbon solutions, Efficien-CTM and Intelligen-CTM can help.

EFFICIEN-CTM: OPTIMISING PLANT EFFICIENCY TO REDUCE EMISSIONS

Efficien-CTM is designed to optimise energy consumption in existing plants. It focuses on reducing the carbon footprint of operational plants by employing predictive models to propose emission reduction strategies. This also includes enhancing site efficiency and implementing electrification solutions.



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An innovative example of this is the installation of a heat exchange network that connects cooling processes in downstream columns with heating processes in upstream columns. This eliminates the need for external steam, potentially reducing energy consumption by around 5%. Furthermore, Efficien-CTM can connect new gas turbines to existing furnaces, substituting ambient air with hot air, which leads to up to a 10% reduction in carbon emissions. The electricity generated by the turbine can also power other equipment, providing additional benefits.

Samsung E&A has established a verified model with an impressive accuracy of ± 5% simulation precision. This enables us to deliver customised carbon reduction solutions that yield an average energy saving of 5% and, in some cases, as much as 10%.

INTELLIGEN-CTM: OPTIMAL INVESTMENT FOR LOW-CARBON PLANTS

Intelligen-CTM transcends traditional feasibility studies to guide clients in building new low-carbon plants. Intelligen-CTM considers the dynamic landscape of global supply and demand-side policies, regional regulations, and carbon intensity, providing clients with an optimal investment scenario tailored to their specific requirements.

This solution aids customers in evaluating the technical and commercial parameters necessary for constructing zero and low-carbon plants. By integrating extensive data on plant configuration, carbon intensity, and policy analysis, we offer optimal development concepts at the FEL 1 and 2 stages.

Recently, Samsung E&A utilised Intelligen-CTM to develop concepts for a blue ammonia project in the United States. By combining technical expertise with a deep understanding of market dynamics and regulatory frameworks, we helped our client identify the most efficient and economically viable path forward.

JOIN US ON THE PATH TO NET ZERO

Samsung E&A proudly leads the way with innovative solutions that meet the needs of today's industries through Efficien-CTM and Intelligen-CTM. Our services are rooted in real-world experience and supported by a track record of successful projects and collaboration with leading technology licensors. Whether optimising existing assets or developing new low-carbon plants, we provide comprehensive solutions that deliver tangible results.

SHELL I STAND: A230 I HALL: ATRIUM

UNLOCKING DEMAND, TAILORING SOLUTIONS AND SCALING THE ENERGY TRANSITION

With an investment of US$10-15 billion between 2023 and 2025 in low carbon solutions, Shell, is helping to reshape the industry

The world needs a balanced and orderly transition away from fossil fuels to maintain secure energy supplies, while accelerating the transition to affordable low-carbon solutions. At Shell, we recognise that the energy transition is not just a challenge, but an opportunity to reshape our industry and create sustainable value. Our Powering Progress strategy is designed to deliver more value with less emissions, addressing the dual challenge of increasing energy demand and urgent climate action.

We all know that there is no single solution to take our world on a path to net zero. Instead, the energy transition needs a multitude of tailored solutions, shaped by technology, sector, geography, macro-economic circumstances and – ultimately – market

> Our Powering Progress strategy is designed to deliver more value with less emissions.

forces. At Shell, we focus on unlocking demand for low carbon solutions, then tailoring them to each industry and customer, and finally helping to scale them from proof of concept to commercial viability. In other words, we are helping to create robust value chains that make decarbonisation solutions efficient, scalable and commercially viable.

We are investing US$10-15 billion between 2023 and the end of 2025 in low carbon solutions. For example, we are building Holland Hydrogen 1, which will be one of the largest renewable hydrogen plants in Europe when operational. The 200MW electrolyser, powered by offshore wind, will produce up to 60,000 kilogrammes of renewable hydrogen per day to supply the Shell Energy and Chemicals Park Rotterdam. Holland Hydrogen 1 will help to decarbonise the production of our petrol, diesel and aviation fuel at the Shell Energy and Chemicals Park Rotterdam. In the longer term, the plant could also supply hydrogen to help reduce emis-sions in transport and industry. We are also investing in technologies such as carbon cap-ture and storage to reduce emissions from our own operations such as refineries and LNG plants, and, in the longer term, to help our industrial customers reduce their emissions too.

> Shell is attending ADIPEC to engage with a diverse set of customers, stakeholders and policy makers to help drive change to advance the energy transition.

Shell is attending ADIPEC to engage with a diverse set of customers, stakeholders and policy makers to help drive change to advance the energy transition. The greatest and fastest change will come from collaboration and broad coalitions of businesses, governments, and other parties, working sector by sector, to identify and then pursue decarbonisation pathways.

TENARIS | STAND: 7130 | HALL: 7

Tenaris

SUSTAINABLE STEEL SOLUTIONS FOR FORWARD THINKING COMPANIES

Tenaris is well-positioned to meet industry demands through its premium products, technical expertise, and a robust portfolio for hydrogen storage and transportation, carbon capture and storage, and geothermal wells

Tenaris, a leading global manufacturer and supplier of steel pipes and services for the energy industry and otherzz industrial applications, recognises the significant role the steel industry plays in global carbon emissions. The company is committed to reducing its environmental footprint and developing new technologies for the next generation of energy, all while continuing to meet the demands of its customers and stakeholders.

Tenaris has pledged to reduce its CO2 emissions intensity rate by 30% by 2030, accounting for scopes 1, 2, and 3, including raw materials, compared to 2018 levels.

> The CO2 emission intensity for Tenaris operations is 37% below the world steel global average per tonne of steel produced.

"We have already achieved a 17% reduction towards our goal. Key elements of our strategy include increasing the scrap share in steel production using our Electric Arc Furnaces, expanding the use of renewable or low-emission electricity, and enhancing energy and material efficiency. We are also exploring hydrogen production and carbon capture technologies, recognising their potential roles in our decarbonisation strategy," explains Carolina Bengochea, Senior Director of Environment at Tenaris.

Energy and material efficiency are integral to our industrial excellence programme. Numerous projects aimed at enhancing energy efficiency have been implemented and are ongoing, including the modernisation of furnace burners, equipment upgrades, and smaller initiatives focused on reducing electricity consumption.

> Energy and material efficiency are integral to our industrial excellence programme.

Tenaris has inaugurated its new Electric Arc Furnace (EAF) equipped with Consteel® technology at its steel shop in Campana, Argentina. This innovative technology minimises energy loss, optimises output, and reduces environmental impact by employing continuous scrap feed from conveyor belts, offering a more efficient and environmentally friendly alternative to traditional electric arc furnaces.

The CO2 emission intensity for Tenaris operations is 37% below the world steel global average per tonne of steel produced.

Another crucial pillar of Tenaris's strategy is the circular economy. The company's production processes utilise electric arc furnaces fed by recycled metal scrap, which helps minimise reliance on virgin materials. This is reflected in the average recycled content of our steel, which increased from 68% in 2018 to 79% in 2023, according to ISO 14021 standards.

Given that EAF steel production requires substantial electricity, the company is actively working to partially replace fossil energy sources with renewables. A significant step in this direction was the operation of a 103.2 MW wind farm in Argentina, which began in October 2023 after a US$200 million investment. This facility supplies nearly 50% of the electricity for Tenaris's industrial operations in Campana, reducing CO2 emissions by 152,000 tonnes compared to 2018. A second wind farm, with a US$214-million investment, is set to be completed in 2025, which will cover an additional 30% of energy needs and cut CO2 emissions by 102,500 tonnes annually relative to 2018 levels. Additional renewable electricity investments include solar panel projects in Italy, China, and Romania.

Tenaris is also investigating the generation and utilisation of hydrogen in its production processes, gradually replacing fossil fuels. In July 2024, Tenaris launched its first trial in Italy to produce and use hydrogen at its Dalmine facility.

The company's commitment extends to low-carbon applications, with a robust portfolio for hydrogen storage and transportation, carbon capture and storage, and geothermal wells. For over a decade, Tenaris has specialised in high-pressure hydrogen storage and transportation, launching THera™ technology in 2021 to provide high-strength, reliable materials for hydrogen applications. Recently, the THera™ portfolio was expanded to include linear storage solutions and seals for high-pressure hydrogen, qualifying materials for Hydrogen Underground Storage.

The Carbon Capture and Storage (CCS) market is poised for significant growth, and Tenaris is well-positioned to meet industry demands through its premium products and technical expertise. Leveraging decades of experience in oil and gas, TenarisHydril premium connections are ideal for CO2 injection wells and ensure reliable products for CO2 transport and sequestration. With over 30 years of experience in geothermal drilling, Tenaris optimises well design and productivity for both complex oil and gas wells and geothermal applications.

TOTALENERGIES I STAND: **A232** I HALL: **ATRIUM**

A NEW ERA OF ENERGY: EFFICIENCY MEETS SUSTAINABILITY

TotalEnergies is driven by its balanced multi-energy strategy anchored on two key pillars: hydrocarbons, particularly LNG, and Integrated Power, which is vital for the energy transition

In 2023, TotalEnergies achieved robust results aligned with its strategic objectives while advancing its transition towards becoming an integrated energy company. The firm is firmly positioned as a significant investor in the future energy landscape, driven by its balanced multi-energy strategy anchored on two key pillars: hydrocarbons, particularly LNG, and Integrated Power, which is vital for the energy transition.

TotalEnergies is committed to aiding its customers in their decarbonisation journeys by refocusing its oil and gas portfolio on low breakeven assets and projects with minimal greenhouse gas (GHG) emissions. Simultaneously, the company is diversifying into electricity, especially renewables, adopting an integrated approach from production to customer delivery. The commitment remains to responsibly produce low-cost, low-emission hydrocarbons.

SIGNIFICANT EMISSION REDUCTIONS

In 2023, TotalEnergies successfully reduced emissions by 24% across all operated sites compared to 2015, achieving a 34% reduction in its oil and gas production, refining, and liquefaction sites. These results are pivotal in supporting the company's goal of a 40% net reduction by 2030. The Scope 1 and 2 emission intensity of upstream oil and gas activities on an equity basis decreased to 18 kgCO2e/boe in 2023, while methane emissions from operated sites dropped by over 47% since 2020. TotalEnergies is on track to meet its -50% methane emissions target a year ahead of its 2025 goal, with an ambition of zero methane emissions by 2030.

The company has expanded its target for methane intensity emissions, now aiming for less than 0.1% across all upstream oil and gas operations.

LEADERSHIP IN LNG AND LOW-CARBON INVESTMENTS

TotalEnergies is a leader in LNG, which serves as a transitional energy source that mitigates the intermittent nature of renewable power generation while reducing emissions in coal-reliant nations. In 2023, the company estimated that its LNG sales helped avoid approximately 70 Mt of CO2e emissions globally.

In terms of investments, TotalEnergies allocated US$16.8 billion in 2023, with 35% directed towards low-carbon energies, primarily in power. This substantial investment has facilitated a 6GW increase in renewable electricity production capacities, alongside advancements in storage, flexible production, and distribution.

DELIVERING CLEAN ENERGY SOLUTIONS

The company is committed to building a world-class, cost-competitive portfolio that combines renewable and flexible assets to provide reliable clean power to customers

around the clock. By leveraging its purchasing power, TotalEnergies optimises investment costs and utilises digital solutions to streamline operations, ultimately reducing costs.

> TotalEnergies is on track to meet its -50% methane emissions target a year ahead of its 2025 goal, with an ambition of zero methane emissions by 2030.

These efforts are translating into lower emissions for customers. In 2023, the carbon content of energy sold to customers decreased by 13% compared to 2015, positioning the company well to achieve its -25% target by 2030.

INNOVATIVE DECARBONISATION SOLUTIONS

TotalEnergies is dedicated to leveraging cutting-edge technologies to avoid and reduce emissions. Notable projects include:

AUSEA: A drone-based methane detection and quantification system that is now available to several national oil companies. Following its successful deployment across operated sites, AUSEA has conducted flights on non-operated assets in locations such as Qatar, Brazil, and the UAE.

ZEREM: This research and development programme aims to support the company's goal of achieving carbon neutrality by 2050. It focuses on providing tailored solutions for decarbonising exploration and production assets.

XLite: An innovative geophysical monitoring project that integrates proven technologies to provide a cost-effective solution for challenging wells, potentially saving millions on individual projects.

With pilot demonstrations completed, XLite is expected to be fully deployed by 2025, promising enhanced performance and significant cost savings.

UNITED ENERGY GROUP | STAND: 6353 | HALL: 6

BUILDING A MORE SECURE, SUSTAINABLE ENERGY FUTURE

United Energy Group is dedicated to reducing its carbon footprint, diversifying the global energy mix, and building partnerships to unlock the potential of green hydrogen

United Energy Group (UEG) is an international energy group listed in Hong Kong, focusing on the oil, gas, and clean energy businesses. The Group has rapidly grown its operations and earned the respect of the industry as an experienced and capable operator. UEG has an international footprint with a high-quality portfolio of upstream oil and gas, as well as clean energy assets spanning South Asia, North Africa, the Middle East, and Europe.

The Group plays an important role in addressing the global challenges of rising energy demand and climate change. UEG remains focused on its oil and gas business to provide secure energy supplies that drive progress in the countries where it operates, while also reducing emissions and building a lower-carbon future through investments in clean energy.

For a more secure and sustainable energy future, our business strategy is steered towards multiple fronts: reducing the carbon footprint of our oil and gas operations, diversifying the global energy mix by expanding our renewable energy segment, and building partnerships to unlock the full potential of green hydrogen.

> We have established a 99 MW wind power project in Pakistan and the first large-scale off-grid solar power plant in Iraq, which powers the daytime energy needs of our Block-9 camp.

We have achieved a series of significant milestones in recent years to pave the way for a greener future. We are constructing a central gas processing plant in Block-9, Iraq, which will significantly reduce GHG emissions and bolster energy security in the country. Additionally, we have expanded our footprint to Southeast Europe, where we signed an agreement to build a 250 MW solar photovoltaic project in Bulgaria, marking a new chapter in our journey towards a lower-carbon future. This project is currently Bulgaria's largest solar initiative and is expected to be completed by mid-2026.

Furthermore, we leverage our presence in the countries where we operate oil and gas assets to grow our renewable energy pipeline. We have established a 99 MW wind power project in Pakistan and the first large-scale off-grid solar power plant in Iraq, which powers the daytime energy needs of our Block-9 camp.

We are also collaborating with our international partners to unlock the full potential of green hydrogen, encompassing the entire value chain. In 2024, we signed a memorandum of understanding with the Egyptian government to develop an integrated green hydrogen project in Egypt, targeting an annual production capacity of 250,000 tonnes of green hydrogen. Additionally, we recently signed a memorandum of understanding with Three Gorges International and the Jordanian Ministry of Energy and Mineral Resources for a green hydrogen project.

Looking ahead, we will continue to leverage our technical expertise, industry experience, diverse portfolio, and strong partnerships to lead the way towards a lower-carbon future. We are excited about the journey and our role in building a secure and sustainable energy future where no one is left behind.

YOKOGAWA | STAND: 14135 | HALL: 14

LEADING THE CHARGE IN EMISSIONS MANAGEMENT

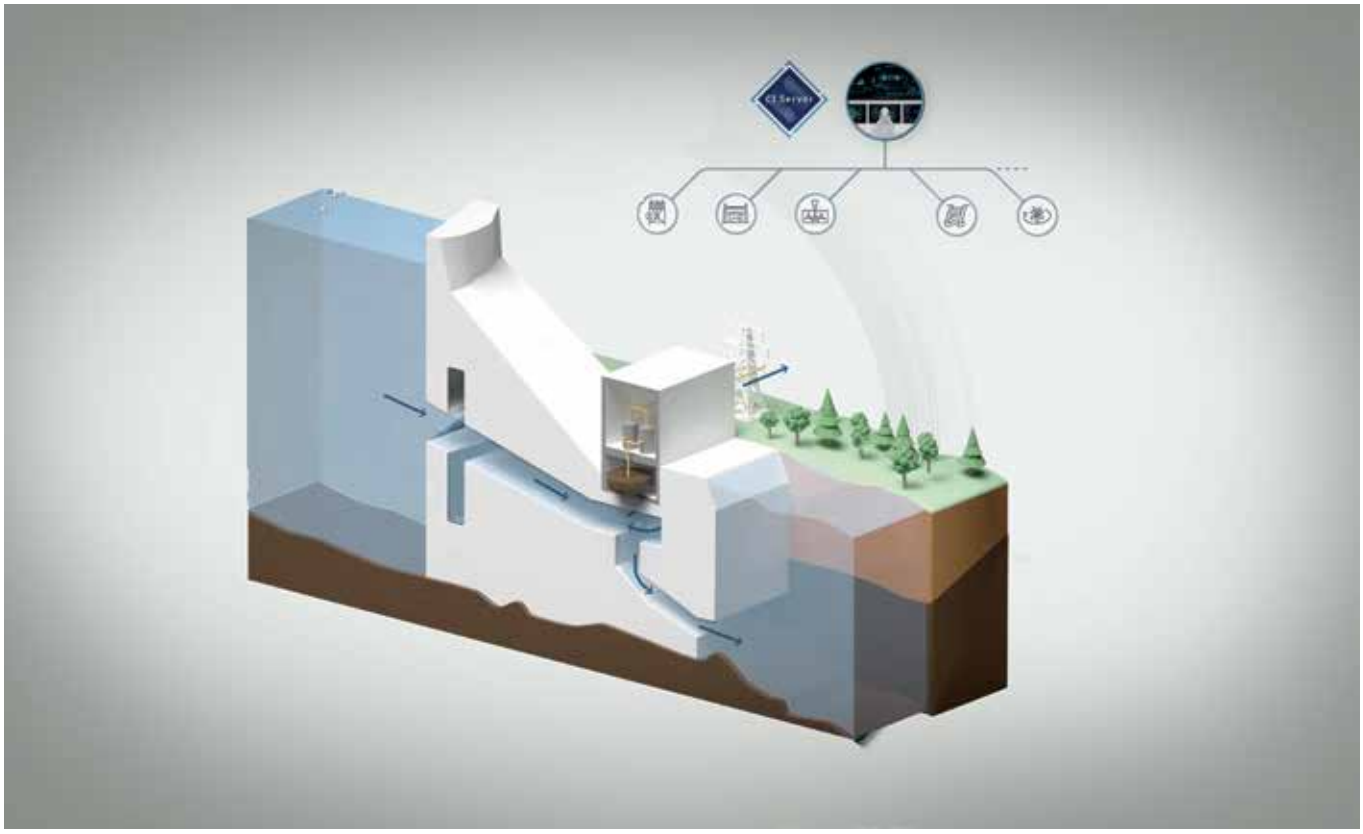
KBC, a Yokogawa company, offers VM-GEM software that helps businesses optimise energy consumption and achieve sustainability targets

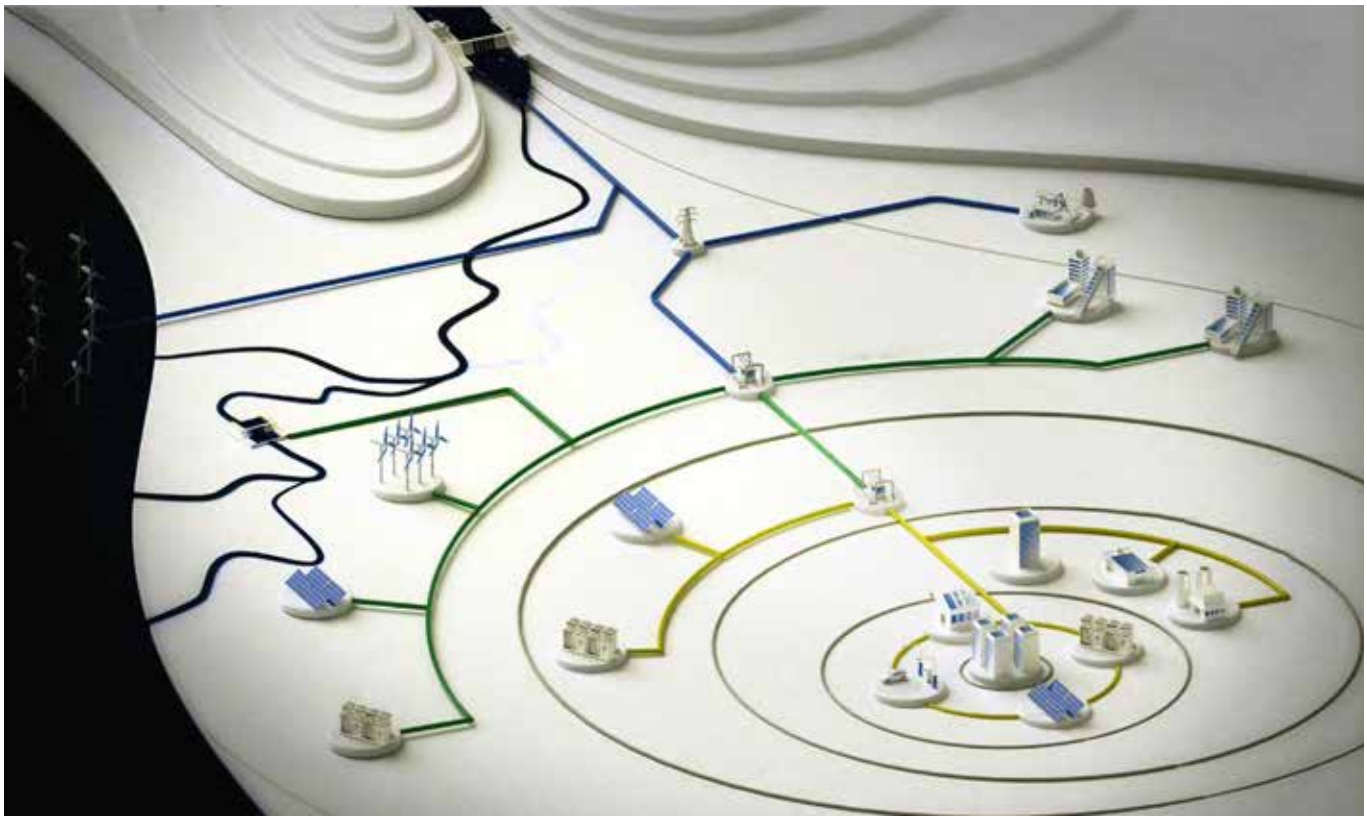
Global pressure to cut carbon emissions is intensifying. Businesses must find innovative ways to tackle the complexities of decarbonisation without compromising on operational efficiency or profitability.

KBC, a Yokogawa company, offers Visual MESA® GHG Emissions Management (VM-GEM) software, a certified solution that empowers businesses to meet these challenges. By seamlessly integrating real-time data with advanced energy modelling, VM-GEM software offers actionable insights that optimise energy consumption, reduce emissions, and help companies achieve sustainability targets.

VM-GEM stands out as a leading emissions management solution and has earned the “Certified

> The real-world impact of VM-GEM shines through in a case study featuring a major refinery in Brazil, producing 300,000 barrels per day.





Calculation Method" status from TÜV Rheinland Energy and Environment GmbH, one of the world's most respected certification bodies. This recognition confirms VM-GEM's compliance with ISO 14068:2023, the international standard for continuous carbon emissions review and reduction.

With this certification, VM-GEM facilitates the business's ability to meet regulatory demands, such as "Fit-for-55," the Carbon Border Adjustment Mechanism (CBAM), and the Corporate Sustainability Reporting Directive (CSRD), and provides a competitive edge in sustainability.

BRINGING DECARBONISATION TO LIFE

A key advantage of VM-GEM is how it simplifies the complexities of emissions management, auditing, and reporting. With automation that aligns with global standards like DIN EN ISO 14067 for carbon footprint and DIN EN ISO 14040/44 for life cycle assessment, this capability is especially crucial for industries facing a shortage of qualified auditors. It allows businesses to save time and resources while ensuring compliance.

The real-world impact of VM-GEM shines through in a case study featuring a major refinery in Brazil, producing 300,000 barrels per day. By leveraging the full suite of Visual MESA Energy Management System (VM-EMS) applications, including VM-GEM, the refinery achieved impressive results: a 6% drop in electricity use, a 268,000-tonne decrease in CO2 emissions, and a 41% reduction in sulphur emissions.

> By seamlessly integrating real-time data with advanced energy modelling, VM-GEM software offers actionable insights that optimise energy consumption, reduce emissions, and help companies achieve sustainability targets.

With VM-GEM, you can find the perfect balance between reducing energy costs and maintaining environmental responsibility, positioning your business to thrive in a world that demands both sustainability and success while Bringing Decarbonisation to Life™.

ZAKHER MARINE | STAND: 9520 | HALL: 9

ZMi | HOLDINGS

SPEARHEADING SUSTAINABLE SOLUTIONS IN THE OFFSHORE INDUSTRY

Zakher Marine International is helping its clients achieve decarbonisation goals while ensuring a safer and more efficient marine industry

Zakher Marine International is a leading marine services company based in Abu Dhabi, specialising in providing integrated solutions for the offshore energy industry. With a strong commitment to operational excellence, Zakher Marine operates a diverse fleet of vessels, including self-elevating jack-up barges and accommodation, work, and offshore support vessels designed to meet the complex demands of its clients in the region. Our services encompass marine logistics, offshore support, and specialised engineering solutions, all tailored to ensure safety, efficiency, and sustainability.

As the global push towards sustainability advances, Zakher Marine has prioritised initiatives to support decarbonisation efforts. We recognise the urgent need to address climate change and are dedicated to reducing our carbon footprint while helping our clients achieve their own decarbonisation goals. Our approach encompasses the adoption of innovative technologies, sustainable practices, and proactive engagement with stakeholders across various sectors.

SUPPORTING DECARBONISATION

Zakher Marine (ZMi Holdings) has implemented several initiatives aimed at minimising emissions and promoting cleaner, energy-efficient operations. One of our key strategies involves investing in advanced vessel technologies, such as hybrid propulsion systems, the use of chemical additives in fuel, and implementing slow steaming and energy-efficient designs. These innovations not only reduce greenhouse gas emissions but also enhance fuel efficiency, resulting in significant cost savings for our clients.

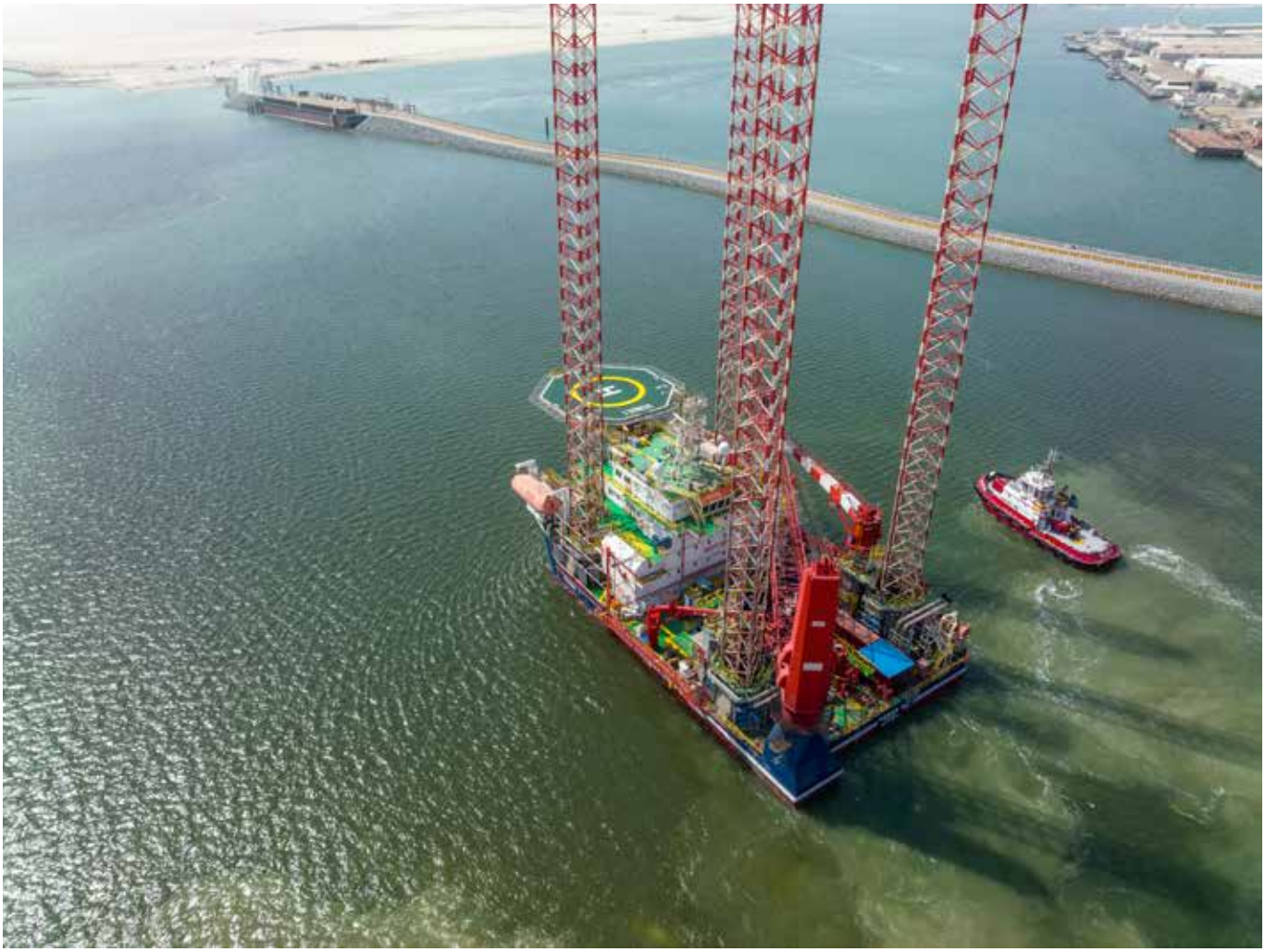
A notable example of our commitment to sustainable practices is our collaboration with a major oil company to retrofit their support vessels with energy-efficient technologies. By integrating alternative energy sources and optimising vessel operations, we helped the client achieve a 20% reduction in fuel consumption, directly contributing to their decarbonisation targets.

> By aligning our goals with industry standards and best practices, we can accurately measure progress and demonstrate the tangible benefits of our solutions.

MEASURING IMPACT

To effectively measure the impact of our decarbonisation solutions, Zakher Marine employs a comprehensive approach that includes data collection, analysis, and reporting. We utilise advanced monitoring systems to track fuel consumption, emissions, and operational efficiency across our fleet. This data allows us to assess the effectiveness of our initiatives and make informed decisions to optimise performance.

Additionally, we engage with our clients to set specific decarbonisation benchmarks and targets. By aligning our goals with industry standards and best practices, we can accurately measure progress and demonstrate the tangible benefits of our solutions. Regular audits and



> As we approach ADIPEC this year, we are particularly excited about the discussions surrounding decarbonisation and sustainability within the energy sector.

reviews further ensure accountability and transparency in our efforts to support decarbonisation.

BENEFITTING INDUSTRIES

While our primary focus is on the offshore sector, the solutions provided by Zakher Marine extend to various industries that rely on marine logistics and operations. These include renewable energy, shipping, and marine construction. As the world progresses towards net-zero emissions, these sectors increasingly adopt sustainable practices. Our expertise in decarbonisation tools and strategies will be instrumental in facilitating their transition to achieve their sustainability goals.

For instance, the renewable energy sector stands to gain significantly from our services. As offshore wind farms and other renewable projects expand, the demand for sustainable marine support solutions will inevitably grow. Our innovative technologies and expertise within the marine sector will play a vital role in aiding the adoption of renewable energy and our commitment to reducing emissions will help these projects achieve their environmental objectives.

As we approach ADIPEC this year, we are particularly excited about the discussions surrounding decarbonisation and sustainability within the energy sector. This prominent event provides a unique platform for industry leaders to share insights, innovations, and best practices aimed at reducing carbon emissions.

ABU DHABI UNIVERSITY I STANDS: **14030 / 14050** I HALL: **14**

RESEARCH-LED INITIATIVES TO POWER ENERGY TRANSITION

Abu Dhabi University has undertaken a series of projects to tackle decarbonisation and promote sustainable development

Abu Dhabi University (ADU) has put great effort into promoting sustainability and becoming a 'green campus.' In the framework of these efforts, the ADU College of Engineering (ADU CoE) has undertaken a series of projects that try to tackle the issue of decarbonisation and promote a much-needed sustainable development. Examples of some of the projects undertaken by the ADU CoE are highlighted below, demonstrating the important efforts ADU has made in contributing to the decarbonisation process of the industry and life in the UAE:

Electrosynthesis of valuable chemicals from seawater brine by utilising captured CO2: Towards a clean environment by valorising CO2 and brine (2023 Mubadala-funded project, prof. Omar Chaalal, Dept. of Chemical Engineering).

The results of the project have led to a US patent and to discussions in many relevant conferences, including COP28.

Semiconductors for enhanced solar photovoltaic-thermoelectric 4E performance optimisation: The optimisation of solar photovoltaic-thermoelectric systems allows businesses to achieve higher energy efficiency, aligning with national decarbonisation targets. This approach reduces carbon emissions by maximising renewable energy output.

Dr Anas Tarabsheh and Dr Mohammed Ghazal of the ECBE Department were granted patents for their inventions titled 'Performance Enhancement for Photovoltaic-Wind Hybrid System' in 2024, and 'Deformable Model for Performance Enhancement of Photovoltaic-Wind Hybrid System' in 2023.

Both inventions introduce innovative methods for seamlessly integrating photovoltaic and wind energy into a single system and contribute to electrical energy production from renewable resources.

Another research initiative in the renewable energy field at the ECBE department focuses on developing wave energy harvesting systems. These systems are designed to capture clean energy from ocean waves, which can then be fed into the grid, used locally for desalinating seawater, or powering equipment in offshore environments.

During ADIPEC 2024, we, at ADU, expect to see a full spectrum of research and development efforts, both locally and internationally, for succeeding an economically viable decarbonisation large-scale process. We are also hoping to find opportunities for collaboration.

ACME ENGINEERING I STAND: **3157** I HALL: **3**

TACKLING CLIMATE CHANGE: ELECTRIC BOILERS SUDDENLY IN VOGUE AGAIN

With zero emissions, economical electric steam and hot water boilers by Acme Engineering deliver maximum kilowatts with a minimum spatial footprint

While the interest of industry in electric boilers has waxed and waned in the last century, suddenly it is in vogue again. Whether to honour Environmental Social and Governance (ESG) goals, meet regulatory commitments, or take advantage of government credits and incentives, a growing number of industrial facilities are installing new or retrofit high-voltage electrode boilers that are compact, economical, and produce no emissions.

Many facility engineers familiar with gas-fired boilers mistakenly believe that electric boilers cannot match the output of the traditional, fossil fuel burning units. Due to considerable advances in electric boiler technology, that is far from the case. Today, such technology can match the capacity of large gas or oil-fired boilers in a much smaller footprint.

The CEJS High Voltage Electrode Steam Boiler by Acme, a Canada-based manufacturer of industrial and commercial boilers, are vertically mounted around the inside of the pressure vessel. This enables the unit to produce maximum amounts of steam in a minimum amount of floor space, with boiler capacity from 6MW to 52MW.

The boiler operates at existing distribution voltages, 4.16 to 25 KV with up to 99.9% efficiency, and can produce up to 170,000 pounds of steam per hour. With pressure ratings from 105 psig to 500 psig, the boilers are designed to ASME Section 1, and are certified, registered pressure vessels at the location of the boiler.

The electric boiler technology is used for residential and commercial district heating, which is increasing in demand, particularly within urban centres. With district heating, distributed heat is generated in a central location through an insulated pipe system, and utilised for high-efficiency, low-pollution, space and water heating. For central heating applications, electric boiler technology quietly supplies ample power for its compact size.

As governments resolve to dramatically cut their greenhouse gases to combat climate change, the urgency for industry to similarly reduce their carbon emissions will only grow. In this battle to protect the environment before the global climate hits an irreversible tipping point, industry along with government must do their part. Fortunately, advanced, zero-emission electric boiler technology can be a readily implementable part of the solution.

ADHIAM I STAND: **13232** I HALL: **13**

SOLUTIONS THAT OFFER A PATHWAY TO SUSTAINABILITY

Supporting industries in their decarbonisation efforts, Adhiam specialises in heat exchangers and electro-chlorination systems

Innovation is at the heart of the sustainable systems and solutions offered by Adiham. The company specialises in plate heat exchangers (PHEs) and brine or seawater electrochlorination systems, which play a seminal role in enhancing efficiency and reducing carbon emissions for various industrial sectors.

PHEs Score High on Several Fronts:

Energy Efficiency: PHEs, such as loop-type or Adiham models, are highly effective at transferring heat between fluids and reducing energy usage in heating and cooling processes. This enhanced efficiency lowers overall energy demand and, by extension, carbon emissions.

Waste Heat Recovery: Industries produce excess heat, which can be captured by PHEs and repurposed for other processes. This reduces the need for additional energy input, leading to more efficient operations and reduced emissions.

Renewable Energy Systems: PHEs also support geothermal heating, biomass, and concentrated solar power plants. The plate's ability to improve heat transfer efficiency aids the integration of these renewable systems, further advancing the decarbonisation goals of companies.

Industrial Applications: Many industries, such as chemical, oil and gas, steel, sugar, distillery, and food processing, benefit from PHEs. By optimising thermal management, PHEs enhance operational efficiency and reduce carbon emissions.

Benefits of Brine or Seawater Electrochlorination Systems Include:

Water Treatment: The electrochlorination systems provide an eco-friendly alternative for water treatment by generating chlorine from salt solutions using electricity, reducing reliance on toxic chemicals that emit greenhouse gases during production and transport. The treated water is used for drinking, industrial purposes, and aquaculture.

Sustainable Disinfection: Traditional disinfection methods use chlorine tablets, which produce high emissions. Electrochlorination eliminates the need for these chemicals, reducing the carbon impact of water treatment.

Energy Efficiency: Adiham electrolysers are highly advanced and ensure minimal power consumption, achieving energy savings of 5% to 10%.

Both PHEs and electrochlorination systems significantly reduce energy consumption and emissions, playing a vital role in the path towards decarbonisation.

AERZEN I STAND: **8832** I HALL: **8**

A COMMITMENT TO DECARBONISATION

Hydrogen is recognised as a key energy carrier for the future and plays a critical role in the decarbonisation of industries, explain AERZEN

As a leading partner in the process industry, AERZEN has extensive experience in hydrogen compression, supported by decades of expertise. Our advanced technologies are globally sought-after for their efficiency and safety, with the VR and VMY series screw compressors demonstrating exceptional performance in this field.

Due to hydrogen's lightness, compression is inherently challenging. Its low energy density relative to volume flow means that large electrolysis plants must handle significant volumes, impacting equipment size, investment costs, and footprint. Additionally, hydrogen's high reactivity and flammability require stringent explosion protection to prevent the formation of ignitable mixtures with atmospheric oxygen.

> *Our advanced technologies are globally sought-after for their efficiency and safety, with the VR and VMY series screw compressors demonstrating exceptional performance in this field.*

Advantages of Screw Compressors for Hydrogen Compression

Screw compressors are particularly effective for hydrogen compression in low-pressure ranges, either as a primary solution or in conjunction with high-pressure compressors. Their design ensures reliable and flexible operation with minimal maintenance and lower operational costs, both under full and partial loads. AERZEN offers both oil-free (VRA and VRW series) and oil-flooded (VMY series) options, delivering outstanding performance in efficiency, space utilisation, cost-effectiveness, and process reliability. Our process gas specialists tailor each solution to meet the specific needs of our customers.

With over 160 years of experience, AERZEN's cutting-edge technology embodies a legacy of innovation. Our commitment to decarbonisation is exemplified by our Hydrogen compressors, specifically engineered for green hydrogen produced through electrolysis.

AGC LIGHTING I STAND: **15375** I HALL: **15**

ENERGY-EFFICIENT LIGHTING SYSTEMS

AGC Lighting provides safe, reliable LED lighting solutions for hazardous environments like oil, gas, and petrochemical industries

AGC Lighting drives decarbonisation efforts in the energy sector through our energy-efficient lighting systems. Integrated with advanced LED technology, our explosion-proof lighting consumes up to 75% less energy than traditional lighting options, while providing superior illumination and longevity. By enhancing safety in high-risk areas, while significantly reducing energy consumption and carbon footprint, we ensure that our products contribute to a clean and sustainable future.

To contribute to decarbonisation efforts, AGC Lighting has focused on developing energy-efficient lighting solutions. Our Supernova series, for instance, offers an energy efficacy of up to 160lm/W. This significantly helps energy sector operators reduce energy consumption and greenhouse gas emissions.

All our explosion-proof products are rigorously tested and certified to meet IECEx, ATEX, and UL844 standards. Their exceptional durability and extended lifespan of our products significantly reduce maintenance requirements and replacement frequency. This not only minimises operational disruptions but also substantially decreases waste generation and associated carbon emissions. In addition, we are actively exploring the use of recycled materials in our manufacturing processes and packaging to further reduce carbon footprint.

We are excited to participate in ADIPEC 2024 and connect with industry leaders to explore new opportunities that advance the decarbonisation journey. We look forward to showcasing our explosion-proof lighting solutions and exploring potential collaborations that combine our lighting expertise with other technologies. Together, we aim to develop comprehensive decarbonisation solutions that drive sustainability and efficiency in the energy sector.

AKKIM I STAND: **11114** I HALL: **11**

PROMOTING THE REDUCTION OF EMBEDDED EMISSIONS

Aiming to achieve climate neutrality, Akkim have set targets and developed strategies to advance its decarbonisation strategy

At Akkim, we are undertaking efforts to define and announce our decarbonisatin strategy to stakeholders. During the reporting period, we conducted modelling related to the 2030 growth forecasts along with inventory control. Feasibility studies for investments were developed to establish a roadmap for both long-term and short-term goals.

The focus of our decarbonisation projects includes the procurement of renewable energy, renewable energy production, technology and equipment investments, and the enhancement of energy efficiency. In the fight against the climate crisis, we are reviewing sustainable product criteria by promoting the reduction of embedded emissions through our supply chain initiatives. To this end, our research and development (R&D), procurement, production, and sales teams are working collaboratively. We aim to turn risks into opportunities while ensuring compliance with regulations and adapting to upcoming systems such as the TRETS (Turkey Emission Trading System) and CBAM (Carbon Border Adjustment Mechanism) in a competitively viable manner.

To set targets and develop strategies for achieving climate neutrality, Akkim has joined the 'Climate Ambition Accelerator' program offered by the UN Global Compact.

In this context, Akkim is committed to playing its part in combating climate change. To set targets and develop strategies for achieving climate neutrality, Akkim has joined the 'Climate Ambition Accelerator' program offered by the UN Global Compact. Through this program, we will take responsibility to ensure that the global temperature increase does not exceed 1.5°C, based on science-based targets. With the support of this training program, Akkim will advance its decarbonisation strategy and roadmap and will submit its SBTi (Science-Based Targets initiative) applications in the future.

ASRY | STAND: **15305** | HALL: **15**

CUTTING-EDGE INITIATIVES FOR THE OFFSHORE INDUSTRY

ASRY's solutions are helping customers achieve their decarbonisation goals, improve workflows and drive efficiency

ASRY is a leader in ship and rig repair, marine engineering, and heavy fabrication services. The company is actively engaged in various environmental initiatives as part of its broader strategy to support sustainability and decarbonisation. Key initiatives include:

- Decarbonisation retrofitting: This involves retrofitting maritime vessels with technologies such as hydro blasting and methanol fuel modules to reduce emissions. ASRY collaborates with industry leaders to become a regional hub for green maritime solutions.
- Renewable Energy Integration: ASRY is committed to reducing its carbon footprint through the integration of renewable energy sources. This includes solar projects for powering operations and the ambitious ASRY Solar Mega Project, aimed at significantly contributing to the energy needs of ASRY's operations.
- Energy Efficiency and Waste Management: The company has invested in modernising its equipment and operations to enhance energy efficiency, such as upgrading air compressors, installing power capacitor banks, and employing hydro blasting techniques. It also focuses on robust waste management and recycling practices.

> *At ADIPEC, ASRY looks forward to exploring new technologies and innovations. The company aims to gain insights into the latest technologies and innovations in decarbonisation that can be integrated into its operations.*

ASRY is also seeking to network with industry leaders to discuss potential collaborations and partnerships that could further advance its decarbonisation efforts.

The company hopes to learn and understand best practices from global experts that can be adapted to enhance ASRY's own decarbonisation strategies and initiatives.

ARGUS I STAND: **3368** I HALL: **3**

ADVANCING DECARBONISATION

Argus pig valves and multi-pig launcher solutions address the increasing demand in reducing carbon emissions

The energy sector faces the dual challenge of reducing carbon emissions and ensuring the integrity of its pipeline infrastructure. Argus pig valves and multi-pig launcher solutions are pivotal in addressing these challenges, offering significant benefits for both piggable and non-piggable pipelines.

Optimised Pipeline Maintenance

Argus pig valves and multi-launcher solutions, streamline pipeline maintenance, enhancing efficiency and reducing labour demands. Traditional pigging methods require manual operation of multiple valves and extensive draining and venting, leading to increased downtime, GHG emissions, and heightened HSE risks. Argus systems automate these tasks, minimising disruptions and decreasing reliance on fossil fuel-powered backup systems, thereby reducing the carbon footprint.

Enhanced Pipeline Integrity

Pipeline integrity is essential to prevent leaks and ensure safe operations. Argus technologies offer advanced cleaning and inspection capabilities, enabling regular maintenance that removes debris, mitigates corrosion, and identifies potential issues early. This proactive approach extends pipeline lifespan, reduces the risk of environmental contamination, and ensures compliance with regulations, supporting decarbonisation efforts.

Versatility for Piggable and Non-Piggable Pipelines

A key advantage of Argus solutions is their versatility. While piggable pipelines benefit from routine cleaning and inspection, non-piggable pipelines often face maintenance and inspection challenges. Argus's innovative technologies overcome these obstacles, allowing effective management of both types of pipelines. This inclusivity leads to enhanced integrity and reduced emissions across the entire infrastructure.

Operational Efficiency and Cost Savings

The automation and efficiency provided by Argus solutions translate to significant cost savings, while enhanced inspection capabilities enable better planning of maintenance activities. These savings can be reinvested into further decarbonisation initiatives, creating a virtuous cycle of improvement and sustainability.

Supporting Environmental Goals

By enhancing pipeline maintenance and integrity, Argus technologies are crucial in preventing leaks and spills that harm the environment. More efficient and reliable pipelines reduce GHG emissions and support the transition to sustainable energy systems. These technologies align with global decarbonisation goals, showcasing the potential for innovative engineering solutions to drive operational excellence and environmental stewardship. Argus pig valves and multi-pig launcher solutions, therefore, are fundamental in the energy sector's efforts to decarbonise and maintain robust pipeline integrity.

ARTEMIS TECHNOLOGIES
STAND: **15047** I HALL: **15**

100% ELECTRIC FOILING VESSELS

Artemis leads the way by offering solutions designed to help ports and harbours cut emissions and increase efficiency

As the maritime industry faces increasing pressure to reduce emissions, Artemis Technologies has emerged as a leader in the push towards a cleaner future.

Renowned for its patented Artemis eFoiler® electric propulsion system, the company is at the forefront of efforts to decarbonise high-speed maritime transport, offering a fleet of vessels that operate with zero emissions.

Artemis Technologies' vessels are designed with advanced electric hydrofoil technology that glide effortlessly over the water. This not only reduces drag and energy consumption, but also extends the operational range, making these vessels adaptable for a variety of maritime applications, from passenger ferries to pilot boats.

Among their standout offerings are the Artemis EF-24 Passenger ferry and the Artemis EF-12 Escape, a luxury water taxi – both of these promise not only high-speed travel, but also a substantial reduction in carbon emissions. These vessels embody the company's commitment to balancing the demands of modern mobility with the urgent need to protect our oceans and waterways, ensuring that sustainable transport does not come at the cost of convenience or comfort.

Artemis Technologies has also turned its attention to the environmental toll of pilot vessels. With over 3,200 such vessels registered worldwide, contributing approximately 820,000 tonnes of CO_2e annually, the company developed the Artemis EF-12 Pilot—a fully electric solution designed to help ports and harbours cut emissions while enhancing the safety, comfort, and efficiency of their operations.

The company's crew transfer vessels (CTVs) deliver not only a smoother and more comfortable ride, but also reduce the likelihood of seasickness among passengers and crew. This extends operating windows compared to conventional CTVs and marks a significant advancement in the electrification of operations within the offshore wind sector.

At ADIPEC, Artemis Technologies looks forward to advancing discussions on how their vessels can support the Middle East's commitment to green technologies, positioning the region as global leader in sustainability.

ARVA GREENTECH I STAND: **1130** I HALL: **1**

STRIKING THE RIGHT BALANCE: ECONOMIC AND ENVIRONMENTAL BENEFITS

Arva Greentech's sustainable and carbon neutral remediation with Arvox SRT

Arva Greentech Remediation AG is a Swiss-German research and development company, which specialises in development of novel sustainable remediation technologies, primarily focused on petroleum hydrocarbon pollution. We are striving to decarbonise the industry and provide our partners and customers with technologies to significantly reduce carbon emissions.

The patented Arvox Superoxidation Remediation Technology (SRT) has been developed for the environmentally sound and sustainable remediation of contaminated soil, oil-based mud cuttings, oil sludge and other contaminated substrates. We are focusing on restoring a highly functional ecosystem capable of actively sequestering atmospheric carbon dioxide.

The environmental impact of our technology was evaluated using the LCA method (following ISO 14040/044). It involves calculating the direct CO2 emissions per tonne of treated material and comparing it to other treatment technologies or disposal. In the case of oil-based mud cuttings this results in an up to 6-fold cut in carbon dioxide direct emissions. In its ideal implementation, and if the remediated site is covered with vegetation and has normal soil microbiological indicators, it will actively absorb carbon dioxide from the atmosphere, and after a short period the entire process will become zero-emission and may eventually show negative atmospheric emissions.

In the context of climate neutrality, we do not limit ourselves to global greenhouse gas emissions but also pay attention to issues of regulating regional microclimates and land use. It is known that sustainably restored soils can serve as the foundation for such important processes as combating desertification, water scarcity, supporting forestation, and by forming a healthy, functional and organic-rich land base as well as preventing microclimatic changes. Therefore, we present the most environmentally beneficial technologies adapted for regional use.

This year at ADIPEC we are looking to take a clear stance toward decarbonisation and climate neutrality in the oil industry. We are looking for partners who aim to increase the sustainability of their region and support companies and governments to achieve their net zero goals. Ultimately, we are excited for a scientific exchange and research cooperation.

AQUAMETRO I STAND: **15122** I HALL: **15**

IMPROVING COMBUSTION LEADS TO REDUCED EMISSIONS

The Aquametro fuel blending system promotes CO2 reduction

To drive emissions reduction and promote sustainability in the maritime sector, the EU Emissions Trading System (EU ETS) has been extended to maritime transport emissions.

The use of alternative fuels such as biofuel plays an important role in the reduction of CO2 emissions and saving money in the context of the Emissions Trading System (ETS).

When using fuel mixtures in ship operations, it's important to supply the combustion engines with a stable and exact fuel mixture, while considering the thermal conditions and chemical interactions of the fuels used when switching between two different fuels. To avoid segregation or settling processes in fuel tanks, the production of an exact and stable fuel blend can be carried out by fuel blending systems during ongoing ship operation.

The Aquametro GreenBLEND fuel blending system enables ship operators to reduce cost for EU-ETS allowances when used for blending-in certified Biofuel to fossil fuel. Thanks to an operator defined blending-in ratio of certified Biofuel to fossil fuel, the CII-rating can be improved.

The GreenBLEND system allows for automatic fuel change-over or permanently controlled fuel blending of different types of fuels. It can be integrated into an existing fuel system with low technical effort and is fully type-approved by DNV.

Switching between different fuels can often pose challenges in fuel stability. Whether transitioning between fossil fuels or blending in biofuels, Aquametro's Homogenizer ensures a stable resulting fuel composition, optimising engine performance and reliability. The Homogenizer can reduce fuel droplet size down to 5µm, resulting in a uniform and fine spray pattern during injection. This improvement in combustion leads to reduced emissions and visible soot.

In our first project with Meriaura, Aquametro has delivered its Fuel Blending System GreenBLEND, its Fuel Performance System FPS, including Shaft Power Meter and Coriolis flow meters, as well as a Homogenizer for the cargo vessel M/S Eeva VG. With our fuel blending system, GreenBLEND Meriaura was able to double the share of bio-oil in all used fuel on M/S Eeva.

AL MASAOOD ENERGY | STAND: **4210** | HALL: **4**

SUPPORTING THE UAE'S NET-ZERO OBJECTIVES

Al Masaood Energy is committed to a more sustainable future with its cutting-edge technologies

As the world transitions toward a more sustainable future, Al Masaood Energy remains at the forefront of the oil and gas sector's decarbonisation efforts. By supporting the UAE's Net Zero objectives by 2045, we are leading the charge by introducing cutting-edge technologies and adhering to the highest environmental standards. Our approach combines innovative waste management strategies and advanced clean energy solutions, setting new benchmarks for sustainability in the industry.

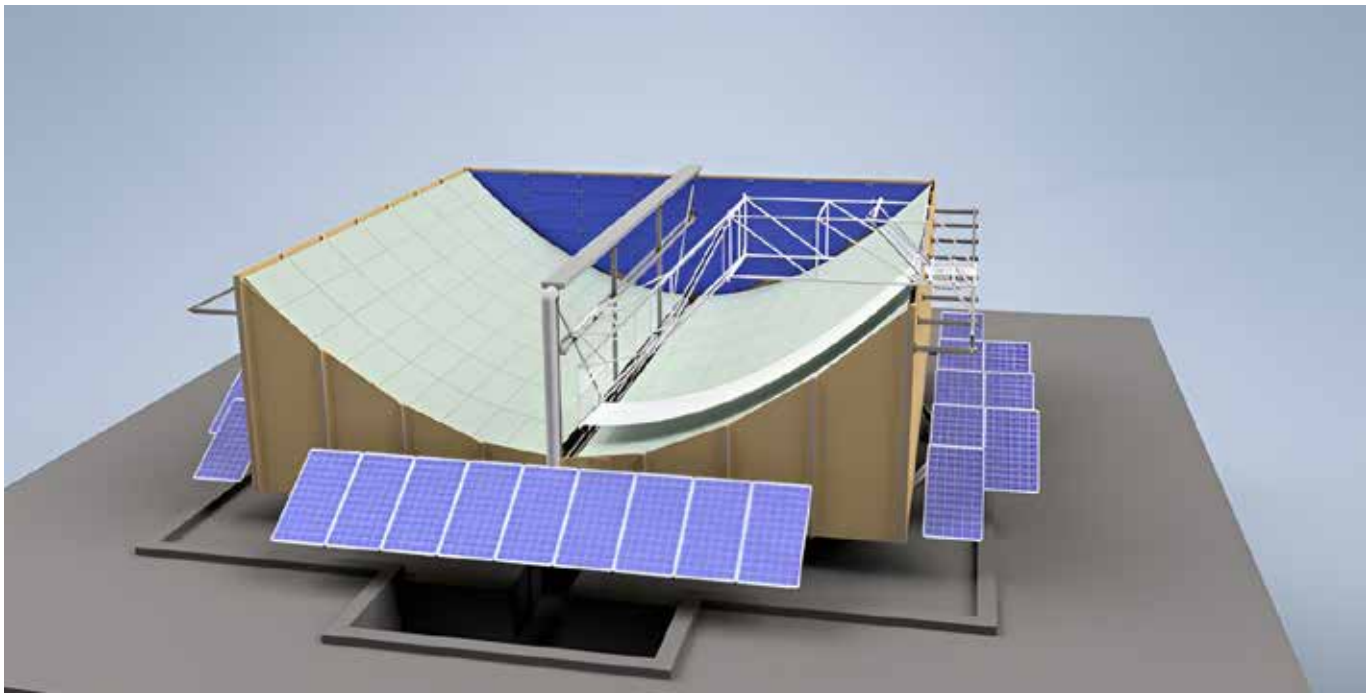
Our dedication to decarbonisation is driven by effective recycling programs and compliance with the ISO 14001 standard. Through comprehensive waste management strategies, we divert operational waste from landfills, significantly reducing greenhouse gas emissions and minimising our environmental footprint. This not only helps conserve natural resources but also lowers energy consumption, reinforcing our commitment to sustainable practices. Our ISO 14001 certification guarantees that we follow globally recognised environmental management standards, enabling us to continuously improve our ecological performance and address the environmental impacts of our operations.

As part of our commitment to decarbonisation, Al Masaood Energy has begun manufacturing its own solar thermal technology, which delivers zero-carbon thermal energy to replace gas-fired boilers that contribute to over 70% of emissions in the oil and gas sector. This initiative addresses one of the biggest sources of industrial emissions. Solar thermal technology, which has been successfully implemented in Oman since 2014, generates steam through solar energy during the day, replacing natural gas combustion. Over the past eight years, this system has saved more than 800,000 tons of CO2 and 16,000,000 MMBtus.

We are proud to support our valued customer ADNOC as they embark on this pioneering project to decarbonise their oil and gas operations and accelerate the energy transition.

We are also excited to announce our upcoming joint research paper with ADNOC Onshore, which will be published by the Society of Petroleum Engineers. To further engage our stakeholders and the public with our efforts, we will soon host a technology showcase at our facility, offering a first-hand look at our solar thermal systems in action.

Through these efforts, Al Masaood Energy is committed to a more sustainable future, benefiting not only our operations but also the communities and industries we serve. As the world evolves, we remain focused on continuous improvement and leading the way in driving positive change.



BARIUM SELAT I STAND: **13250-5** I HALL: **13**

SHAPING A MORE SUSTAINABLE FUTURE WITH PIONEERING PROJECTS

Driven by a commitment to sustainability, Barium Selat is developing the first renewable complex in the Asia-Pacific region

Barium Selat Group, established in 2015, also known as BSE is a Malaysian-based company that has its core business in the oil and gas sector. However, driven by our commitment to sustainability, we have diversified into technology, semiconductors, plastics recycling, and renewable energy, with a vision to become a leading sustainable company. BSE's footprint in the oil and gas sector includes a storage and mixing facility for drilling fluids that can store up to 20,000 barrels of drilling mud and chemicals to support offshore drilling activities as our commitment to clean energy.

As part of our ongoing efforts to help decarbonise the upstream oil and gas sector, BSE has been consistently investing in developing green specialty chemicals to help our customers achieve their ESG goals. With our high-performing G-Series specialty chemicals and additives, we provide a wide range of green selection of specialty chemicals to our customers that are not only greener but also sustainable.

Barium Selat is also committed to developing the first renewable complex in the Asia-Pacific region by 2035, consisting of multiple biorefineries to help combat hard-to-abate sectors like aviation through our high-performing Sustainable Aviation Fuel manufacturing facility in Malaysia, which we target to start production by 2026. Through our innovative green products, we are able to collectively save up to 200,000 kg of CO2 emissions annually, making a significant impact in reducing our overall carbon footprint and as a support towards the global transition.

> *As part of our ongoing efforts to help decarbonise the upstream oil and gas sector, BSE has been consistently investing in developing green specialty chemicals to help our customers achieve their ESG goals.*

This year at ADIPEC, we are dedicated to decarbonising production to meet our customers' needs by exploring low-carbon strategies, engaging with stakeholders, and enhancing business practices through innovative discussions. Our collaborative solutions are designed to drive sustainability and accelerate the energy transition, shaping a more sustainable future.

BARTAKKE I STAND: **13153** I HALL: **13**

ENCLOSURES WITH A PURPOSE

Bartakke lead the way in protection technology whilst safeguarding the environment

At Bartakke, decarbonisation is not just a buzzword; it's a commitment. We are pioneers in protection technology by providing Enclosure Solutions for the Energy, Automation, Pharmaceuticals, Food, and IT industries. Therefore, our mission should also include protecting the interests of the environment, local communities, and climate.

Our journey begins with a focus on energy efficiency. Bartakke has invested in energy-efficient CNC machinery to reduce our carbon footprint and optimise our manufacturing processes.

We went one step ahead by deciding to produce our energy. In 2016, we installed our first 80 KW Solar Power Generation System. This system is off-grid and is not connected to a conventional power grid. We store the excess power generated in a battery system. In 2020, we invested in an additional 118 KW Solar Power Generation System. Our manufacturing facilities and corporate offices are powered entirely by renewable solar energy. By installing these solar power generation systems, we have saved 7920 tonnes of carbon emissions in the entire lifespan of 25 years.

We are working towards a circular economy where every bit of waste is carefully sorted to be reused, recycled, or repurposed. Ninety five percent of our raw material waste is comprised entirely of steel which goes to neighbouring iron mills to be melted and reused into steel components.

Our commitment to decarbonisation doesn't stop here. We have partnered with Henkel Adhesive Technology to introduce their patented Bonderite M-PP Smart Coating Solution. This coating process is significantly superior to the traditional electro-coating process providing 1000 hours of corrosion protection, paint adhesion, and minimised energy consumption.

This pre-treatment process does not contain Heavy metals and Hazardous Air Pollutants (HAPs) emitted from sulphuric and hydrochloric acid. The generation of Volatile Organic Compounds (VOCs) is also greatly reduced making this process RoHS, ELV, and WEEE compliant. This process, being RoHS and ELV compliant, furthers our sustainability agenda.

Our journey towards net-zero emissions and de-carbonisation is still ongoing. Our enclosures not only protect the control systems and instrumentation inside, but also create a lasting external impact.

BELZONA I STAND: **14564** I HALL: **14**

THE POTENTIAL OF POLYMERIC MATERIALS FOR CARBON MITIGATION

Offering a comprehensive portfolio of polymeric repair and protection systems, Belzona can help industries reduce their carbon footprint

As part of the ever-growing arsenal of carbon mitigation technologies and initiatives, industrial coatings and repair composites can help many different industries to reduce their carbon footprints.

With a comprehensive range of polymeric Belzona systems, including epoxy repair composites, high-temperature coatings, liquid waterproof membranes, elastomeric roof coatings and pipe wraps, these systems have been proven to not only repair and protect damaged assets across many different industries, but to also intrinsically improve them for the long term as well.

The environmental implications of this are substantial. By bypassing the need to replace damaged assets and instead actively improving them, industries can not only make significant financial savings, but also make great strides in minimising their carbon footprints.

Steel Fabricator Saves Millions Thanks to Polymeric Repair and Protection Systems

These types of carbon and financial savings were made by a steel fabricator in Scunthorpe, UK. Over the course of several years, the customer has saved millions of pounds by deploying a series of polymeric repair and protection systems, including epoxy repair composites and stainless-steel protective coatings, on their gas pipeline.

Starting in 2016 and continuing through to 2022, the Belzona systems were deployed across the pipeline to combat the widespread corrosion, totalling a distance of 2,030 metres. This enabled the fabricator to make approximately £16 million in financial savings. In addition, by repairing and protecting the pipeline with polymeric technology, the customer was able to bypass the carbon footprint that otherwise would have been incurred through the process of replacing the pipeline.

Polymeric Systems: A Welcome Addition to the Arsenal of Carbon Mitigation Strategies

An increase in investment into industrial coatings and repair composites would help countries in the process of ratchetting up their emissions reduction plans, in order to achieve the net-zero emissions by 2050 target. These technologies are also instrumental in helping asset-owners across many different industries to make significant financial savings as well.

BLACKLINE SAFETY I STAND: **2460** I HALL: **2**

RENEWABLE ENERGY PRODUCTION AND GAS HAZARDS

In their efforts to increase decarbonisation, Blackline Safety highlight their latest safety and gas detection technologies

As the world embraces the need to decarbonise and cut damaging greenhouse gas emissions, renewable energy is becoming a more prevalent fuel source. However, just like the production of energy from oil and gas, creating it comes with hazards to the health and safety of workers.

One of the most significant sources of risk surrounds hydrogen, which is both extremely flammable and, in its natural gas form (H2), is the smallest molecule on earth making it prone to leaking out of containment.

High-Risk Scenarios

As the world's decarbonisation efforts increase, the use of H2 as a fuel source and in various processes will also increase. At each stage of its journey from production to use, hydrogen poses risk. The energy industry already uses gas detection to protect workers but as they move towards the production, transportation or use of cleaner fuels, they will need to broaden the spectrum of the gases they detect to include hydrogen.

Blackline Safety is uniquely equipped to address the challenges posed by hydrogen with our state-of-the-art sensor technology, which includes two sensor variants which can detect H2.

Molecular Property Spectrometer Sensor (MPS)

Firstly, our connected gas detectors use the industry-leading Molecular Property Spectrometer (MPS™) flammable gas sensor for the detection of a broad range of combustible gases. The MPS sensor's innovative technology offers the most accurate readings for over 14 common combustible gases and gas mixes, including hydrogen. It is intrinsically safe, stable and poison-resistant and is already used by energy companies around the world, with an increasing focus on hydrogen applications.

Electrochemical Sensor

The Blackline electrochemical H2 sensor detects hydrogen gas in parts per million, allowing facilities to measure volume as well as percentage LEL (Lower Explosive Limit) for added safety.

The sensor is highly sensitive and offers a versatile choice for operations wishing to have a layered approach to hydrogen detection. PPM measurement can identify leaks very quickly, ideal for scenarios such as fuel cell storage where off-gassing is a continual threat and hydrogen can accumulate at high levels.

BOLDROCCHI I STAND: **2131** I HALL: **2**

CUSTOM-ENGINEERED SOLUTIONS FOR THE ENERGY INDUSTRY

Boldrocchi specialises in critical equipment for onshore gas processing plants, supporting them in their drive to achieve emission targets

Boldrocchi is proud to announce that its Compressor Business Unit has been awarded a significant multimillion-dollar contract by a leading Italian EPC (Engineering, Procurement, and Construction) company. The project involves the supply of critical equipment for an onshore gas processing plant in the Hail and Ghasha fields, which is set to operate with net zero CO2 emissions — one of the most ambitious sustainability initiatives in the region.

The scope of Boldrocchi's supply includes eight API 617 compressors for the Sulfur Recovery Unit (SRU) and an additional three API 617 compressors for the Hydrogenation Unit. These compressors, engineered for high efficiency and reliability, are crucial to the plant's sustainability and emissions reduction goals.

In addition to the compressors, Boldrocchi will supply air intake systems, API 661 oil coolers, lubricating oil systems, and gearboxes, all of which

are designed and manufactured in-house at our world-class production facilities. Our ability to deliver a comprehensive suite of equipment, entirely produced within Boldrocchi, ensures not only tight integration between systems but also a single-source responsibility for quality and performance. The air intake systems will optimise airflow for combustion, while the API 661 oil coolers will manage thermal loads efficiently, contributing to the plant's overall operational excellence.

All of the products and systems will be engineered, manufactured, and tested at Boldrocchi's Center of Excellence in Biassono, Italy. This facility is equipped to handle end-to-end production, from design to final testing, under the strictest industry standards. Our scope also includes rigorous combined testing with 11kV electric motors, ensuring that the compressors and auxiliary systems are fully tested under real-world conditions before shipping.

This award further solidifies Boldrocchi's leadership in delivering complete, custom-engineered solutions to the global energy industry and highlights our ongoing commitment to supporting cutting-edge, sustainable energy projects around the world.

BLACK & VEATCH | STAND: **14332** | HALL: **14**

GREEN HYDROGEN PROJECTS DELIVER ON DECARBONISATION

From green hydrogen to floating LNG: Black & Veatch is enabling bankable decarbonisation

365 MW. That's the total electrolysis capacity that Black & Veatch is building through three green hydrogen projects today that will double the world's capacity.

It is just one way Black & Veatch is fast emerging as a leader in sustainable infrastructure and helping clients deliver on decarbonisation commitments.

The 100-year-old global engineering and construction company is transforming. It is ramping up operations and relationships across the Middle East and helping energy majors address decarbonisation.

Known in the oil & gas industry for innovation and leadership providing floating liquefied natural gas (FLNG) infrastructure solutions – the company's 6th FLNG project, Golar's MK II FLNG, was announced at Gastech this year – it is leading energy majors into tomorrow in many new directions. From electrifying LNG processing with renewable energy to delivering electrified charging vehicle infrastructure in forecourts across six European countries, the range of decarbonisation solutions that its clients are implementing is boundless.

Black & Veatch is currently constructing the Advanced Clean Energy Storage (ACES) green hydrogen project in the United States, located in Delta, Utah. Additionally Black & Veatch is working closely with energy majors to create bankable projects to produce hydrogen and other alternative fuels like sustainable aviation fuel while guiding projects such as the UK's Hydrogen Pathfinder project through development stage gates.

We are proud to support our valued customer ADNOC as they embark on this pioneering project to decarbonise their oil and gas operations and accelerate the energy transition.

Part of Black & Veatch's success in helping clients achieve their decarbonisation targets stems from its ability to work with industrial, commercial, utility, developer and government clients at every stage of the infrastructure lifecycle and across the entire value chain of technologies.

Earlier this year, Charlie Sanchez joined Black & Veatch to drive this end-to-end transformative enablement. President of the company's Strategic Advisory and Lifecycle Resiliency Services business, Charlie's team brings both strategic consulting and operating resiliency that is giving energy resources companies a competitive advantage. Charlie will be speaking and leading a roundtable discussion at the Finance & Investment Conference on Day 2, and you can meet him as well as Black & Veatch's EMEA leader, Youssef Merjaneh.

BRIDGE ENERGY | STAND: **7536** | HALL: **7**

POWERING DECARBONISATION WITH FLARED GAS SOLUTIONS

Bridge Energy's innovative technologies are helping companies transform emissions into eco-friendly power

Bridge Energy is a leader in the energy transition, focusing on harnessing wasted energy resources to power sustainable solutions. At the core of our operations is a commitment to reducing global gas flaring, which annually emits approximately 500 million tonnes of CO2 equivalent. By developing innovative technologies that convert flared gas into usable energy, we address one of the major contributors to greenhouse gas emissions.

Our flagship initiative involves utilising flared gas to power modular data centres (MDCs). These MDCs, deployed near flare sites, transform previously wasted energy into a sustainable power source for cloud computing and storage. This approach not only mitigates the environmental impact of gas flaring but also provides a cleaner alternative to traditional grid-powered data centres. MDCs require significantly less space, power, and cooling, enabling rapid deployment and scalability while reducing operational costs and transmission losses.

A prime example of our impact is the deployment of MDCs in remote oil fields. By capturing and repurposing flared gas, Bridge Energy has helped reduce emissions while meeting the growing demand for data processing in an environmentally responsible manner. These MDCs operate independently of the grid, aligning with the energy sector's broader goals of efficiency and sustainability.

> *We are proud to support our valued customer ADNOC as they embark on this pioneering project to decarbonise their oil and gas operations and accelerate the energy transition.*

At ADIPEC 2024, we are excited to engage with global leaders in decarbonisation and present our flared gas solutions. As the industry moves towards a lower-carbon future, we look forward to collaborating on further advancements in carbon capture, energy efficiency, and renewable energy integration. Our focus remains on transforming harmful emissions into valuable resources that drive both environmental and economic progress.

MDCs transform wasted energy into a sustainable power source for cloud computing and storage. This approach mitigates the environmental impact of gas flaring and provides a cleaner alternative to traditional grid-powered data centres.

CANNON ARTES I STAND: **2112** I HALL: **2**

AN EFFECTIVE SOLUTION

Cannon Artes' ZeroGas technology - a useful tool for C02 Ocean Capture

On account of human-related activities, carbon dioxide is building up in the atmosphere and causing changes to the climate because of the 'greenhouse' effect. CO2 in the air is in equilibrium with CO2 in the oceans' water which, accounting for 70% of the surface of Planet Earth, constitutes a huge reservoir of carbon.

In the oceans, CO2 is present in the form of dissolved CO2 and hydrocarbonate/carbonate ions. More CO2 is released into the atmosphere, as well as dissolved into the oceans' water, causing acidification of the latter and significant damages to the marine life. However, this process can be reversed. If CO2 is removed from water and sequestrated, more CO2 will move from the atmosphere (gas phase) to the liquid phase in order to keep the equilibrium.

Cannon Artes' ZeroGas Vacuum Deaeration technology is an effective solution to remove dissolved carbon dioxide from water.

The technology focuses on a vertical degassing tower that incorporates a storage section. In the vacuum tower, the dissolved carbon dioxide is removed from the liquid phase by creating vacuum conditions. The reduction of the partial pressure in the gas phase is the driving force that moves dissolved carbon dioxide into the gas phase. A vacuum is created in the degassing tower through the action of pumps, either with or without the assistance of additional air-driven ejectors. The water is fed to the top of the degassing tower and falls across metallic, or plastic rings, to create the highest active surface area for the most effective mass transfer. CO2 -depleted water is then collected into a storage section, while a CO2-rich gas stream can be collected and refined for CO2 recovery, sequestration and/or reuse.

At ADIPEC 2024, Cannon Artes is showcasing its vacuum degassing technology as an effective building block in the field of capturing and sequestrating CO2 from the ocean's water.

CANNON BONO ENERGIA I STAND: **2112** I HALL: **2**

CUTTING-EDGE TECHNOLOGY TO REDUCE CARBON EMISSIONS

Cannon Bono Energia: Driving decarbonisation with innovative industrial boilers

Cannon Bono Energia is dedicated to the design, manufacturing, installation, service, and maintenance of industrial boilers that support decarbonisation efforts across industries. With a strong focus on innovation, CBE offers a range of solutions to help companies reduce carbon emissions.

- **Hydrogen and off-gas boilers:** Since building the first full hydrogen boiler in 2005, CBE has advanced its R&D efforts. Today, our boilers can operate on uncontrolled off-gas mixtures, pure hydrogen, or blend with other fuels, making them a powerful tool for reducing CO2 emissions.
- **Electric boilers:** Our industrial electric boilers, equipped with a system of resistors or electrodes, efficiently generate the energy needed for various production processes.
- **Heat pumps:** Up to four times more efficient than conventional generators, our heat pumps provide a cost-effective method for producing hot water and steam, further enhancing energy efficiency.

Our decarbonisation technology has been successfully implemented across various industries, achieving companies' decarb goals. For example, a Saudi Arabian oil and gas company utilises a heavy-duty water tube boiler that operates up to 100% full hydrogen. In Italy, a chemical production company benefits from a high-performance steam generator that uses a blended fuel mix of natural gas and hydrogen, which is produced as waste from their production process. A synthetic chemical manufacturer in China employs a multitubular thermal oil heater capable of running on up to 100% hydrogen, significantly reducing CO2 emissions. Additionally, an insulation and building materials company operates electric thermal oil heaters at sites in both Sweden and Saudi Arabia, providing zero-emission energy. Finally, a pharmaceutical company in Switzerland uses an electric steam generator, which has enabled them to achieve a 100% reduction in CO2 emissions.

Hydrogen is expected to play a major role in decarbonisation, with discussions focusing on scaling production, developing infrastructure, and expanding its applications. Cannon Bono Energia is keen to explore advancements in Carbon Capture, Utilisation, and Storage (CCUS), expanding hydrogen infrastructure, and leveraging digitalisation to optimise energy efficiency and emissions tracking. Monitoring, predictive maintenance, and emissions tracking are crucial in driving industries toward net zero goals.

CATHELCO I STAND: **15204** I HALL: **15**

PROMOTING SUSTAINABILITY IN MARITIME OPERATIONS

A global leader in maritime technology, Cathelco has deployed its systems in over 20,000 vessels worldwide

Cathelco, a globally recognised leader in marine technology, is committed to advancing the decarbonisation of the maritime industry through its innovative solutions that enhance vessel efficiency and reduce greenhouse gas (GHG) emissions. With over 50 years of experience, Cathelco's systems are installed on more than 20,000 vessels worldwide, significantly contributing to the sustainability goals of the maritime sector.

Leading Cathelco's suite of decarbonisation technologies is the DragGone™ ultrasonic antifouling system, a cutting-edge solution designed to prevent biofouling on ship hulls. By emitting high-frequency sound waves, the DragGone™ system disrupts the attachment of marine organisms, keeping hull surfaces clean and smooth. This technology reduces hydrodynamic drag, allowing vessels to maintain speed with 13% less fuel consumption, which in turn lowers GHG emissions. The DragGone™ system has been third-party tested and proven to be non-disruptive to marine mammals, making it an environmentally responsible choice that enhances operational efficiency and reduces maintenance needs, positioning it as a vital tool for decarbonisation.

Complementing the DragGone™ system are Cathelco®'s Marine Growth Prevention Systems (MGPS), designed to prevent biofouling within critical internal seawater pipework, such as cooling systems. Biofouling in these systems can lead to blockages, increased energy demand, and a higher risk of failures, all contributing to increased fuel consumption and GHG emissions. By preventing marine organism build-up, Cathelco's MGPS ensures that vessels operate at peak efficiency, reducing fuel consumption and emissions.

Furthermore, Cathelco's Impressed Current Cathodic Protection (ICCP) systems play a crucial role in maintaining vessel structural integrity by preventing hull corrosion. By mitigating corrosion, these systems help vessels maintain optimal hydrodynamic efficiency, contributing to reduced fuel use and emissions. This ensures that vessels operate smoothly and efficiently, aligning with the broader goals of decarbonisation in the maritime industry.

At ADIPEC 2024, Cathelco looks forward to showcasing these innovations and exploring partnerships to expand the impact of its technologies, accelerating the transition to a low-carbon future in the maritime industry.

CELEROS FLOW TECHNOLOGY
STAND: **4470** I HALL: **4**

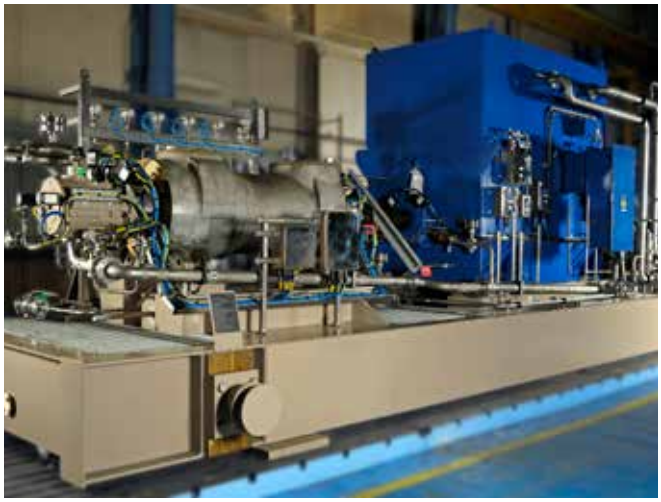
DECARBONISING THE WORLD'S ENERGY SUPPLY

ADNOC chooses Celeros Flow Technology as a trusted partner for decarbonisation project

Celeros Flow Technology (Celeros FT) is a leading global lifecycle partner committed to supporting customers involved in decarbonising the world's energy supply. Its flow control solutions and services are designed to optimise performance while minimising leakage and reducing energy consumption, making operations more sustainable. Recent product innovations include the CFT-GREEN Valve Packing Seal System to minimise fugitive emissions and H2-ready BandLockTM2 closures. Celeros FT's pump re-rating services are also helping customers to lower their carbon emissions by up to 20%.

ADNOC recently appointed Celeros FT to supply two high pressure injection packages for carbon capture and storage (CCS) at its Habshan gas plant. The project is part of ADNOC's planned US$15 billion decarbonisation investment, with the aim of achieving Net Zero by 2050.

Tommy Kassem, Chief Commercial Officer for Celeros FT, comments: "We are proud to support our valued customer ADNOC as they embark on this pioneering project to decarbonise their oil and gas operations and accelerate the energy transition. Our team has the engineering expertise in



high pressure pump applications to develop the advanced carbon capture and storage solutions that companies like ADNOC require to reduce climate change impacts and secure a cleaner future for all."

Incorporating advanced pump technology from Celeros FT's ClydeUnion Pumps brand, the high-pressure injection packages will handle the captured supercritical CO2 from the ADNOC Gas (AG) Habshan facility, and transport it by dedicated pipeline to the Bab

Far North Full Field Development CO2 Storage Hub, for onward delivery to consumers in the region. The two packages will feature Celeros FT's high pressure BB5 pump technology and include electric motors, variable frequency drives (VFDs), dry gas seal and dry gas seal systems. Each pump train will be capable of injecting 1.5 million tonnes of CO2 per annum, which equates to the carbon emissions of more than 326,000 vehicles.

Celeros FT are excited to exhibit at ADIPEC again this year. Shane Moynihan, Celeros FT's Regional Director-Middle East, explains: "ADIPEC offers a unique opportunity to collaborate with industry peers, exchange knowledge, and share innovative strategies that can drive our customers' decarbonisation efforts."

CETIM I STAND: **9252** I HALL: **9**

CIRCULAR ECONOMY, DECARBONISATION AND RESILIENCE

Using the CEDRE strategic project, Cetim is working alongside manufacturers to help accelerate decarbonisation

Capturing and Storing Carbon

CEDRE supports manufacturers of equipment, components and machinery in adapting and developing products to capture, transport, store, and use carbon. The 'Fluid & Decarbonation Systems' issue, which concerns this value chain, and the mechanical equipment used, is the focus of several projects. Test benches for sealing and the behaviour of materials in a CO2 environment are also being developed. CEDRE is also working alongside them on the use of captured CO2 to decarbonise certain mechanical processes.

Hydrogen Reinforcement

Illustrating Cetim's commitment to the issues associated with the ecological transition, HyMEET aims to support the mechanical engineering professions, their customers and the entire industry, in meeting the technological and economic challenges associated with hydrogen. HyMEET covers the industry's entire value chain: production, storage, transport, distribution and end use.

It combines an ambitious research and development programme with an investment of €25 million in resources dedicated to tests, characterisation and validation platforms, as well as consultancy and training programmes. It already employs over 100 people and relies on Cetim's six deacdes of experience and multi-disciplinary expertise, particularly in sealing, embrittlement and permeability of materials, fatigue of components, cleanliness, as well as manufacturing, forming and assembly processes.

> *HyMEET aims to support the mechanical engineering professions, their customers and the entire industry, in meeting the technological and economic challenges associated with hydrogen.*

Contributing to the Decarbonisation of Industrial Sites

By addressing the equipment level, CEDRE is helping develop technological solutions, particularly the 50 French industrial sites that emit the most carbon with a valuable foundry expertise to the list of steelmakers.

To help companies take on-board the challenges of the environmental and energy transition, an environmental maturity profile enables them to understand the importance of the subject, assess their current maturity and identify levers for action. Finally, increasing the skills of manufacturers is also key to accelerating decarbonisation: people are needed to develop these technological solutions and to operate them. Cetim identifies the new skills needed by manufacturers to meet these challenges and develop their professions. Our Cetim Academy® training catalogue is also evolving. We offer an 'Energy and Environmental Transition' course dedicated to managerial, design, industrialisation, production, QHSE and maintenance functions.

CHONGQING HONGBAO TECHNOLOGY | STAND: **13054** | HALL: **13**

COMMITTED TO BUILDING INTELLIGENT, EFFICIENT INSPECTION MODELS

Chongqing Hongbao Technology addresses the transition to a green economy through the Youlong Intelligent Inspection Platform

In oil and gas production, pipeline and station inspections often face challenges such as low efficiency, high risk, and delayed risk identification. To address these challenges and support the transition to a green economy, Chongqing Hongbao Technology is committed to building a more intelligent and efficient inspection model and providing an aerial-ground integrated intelligent inspection solution. This automated workflow empowers oil and gas inspections, reducing manpower, enhancing quality, boosting efficiency, and advancing the low-carbon economy.

Our solution integrates drones, automated docks, portable operating systems, ground inspectors, and other resources through the Youlong Intelligent Inspection Platform. Utilising DJI drone products and industry ecosystem, we achieve precise data collection, efficient aggregation, and intelligent analysis. This enables comprehensive inspection and monitoring of production facilities such as pipelines and stations, accurate detection and timely handling of risks, and automatically generating comprehensive and paperless inspection reports, propelling inspections in the energy sector to a new level.

In 2023, the Yilong Work Area of China Petroleum Southwest Oil & Gas Field, which manages a 518-kilometre gas pipeline, implemented our Youlong Aerial-Ground Integrated Intelligent Inspection Solution. This transition from costly, inefficient manual methods to our advanced system—featuring drone imagery, AI-driven alerts, and real-time processing, significantly reduced manpower input by 91%, decreased high-carbon transportation, and improved inspection efficiency by four times, offering a low-carbon and fully paperless management process that contributes to genuinely 'green inspections.'

We are looking forward to connecting with leading enterprises at ADIPEC, boosting the digital transformation of oil and gas production, and showcasing Chinese innovation. Together, we aim to drive progress in the global carbon reduction economy.

CLAMPON I STAND: **9133** I HALL: **9**

NON-INTRUSIVE MONITORING SOLUTIONS

ClampOn's advanced corrosion and erosion monitoring systems are helping companies reduce their carbon footprint

At ClampOn, we are dedicated to pioneering innovative solutions that not only enhance operational efficiency but also contribute to a sustainable future. The ClampOn Corrosion-Erosion Monitor embodies this commitment by providing advanced monitoring capabilities that help industries reduce their environmental footprint.

Driving Decarbonisation with Advanced Monitoring

The ClampOn Corrosion-Erosion Monitor is designed to offer precise, and real-time monitoring of corrosion and erosion in pipelines and other critical infrastructure both for topside and subsea applications. By enabling early detection and proactive maintenance, our technology helps prevent leaks and failures that can lead to significant environmental harm. This not only ensures the safety and reliability of operations but also assists in reducing the carbon emissions associated with emergency repairs and unplanned downtime.

Supporting Sustainable Operations

Our non-intrusive monitoring solutions are integral to the transition towards more sustainable industrial practices. By providing accurate data on the condition of assets, the ClampOn Corrosion-Erosion Monitor allows for optimised maintenance schedules, reducing the need for frequent inspections. This decreases material waste and energy consumption, further supporting our clients' decarbonisation goals.

Innovating for a Greener Tomorrow

At ClampOn, we believe that innovation is key to achieving a sustainable future. Our research and development efforts are focused on enhancing the capabilities of our monitoring systems to provide greater accuracy and reliability. We are committed to continuously improving our products to meet the evolving needs of our clients and the environment.

Collaborating for Impact

We understand that achieving a low-carbon future requires collaboration across industries. ClampOn actively partners with clients and industry leaders to promote best practices and share knowledge. Together, we can drive the adoption of technologies that reduce carbon emissions and protect our planet for future generations.

A Vision for the Future

ClampOn is committed to contributing to the reduction of carbon emissions through our innovative solutions. Our non-intrusive monitoring solutions reflect our dedication to sustainability. As we advance our technology, we remain focused on supporting our clients in their efforts to reduce carbon emissions and promote environmental stewardship. We are humbled to play a role in the journey towards a low-carbon future, working together with our partners to create a more sustainable world.

CMG I STAND: **12302** I HALL: **12**

BRIDGING THE GAPS FOR A SUSTAINABLE FUTURE

CMG tackles key challenges of CO2 management by combining a comprehensive approach, technology, and deep industry expertise

The Paris Agreement accentuated the siloes between storage and injection teams, leading to increased risks and underscoring the necessity for an integrated CO2 management solution.

Computer Modelling Group Ltd. (CMG), is a global software and consulting company, combining technology with deep industry expertise to solve complex CO2 storage challenges. Committed to supporting the energy transition through seamless management of CO2, CMG launched CO2LINK in collaboration with Kongsberg Digital. CO2LINK is a transformative simulator coupling that helps businesses streamline their CO2 injection and storage process.

As a sophisticated controller, CO2 LINK integrates a transient-wellbore simulator with a compositional reservoir simulator, crucial for accurately modelling CO2 injection. By dynamically solving variables like flow regime, gravity, friction, and heat exchange, it addresses the rapid changes in pressure, temperature, and composition in the near-wellbore region, which can lead to abrupt phase changes and impact injectivity.

CO2LINK offers industry-first features — seamless transitions between transient and pseudo-steady states and coupling at the per-perforation level for inflow performance. It also allows full control from the source to the reservoir destination, ensuring the CO2 storage operations are safe and efficient, even in complex scenarios.

CMG has significantly contributed to decarbonisation efforts by providing its comprehensive carbon capture and storage (CCS) solution for the Trudvang project in the Norwegian North Sea. Led by Sval Energi AS, the project aims to capture 9 million tons of CO2 annually from various industrial sources and store it permanently beneath the seabed. CMG's integrated approach enhances CO2 storage by combining reservoir simulation, geochemistry, geomechanics, and pipeline analysis, design optimisation, efficiency improvement, and cost reduction for long-term carbon storage.

At ADIPEC 2024, CMG is eager to explore interactions and partnerships that accelerate decarbonisation efforts. We focus on showcasing our advanced CO2 injection management and storage technologies pivotal in reducing carbon footprints and enhancing sustainability in the energy sector. We look forward to engaging with industry leaders and sharing insights that will contribute to a low-carbon future.

COMBUSTION AND ENERGY
STAND: **14292** I HALL: **14**

SHAPING THE FUTURE OF HYDROGEN

Combustion and Energy is pioneering explosion-proof solutions for hydrogen infrastructure

As a leading provider of safe and reliable electrical equipment for potentially explosive environments, Combustion and Energy (CE) is committed to supporting the transition to a decarbonised future. Our competence in designing and manufacturing Ex equipment positions us as a key player in the development of hydrogen infrastructure.

It is necessary to find alternative energy sources to fossil fuels. In the renewable energy landscape, hydrogen represents the most interesting challenge, but its use may raise safety issues because hydrogen is highly explosive. That is why it is necessary to take precautionary measures for the storage and handling of the gas.

Building on its 35 years' experience in the design of explosion-proof equipment, CE has developed its own line of Ex ENCLOSURES in stainless steel or aluminium, certified ATEX, IECEx, EAC and INMETRO, and PESO for IIB, IIB+H2 and IIC groups of gasses. Our IIB+H2 enclosures housing electrical devices are suitable for hazardous areas.

The development of drone technology will drive the spread of hydrogen fuel cell mobility and the necessary infrastructure, such as multi-function Heli-service stations (landing, loading/unloading of goods and/or passengers, and hydrogen refuelling).

With the brand name LUXSOLAR, Combustion and Energy produces Aircraft Warning Lights (AWL) for light-signalling of high obstacles, aeronautical beacons, heliport/vertiport lights and navaids both for safe and hazardous area applications.

By combining our expertise in explosion-proof technology, lighting systems and custom manufacturing, CE is committed to providing comprehensive and reliable solutions for the growing hydrogen infrastructure market.

We are actively seeking partnerships to collaborate with industry leaders and accelerate the adoption of hydrogen as a clean and sustainable energy source. As we look forward to ADIPEC, we are excited to connect with industry professionals and explore opportunities for collaboration. Together, we can shape the future of hydrogen and contribute to a more sustainable and environmentally friendly world.

CONCRETE CANVAS I STAND: **8650 I** HALL: **8**

REDUCING CONCRETE EMISSIONS

Concrete Canvas is committed to driving the transition to more sustainable manufacturing, focusing on reducing lifecycle CO2 emissions, waste, and pollution

Created specifically for erosion control and containment, Concrete Canvas® (CC) products are part of a revolutionary class of new, innovative materials called Geosynthetic Cementitious Composite Mats (GCCMs). CC is a flexible, concrete-filled geosynthetic which provides a thin and durable concrete layer when hydrated. Typically, 10-times faster to install than conventional concrete solutions; essentially, it's Concrete on a Roll™.

The use of our products as an alternative to conventional concrete solutions in surface erosion applications (like Channel lining, Slope Protection, and Bund Lining) reduces CO2e emissions. Concrete Canvas installations in the UK typically provide up to 60% CO2e saving when compared to conventional concrete methods.

We have conducted a Life Cycle Assessment of Concrete Canvas (CCT2) through a third-party engineering consultancy, Ricardo. This study has assessed the GWP of using CCT2 or ST4 to produce a 1,800m2 channel. The study has considered the upstream impacts associated with raw material extraction, the core impacts associated with producing each product and the downstream impacts associated with installation, removal and end of life. The impacts arising from transportation between these stages have also been considered, with CCT2 being transported 10 times further from factory to site.

The results indicate that using CCT2 to construct the channel has a 63% lower GWP than ST4. Per m2 of channel, 20.6kg of CCT2 are required, compared to 320kg of ST4. Both products' key life cycle stage is the upstream stage, in particular cement production. Using a product that requires less cement results in lower CO2e emissions.

We're looking forward to sharing how our Concrete Canvas solutions reduce CO2e emissions in surface erosion applications, with up to 60% savings compared to traditional concrete methods.

COSASCO I STAND: **4210** I HALL: **4**

DECARBONISING SOLUTIONS FOR EMISSION-HEAVY SECTORS

Cosasco is committed to advancing a lower-carbon future through innovative solutions that address the safety challenges of CCS

Carbon capture and storage (CCS) is emerging as a crucial technology in various industries, including refining, concrete, and steel production work, to reduce carbon footprints. These emission-heavy sectors are often geographically concentrated, making it ideal to capture CO2 at the source.

CCS requires capturing, transporting, and storing CO2, which is often achieved in a supercritical state to improve efficiency. In this state, CO2 is highly soluble in water, forming carbonic acid (Gan Cui, 2019), which can cause severe corrosion in high-pressure infrastructure. Cosasco's corrosion monitoring solutions and decades of expertise in oil and gas, are critical to assessing and mitigating this risk. Cosasco's highly engineering corrosion monitoring systems use metallic coupons and probes to assess the internal conditions of piping systems, and our specialised safety devises allow safe, under pressure installation and removal of monitoring devices.

A significant challenge in CCS is managing rapid gas decompression (RGD), which can damage equipment by forming bubbles in soft materials as CO2 expands when depressurised. In collaboration with large energy operators, Cosasco has developed suitable solutions to withstand RGD. Our extensive research has allowed us to construct solutions that perform well in high pressure conditions and have proven effective.

Cosasco's corrosion monitoring solutions and decades of expertise in oil and gas, are critical to assessing and mitigating this risk. Our extensive research has allowed us to construct solutions that perform well in high pressure conditions and have proven effective.

Cosasco remains dedicated to supporting the industry to reduce their carbon footprints, providing products and solutions that prioritise safety and efficiency. We proudly support energy companies worldwide with their CCS initiatives and green energy production efforts.

DNV I STAND: **9157** I HALL: **9**

NAVIGATING THE PATH TO A GREENER TOMORROW

DNV offers testing, certification, monitoring, and advisory services across the energy value chain

Jan Zschommler, Market Area Manager for Middle East & Africa at DNV, discusses how the company partners with customers to accelerate the transition to a decarbonised future.

As a trusted, independent partner in the energy sector, DNV comes to ADIPEC 2024 ready to share its whole energy systems expertise, deep technical knowledge and data-driven solutions to accelerate the transition to a decarbonised future. Our 5,000 energy experts provide testing, certification, monitoring, and technical advisory services across the entire energy value chain, including renewables, oil and gas, and power systems.

For 160 years, we have continuously adapted and led the way in helping our customers tackle the most complex challenges. Today, we use our extensive experience and deep expertise to help more than 100,000 companies worldwide conduct their business safely and sustainably.

The world's energy system is transitioning from being dominated by fossil fuels to a growing share of variable renewables. Separate value chains are merging into a single, interconnected system based on significant electrification, demanding a holistic approach to energy systems.

In the Middle East and North Africa (MENA), by 2050, solar and wind power are set to supply the majority of electricity—46% and 31%, respectively. Of this solar electricity generation, 28% will likely come from solar and storage power stations, while most wind power will remain onshore.

To support the industry in navigating this accelerating transition, DNV delivers key insights through research and publications like the annual Energy Transition Outlook, providing operational and technological foresight.

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"DNV's own research and publications clearly shows that the Energy Transition is happening, but not quickly enough to meet the Paris commitments. More speed is needed! This is where DNV comes in, supporting the energy industry to decarbonise," said Jan Zschommler, Market Area Manager for Middle East & Africa at DNV.

The transition will unfold differently across global regions, with the Middle East expected to sustain significant hydrocarbon production and export while experiencing rapid growth in renewables, particularly solar PV. DNV will continue to support its Middle Eastern customers in implementing advanced decarbonisation solutions to reduce carbon footprints and remain competitive in the global market for low-carbon energy.

ADIPEC 2024 is set to reconfirm its status as a primary meeting place for the energy industry. As our industry enters a critical period of transition and innovation, with decarbonisation becoming the key challenge, we at DNV believe that collaboration and engaging in industry dialogue at events like ADIPEC will be more important than ever.

CWHI I STAND: **4410** I HALL: **4**

A COMMITMENT TO INNOVATION AND EXCELLENCE

From large-scale steel structures to turnkey solutions, CWHI powers forward in the drive to reduce carbon emissions

Aa trusted partner for some of the world's most challenging and ambitious energy projects, CWHI's product range spans from large-scale steel structures and specialised components to turnkey solutions, leveraging advanced manufacturing techniques that meet the unique requirements of each customer.

Whether in offshore platforms, renewable energy infrastructure, or critical industrial installations, CWHI are committed to providing tailored solutions that align with the specific demands of our clients, ensuring that every project we undertake is executed with precision, efficiency, and the highest standards of quality, all while safeguarding and enhancing the natural resources essential for a brighter future.

CWHI specialises in the efficient and high-quality fabrication of fixed and floating foundations for offshore wind farms, playing a pivotal role in promoting the development and transition towards renewable energy worldwide. Our comprehensive approach ensures that each product we produce meets the highest industry standards and contributes to the global shift towards sustainable energy solutions.

Our comprehensive approach ensures that each product we produce meets the highest industry standards, and contributes to the global shift towards sustainable energy solutions.

Specifically, we have supported several high-profile Offshore Wind projects in the UK to help the drive towards Net Zero and reduce carbon emissions.

Uniting the entire energy industry, this exhibition presents companies with a unique platform to forge partnerships essential for developing new business models, and product innovations that align with the priorities of the regions rapidly evolving energy ecosystem.

ADIPEC offers a prime opportunity for us to connect with both existing and new clients, leveraging our regional expertise to establish mutually beneficial partnerships that drive successful decarbonisation projects worldwide.

CUMIC STEEL I STAND: **14615** I HALL: **14**

INNOVATIVE AND ECO-FRIENDLY STEEL SOLUTIONS

CUMIC STEEL is dedicated to positively impacting the steel industry as it faces the critical challenge of reducing carbon emissions

As a global steel solutions provider, we have incorporated green transformation into our company vision and strategy, facilitating a win-win collaboration for our customers, suppliers, and the entire supply chain.

We focus on delivering innovative and eco-friendly steel solutions that meet the growing demand for sustainable development. Our offerings include:

- Low-emission steel: This year, we supplied Baosteel's 30% carbon-reduced green steel coils and hydrogen metallurgy steel bars from HBIS.
- Renewable energy steel supply: We provide wind tower shafts, forgings, and steel plates for wind tower construction, along with solar panel mounting systems and silicon steel for hydropower generators.
- Innovative eco-friendly project supplies: For instance, we played a vital role in the Botlekweg HYCO5 carbon capture initiative.

These products enable our customers to differentiate themselves in the marketplace, particularly in traditional and renewable energy sectors, which face increasing pressure to reduce their carbon footprints. Furthermore, by integrating transparent carbon data into our product offerings, we help clients accurately report and reduce Scope 3 emissions, minimising subsequent carbon costs and ensuring compliance with regulations such as CBAM.

Collaboration with our suppliers is a key part of our green strategy. As global carbon neutrality goals progress, many Chinese steel mills are strengthening their long-term competitiveness and resilience by adopting low-carbon and green technologies early on. Through our close partnerships, we supply green steel to global customers in need.

Through our involvement in global decarbonisation projects, and participation in influential industry events such as ADIPEC, CUMIC looks forward to discovering new opportunities, trends and innovations, and to collaborate with partners who share the same commitment to building a green future with steel.

DOLPHIN GROUP I STAND: **10212** I HALL: **10**

ENERGY-EFFICIENT TECHNOLOGIES

Local manufacturer of static equipment Dolphin Group, are deeply focused on their sustainability targets

As a leader in the design and manufacture of industrial equipment, Dolphin Group is deeply committed to contributing to global decarbonisation goals by leveraging our expertise in energy-efficient technologies. As a local manufacturer of static equipment, we serve key industries such as oil and gas, chemical refineries, and water treatment plants, focusing on developing optimised solutions that reduce energy consumption and minimise carbon emissions. Our practices align with the UAE's leadership initiatives, ensuring our contributions meet both national and global sustainability targets.

A key area of our contribution lies in the design and manufacture of high-efficiency heat exchangers, including shell-and-tube heat exchangers and air-cooled systems. These systems are integral to energy-intensive industrial processes, and our designs prioritise maximising heat transfer efficiency while minimising energy loss. By optimising thermal performance, we enable our customers to reduce energy consumption significantly, contributing to a lower carbon footprint.

To further support our clients, we provide solutions for performance monitoring and predictive maintenance software for shell-and-tube exchanger networks. These technologies help streamline operations by identifying inefficiencies and removing redundant maintenance processes, thus enhancing operational efficiency, and reducing emissions and waste of natural resources.

Our expertise extends to advanced thermal and mechanical design techniques for shell-and-tube heat exchangers, ensuring efficient heat recovery even in the harshest environments. With the use of state-of-the-art simulation tools, we refine our designs to maximise heat transfer between fluids while reducing the energy required for cooling or heating processes, directly cutting greenhouse gas emissions.

Moreover, Dolphin Group has integrated additive manufacturing into our processes, significantly reducing material waste. By adopting digital inventories alongside these advanced manufacturing techniques, we have also reduced logistical emissions, enhancing our overall sustainability efforts. Our air-cooled heat exchangers are designed for maximum cooling capacity with minimal energy use, a solution especially suited for regions where water scarcity is a concern. Through these initiatives, we are proud to play a pivotal role in helping industries.

ECON I STAND: **8750** I HALL: **8**

TREATING WASTE WITHOUT CO2 EMISSIONS

econ offers a sustainable and efficient solution for a cleaner future with VacuDry®

econ industries advanced solution, such as VacuDry®, plays a pivotal role in reducing greenhouse gas (GHG) emissions from the treatment of hazardous wastes such as drill cuttings, tank bottom sludges, MARPOL sludges, spent catalyst and contaminated soil, amongst others. econ's aim is to achieve resource-conserving material recycling with the VacuDry® technology that separates harmful substances, such as hydrocarbons and mercury, under heat and vacuum in a fully encapsulated system. Particularly when it comes to energy efficiency and low carbon emissions, this method is far superior to any other thermal treatment process and is accepted as state-of-the art by approval authorities worldwide. By recovering resources at product quality, this helps to minimise the need for raw material extraction, a process often linked to substantial carbon emissions.

With VacuDry®, you can save ~1 tons of CO2 emissions when one ton of oily waste is treated. By quantifying the reduction in GHG emissions achieved by using VacuDry®, substantial carbon credits are generated. Organisations can offset their carbon footprint and participate in carbon markets via the Global Carbon Council (GCC).

The energy requirement for the VacuDry® process can come from electricity and therefore the plants can be operated regeneratively. In addition, the energy requirement is a low 250 - 400 kWh/t (significantly lower than other thermal desorption processes), hence the generation of CO2-eq is negligible. The VacuDry® technology has a process off gas < 30 Nm3 /h which is far less than any other thermal process.

Beyond energy efficiency, econ contributes to decarbonisation by:

- Enabling the circular economy.
- Supporting renewable energy integration.

By partnering with econ, businesses can not only enhance their environmental performance, but also capitalise on the growing carbon credit market and achieve profit through resource recovery.

We're eager to present Oil & Gas and waste management companies with the opportunity to treat waste without CO2 emissions.
By partnering with us, energy companies can accelerate their decarbonisation journey, enhance operational efficiency, and contribute to a more sustainable future.

ELEGAR KERPEN | STAND: **13776** | HALL: **13**

ADVANCING SUSTAINABILITY

Elegar Kerpen are reducing the carbon footprint by producing cutting-edge machines designed to maximise energy efficiency

Elegar Kerpen Kabel India Pvt. Ltd is a forward-thinking company dedicated to advancing sustainability in the manufacturing sector through innovative products and initiatives. Our product line includes cutting-edge machines designed to maximise energy efficiency. These machines use advanced technology to reduce power consumption, lower operational costs, and minimise environmental impact. They are particularly beneficial in reducing the carbon footprint of industrial operations. We prioritise safety and environmental stewardship by providing wires and cables using compounds and products that are non-hazardous. These products comply with key regulatory standards such as REACH, RoHS, and CE. This ensures that our products are safe for both users and the environment.

Elegar Kerpen uses energy-efficient E-Beam crosslinking for polymers, reducing energy use compared to traditional methods.

Our LSZH (Low Smoke Zero Halogen) cables emit minimal smoke, and no halogens are released to the environment in case of fire.

Designed for a 50-year lifespan, our cables are more sustainable than the typical 25-year lifespan cables.

We prioritise safety and environmental stewardship by providing wires and cables using compounds and products that are non-hazardous. These products comply with key regulatory standards such as REACH, RoHS, and CE. This ensures that our products are safe for both users and the environment.

We are ISO 14001:2015 certified, underscoring our commitment to environmental management.

At ADIPEC, we would like to promote our high-end products, manufactured while keeping our commitment of a zero footprint for the oil and gas sector. We also look forward to new technologies in wire and cables manufacturing equipment and compounds.

ELGI I STAND: **13670** I HALL: **13**

INNOVATIVE COMPRESSED AIR SOLUTIONS

ELGi supports a wide range of industries with its portfolio of over 400 products

ELGi, one of the global leaders in compressed air solutions, operates in over 120 countries, with manufacturing facilities in Europe, North America, and India. We have been operating in the Middle East for over two decades and have a robust presence in the UAE, featuring comprehensive sales and after-sales operations. Known for its customer-first philosophy, ELGi offers cutting-edge, sustainable compressed air systems that enhance productivity while reducing operational costs.

With a portfolio of over 400 products, including oil-lubricated and oil-free rotary screw, centrifugal, and reciprocating compressors, ELGi supports a wide range of industries, such as manufacturing, food and beverage, construction, pharmaceuticals, and textiles. These high-performance solutions provide energy-efficient compressed air across diverse applications.

Leading the Way with Advanced Technology

In its ongoing commitment to environmental sustainability, ELGi continues to innovate with solutions that significantly reduce carbon emissions:

- Future-ready compressors: ELGi's compressors featuring tier 3 and tier 4 engines reduce emissions by up to 90%. These are available globally.
- Portable electric compressors: A pioneer in the industry, ELGi offers portable electric compressors as a cleaner alternative to traditional diesel-powered models, ideal for eco-conscious operations where power is accessible.

> *Known for its customer-first philosophy, ELGi offers cutting-edge, sustainable compressed air systems that enhance productivity while reducing operational costs.*

- Tier 2 engine compressors: Select ELGi models with tier 2 engines cut emissions by 50% compared to older tier 1 engines.

ELGi's sustainable compressed air solutions are making a tangible impact. For example, a major shipping company that previously used diesel compressors for sandblasting generated massive CO2 emissions. After switching to ELGi's portable electric compressors, the company drastically reduced its carbon footprint, underscoring ELGi's commitment to eco-friendly innovation.

This year at ADIPEC, we look forward to meeting new customers and showcasing how ELGi's solutions drive a greener, more sustainable future.

ELGi's compressors featuring tier 3 and tier 4 engines reduce emissions by up to 90%. Its portable electric compressors offer a cleaner alternative to traditional diesel-powered models and are ideal for eco-conscious operations where power is accessible.

ELLIS I STAND: **8556** I HALL: **8**

LEADING THE WAY IN SUSTAINABLE CABLE MANAGEMENT SOLUTIONS

Ellis supports global industries in their pursuit of decarbonisation

Ellis is a pioneering UK-based company recognised as the first to achieve an Environmental Product Declaration (EPD) for stainless steel cable cleats. Specialising in the design and manufacture of cable cleats, hangers, and bespoke cable management solutions, Ellis is dedicated to supporting global industries in their pursuit of decarbonisation. The EPD certification highlights Ellis's commitment to transparency and environmental responsibility, providing verified data on the environmental impact of its products, including factors like global warming potential (GWP), ozone depletion potential (ODP), and abiotic resource depletion.

Having an EPD allows Ellis to offer customers clear, comparable information about the environmental performance of their products, helping clients make informed decisions that align with their sustainability goals. Ellis is the first stainless steel cable cleat manufacturer in the world to provide this verified documentation of the Life Cycle Analysis required to calculate the EPD. This will be invaluable, particularly for its EU customers, when calculating their Cross Border Accounting Mechanisms.

To further strengthen its sustainability initiatives, Ellis recently appointed Sonia Villalobos as Environmental Engineer. In her role, Sonia will be instrumental in monitoring and reducing the company's environmental impact, with a clear goal of achieving net zero carbon emissions. Her expertise will drive initiatives that enhance the sustainability of Ellis' operations and product offerings, including the development of greener materials, process optimisations, and a deeper integration of environmental considerations across the business. This addition to the team underscores Ellis Patents' commitment to proactive environmental stewardship.

By integrating sustainable materials and design practices, Ellis not only reduces the environmental impact of its products but also extends the lifespan and reduces maintenance needs of cable installations, contributing to a lower overall carbon footprint for its clients.

As Ellis Patents looks forward to ADIPEC 2024, with a focus on exploring new partnerships and showcasing their innovative solutions, Ellis aims to highlight the role of transparent environmental impact data in driving sustainable decisions. The company views ADIPEC as an opportunity to collaborate with stakeholders, share knowledge, and collectively push the industry towards a greener future through cutting-edge, eco-conscious cable management solutions.

ELMSS I STAND: **8731** I HALL: **8**

THE KEY TO DECARBONISATION

Recognising the increasing demand for electric process heaters, ELMESS share their remarkable solutions

Decarbonisation of the process industry, towards a carbon-free world, is one of the biggest challenges of our time. How to get there? Electrification by using regenerative energy, as well as improving the efficiency to reduce energy consumption, are the key to decarbonisation.

As 80 to 90% of process heat is still based on fossil fuels such as gas or oil, there is a huge potential for decarbonisation of process energy.

Looking at process heat, electric heaters are an important part of the solution. As 80 to 90% of process heat is still based on fossil fuels such as gas or oil, there is a huge potential for decarbonisation of process energy, using electric heaters with 'green' electricity from renewable sources.

ELMESS-Thermosystemtechnik from Germany are specialists for electrical heaters and heating systems for process applications. With close to 80 years of experience, we offer individual solutions for all heating requirements. We offer heaters all media, gas, liquids or compact bodies, for safe area or Ex hazardous areas (ATEX, IECEx).

The advantages of electric heaters, simple installation, low maintenance and high safety standards, have been known for many years. With a power and temperature control, optimised for the process, very efficient use of energy can be realised.

Our multiple long-term customers in the fields of chemical and petrochemical industries, oil & gas industries, industrial gases technologies and many other branches, have successfully been operating electric heaters for many years. Among our long-term key customers are companies Linde, Siemens, Atlas Copco, Solar Turbines, GE, Baker Hughes, BASF, Bayer, DOW and many more.

In the past, electric process heaters used to be niche products. They were used for start-up process, or where no other source of heat is available. Now, with increasing requests of decarbonisation of process energy, electric heaters will be required more and more in other branches.

EMPHOR I STAND: **14370** I HALL: **14**

CONTRIBUTING TO A GREENER, SUSTAINABLE FUTURE FOR ALL

EMPHOR is helping energy companies cut emissions and improve efficiencies

EMPHOR is as a leader in providing industrial solutions, focusing on process automation, instrumentation and control, and analyser system integration. Catering to critical sectors such as oil and gas, petrochemicals, LNG, gas distribution, and power, EMPHOR is dedicated to improving operational efficiency while actively reducing harmful emissions.

With a robust portfolio that includes flow metering solutions and gas analyser systems, EMPHOR supports industries like gas processing plants, refineries, and petrochemical facilities in streamlining their hydrocarbon production processes. These advanced solutions play a pivotal role in reducing emissions and aiding industries in their decarbonisation efforts. By integrating advanced flow metering and gas analysis technologies, EMPHOR enables companies to optimise their operations, minimising environmental impact while promoting sustainability.

EMPHOR's solutions have demonstrated significant success in helping the industry achieve decarbonisation goals. For instance, in the oil and gas sector, the company's flow metering systems are essential in measuring CO2 during the carbon capture and storage process. This measurement ensures that captured emissions are effectively utilised or securely stored, contributing to the industry's effort to reduce its carbon footprint.

In the renewable energy sector, EMPHOR's advanced metering skids are designed to measure hydrogen concentrations within natural gas pipelines. This supports the shift towards hydrogen as a clean energy source, facilitating the transition to more sustainable energy solutions.

In addition to oil, gas, and renewable energy, EMPHOR's gas analyser systems provide real-time data that enhances production processes, leading to emission reductions. The company's high-performance sensor solutions are also key in the maritime industry, where they measure emissions from a variety of fuels, including hydrocarbons, ammonia, biofuels, and methanol. This helps companies meet international regulations and supports the industry's move towards carbon neutrality.

At ADIPEC 2024, EMPHOR is eager to showcase its innovations, including advanced flow metering systems, gas analyser systems, and continuous emission monitoring solutions. These technologies are crucial in pushing forward decarbonisation goals of companies. EMPHOR anticipates forming partnerships, exploring cutting-edge technologies, and uncovering opportunities to reduce carbon emissions.

EMPHOR is committed to pioneering sustainable solutions. By helping industries achieve their net-zero targets, EMPHOR continues to contribute to a greener, more sustainable future for all.

EMSTEEL I STAND: **5352** I HALL: **5**

A GLOBAL LEADER IN LOW-CARBON STEEL PRODUCTION

EMSTEEL: The UAE's largest steel and building materials manufacturer is a one-stop shop for sustainability

Previously known as Emirates Steel Arkan, EMSTEEL is a public joint stock company (ADX: EMSTEEL) and the UAE's largest steel and building materials manufacturer, leveraging cutting-edge technologies to supply both the local market and over 70 international markets with high-quality, low-carbon products, creating a one-stop shop for sustainable manufacturing and construction sectors.

The Group is a global leader in low-carbon steel production and is aligned with the UAE's Net Zero by 2050 Strategic Initiative. EMSTEEL is the first steel company in the world to capture its Carbon Dioxide (CO2) emissions. Additionally, in collaboration with Masdar, the Group announced the first green hydrogen steel pilot project in the MENA region in 2023, further cementing its leadership in sustainable innovation.

The Group is building the foundations for a new low-carbon emission iron hub, the Eco-Iron Project, a ferrous raw material production facility in Abu Dhabi that would become an integral part of a global low-carbon emission iron supply chain. Associated MoUs have been signed with Abu Dhabi Department of Economic Development, Abu Dhabi Ports Group, Itochu Corporation, and JFE Steel.

EMSTEEL was recognised as a 2024 Steel Sustainability Champion by the World Steel Association (worldsteel). This prestigious accolade, now in its seventh year, celebrates companies showcasing exemplary commitment to pioneering efforts in decarbonising steel production within the global industry.

EMSTEEL won the Sustainable Manufacturer Award from the Ministry of Industry and Advanced Technology (MoIAT) and was selected by the World Economic Forum (WEF) as one of the five steel producers globally taking tangible action to decarbonise the steel value chain.

The Group's contributions to decarbonisation in the UAE's industrial sector were also recognised at the Make it in the Emirates Awards 2024, with the prestigious Best Sustainable Manufacturing Award.

EMSTEEL's commitment to low-carbon innovation is reflected in its products - The sustainable ES600 high-strength steel rebar redefines sustainability and efficiency with 18-24% reduced steel consumption. The incorporation of ES600 within two prominent projects in Dubai, Al Habtoor Group's 'Al Habtoor Tower' and SOBHA Realty's 'SOBHA Crest,' signifies a momentous stride towards the realisation of sustainable construction methodologies in one of the world's most thriving real estate markets. The rebar's superior characteristics, reduced carbon footprint, and innovative design, position ES600 as the preferred choice for low-carbon construction endeavours for the industry, supporting efforts to reduce emissions and contribute to a greener tomorrow.

ENERGY ROBOTICS | STAND: **14459** | HALL: **14**

DRIVING DECARBONISATION THROUGH AUTONOMOUS ROBOTICS SOLUTIONS

Energy Robotics' software platforms allow remote inspection and monitoring of industrial facilities

Energy Robotics provides software platforms that enable asset owners to efficiently manage fleets of autonomous robots and drones. These solutions are designed for the inspection and monitoring of industrial facilities, reducing the need for human operators to travel to remote sites, and thereby supporting global decarbonisation efforts.

Supporting Sustainable Development Goals

Energy Robotics aligns its efforts with five key Sustainable Development Goals (SDGs): Climate Action, Affordable and Clean Energy, Good Health and Well-being, Decent Work and Economic Growth, and Industry, Innovation, and Infrastructure. Through its autonomous inspection technology, the company has significantly reduced the need for thousands of kilometres of operator commutes, allowing workers to monitor facilities remotely. The company is also collaborating on the innovative Eurostars-funded Gas Leak Robotics Detection (GLAD) project, which aims to develop a novel solution for early detection of harmful gases through sound mapping.

Decarbonisation Success Stories

Energy Robotics' solutions are helping various industry players achieve their decarbonisation goals. For instance, robots equipped with advanced sensors conduct multiple daily inspections to detect methane, a greenhouse gas with a warming potential 80 times greater than CO2. By pinpointing leaks early, the robots help reduce the environmental impact of harmful gas emissions.

Through its autonomous inspection technology, the company has significantly reduced the need for thousands of kilometres of operator commutes, allowing workers to monitor facilities remotely.

Energy Robotics' solutions have also helped companies detect a gas leak at a customer's site that had gone unnoticed by stationary sensors. In another incident, a major oil and gas company utilised a drone operated through Energy Robotics' platform to detect an oil leak on top of a tank.

Since March 2024, a customer has shifted two facilities to a 'Rounds by Exception' mode. This means that instead of human operators conducting three daily inspections, robots perform these tasks, significantly reducing the need for commuting to and from the sites.

The company's solutions are also helpful in remote electrical substations, where robots regularly monitor for leaks of SF6 gas. SF6 has a global warming potential 23,500 times greater than CO2, making immediate leak detection critical.

At ADIPEC, Energy Robotics is excited to engage in discussions about policies and business strategies that will accelerate the adoption of technology for a greener energy ecosystem.

ENDRESS+HAUSER | STAND: **14433** | HALL: **14**

PORTFOLIO OF HIGH-PERFORMING MEASUREMENT EQUIPMENT

Endress+Hauser ensure safe operation with optimal performance in their challenge to combat climate change

Climate change, driven by greenhouse gas emissions, is an urgent global challenge requiring immediate decarbonisation across all business sectors. In the transition towards a net-zero economy, hydrogen as an energy carrier and carbon capture, utilisation, and storage (CCUS) technologies are emerging as promising options in reducing emissions in the oil and gas industry. However, hydrogen and CO2 pose challenges in transport, storage, and use, necessitating expert consultation for accurate and reliable measurement.

Reliable measurement instrumentation is essential throughout the hydrogen value chain, from production to end use. Coriolis metres ensure precise measurement of hydrogen transfers, guaranteeing fair transactions and accountability. Laser-based hydrogen quality measurement is crucial for maintaining compliance with quality standards. Endress+Hauser offers best-fit instrumentation and solutions across this value chain. Our portfolio ensures safe operation with optimal performance while complying with regulatory and environmental standards, supported by traceability and documentation.

For CO2, it must be captured, transported, and stored in underground facilities or used for Enhanced Oil Recovery (EOR) and other industrial purposes. The CCUS value chain demands the highest levels of measurement accuracy, reliability, and real-time monitoring, especially under harsh conditions and evolving regulatory standards. Partnering with an experienced company becomes imperative to achieve sustainability goals in this dynamic environment.

Endress+Hauser provide a comprehensive portfolio of high-performing measurement equipment, ensuring accurate and reliable measurement of quality, quantity, and composition. Our state-of-the-art communication protocols enable seamless integration across all measurement points. Additionally, our Heartbeat Technology health monitoring facilitates maintenance-free operation. Our extensive process and application knowledge, along with our tailored products for the hydrogen and CCUS market segments, positions us as a valuable partner. We have successfully executed CO2 metering projects in the Middle East, capturing CO2 from industrial facilities, ensuring regulatory compliance, and meeting quantity and quality measurement standards.

Achieving industrial decarbonisation requires global leadership, coordination, and significant investments in innovative, clean, and emerging technologies. ADIPEC facilitates this in terms of engagement, collaboration, and coordination with the relevant industry stakeholders, at a global scale, advancing the topic of decarbonisation. Endress+Hauser is committed to play an active part in this arena.

ERM I STAND: **8450** I HALL: **8**

SETTING STRATEGIES TO REDUCE EMISSIONS

Global sustainability consultancy ERM, unlocks commercial and digital opportunities to advance decarbonisation

ERM partners with the world's leading organisations to create innovative solutions to sustainability challenges. Meeting the needs of today while preserving opportunity for future generations, ERM has advised on several thousand decarbonisation projects and can provide insights, learnings and experience from this extensive strategy and implementation work important in advancing decarbonisation.

Digitalisation is a crucial element to ensure our capability can be accessed by an increasing stakeholder group. Codifying our expert knowledge requires the latest in digital capability and ERM are committed to developing digital solutions and products as a core part of our offering.

ERM drives profitable commercial outcomes through practical, deliverable strategy and on-the-ground project execution with deep low carbon technology understanding built on 50 years of experience in sustainability consulting.

While every oil and gas company's decarbonisation journey is unique, the current landscape requires risk management and provides opportunities for value creation. The journey starts with setting ambitious strategy, then delivering on performance at the asset level, creating value through diversification and transition to low carbon products, new technological strategy and creating ongoing and compelling disclosures. Enabling success along the journey entails building organisation awareness, evolving staff mindsets, expanding data systems and utilising Artificial Intelligence.

In relation to ERM technology, emissions.AI helps our clients discover actionable insights for energy and emissions efficiency in complex facilities. Artificial intelligence prompts teams with options to accelerate decision making and drive optimisation. Customers are using the digital twin to identify where existing standard operating procedures can be refined to deliver the same outcome, but with less energy and emissions consequences.

As ERM now has a base in Abu Dhabi, we are looking forward to exploring joint ventures in sustainable technology deployment. Decarbonisation requires collaboration across the industry, and we are interested in seeing new partnerships between traditional energy companies, technology providers, and governments that focus on decarbonisation initiatives.

ESGIAN I STAND: **9116** I HALL: **9**

A GAME CHANGER FOR DECARBONISATION IN OFFSHORE DRILLING

ESGIAN is excited to showcase Greenpact Live at ADIPEC 2004. An innovative digital platform designed to drive progress toward a low-carbon future

ESGIAN is committed to driving the transition towards a low-carbon future in the offshore energy sector through our innovative digital platform,

Greenpact Live. This solution optimises energy consumption and significantly reduces emissions, equipping offshore operators with the tools to meet their decarbonisation goals.

Greenpact Live utilises smart sensors installed in offshore rig switchboards to measure the energy consumption of individual equipment. The data is transmitted via satellite to onshore cloud storage, where it is processed and analysed in real-time using advanced analytics and machine learning. By integrating power consumption with operational reports, our platform identifies inefficiencies and recommends actionable adjustments.

These insights lead to immediate energy savings and emissions reductions, delivering both economic and environmental benefits.

Proven Decarbonisation Success: Real-World Examples

A notable deployment is on a Keppel Fels B jack-up rig. With a basic setup, the software has been operational for one year, producing significant results:

- Fuel savings: 127 MT
- CO2e savings: 414 MT
- Engine running hours reduced: 751 hours

These reductions demonstrate how Greenpact Live aids companies in cutting emissions and energy use, even with an entry-level configuration. Additionally, the gathered data prepares companies for the implementation of emission reduction systems tailored to specific rig types and activities.

Beyond operational enhancements, our platform fosters a culture of energy efficiency among employees, raising awareness and driving behavioural changes. The system also provides a common communication platform for stakeholders, enabling better collaboration between drilling contractors and operators on emission reduction planning and investments.

ADIPEC 2024: A Hub for Decarbonisation Innovation

As we prepare for ADIPEC 2024, we look forward to connecting with industry leaders and showcasing how Greenpact Live is advancing the low-carbon agenda. We believe our platform is pivotal in empowering companies to optimise energy use and implement net zero strategies, contributing to a sustainable, high-growth future.

EURO GAS SYSTEMS
STAND: **11530** I HALL: **11**

INNOVATIVE SOLUTIONS FOR REDUCING FLARING IN THE OIL AND GAS INDUSTRY

EGS is committed to helping their clients navigate the evolving landscape of the energy industry

At EGS we use gas engine-powered compressors and generator packages that are specifically designed to support the harsh and demanding conditions of oilfield environments. These specialised engines provide a reliable solution without requiring additional processing equipment, which optimises energy consumption and minimises the overall footprint of operations. By streamlining equipment needs, EGS not only enhances operational efficiency but also contributes to a more sustainable approach to resource management.

Our commitment to environmental responsibility is further demonstrated through the incorporation of cutting-edge technologies for exhaust emissions treatment. These advanced technologies ensure that our solutions remain environmentally friendly, meeting and often exceeding regulatory requirements. By integrating the latest emissions control systems, we help our clients minimise their impact on the environment, contributing to global efforts to reduce gas emissions and combat climate change.

For the past five years, EGS has partnered with Expro in Algeria to provide state-of-the-art compression solutions aimed at reducing flaring. This collaboration has brought impressive results. Sonatrach, the Algerian national oil company, has achieved significant reductions in flaring, turning a previously wasted resource into a valuable asset. This success story highlights the effectiveness of our solutions and the tangible benefits they deliver, both in terms of environmental impact and economic value.

At EGS, we are constantly striving to better understand the unique challenges faced by operators in the oil and gas sector. This understanding allows us to anticipate their needs and proactively integrate necessary technological advancements to help achieve their objectives. We are also keen on exploring new and innovative solutions that can be incorporated into our existing packages to further enhance our support for decarbonisation efforts. By continuously innovating and adapting, EGS remains committed to helping our clients navigate the evolving landscape of the energy industry and meet their sustainability goals.

EVIDENT I STAND: **1130** I HALL: **1**

A CRUCIAL ROLE IN DECARBONISATION

Using cutting-edge technologies, Evident helps its customers on their journey to sustainability

Evident plays a crucial role in advancing decarbonisation efforts across various industries with its cutting-edge non-destructive testing (NDT) technologies, including ultrasonic (UT) and eddy current testing (ECT) instrumentation, remote visual inspection (RVI) devices, and X-ray fluorescence handheld analysers.

By enhancing operational efficiency and safety, Evident's innovations significantly reduce environmental impact. Tools such as the OmniScan™ X3, EPOCH™ 650, and NORTEC™ 600 flaw detectors,

39DLP™ thickness gauges, IPLEX™ video borescopes, and Vanta™ XRF analysers are indispensable in sectors such as renewable energy, oil and gas, nuclear, aerospace, and rail. They are vital for inspecting and maintaining infrastructure, helping to ensure the integrity and longevity of equipment, and ultimately lowering their carbon footprints.

For example, OmniScan X3 phased array (PA) and EPOCH 650 ultrasonic (UT) flaw detectors are used to inspect wind turbine blades and nuclear power plant components, enhancing energy production efficiency while minimising downtime. In oil and gas, PA/UT devices detect pipeline corrosion and defects, reducing the risk of leaks, environmental contamination, and energy waste.

In manufacturing, Evident's Vanta™ X-ray fluorescence (XRF) handheld analysers and Vanta iX in-line analysers contribute to decarbonisation by enabling manufacturers to control the composition and quality of new material to make them lighter, more robust, and more energy-efficient. This can include fuel cells for the electric vehicle (EV) mobility industry or components for power plants.

Vanta analysers are also used to enhance recycling processes by identifying metal grades in scrap and valuable elements in Li-ion batteries, minimising the greenhouse gas emissions associated with manufacturing and mining critical elements.

Through its various technologies, Evident helps its customers transition to more sustainable operations, improving energy efficiency and contributing to decarbonisation goals across several industries, including wind, solar, nuclear, and automotive.

EXPRO I STAND: **14170** I HALL: **14**

DRIVING SUSTAINABLE CHANGE IN THE TRANSFORMING REGION

Expro showcase their carbon management and production lifecycle solutions to enhance the efficiency and safety of CCUS and emissions management projects

Expro, a global leader in the energy sector, has been driving decarbonisation efforts for over two decades. Our mission is to support industries in achieving net-zero goals by providing innovative and reliable solutions for emissions management and carbon storage. With extensive experience, advanced technological and engineering capabilities, we play a crucial role in enabling effective decarbonisation.

In the Middle East region, our commitment to emissions management is evident through a successful initiative to reduce natural gas flaring, a major source of greenhouse gas emissions. Faced with unreliable and uneconomical solutions, our customers required a more effective approach. In one notable project, Expro conducted a detailed study and implemented gas-to-power compressors at 10 sites. Within 32 weeks, we delivered, installed, and commissioned the engineered solution, significantly reducing flaring and optimising production. This fast-tracked solution not only helped the client meet export commitments and extend the life of the field, but also cut operational costs (OPEX) and reduced greenhouse gas emissions by up to 10,000 tons of CO2e per day across the sites. To date, we have successfully implemented similar solutions across nearly 30 sites in the MENA region and are actively supporting our customers on additional initiatives.

With extensive experience, advanced technological and engineering capabilities, we play a crucial role in enabling effective decarbonisation

The Northern Lights Carbon Capture and storage project in the Norwegian North Sea, is another prime example of our impact. In 2020, Expro delivered integrated well testing services, including surface well testing, fluid sampling and analysis, drill stem testing (DST), tubing conveyed perforations (TCP) and subsea well access. Our seamless project management and cutting-edge technologies ensured the project's success, providing vital data that influenced the field development plan and final investment decision. This project highlights our expertise in delivering precise and reliable solutions, particularly in appraising CO2 storage reservoirs.

FINEOTEX CHEMICAL LTD | STAND: **13775** | HALL: **13**

SUPPORTING DECARBONISATION

Fineotex Chemical Ltd is a leading manufacturer of specialty chemicals with a robust focus on sustainability and environmental responsibility

Company Overview and Decarbonisation Initiatives

Fineotex Chemical Ltd has an extensive product portfolio. As an ISO-certified, publicly listed company with global operations, we are committed to reducing our environmental footprint and supporting decarbonisation.

Decarbonisation Initiatives

1. **Product Safety and Sustainability:** Our products are designed to be free from harmful substances, ensuring they have a minimal impact on the environment. This commitment aligns with our goal to promote sustainability and reduce the overall carbon footprint of our operations and those of our clients.
2. **Water Management:** We adhere to CETP guidelines for wastewater discharge and use advanced treatment technologies to manage water resources efficiently. Our practices include reusing treated water and reducing freshwater dependency, which contributes to lower carbon emissions and supports sustainable water use.
3. **Energy Efficiency:** Fineotex has made significant strides in energy conservation by installing solar panels at our facilities. This initiative reduces our reliance on non-renewable energy sources, cuts greenhouse gas emissions, and supports our transition to a low-carbon economy.

Examples of Decarbonisation Success

Our solutions have been instrumental in helping industry players achieve their decarbonisation goals. For instance, our advanced water treatment chemicals have enabled clients to minimise wastewater generation and enhance recycling processes, leading to significant reductions in their overall carbon footprint. Additionally, our energy-efficient products have helped companies optimise their operations and lower energy consumption, further supporting their decarbonisation strategies.

Expectations at ADIPEC

At ADIPEC this year, we are looking forward to exploring new innovations and technologies that can further enhance our decarbonisation efforts. We are particularly interested in advancements in renewable energy, energy-efficient solutions, and sustainable practices that can complement our existing initiatives. Engaging with industry leaders and stakeholders will also provide valuable insights into collaborative opportunities for advancing decarbonisation goals.

FRONIUS I STAND: **14316** I HALL: **14**

FOCUSING ON CARBON FOOTPRINT FOR MORE SUSTAINABLE WELDING

Fronius is taking a revolutionary step in terms of sustainability and its use of resources by carrying out a certified life cycle assessment (LCA) for welding applications

Taking a holistic view of welding, from device manufacturing through customer use to end of life, yields insights into the key areas where we can reduce the carbon footprint. As pioneers in the industry, Fronius are looking to address these areas in cooperation with our customers.

Welding creates long-lasting bonds between metals. But how can we make this process one that will last by enhancing its sustainability in the customer's application? For our customers, in addition to cost effectiveness, the carbon footprint of their production processes and components is becoming more and more important. That's why we want to create added value by helping companies to reduce their consumption of resources during welding.

Facts Over Feelings

The discussion around sustainability is emotionally charged, but our approach to sustainability centres on the evidence. We start by bringing facts to the table and then choosing a framework that allows the results to be presented clearly. We translate the CO2 proportion of the relevant parameters over to 1 metre of weld, because it quickly shows us where our starting point should be.

The Biggest Lever: Resource-Efficient Use

In the life cycle of a Fronius TPS/i welding system, only around 0.5% of the total CO2 equivalents comes down to the production, repair, and disposal of the welding machine. The rest is split between the filler metal, the shielding gas, and the energy consumed, which highlights the importance of making efficient use of these resources.

Economic Benefits = Environmental Benefits

Fronius wants to work together with its customers to tackle areas where CO2 can be reduced. High welding quality plays a central role here in ensuring the materials are used as efficiently as possible, or in other words by avoiding wasting resources with rejects or rework. Reproducible, high-quality welded joints protect both the bottom line and the environment.

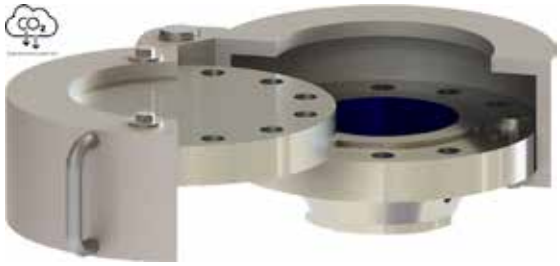
The experts at Fronius can provide targeted support to help customers identify carbon savings potential in production, for example by using the OPT/i Gas digital gas controller or the WeldCube Premium monitoring and analysis tool.

FULGOSI SRL I STAND: **1160** I HALL: **1**

A DEDICATION TO INNOVATION

A trusted partner in the Oil & Gas and petrochemical industries since 1974, Fulgosi S.r.l. specialises in high-performance products designed to meet the most stringent international standards

The core offerings at Fulgosi S.r.l. include Quick Opening Closures (QOCs), Pig Traps, and other essential pressure vessel components, all engineered to withstand severe service conditions while ensuring maximum safety and efficiency. Our dedication to innovation extends to supporting decarbonisation, where we offer solutions that significantly reduce the environmental impact of industrial operations.



Innovative Solutions for Decarbonisation

One of our flagship products contributing to decarbonisation efforts is the Fulg-O Blind, a cutting-edge Quick Opening Closure system. The implementation of Fulg-O-Blind results in significant time and cost savings, as evidenced by the reduction in the number of operators needed from 'multiple' to one, and the operation time from 30 minutes to just one minute. Additionally, it eliminates the need for power supply, special tools, spare seals, and stud/bolts, thus reducing operational and environmental costs. Safety is greatly enhanced with the system's built-in safety bleeder and active lock features, preventing operation under pressure. This system is already in operation on a gas pipeline in Serbia (South Stream Lite pipeline), where it has proven its ability to enhance safety and environmental protection. By eliminating the need for external power and reducing human intervention, the Fulg-O Blind not only minimises carbon emissions, but also ensures operational safety and efficiency.

> *One of our flagship products contributing to decarbonisation efforts is the Fulg-O Blind, a cutting-edge Quick Opening Closure system.*

Anticipating ADIPEC 2024

At ADIPEC 2024, we look forward to showcasing our innovative decarbonisation solutions and engaging with industry leaders to further discuss how our technologies can support their sustainability goals. The event provides a valuable platform for us to demonstrate the real-world impact of our products, like the Fulg-O Blind, and to explore new opportunities for collaboration. We are excited about the potential to contribute to the global transition towards a more sustainable and low-carbon future.

Fulgosi S.r.l. remains committed to developing advanced solutions that not only meet the needs of today's industry but also pave the way for a greener tomorrow.

FUTUREMAIN CO. I STAND: **7210-8** I HALL: **7**

THE ROLE OF SMART SOLUTIONS

FutureMain Co: Realising factory decarbonisation through AI and predictive maintenance

Artificial Intelligence (AI) and predictive maintenance technologies are playing a pivotal role in the decarbonisation of factories. The advent of smart solutions now allows us to analyse real-time equipment data, predict the condition and potential faults of machinery, and perform optimal maintenance accordingly. These technological advancements go beyond merely enhancing machinery reliability—they also offer significant benefits in improving energy efficiency and conserving resources.

The recently acclaimed ExRBM predictive maintenance solution offers advanced capabilities by automatically diagnosing equipment and machinery conditions and identifying faults using cutting-edge AI technology and big data—without the need for complex frequency analysis. This smart functionality enables factories to proactively address potential issues before they escalate into serious problems, ensuring greater reliability and efficiency in equipment management.

How AI-Powered Predictive Maintenance Solutions Contribute to Decarbonisation.

Energy Consumption Reduction
When factory equipment operates in optimal conditions, unnecessary energy consumption can be significantly reduced. The ExRBM solution identifies when machinery can function most efficiently and helps maintain that state. For instance, it prevents key equipment like motors and pumps from wasting energy due to overload or overheating. This improves the overall energy efficiency of the factory, ultimately contributing to the reduction of carbon emissions.

Preventing Unplanned Production Downtime
Equipment failures in factories can lead to production line stoppages, resulting in wasted energy and resources. By preventing such unexpected failures, the ExRBM solution enhances the efficiency of production processes and plays a key role in reducing unnecessary carbon emissions. This leads to more stable factory operations and overall productivity improvements.

Data-Driven Decision Support and Sustainable Factory Operations
The ExRBM solution provides real-time analysis of large datasets, enabling companies to make more accurate decisions. It identifies areas where energy consumption can be reduced and offers specific recommendations for improvement. For example, if certain equipment or processes are consuming excessive amounts of energy, ExRBM can quickly detect and address the issue.

In conclusion, AI and predictive maintenance technologies are essential for realising decarbonisation in factories. These technologies are becoming critical tools for increasing sustainability in factory operations and are guiding the future direction of the manufacturing industry. The adoption of advanced solutions like ExRBM is becoming a vital component for companies striving to achieve sustainable growth and decarbonisation goals.

GHGSAT I STAND: **12336** I HALL: **12**

SATELLITE DATA DRIVES INDUSTRY DECARBONISATION

A global leader in satellite-based emissions monitoring, GHGSat is transforming how industries track and reduce greenhouse gas emissions

By leveraging cutting-edge satellite technology, GHGSat offers accurate visibility into methane and carbon dioxide emissions, empowering industries to make data-driven decisions that accelerate their decarbonisation journeys.

In 2023 alone, GHGSat's commercial satellite constellation delivered over three million site-level measurements, establishing it as a trusted partner for leading oil and gas companies worldwide. By accurately identifying and quantifying emissions, industries have mitigated 13 million tonnes of CO_2 equivalent.

What distinguishes GHGSat's technology is its unmatched data accuracy, rapid data delivery within hours, and comprehensive analytics platform. Beyond emissions detection, detailed analytics enable rapid ground mitigation actions, optimised operations, and improved asset management. By analysing emissions patterns, companies can pinpoint areas where process improvements can reduce waste and energy consumption. This not only helps to reduce emissions, but also improves profitability and sustainability. This data-driven approach assists in emissions reduction, and contributes to improving the bottom line, making it a vital tool for industries beyond oil and gas—including waste management, landfills, coal mining, and government sectors.

Our solutions have been instrumental in helping industry leaders, such as Aramco and Chevron, achieve their sustainability goals. Our technology has been instrumental in helping Aramco identify and monitor methane emissions from their in-Kingdom operations, demonstrating our commitment to decarbonisation

One of the most significant advantages of GHGSat's satellite monitoring is its ability to cover remote, offshore, and otherwise inaccessible areas—particularly valuable for industries like oil and gas, where traditional monitoring methods face limitations.

As the global demand for decarbonisation solutions continues to grow, GHGSat is committed to expand its capabilities and partnerships. At ADIPEC 2024, we look forward to connecting with industry leaders to discuss the latest advancements in satellite technology and explore new opportunities for collaboration. Together, we can harness the power of data to build a lower-carbon future.

GMCG I STAND: **15284** I HALL: **15**

SERVING MARITIME AND OFFSHORE OIL & GAS INDUSTRIES

GMCG are deeply committed to helping their clients adopt the best practices for sustainability

Global Maritime Consultants Group (GMCG), founded in 1988, is a globally recognised consultancy with 37 years of experience serving the maritime and offshore oil & gas industries. With 19 offices across 17 countries, GMCG offers a comprehensive range of services designed to enhance safety, efficiency, and regulatory compliance. Our core services include marine surveys, vessel inspections, compliance audits, and specialised consultancy. We are deeply committed to supporting global decarbonisation efforts by helping our clients navigate the complex landscape of environmental regulations and adopt best practices for sustainability. This includes advising on the implementation of energy-efficient technologies, optimising operational procedures to reduce emissions, and ensuring adherence to international environmental standards. Our initiatives contribute significantly to the reduction of carbon footprints across the maritime industry, reinforcing our dedication to a sustainable future.

GMCG has been instrumental in helping industry players achieve their decarbonisation goals through targeted and effective solutions. For instance, our detailed vessel inspections and compliance audits ensure that ships meet the stringent environmental regulations outlined in MARPOL Annex VI, which is critical in controlling air pollution from vessels. Additionally, we offer expert consultancy on ballast water management systems, a key factor in preventing ecological damage and maintaining marine biodiversity. Our guidance has also been crucial in assisting clients with the transition to low-sulfur fuels and the adoption of alternative energy sources, such as LNG, which significantly reduce greenhouse gas emissions. Furthermore, GMCG provides comprehensive training programs that equip maritime professionals with the knowledge and skills needed to implement sustainable practices effectively. These programs cover essential topics such as fuel optimisation, emissions reduction strategies, and best practices in sustainable shipping, all aimed at helping our clients exceed their decarbonisation targets while maintaining operational efficiency.

At ADIPEC 2024, GMCG is eager to utilise its 37 years of experience and its global network of 19 offices across 17 countries, to engage with industry leaders on the latest decarbonisation strategies. We are particularly focused on showcasing our expertise in environmental compliance, energy efficiency, and sustainable operational practices. Our goal at the event is to forge new collaborations and partnerships that will drive the decarbonisation agenda forward within the maritime and offshore industries. We are also looking forward to sharing insights from our extensive work in helping clients meet stringent environmental regulations, reduce their carbon footprints, and achieve sustainable operational goals. By demonstrating our capabilities and discussing the latest innovations in decarbonisation, we aim to reinforce our position as a leader in the industry's transition towards a more sustainable future.

GLOBAL UNDERWATER I STAND: 8450 I HALL: 8

A PIONERING APPROACH TO SUPPORTING DECARBONISATION

In their drive to decarbonise the global economy and achieve net zero ambitions, Global Underwater share their valuable insight and expertise

Work to decarbonise the UK economy has been underway for decades, with the energy sector and its associated supply chain playing a pivotal and innovative role.

As the leading trade and industry development body for the UK's underwater sectors, Global Underwater Hub supports the supply and delivery of low carbon solutions, enables collaboration across industries and encourages the internationalisation of these technologies and services.

Investment, Co-location, Electrification and CCUS

Major global investment in floating and fixed offshore wind is planned in the coming decades and UK companies have the technologies, knowledge and skills that will be needed, particularly where so much engineering and infrastructure is required below the waterline.

Competing needs from different industries in our seas means that novel approaches will be required, and co-location will be imperative to maximise opportunity. Scotland's innovative INTOG awards illustrate how floating offshore wind farms can replace diesel generators on offshore platforms, cutting emissions. While the potential for siting wave and tidal devices within offshore wind farms and sharing infrastructure is being actively explored.

Companies that make up the UK underwater supply chain have taken a pioneering approach to supporting decarbonisation, which takes many guises. Examples include:

- Powering offshore platforms with electricity from offshore wind turbines.
- Establishing the world's first wave and tidal demonstration and testing facility.
- Utilising floating solar systems to power electric AUVs for subsea inspection operations.
- Employing marine renewable energy stored in subsea batteries to power subsea tiebacks.

Aside from energy generation, decarbonisation efforts in the underwater environment include the development of all electric ROVs and remote piloting of ROVs, AUVs and USVs. All of which can reduce personnel travel, vessel idling and overall carbon emissions.

Carbon capture, utilisation and storage, either within new conventional energy developments or by utilising depleted reservoirs, allows carbon intensive industries a route to storage.

The potential of the world's oceans and seas has yet to be fully realised. Global Underwater Hub, its members and stakeholders, are well placed to assist countries around the world to harness these opportunities in the drive to decarbonise the global economy and achieve net-zero ambitions.

Global Underwater Hub will be attending ADIPEC as part of the Scotland Pavilion, organised by Scottish Development International.

GORIZIANE I STAND: **1454** I HALL: **1**

A GROUNDBREAKING SOLUTION IN PIPELINE EQUIPMENT

Goriziane's G-Fit is designed to reach higher efficiency levels in jackets fabrication

With more than 75 years of history, Goriziane E&C is a leading company in the onshore and offshore industries, specialised in providing:

- Pipeline equipment
- Turnkey plants for pipe handling solutions for multiple joints fabrication
- Systems and components for navy and commercial vessels
- Handling solutions for pipes, wire rods and coils

In recent years, as part of its commitment to a sustainable future, Goriziane E&C has extended its expertise into the offshore wind industry.

A key product driving this initiative is the G-FIT (Goriziane – Fabrication Innovation Technology). Designed to reach a higher level of efficiency in jackets fabrication, as a joining link between cutting and welding operations, its main features are:

- Leg and stub laser scanning, to allow a 'real to real' stub cutting
- One to one leg-stub alignment, the tack welding and complete welding operations are improved, no stub reworking is needed.
- With the G-FIT's scanning and alignment system, the cutting and welding activities are now under time and cost control.

G-Fit Delivers a Range of Benefits:

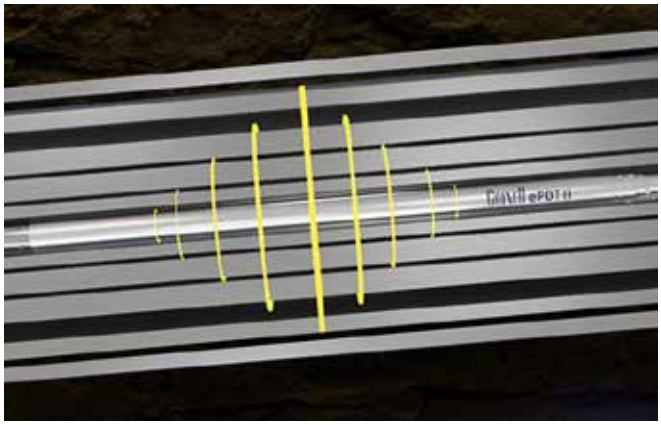
- Enhanced production
- Increased cost and time efficiency High precision and process reliability Reduced crane and lifting operations
- Improved safety
- Personnel reduction by up to 90%
- Automated and integrated processes
- Modular and portable solutions
- Zero emissions
- Real-time conformity reports
- These advantages reflect Goriziane E&C's commitment to sustainability. Our innovative solutions help industries reduce environmental impact, improve energy efficiency, and increase productivity, aligning with the global push toward greener practices.

GOWELL I STAND: **4110** I HALL: **4**

WIRELINE LOGGING SOLUTIONS

GOWell remains at the forefront of innovation, dedicated to delivering superior well integrity solutions across diverse energy markets

Global leader GOWell, offers world-class wireline logging equipment, backed by a unique integration of technology, engineering, manufacturing, maintenance, and data interpretation capabilities. This comprehensive approach ensures the delivery of high-performing solutions that enhance well integrity monitoring and diagnostics, driving efficiency and accuracy for our customers.



Continuously evolving to meet the growing demands of the upstream hydrocarbon, geothermal, and carbon storage industries, GOWell's resources include an advanced research and development centre located in Houston, complemented by state-of-the-art production facilities. Our commitment to customer success is further supported by our globally located technical support hubs providing expert training in the application of our technologies and data interpretation services for our proprietary tools.

GOWell flagship services are combinable, operable in real-time or memory modes, and provide critical diagnostics for CCUS wells. These services include innovative pipe integrity tools like the MTD and ePDT, that simultaneously measure the individual thickness of up to six pipe strings, and casing diameters to 48", unique imaging tools like the MPAC that provide hi-res metal thickness maps of two pipe strings, the DEC for through-tubing measurements of casing deformation, MFC multifinger tools for internal corrosion or deposits evaluation, and the new technology, TTCE tool for through-tubing casing cement evaluation. Other important services include leak and behind-pipe flow detection with our suite of spectral noise tools, and production or injection logging with our complete range of PL sensors.

GOWell has been providing these services in the US and Europe CCUS markets with our more established tools. Meanwhile newer tools like the TTCE and MPAC, also designed to operate in liquid or gas environments, are completing field trials and will then become an intrinsic part of our total decarbonisation portfolio.

We achieve success by delivering high-quality products and excellent service support combined with a flexible business approach. At ADIPEC, our mission is to continue to work to expand and unify our offering in a common cause and growth strategy that benefits CCUS decarbonisation operations globally, providing valuable input for risk management and cost reduction, to make these projects more viable and ultimately more successful in benefit of a greener planet.

GROUPE IPI - SAPAG VALVES
STAND: **9259** I HALL: **9**

PIONEERS IN THE DECARBONISATION OF THE OIL & GAS INDUSTRY

Since 1920, SAPAG Valves, part of Groupe IPI, has established itself as an undisputed leader in the manufacture of bespoke industrial valves

As the industry moves towards more sustainable solutions, SAPAG Valves has redoubled its efforts to embed decarbonisation at the heart of its operations and products.

SAPAG Valves' commitment to decarbonisation is reflected in the development of innovative solutions that enable its customers to reduce their carbon footprint. For example, our low-leakage valves, specially designed to minimise fugitive emissions, have enabled several major companies in the sector to significantly reduce their greenhouse gas emissions. Not only are these valves essential for complying with strict environmental regulations, but they also help to reduce the operational costs associated with product loss.

In addition, SAPAG Valves actively invests in the research and development of new technologies to improve the energy efficiency of its products. Our initiatives include the development of advanced materials that reduce the weight and increase the durability of valves, while optimising their performance in extreme environments.

At ADIPEC 2024, SAPAG Valves looks forward to new opportunities for collaboration to accelerate the transition to a more sustainable future. We look forward to sharing our innovations and collaborating with other industry players to achieve common decarbonisation goals. ADIPEC is an ideal platform for us to demonstrate how tailor-made solutions can play a crucial role in reducing emissions and the transition to cleaner energy.

GASOS I STANDS: **432** I HALL: **4**

A CLEAR VISION

With a rich heritage in the oil and gas industry, GASOS provide high quality products and services

Established in 1972, GASOS was set up as a local company with a view to serving as a focal point for providing requisite technology and services to the oil and gas sector. This position of eminence and reputation has been achieved mainly due to the vision of the Bin Hamoodah family, as well as their firm commitment to invest GASOS with the same qualities of integrity, reliability, and service, for which the family name has since long been renowned.

The main focus for GASOS at ADIPEC 2024, will be the following:

- CCSU (Carbon Capture, Storage and Utilisation)
- Sustainability
- Energy optimisation and reducing energy consumption
- Renewable energy
- Hydrogen
- Artificial Intelligence
- Digitisation
- New technologies
- New EPC contractors looking for partners
- New drill pipe manufacturers
- Develop and participate in local industries manufacturing
- Acquisitions and restructuring of companies
- Looking to attract more UAE nationals who are self-motivated, knowledgeable, experienced, team-oriented, energetic, and young individuals with Oil & Gas experience to apply for our company.
- Looking out for consultants who can navigate us to achieving higher ICV score

Below are companies that are under the GASOS umbrella who share the same vision and provide high quality products/services.

WESCO is a fully integrated mechanical workshop, capable of reverse engineering, rotating machinery repair, stress relieve and rewinding of motors, complete service and overhauling of turbines, compressors, pumps, valves, pipes, motors and reverse osmosis system.

United Metal Works, is a 100% local manufacturing facility, and pioneers in fabrication and installation of steel structural works, tanks, bollards, hoppers, choke manifolds, production manifold, pressure vessels, process equipment, surge tanks, separators, cement silos, batch mixers, and sentinels.

GCA are agents for the full spectrum of valves, actuators, fittings, flanges, insulating joints, systems for measuring, filtering, and regulating fluids and gases, and fire prevention systems.

GREENE TWEED | STAND: **8635** | HALL: **8**

A CORPORATE INITIATIVE TO SUPPORT RENEWABLE ENERGY AND DECARBONISATION

Greene Tweed's portfolio extends to sealing systems for downhole safety valve applications

In 2023, Greene Tweed established a corporate initiative around renewable energy as well as decarbonisation efforts. Internally, we have enrolled in carbon disclosure programs and have begun setting plans to reduce our own carbon footprint. Related to our product offering, we provide non-metallic components to various types of equipment within the hydrogen and CCUS space.

Greene Tweed sealing systems have been recently qualified in downhole safety valve applications used for carbon storage. The requirements for these types of applications involve a wide range of temperature and pressure exposure that require specialty materials which are part of the Greene Tweed portfolio. Greene Tweed is also participating in several carbon capture projects that utilise our specialty elastomer and composites portfolio in a range of compressor and valve applications.

> *Related to our product offering, we provide non-metallic components to various types of equipment within the hydrogen and CCUS space.*

Greene Tweed looks forward to exploring new partnerships that may value our extensive portfolio of materials. We are also looking for guidance to ensure we are well positioned to support the broader industries' decarbonisation efforts.

HEXAGON | STAND: **14530** | HALL: **14**

DIGITAL INNOVATIONS FOR A GREENER TOMORROW

Hexagon's data-driven insights can turn environmental stewardship into strategic advantages

Hexagon is a global leader in digital reality solutions, empowering a sustainable future by harnessing the power of data to drive decarbonisation and sustainable development. Its solutions are designed to enable sustainable development, extend asset productivity and lifespan, and reduce construction and demolition waste. By putting data to work, Hexagon helps industries transition towards a more sustainable and autonomous future.

R-evolution, Hexagon's green tech subsidiary, is accelerating the green energy transition by enhancing efficiency and optimising renewable energy production in solar, wind, green hydrogen, and desalination. It relies on Hexagon Asset Lifecycle Intelligence's cutting-edge solutions, including HxGN EAM and HxGN SDx, along with digital reality solutions such as Leica BLK and OxBlue, and advanced simulations with Cradle CFD. Additionally, R-evolution is transforming environmental conservation in oceans and forests, helping large corporations boost their impact by sponsoring Green Cubes, a novel asset class for biodiversity.

Solutions that Support Decarbonisation Goals

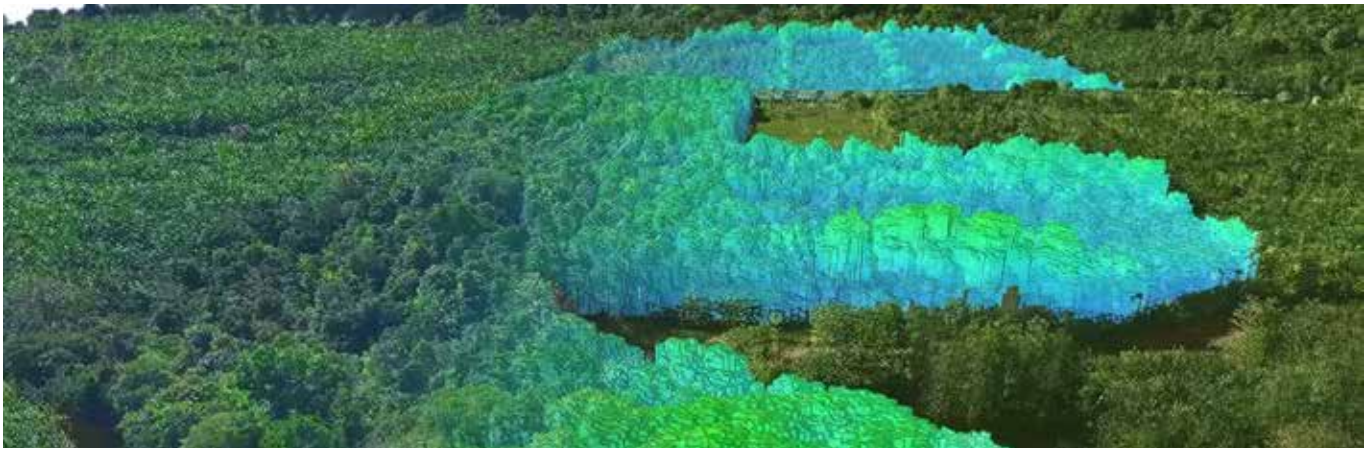
Hexagon's HxGN EAM (Enterprise Asset Management) platform is tailored to meet the unique challenges faced by energy companies, notably in the oil and gas sectors. For over three decades, HxGN EAM has been helping organisations implement advanced asset management practices, leading to safer, more compliant, and cost-effective

> *By putting data to work, Hexagon helps industries transition towards a more sustainable and autonomous future.*

A leading energy company in the Americas, for instance, leveraged HxGN EAM to build a digital-native organisation. The platform provided access to real-time information, which was crucial to achieve decarbonisation goals. Similarly, Eiffage, a global construction company, successfully connected various data sources to measure its environmental footprint, tracking metrics such as carbon emissions and fuel consumption across its equipment fleet.

ADIPEC and the Future of Decarbonisation

At ADIPEC, Hexagon is excited to showcase its digital solutions. With a strong focus on integrating energy efficiency and environmental compliance, Hexagon aims to help companies uncover hidden cost-saving opportunities while reducing energy usage and emissions. The company looks forward to engaging with industry leaders on how digital transformation and data-driven insights can turn environmental stewardship into a strategic advantage.



GWC I STAND: **15055** I HALL: **15**

PAVING THE WAY FOR A GREENER LOGISTICS FUTURE

GWC, is committed to advancing sustainable practices across its operations

As part of its environmental stewardship, GWC, Qatar's leading provider of logistics and supply chain solutions, has implemented a comprehensive decarbonisation strategy, targeting significant reductions in greenhouse gas (GHG) emissions and fostering sustainable growth within the industry.

A key element of GWC's decarbonisation efforts is the transition to Euro 5 class vehicles for its logistics fleet. These vehicles are engineered to minimise GHG emissions, contributing to cleaner air quality and reducing the company's overall carbon footprint. By adopting these advanced vehicles, GWC demonstrates its commitment to integrating environmentally friendly technologies into its logistics operations.

In addition to reducing emissions from its fleet, GWC has implemented an in-house bio-digester system to address food waste generated within its facilities. This innovative solution converts food waste into compost and fertiliser, thereby mitigating the methane emissions that would have been produced if the waste had been sent to landfill. This approach not only supports waste reduction, but also contributes to the circular economy by creating valuable by-products.

GWC's warehouses are equipped with energy-efficient technologies to further support its decarbonization goals. The installation of LED lighting, solar streetlights, and efficient HVAC systems have substantially reduced energy consumption within these facilities. Furthermore, the integration of skylights in warehouses has minimised the need for artificial lighting during daylight hours, thereby decreasing electricity usage and further reducing the company's carbon emissions.

GWC has also installed a sewage treatment plant to produce treated sewage effluent – which is used for the irrigation of vegetation and flora. This reduces the need for water which would otherwise be sourced from local desalination plants, saving significant energy from these facilities.

GWC offers logistics and supply chain solutions that are both sustainable and energy-efficient, positioning the company as a leader in green logistics. In alignment with its commitment to environmental responsibility, GWC has set ambitious emission reduction targets to be achieved by 2030. These targets are outlined in the company's Environmental, Social, and Governance (ESG) report, which reflects GWC's dedication to continuous improvement in its environmental performance.

By implementing these initiatives, GWC is not only reducing its environmental impact but also setting a benchmark for sustainability within the transport sector.

HITACHI ENERGY I STAND: **11510** I HALL: **11**

POWERING INNOVATION: A GLOBAL LEADER IN TRANSFORMERS

Hitachi Energy delivers solutions that support the decarbonisation goals of utilities, industries, and infrastructure sector

The energy sector is pivotal in advancing decarbonisation as global efforts to meet climate goals intensify. Electricity will be the backbone of the future energy system, powering everything from homes to industries. Reducing carbon emissions is essential to creating a sustainable energy future, and industries are increasingly seeking innovative solutions to lower environmental impact while ensuring energy security and efficiency.

Hitachi Energy is at the forefront of this transformation, delivering advanced technologies that enable the seamless integration of renewable energy and support decarbonisation. Our high-voltage direct current (HVDC) technology plays a key role, facilitating clean energy transmission over long distances with minimal losses. Additionally, our Grid Integration solutions modernise power systems, enhancing flexibility and ensuring renewable energy is efficiently integrated and dispatched where needed.

As a global leader in transformers, Hitachi Energy offers both liquid-filled and dry-type transformers, along with complete life-cycle support services, including replacement parts. Our portfolio helps utilities, industries, and infrastructure sectors maximise return on transformer assets by providing high reliability and optimised performance while lowering life-cycle costs and environmental impact.

Transformers play a significant role in energy efficiency, which helps reduce carbon emissions. Hitachi Energy's EconiQ™ transformers can reduce CO2 equivalent emissions by 23% over the product life cycle. Moreover, EconiQ™ transformers reduce emissions from materials and manufacturing, achieving up to a 35 percent reduction in CO2 emissions from materials usage.

Our EconiQ™ portfolio also provides eco-efficient solutions that reduce the use of sulfur hexafluoride (SF6), a potent greenhouse gas, in electrical equipment, further minimising environmental impact.

Hitachi Energy lays equal importance on digital transformation in accelerating the energy transition. By leveraging data and digital technologies to deliver actionable insights, we help our customers optimise energy systems, enhance grid resilience, and enable the large-scale integration of renewable energy sources. This holistic approach helps reduce emissions and ensures a stable and flexible energy supply for future generations.

At ADIPEC 2024, Hitachi Energy is eager to engage with customers and partners, showcasing how its solutions help industries meet climate goals and contribute to a carbon-neutral future.

HUGHES I STAND: **8430** I HALL: **8**

POWER UP!

Hughes introduce a world-first designed, Zero Power Cooler

For over 50 years, Hughes have kept workers safe. Our company was born of innovation in site safety and has been at the forefront of emergency safety shower, eye/face wash and decontamination equipment design and manufacturing ever since.

Through customer engagement and understanding, we deliver premium quality products and customised solutions to provide you with a safer working environment, greater protection against serious injury and peace of mind that you're compliant with crucial safety standards.

International standards for safety showers and eye/face wash equipment specify that water delivered by an emergency safety shower must be tepid. Tepid water is controlled within a fixed temperature range. For the ANSI standard this is stipulated as 16C to 38C (60F to 100F). In hot climates, where high ambient temperatures are common, the water within or supplied to safety showers, can easily become overheated and above the tepid range. Hughes Safety Showers provide tepid water solutions to protect the safety of the workforce in the most challenging environments.

Hughes have developed the revolutionary Hughes Zero Power Cooler® to provide a water tempering solution to sites in extremely hot climates without requiring a power supply. This product utilises the naturally occurring convection process to lower the water stored within a tank shower to a tepid range without the use of any electricity. This makes it well-suited for remote locations where installing power lines is impractical or prohibitively expensive. These units are maintenance-free after installation, allowing for a 'fit and forget' approach.

Once commissioned, the Hughes Zero Power Cooler produces no carbon emissions. Compared to traditional chiller units, switching just 1 unit saves thousands of kilograms of carbon each year. Per year, 15 traditional chiller units produce more carbon emissions than 100 return flights from London Heathrow to Dubai. On the road to becoming carbon neutral, the Hughes Zero Power Cooler makes a vast change to your carbon footprint.

Visit Hughes at ADIPEC, to learn more about the Hughes Zero Power Cooler, a world first designed to temper the water within the Hughes emergency tank shower without the need for power!

IMI CRITICAL I STAND: **8439** I HALL: **8**

A NEGLECTED OPPORTUNITY FOR DECARBONISATION?

IMI help companies achieve their climate goals by making sure opportunities do not go unmissed

For over 150 years, IMI has helped companies operate safely and sustainably. Our products are instrumental in renewable and nuclear power generation, we ensure that processes use energy efficiently, and we assist hard-to-abate industries contribute towards net-zero by optimising yields, reducing emissions and extending asset life.

Ensuring that brownfield facilities minimise their carbon footprint through incremental gains is arguably the most impactful measure that can be taken to achieve climate goals, especially in the short term.

One example is an often overlooked 'utility' in Oil, Gas and Chemical facilities. Steam production can account for over 20% of energy use and presents an immediate opportunity to reduce carbon emissions.

Steam traps operate in arduous conditions and are susceptible to failure. Surveys have found that up to 25% of steam traps in a typical facility are defective, often with no obvious indication that a trap has failed:

- Blocked traps prevent condensate from being drained effectively, reducing the efficiency of downstream processes, compromising asset life and in the worst cases, causing catastrophic failures.
- Leaking traps mean that expensively produced steam is wasted, reducing energy efficiency and creating unnecessary CO2 emissions.

Periodic inspections attempt to identify failing steam traps but are ineffective. Traps may be missed, inaccessible, or out of service during the survey, intermittent failures go undetected, and faults persist between surveys.

It's now possible to continuously monitor steam trap health, enabling prompt replacement of failed traps to reduce unnecessary CO2 emissions and ensure that processes operate as intended.

Our Steam Trap Monitoring (STM) solution is directly powered by the heat of the steam line, so requires no batteries.

The STM can be retrofitted to existing steam traps without disturbing pipework, ideal for brownfield facilities.

Temperature, acoustic and vibration data is transmitted wirelessly over a secure, long range (LoRaWAN) network to provide actionable insights into trap condition, lost steam and CO2 savings.

Small changes add up: A modest facility with just 34 steam traps recently eliminated 64 tonnes of unnecessary CO2 emissions, equivalent to planting almost 400 trees.

ICR GROUP | STAND: **6210** | HALL: **6**

SUPPORTING DECARBONISATION IN ENERGY SYSTEMS

Innovative repair solutions by ICR Group are key to reducing emissions and enhancing asset integrity in the energy sector

ICR Integrity (ICR) is a leading global provider of integrated maintenance and integrity solutions in the offshore renewables and clean energy sectors. We are committed to supporting the energy transition journeys of our clients with innovative solutions such as Technowrap™ and INSONO™. These solutions are at the forefront of our efforts, contributing to the decarbonisation of industrial operations by extending asset life and reducing waste.

Solution Focused

Technowrap™, a composite repair solution, enables the in-situ repair of pipelines, vessels, and structures without the need for disruptive and carbon-intensive replacements. Technowrap™ eliminates hot work and extends asset life, helping clients lower their emissions while maintaining operational efficiency. This sustainable repair method aligns with the industry's broader goals to decarbonise operations.

New Techniques

Complementing Technowrap™ is INSONO™, a cutting-edge non-destructive testing (NDT) technique designed for inspecting composite repairs on metallic components. Validated by the Welding Institute (TWI) and accredited by UKAS, INSONO™ provides data-driven evidence to ensure the ongoing integrity of these repairs. This enables the safe and sustainable life extension of ageing assets, helping operators avoid costly and emission-heavy replacements.

Proven Technology

ICR's products undergo life cycle assessments (LCA) to ensure that we understand and mitigate the environmental impact of our solutions throughout their life cycle. This approach underpins our dedication to reducing emissions across all stages of our operations.

Live Scope

ICR recently deployed INSONO™ for a project in Oman to inspect the integrity of a previously installed repair, preventing a full shutdown and the associated environmental impact of replacing infrastructure. This not only saved the client significant costs but also helped avoid unnecessary emissions, aligning with their decarbonisation goals.

As we look forward to ADIPEC 2024, we are excited to engage with industry leaders and showcase how ICR's technologies are driving decarbonisation. Our focus remains on developing solutions that support the transition to cleaner energy while delivering measurable results in emissions reduction and asset longevity.

> *Related to our product offering, we provide non-metallic components to various types of equipment within the hydrogen and CCUS space.*

IRE OIL & GAS FZE I STAND: **13115** I HALL: **13**

DELIVERING SOLUTIONS THAT EMPOWER CUSTOMERS TO MEET THEIR GOALS

IRE Oil & Gas FZE represent brands dedicated to delivering sustainable solutions

At IRE Oil & Gas FZE, we are committed to partnering with forward-looking companies driving the global push toward a low-carbon future. We proudly represent innovative brands such as FuelRe4m, Scotgrip, and Crocodile Products, each dedicated to delivering solutions that help industry players meet their decarbonisation targets.

FuelRe4m is a versatile solution designed to improve the quality, efficiency, and performance of fossil fuels by optimising the combustion process and reducing harmful emissions. It enhances fuel performance by cleaning and stabilising fuel, preventing deposit build-up in engines, and improving combustion efficiency. FuelRe4m reduces fuel consumption and emissions by ensuring a cleaner burn, extending engine life, and lowering maintenance costs. Tested across diverse engine types, from small two-stroke engines to the large slow-speed diesel engines found on oil tankers, it provides a tangible solution for industries aiming to reduce their carbon footprint while improving operational efficiency.

Scotgrip is committed to producing eco-friendly safety solutions for industrial environments. Their durable products, created using sustainable processes, enhance workplace safety and contribute to reduced waste and energy consumption over the product lifecycle.

Crocodile Products offers innovative bamboo matting solutions, which are more sustainable and outperform traditional wood alternatives.

> *FuelRe4m reduces fuel consumption and emissions by ensuring a cleaner burn, extending engine life, and lowering maintenance costs.*

Bamboo, as a rapidly renewable resource, provides a greener option for industrial applications while delivering superior durability and performance. This reduces the need for frequent replacements, conserves resources, and minimises environmental impact, making it ideal for companies committed to both safety and sustainability.

Our approach centres on delivering solutions that empower customers to meet their sustainability and decarbonisation objectives. We see ourselves as partners in the energy transition, offering products that support reduced emissions, increased energy efficiency, and enhanced sustainability.

At ADIPEC 2024, we are excited to engage with industry leaders who share our vision for a sustainable energy future. We look forward to showcasing our partners' innovations and exploring collaborations that prioritise decarbonisation, efficiency, and sustainable growth.

ITALVAV I STAND: **313** I HALL: **3**

DRIVING CHANGE THROUGH INNOVATIVE SOLUTIONS FOR DECARBONISATION

ITALVALV's products meet modern industry challenges whilst contributing to the future of sustainable energy

Environmental sustainability, along with other core values, has always been of paramount importance to ITALVALV. Since our inception 50 years ago, we have consistently sought solutions to reduce the environmental impact of our activities. Our latest investments include energy-efficient machinery, an expansion of solar panels, and enhanced thermal insulation. We also prioritise the research of alternative materials for valve construction, all aimed at decarbonisation and promoting sustainability.

ITALVALV plays a pivotal role in advancing technology for decarbonisation. Our products are designed for high performance and durability, featuring anti-corrosion materials, fugitive emission designs, and intelligent control systems. These characteristics enhance efficiency and contribute to a reduction in gas emissions, thereby decreasing our environmental impact. The Magnetic Driven Zero Emission Seal Gas Booster is among the products designed specifically for this purpose.

We develop cutting-edge solutions for managing fluids and gases in applications focused on reducing carbon emissions. A notable example is our Sleeve Valve for scrubbers, which effectively cleans emissions from cruise vessels.

We are dedicated to supporting the low-carbon energy sector, including LNG, hydrogen, geothermal, biogas, solar and wind plants, water and hydroelectric projects, and carbon capture technologies. Experience and innovation guide our efforts to assist industry players in achieving their decarbonisation goals.

Customers benefit from our extensive experience — especially in geothermal applications, which we have supported for decades — combined with our innovative approach. ITALVALV collaborates closely with engineers and designers to develop customised solutions that meet specific customer requirements and comply with increasingly stringent emissions regulations. This synergy enables us to tackle the challenges of modern industry proactively, turning decarbonisation into a tangible reality.

At ADIPEC 2024, we anticipate increased visibility for manufacturers committed to sustainability. As strategic partners in the pursuit of a sustainable future, we are actively contributing to the protection of our planet and fostering innovation in the energy sector. We extend our gratitude to ADIPEC 2024 for underscoring the significance of the decarbonisation process and for providing concrete solutions to help achieve decarb goals.

JEREH GROUP
STANDS: **10410 / 10430** I HALL: **10**

SUSTAINABLE ALTERNATIVES

Jereh's electric fracturing equipment leads the way in decarbonising oil and gas operations

As the energy industry strives to reduce its carbon footprint, Jereh Group is at the forefront with innovative solutions designed to help oil and gas operators achieve their decarbonisation goals. The Jereh IntelliFrac electric fracturing unit is a game-changer, offering a sustainable and efficient alternative to traditional diesel-powered equipment, thereby directly contributing to the reduction of carbon emissions in the industry.

Since its launch in 2022, Jereh has deployed over 300 IntelliFrac units globally, supporting various oil and gas projects with a focus on minimising environmental impact. The electric fracturing technology significantly reduces greenhouse gas emissions by replacing diesel engines with electric motors, which can be powered from the grid or renewable energy sources. This switch not only lowers CO2 emissions but also reduces other harmful pollutants such as NOx and particulate matter, making operations cleaner and more environmentally friendly.

In the United States, Jereh's trailer-mounted electric fracturing unit, equipped with a 7000 HP plunger pump, has been designed to meet the demanding requirements of high-discharge flow rates and continuous operations. By integrating all necessary equipment into a single truck, the IntelliFrac reduces the number of vehicles required on-site, further cutting down on carbon emissions and lowering overall logistics costs. This compact design contributes to a smaller operational footprint, enabling oil and gas companies to conduct fracturing operations with less environmental disturbance.

One of the standout features of Jereh's approach to decarbonisation is its flexibility in power sourcing. The IntelliFrac can be powered directly from the electrical grid, which increasingly includes renewable energy sources, or from Jereh's Power2Go mobile gas turbine genset. This genset can generate 33 MW of electricity, providing a reliable and lower-emission power option in remote or off-grid locations. By ensuring that fracturing operations are not solely reliant on traditional fossil fuels, Jereh enables operators to reduce their carbon emissions significantly, even in challenging environments.

By adopting electric fracturing technology, Jereh is helping oil and gas companies meet their decarbonization targets, paving the way for a cleaner, more sustainable energy landscape.

JIANGYIN YANGZI FITTING
STAND: **13316** I HALL: **13**

A TRADITIONAL MANUFACTURER WITH A MODERN PLAN FOR THE FUTURE

With a rich production heritage since 1989, Jiangyin Yangzi Fitting have made several changes to help improve the environment

With more than 35 years of service, Jiangyin Yangzi Fitting are a traditional manufacturer for the butt weld pipe fittings, especially for plate fabricated welded fittings. Our present materials have changed from carbon steel to stainless steel, duplex stainless steel, super duplex ss, Hastelloy, nickel base alloy, nickel copper, and titanium, to name a few. As a result of this change, we aim to use more efficient equipment to produce high value added and low-energy consumption products relatively.

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As a traditional fittings' manufacturer, we follow official policies and guidelines. Firstly, we gradually established a carbon reduction target, then eliminated outdated equipment, followed by an improvement in production technique and efficiency. We also upgraded to new cold moulding processing to replace the traditional hot forming process, reduced the energy consumption generated during the production process, strengthened the training of carbon emission reduction for employees - educating them to form the most basic awareness - all the way through to the periodic energy consumption report data to assess employees. Our long-term goal is to actively participate in carbon emission trading to improve our environment and help protect our planet.

At ADIPEC 2024, we are looking forward to participating more in recycling and green solutions.

JIANGSU GOLDEN GATE ENERGY & EQUIPMENT CO LTD I STAND: **13432** I HALL: **13**

COMMITTED TO QUALITY AND SAFETY IN THE ENERGY SECTOR

Jiangsu Golden Gate Energy & Equipment Co. Ltd has a strong foothold in global markets for its energy solutions

Founded in December 1992, Jiangsu Golden Gate Energy & Equipment Co. Ltd. has established itself as a prominent player in the energy sector with a registered capital of 120 million yuan and fixed assets valued at 100 million yuan. The company occupies a vast area of 160,000 square metres, showcasing its commitment to growth and innovation.

Certifications and Licenses

Jiangsu Golden Gate possesses a variety of design and manufacturing licences, including the prestigious Class A2 pressure vessel licence issued by the Jiangsu Special Equipment Safety Supervision and Inspection Institute. Additionally, it holds a Class B boiler manufacturing licence, alongside U, U2, and S certificates from the American Society of Mechanical Engineers (ASME). The company has also achieved quality management system certification, environmental management system certification, and occupational health and safety management system certification from the China Classification Society.

Comprehensive Technical Solutions

The company offers a range of technical solutions tailored for crude oil, natural gas, and oily sewage treatment, integrating design, manufacturing, installation, and commissioning. Its product line includes three-phase separator skids, crude oil electric dehydrator skids, crude oil electric desalting equipment, heavy fuel oil electrostatic processing lines, natural gas gathering and purification equipment, oily sewage treatment devices, skid-mounted equipment for the petrochemical industry, pressure vessels, heat exchangers, columns, and reactors, and heating boilers.

Global Reach and Strategic Partnerships

Jiangsu Golden Gate is a qualified supplier to major industry players, including PetroChina, Sinopec, and CNOOC. The company's products have found markets beyond China, and are being exported to countries such as Iraq, India, Malaysia, Chile, Bangladesh, Azerbaijan, Indonesia, Iran, Venezuela, Sudan, Niger, Kazakhstan, and Singapore.

Notably, the heavy fuel oil electrostatic processing line produced by Jiangsu Golden Gate is compatible with gas turbines from both American GE and Siemens of Germany. This unique capability makes Jiangsu Golden Gate the sole supplier of such processing lines in China that can match these prestigious gas turbines.

Jiangsu Golden Gate Energy & Equipment Co. Ltd. stands out not only for its extensive range of products and services but also for its commitment to quality and safety in the energy sector. With a strong foothold in both domestic and international markets, the company continues to drive innovation and efficiency in energy solutions.

JINGZHOU SUNRISE ENERGY TECHNOLOGY CO. I STAND: **11114** I HALL: **11**

PIONEERING OILFIELD SOLUTIONS AT ADIPEC

Jingzhou Sunrise Energy Technology Company specialises in oil tools and technical services, providing innovative technologies for the future of energy

Sunrise, established in 2010 and located in Shashi District, Jingzhou City, Hubei Province, specialises in oil tools and technical services. We seamlessly integrate technology research and development (R&D), production, and sales, fostering robust partnerships with major oilfields and serving as a trusted supplier for PetroChina, Sinopec, and Baker Hughes.

With a highly skilled R&D team, cutting-edge machining equipment, and a comprehensive quality management system, Sunrise holds ISO9001, API Q1, API 11D1, GBT19022:2003, and ISO45001 certifications. The company has secured 16 invention patents, 48 utility model patents, and one software copyright. Recognised as a national high-tech enterprise and honoured as a small giant of science and technology in Jingzhou in 2014, our products are distributed to major oilfields across China, including Huabei, Daqing, Changqing, Xinjiang, Shengli, Yanchang, and CNOOC, with annual sales surpassing 10,000 sets.

Our innovative multi-stage fracturing process for horizontal wells has set a benchmark in China. We have also pioneered coiled tubing-driven multi-stage jet fracturing, effectively addressing challenges in multi-stage fracturing within casing. Sunrise is advancing stepless difference limited fracturing and multi-stage fixed string fracturing technologies. By collaborating with domestic research institutes and universities, we contribute to projects for CNPC, Sinopec, and CNOOC, receiving accolades for our horizontal well multi-stage fracturing tools and coiled tubing drive products.

Looking to the future, Sunrise is dedicated to spearheading new processes and technologies, with a strong emphasis on scientific innovation and resolving critical oilfield construction challenges. Our mission is to provide reliable oil and gas development tools and solutions, aiming to create greater value for our customers while building a legacy of excellence centred on innovation, cooperative success, and sustainability.

The company's innovative multi-stage fracturing process for horizontal wells has set a benchmark in China. It has also pioneered coiled tubing-driven multi-stage jet fracturing, effectively addressing challenges in multi-stage fracturing within casing.

KBR I STAND: **12117** I HALL: **12**

EXPERTISE THAT SPAN THE ENTIRE VALUE CHAIN

KBR look forward to showcasing how their solutions, including CleanSPEND, can help companies navigate the complex journey towards lowering carbon emissions

As a global technology business, KBR has been at the forefront of innovation in the energy sector for decades. From concept to commissioning, through operations and decommissioning, we are uniquely positioned to address the industry's most pressing challenges, one of which is certainly decarbonisation.

We are committed to innovation, as we believe this is not just an option but an essential necessity in addressing this challenge. Our unique approach combines deep industry knowledge with cutting-edge technology to deliver transformative solutions. We excel in several techniques that we have identified as Digital Accelerators for the energy industry including digital engineering, data analytics, AI, cybersecurity and autonomous systems. These capabilities enable us to develop and implement decarbonisation solutions that address some of the common industry challenges such as making decisions based on data, risk reduction, and being able to efficiently and effectively respond to market needs.

For example, one common challenge is the need to accurately assess the whole lifecycle carbon emissions associated with a particular project, in the face of growing stakeholder pressure and compliance risk. Our CleanSPEND solution leverages our digital engineering and data analytics expertise, combined with our extensive energy industry data, to generate comprehensive lifecycle CO2 equivalent emission predictions. For one major offshore operator, CleanSPEND helped to optimise their project design, significantly decreasing projected emissions without compromising operational efficiency.

> *We are committed to innovation, as we believe this is not just an option but an essential necessity in addressing this challenge. Our unique approach combines deep industry knowledge with cutting-edge technology to deliver transformative solutions.*

At ADIPEC this year, we're excited to engage with industry leaders on the latest decarbonisation trends and digital technologies. KBR remains committed to driving innovation and sustainability in the industry, through digital, to allow us to deliver on our energy transition mission. We invite ADIPEC attendees to visit our booth and explore how our expertise and solutions can support your goals, ensuring a cleaner, more sustainable future for the energy sector.

KDU GROUP I STAND: **15304** I HALL: **15**

DELIVERING CUTTING-EDGE SYSTEMS THROUGH STRONG ALLIANCES

KDU Group specialise in power control solutions for decentralised power generation, both on land and at sea

KDU Group is an industry leader in providing cutting-edge decarbonisation solutions for oil and gas, maritime and industrial sectors. We deliver innovative products through partnerships with industry leaders like DEIF A/S, offering efficient energy management systems for conventional and renewable energy sources, and Leclanché, delivering advanced energy storage solutions. Our services are aligned with the UAE, as well as global green initiatives to support decarbonisation efforts.

Our Decarbonisation Solutions Include:

1. **Optimising Efficiency:** DEIF's intelligent power controllers help customers reduce fossil fuel consumption through energy optimisation, minimised emissions, and extending the lifespan of equipment's.
2. **Renewable Energy Integration:** Our solutions aid in integrating renewable energy sources, such as wind and solar, with existing power systems. Leclanché's battery storage system maximise efficiency by storing excess energy for later use.
3. **Sustainable Shipping:** KDU provides solutions that aid and support marine vessels with emission reduction, contributing to a greener and more sustainable maritime future.
4. **Custom Solutions and Support:** We provide end-to-end services, from consulting and design to installation and ongoing maintenance, ensuring our clients receive customised solutions that meet their unique requirements.
5. **Proven Expertise and Industry Knowledge:** With years of experience in the industry, our team brings extensive technical expertise, and a deep understanding of the challenges faced by the oil and gas, and maritime sectors, enabling us to offer solutions that drive real results.

Our latest solution provided for the Wynn Marjan Hybrid Power Project is a prime example of our promise to sustainable energy management solutions. This large-scale renewable energy project aimed at providing clean and sustainable electricity to the Wynn Al Marjan Island resort development in Ras Al Khaimah, the UAE and KDU group delivered exactly that - an efficient and advanced energy management system integrating different energy sources such as solar battery and diesel. With a clear focus on the goals, KDU Group is not just a solutions provider; we are your partner in your transition toward a cleaner, greener, and more sustainable, low-carbon future.

KISCO STEEL I STAND: **13171** I HALL: **13**

A COMMITMENT TO MINIMISING GHG EMISSIONS

Leading steel manufacturer Kisco Steel has a firm action plan

Kisco Steel is one of the leading steel manufacturers in India of rolled and forged bars for carbon steel, alloy steel, stainless steel, tool and die steel, and ingots and billets. Kisco is committed to contributing towards minimising GHG emissions and the carbon footprint to achieve the Global Decarbonisation Goal through our use of PNG for heat treatment furnaces - use of 100% recycled steel etc.

Kisco is adopting the following strategies, initiatives and innovations to reduce and minimise the carbon footprints during manufacturing. In response to environment and climate change, Kisco has a firm action plan. We are working on putting up a solar plant, enhancing energy efficiency, the Kisco sustainability programme, water conservation (reuse of water in cooling towers), Green Kisco (tree plantation), and strategic knowledge of climate change (training and awareness programme). Kisco is also following adaptation and mitigation through energy and water conservation, waste management, saving paper and electricity, fossil fuel to natural gas, 100% use of PNG for combustion in steel making, and rolling and forging. Below are some of our efforts in making a huge impact towards the Global Decarbonisation Goal:

- 100% recycled steel used for steel making
- Circular economy and resource efficiency – scrap-based steel making, ensure availability of good quality steel scrap
- Our steel melting and refining is with APCD (Air pollution Control Device)
- All heat treatment furnaces are PNG fired
- Water conservation - reuse of water, cooling towers
- 100 % LED for all industrial lights
- Green India - Green Kisco - tree plantation
- ERP for all verticals - minimisation of paper printing
- Waste management - waste heat recovery (heat treatment furnace)
- Enhance energy efficiency - through ISO 50001 energy management systems
- IMS certification 14001 for environment
- Strategic knowledge of climate change - trainings and awareness programmes
- Pneumatic compressor used for forging hammer
- Solar energy - working on putting up solar plant
- Reduce diesel and petrol consumption through carpooling & train travel
- 100% rainwater harvesting

KOBELCO I STAND: **2352** I HALL: **2**

A GLOBAL VISION

As a trusted partner in the energy transition, KOBELCO are helping to shape the future with their high-efficiency compressors

As KOBELCO's Non-standard Compressor Section, we have designed, manufactured and delivered all three types of compressors (Screw, Centrifugal, and Reciprocating) to clients around the world to support their decarbonisation projects, such as clean hydrogen (electrolyzers, etc.), Carbon Capture and Utilisation and Storage (CCUS), Sustainable Aviation Fuel (SAF), and others.

By leveraging our extensive experience and advanced technology, KOBELCO ensures that our compressors meet the highest standards of efficiency and reliability, tailored to the specific needs of each project. This commitment not only aids in reducing carbon emissions, but also aligns with our broader vision of driving sustainable industrial practices globally.

KOBELCO has a proven track record in supporting industry leaders in their decarbonisation efforts. Notably, we have been awarded four CCUS projects in Japan and Europe, and a significant SAF project in France. These projects highlight our ability to deliver robust, reliable, and high-efficiency compressors that are essential for the CCUS, as well as the production of SAF. Our involvement in these initiatives underscores our role as a trusted partner in the energy transition, providing solutions that not only meet the stringent demands of decarbonisation, but also ensure operational stability and long-term sustainability for our clients.

At this year's ADIPEC, KOBELCO is eager to engage with industry peers and key stakeholders to exchange insights and strategies on advancing decarbonisation efforts. We look forward to sharing our experiences and participating in meaningful discussions on the effective implementation of decarbonisation technologies. Additionally, KOBELCO is particularly interested in exploring collaborative opportunities that can drive further advancements in areas such as clean hydrogen, CCUS, and SAF, where our expertise in compressor technology can make a substantial difference. By actively engaging in these discussions, we aim to contribute to shaping the future of the industry, ensuring that the global shift towards low-carbon economy is both effective and sustainable.

KOTUG INTERNATIONAL I STAND: **15242** I HALL: **15**

LEADING THE WAY IN MARITIME DECARBONISATION

KOTUG INTERNATIONAL believe the future of maritime industry lies in sustainable innovation

As a global leader in towage and maritime services, we are dedicated to pioneering solutions that not only meet the highest industry standards, but also support the decarbonisation goals of our clients and partners worldwide. Our company, deeply rooted in maritime heritage since 1911, offers a comprehensive portfolio that spans vessel design, construction, chartering, operations, training, and consultancy services across Europe, Asia, Australia, Africa, the Middle East, the Americas, and the Caribbean.

One of our key innovations in the journey towards decarbonisation is the E-Pusher, the world's first fully electric, zero-emission modular pusher barge. This groundbreaking vessel is a testament to our commitment to reducing the environmental impact of maritime operations. Additionally, KOTUG has introduced dual-fuel methanol tugboats and the world's first hybrid tugs, which achieve a fuel reduction of over 25%. These innovations are complemented by KOTUG Optiport, an AI-based asset scheduling tool that further reduces fuel consumption by an average of 25%. Through our advanced tug and full-mission simulators, we continually enhance operational efficiency, safety, and fuel economy, helping our clients navigate towards a more sustainable future.

As we look forward to ADIPEC 2024, we are excited to engage with industry leaders and partners to explore further opportunities for decarbonisation. Our focus at the event will be on sharing insights from our latest initiatives and collaborating on new projects that push the boundaries of maritime excellence. By fostering partnerships and exchanging ideas, we aim to drive the maritime industry towards a greener, more sustainable future.

Join us at ADIPEC 2024 as we continue to lead the way in maritime excellence. Together, we can chart a course towards a cleaner, more efficient maritime industry.

KOREA MEASURING INSTRUMENTS RESEARCH ASSOCIATION I STAND: **7210** I HALL: **7**

THE ROLE OF SMART SOLUTIONS

Realising factory decarbonisation through AI and predictive maintenance with Korea Measuring Instruments Research Association

Artificial Intelligence (AI) and predictive maintenance technologies are playing a pivotal role in the decarbonisation of factories. The advent of smart solutions now allows us to analyse real-time equipment data, predict the condition and potential faults of machinery, and perform optimal maintenance accordingly. These technological advancements go beyond merely enhancing machinery reliability - they also offer significant benefits in improving energy efficiency and conserving resources.

The recently acclaimed ExRBM predictive maintenance solution offers advanced capabilities by automatically diagnosing equipment and machinery conditions and identifying faults using cutting-edge AI technology and big data - without the need for complex frequency analysis. This smart functionality enables factories to proactively address potential issues before they escalate into serious problems, ensuring greater reliability and efficiency in equipment management.

How Predictive Maintenance Solutions Contribute

Energy Consumption Reduction: When factory equipment operates in optimal conditions, unnecessary energy consumption can be significantly reduced. The ExRBM solution identifies when machinery can function most efficiently and helps maintain that state. For instance, it prevents key equipment like motors and pumps from wasting energy due to overload or overheating. This improves the overall energy efficiency of the factory, ultimately contributing to the reduction of carbon emissions.

Preventing Unplanned Production Downtime: Equipment failures in factories can lead to production line stoppages, resulting in wasted energy and resources. By preventing such unexpected failures, the ExRBM solution enhances the efficiency of production processes and plays a key role in reducing carbon emissions. This leads to more stable factory operations and overall productivity improvements.

The adoption of advanced solutions like ExRBM is becoming a vital component for companies striving to achieve sustainable growth and decarbonisation goals.

Data-Driven Support and Sustainable Factory Operations

The ExRBM solution provides real-time analysis of large datasets, enabling companies to make more accurate decisions. It identifies areas where energy consumption can be reduced and offers specific recommendations for improvement. For example, if certain equipment or processes are consuming excessive amounts of energy, ExRBM can quickly detect and address the issue.

In conclusion, AI and predictive maintenance technologies are essential for realising decarbonisation in factories. These technologies are becoming critical tools for increasing sustainability in factory operations and are guiding the future direction of the manufacturing industry. The adoption of advanced solutions like ExRBM is becoming a vital component for companies striving to achieve sustainable growth and decarbonisation goals.

LAMPRELL I STAND: **6210** I HALL: **6**

A COMMITMENT TO DECARBONISATION IN THE ENERGY SECTOR

At Lamprell, sustainability is more than a goal; it is integral to their vision and daily operations

With over 45 years of experience, Lamprell is a leading provider of contracting services to the international energy sector. We employ more than 6,000 people, with primary facilities in the UAE and additional operations in Saudi Arabia through a joint venture.

Since entering the offshore wind market in 2007, Lamprell has played a pivotal role in contributing to the energy transition and global decarbonisation goals. We have delivered six wind turbine installation vessels and hundreds of wind turbine foundation structures, including transition pieces, jackets, piles, and suction buckets, to major UK offshore wind farms. Clients we have worked with in offshore wind include Ocean Winds, Seaway 7, GeoSea, ScottishPower Renewables, Fred Olsen and Seajacks. The projects we delivered are currently generating green energy across UK North Sea wind farms.

Lamprell is committed to achieving net zero by 2050 and supports the transition to cleaner energy by fabricating structures for the sector and implementing energy conservation measures (ECMs) within our operations. Through ECMs, we have achieved a 39% reduction in energy consumption, equivalent to 70,475 MWh, compared to our 2015 baseline. Energy-use audits have helped us optimise electricity and diesel consumption, resulting in a 29% reduction in intensity emissions. We also plan to install solar panels across our UAE operations to further reduce our carbon footprint.

We regularly engage with supply chain partners to monitor and reduce their greenhouse gas emissions, sharing insights from our audits to promote best-practice decarbonisation.

In 2022, Lamprell invested in a state-of-the-art automated production line that is being used for the serial fabrication of offshore wind substructures. The production line, which was commissioned in 2023, has the ability to construct transition pieces, monopiles and floating wind components for renewables projects. In early 2024, we successfully delivered 62 transition pieces from the production line for the Moray West project offshore Scotland.

As we look ahead to ADIPEC 2024, Lamprell is eager to engage with industry leaders to discuss and promote innovative decarbonisation initiatives. Driving the global energy sector toward a lower-carbon future.

LAY EVENT MANAG. I STAND: **13191** I HALL: **13**

TRANSFORMING ENERGY SOLUTIONS ACROSS INDUSTRIES

Discover cutting-edge CO2 technologies and innovative products for a sustainable future at LAY Event Management

Lay Event Management, part of the KYK Group, is your one-stop destination for a diverse range of products and technical services, including CO2 drilling equipment, CO2 dry fracturing sand-carrying equipment, CCUS oil well equipment, and CO2 single-well huff and puff systems.

Our high-quality control valves boast extended lifecycles and include Pressure Reducing Valves (PRV), Globe Control Valves, Ball Valves, and Butterfly Valves. We have also developed innovative solutions such as the Dual-Channel Diverting Valve, designed for efficient particle transfer in pipelines.

The company holds ISO 9001, ISO 45001, and ISO 14001 quality certifications. Our expertise extends to a variety of pressure gauges, including stainless-steel, shock-proof, differential, diaphragm, precision test pressure gauges, gauges with contact switches, digital pressure gauges, pressure transmitters, thermometers, and hydraulic pressure test kits. Our products are widely utilised across industries such as petrochemicals, oil and gas, refinery plants, mechanical manufacturing, construction machinery, air conditioning and gas treatment, refrigeration, pharmaceuticals, power generation, food and beverage, sewage treatment, and textile manufacturing.

We specialise in the design and production of torque wrenches, continuously improving product structure to enhance efficiency, significantly reduce energy consumption, and extend product lifespans.

Our services include green and low-carbon new material products for the fine chemical industry, tailored to meet the specific requirements of different oil fields. Our environmentally friendly products aim to reduce carbon emissions compared to traditional alternatives.

Additionally, we have developed OEM products for lubricant additives (decarbonisation-low ash) for a project in the Middle East.

At this year's ADIPEC, we are excited to introduce our products and services to the global market. We believe that ensuring long-term product reliability through rigorous quality control is vital in supporting decarbonisation efforts. We look forward to engaging with industry leaders at ADIPEC to explore and develop new strategies for advancing decarbonisation.

Our products are widely utilised across industries such as petrochemicals, oil and gas, refinery plants, mechanical manufacturing, construction machinery, air conditioning and gas treatment, refrigeration, pharmaceuticals, power generation, food and beverage, sewage treatment, and textile manufacturing.

LESER I STAND: **8851** I HALL: **8**

AN ENERGY CONCEPT WITH A HOLISTIC APPROACH

Safety relief valve producers LESER, is planning a sustainable expansion with a goal of ensuring CO2 neutral production by 2035

LESER is one the largest safety relief valve producers in the world for a reason. We manufacture around 150,000 safety valves annually at our Hohenwestedt, Germany plant. With growing demand and new tech needs, the current space is running tight, and we are gearing up for a 15,000 m² expansion.

As a socially responsible brand, we're indeed planning a sustainable expansion. A planning firm was commissioned to create a holistic energy concept and ensure LESER's goal of CO2-neutral production by 2035.

CO2 neutrality will be achieved in Scope 1 (direct emissions from own facilities and processes) and Scope 2 (indirect emissions from purchased electricity, steam or heat).

Photovoltaic systems will be installed on all new hall roofs, and air-source heat pumps will provide heating, eliminating the need for fossil fuels. Additionally, waste heat from machines will be integrated into the energy balance.

LESER is investing €41.3 million in this upgrade, with more expansions in the works through 2032.

At LESER, sustainability is a continuous effort. In 2023, we installed solar systems at three locations, reduced global paper consumption worldwide, and plan further paper reduction projects by next year. We've raised the bar on purchases meeting sustainability criteria to 75% (+20%) and now have sustainability make up a quarter of supplier evaluations.

This is just a glimpse of LESER's sustainability efforts. We're continuously improving workplace safety, such as providing prescription safety goggles and installing protective equipment to all hydrostatic test benches and systems.

In recognition of our ongoing efforts to conserve energy and promote environmental sustainability, LESER has once again received a silver medal from EcoVadis this year. This rating puts LESER in the top 15% of companies in the last 12 months. However, we will not become complacent, we are only planning bigger!

MAMMOET I STANDS: **11310** I HALL: **11**

SUPPORTING THE GLOBAL PUSH TOWARDS DECARBONISATION

Heavy lifting and transport solutions leader Mammoet, offers innovative technology designed to meet the evolving needs of the energy sector

With decades of experience, Mammoet has continually pushed boundaries to help industry players decarbonise their operations while maintaining project efficiency and safety. Key innovations, such as the world's largest electric crane, the SK6000, and the introduction of zero emission electric SPMT units, highlight Mammoet's commitment to sustainable development and emissions reduction.

Mammoet is leading the way in sustainable heavy lifting and transport by pioneering zero emission solutions. In alignment with global decarbonisation goals, Mammoet is helping its customers minimise their carbon footprints on site through the electrification of heavy equipment and the use of alternative power sources such as hydrogen and biofuels.

Mathias Hoogstra, Mammoet's Head of Sustainability, envisions construction sites powered by electric or hydrogen vehicles, cranes, and trucks. "Our focus is to exchange energy as efficiently as possible and become zero emission on site. Equipment can cross-charge using energy hubs, ensuring that power is directed to where it is needed most," he explains.

This vision is no longer a distant goal. Mammoet has already deployed electric cranes and transport solutions on projects, demonstrating the potential for zero emission heavy lifting in the energy sector. For example, Mammoet's work at the ITER nuclear research facility in France, showcased its ability to offer tailpipe emissions-free transport. This marks a significant milestone in the company's commitment to reducing emissions without compromising on performance.

A major milestone was also achieved when Mammoet undertook the replacement of a production vessel at a Shell chemical plant in the Netherlands, using purely electric power with the lowest possible environmental impact. Mammoet's electric Power Pack Unit (ePPU), which replaces traditional diesel power sources, has been critical in enabling Mammoet to offer a complete heavy lifting and transport solution without tailpipe emissions. By utilising this equipment, Mammoet's clients can reap the benefits of smoother permitting processes, as well as greater access to funding opportunities that increasingly prioritise lower carbon emissions.

Mammoet's efforts to decarbonise extend beyond individual projects. Electric cranes, such as the world's largest electric crane - SK6000, and electric Self-Propelled Modular Transporters (SPMTs) are now available for zero emission heavy lifting and transport. Through continuous innovation, Mammoet is helping the energy sector transition to more sustainable operations, supporting the global push towards decarbonisation.

MARJAN INDUSTRIAL DEVELOPMENT
STAND: **10230** I HALL: **10**

HEAT-POWERED AND BATTERY-LESS WIRELESS SENSORS

AEInnova, MARJAN's legal partner in the UAE are pioneers of the InduEye device

AEInnova develops and manufactures the InduEye device, the first commercial net zero family of sensors for Industry 4.0, and in particular, the Oil & Gas industry. It offers the first autonomous heat-powered and maintenance-free wireless sensors in the market, to perform the machinery predictive maintenance and steam leaks detection. It allows the reduction of 20KWh of energy consumption compared to any wired sensor, and up to 500Kg CO2 equivalent compared to any wireless sensor, due to being heat-powered and battery-less. Additionally, these devices perform predictive maintenance of rotative machines which helps to reduce their energy consumption, whilst the steam leaks detection reduces their carbon footprint.

AEInnova was finalist at the ADIPEC Awards 2022 in the category of Outstanding Achievement in Low Carbon Initiative.

AEInnova is the EU key Innovator in autonomous sensors, a company partially owned by the European Commission.

Both CEPSA S.A. and REPSOL S.A. have installed 20 InduEye to monitor vibrations of non-critical assets inside ATEX environments, instead of using battery-powered wireless sensors. This has helped to reduce in one year 10 Ton CO2-eq / year. These numbers are scalable. The higher number of battery-less sensors you install, the better carbon reduction you obtain.

CEMEX has installed 10 InduEye to monitor vibrations of semi-critical assets instead of using battery-powered wireless sensors or wired sensors. This helped to reduce in one year 5 Ton Co2 eq / year.

ARCELOR MITTAL has installed 2 InduEye to monitor vibrations in a steel casting line. This helped to reduce in one year 1 Ton Co2 eq / year.

TÜPRAS is currently testing this solution with one InduEye device to demonstrate internally its functionality.

This year, ADIPEC will be promoting decarbonisation in the Oil & Gas industry and promoting net zero technologies. AEInnova does exactly that, with the InduEye.

MASTERWATT I STAND: **15146** I HALL: **15**

TAILOR-MADE ELECTRIC HEATING SOLUTIONS

Masterwatt: Solutions for process heating systems

Masterwatt was born 42 years ago and today is a well-known and reliable European player in the electric heaters manufacturing sector. Masterwatt is specialised in the design and manufacturing of tailor-made electric heating solutions for industrial, marine and Oil & Gas applications.

This highly specialised know-how makes Masterwatt a key partner in your decarbonisation process: you can reduce your carbon emissions and use of fossil fuels by opting for the electrification of your heating systems.

The heat exchangers, the power and temperature controllers, together with other Masterwatt products, offer the needed resources for reducing CO2 emissions. In fact, the use of an electrical heat exchanger can reduce your utility costs by 10-20%. This cost reduction is obtained thanks to a better efficiency of the heat transfer (compared to gas heating systems) and, in some cases, a lower price of electricity towards the cost of natural gas.

Our main production is based on armoured heaters, electric immersion heaters, electric heat exchangers, duct heaters, packages and related control panels for the power supply and the process control. Our products are used for the integration, or replacement, of conventional burner heating systems in several industrial applications and sectors, such as Oil & Gas, paper and tissue, naval, and many others. We also serve molten salt plants, as a key technology of the energy transition all over the planet.

The heat exchangers, the power and temperature controllers, together with other Masterwatt products, offer the needed resources for reducing CO2 emissions.

Our heaters are suitable to work in all sectors in which the electrification and the CO2 reduction are needed, especially in potentially explosive environments, according to ATEX, IEC Ex, CSA, UKCA, ASME, UL, INMETRO and EAC rules. Furthermore, certificated heat exchanger shells can be provided according to “U” STAMP, PED, RINA, ABS, Lloyds, DNV and others.

The challenge of the energy transition has now started, and Masterwatt is there to support customers in converting, and improving, their carbon footprint by designing together and supplying the best possible manufactured solutions for your process heating systems.

MERAKI GLOBAL ENERGY | STAND: **11550** | HALL: **11**

POWERING THE PATH TO NET ZERO WITH INNOVATIVE SOLUTIONS

With a century of expertise in heat transfer technology and exhaust solutions, NEM Energy Group, part of Meraki Global Energy in the Middle East, lead the way in enabling the energy transition

At NEM Energy Group, we make energy more efficient. Our core competence lies in the heat transfer process, emphasising project execution across various sectors, including power and heat generation, oil & gas, industries, and renewable energy. Our products include Heat Recovery Steam Generators (HRSGs), exhaust solutions behind gas turbines, as well as heat exchangers for geothermal, nuclear and conventional power plants. From design to aftermarket services, we support our customers throughout the entire lifecycle of their plants.

One of our key contributions to decarbonisation is the development of H2-ready solutions. NEM Energy Group is proud to be the first company worldwide to receive a concept certificate for our H2-Readiness concept for HRSGs. This includes complementary equipment such as by-pass stacks. These innovations are designed to help natural gas-fired combined cycle power plants (CCPP) transition to running on hydrogen fuel, significantly reducing carbon emissions while maintaining high efficiency in energy production.

To supplement with renewable energy in the grid, future ready CCPP should be flexible in operations, and our technology supports flexible operations of CCPPs. The DrumPlus™ HRSG design allows for an unrestricted gas turbine ramp up so that the operator can provide power as quick as possible when being called upon by the grid. Our Rotor Air Cooler design solves the stress corrosion problem faced by many gas turbines applications and protects the cooler against excessive fatigue from thermal cycling, increasing the plant's availability.

> *To supplement with renewable energy in the grid, future ready CCPP should be flexible in operations, and our technology supports flexible operations of CCPPs.*

At ADIPEC 2024, we are excited to connect with customers, partners, and industry leaders to discuss the future of decarbonisation. Our partnership with Meraki Global Energy exemplifies our commitment to the Middle Eastern Region and we look forward to showcasing our latest technologies and exploring new opportunities to collaborate.

MANNESMAN ENERGY I STAND: **7232** I HALL: **7**

A COMMITMENT TO EXCELLENCE

With an expertise in decarbonisation, Mannesmann Energy offer extensive solutions spanning the entire project lifecycle

Mannesmann Energy is a fully independent Emirati EPC contractor and technology integrator based in Abu Dhabi, United Arab Emirates. We offer extensive international expertise across various sectors, and our main business areas are oil and gas, sustainability and infrastructure.

Our international team of experts enables us to offer comprehensive solutions that span the entire project lifecycle, from concept through procurement, construction, and commissioning. Leveraging a wealth of specialised knowledge and innovative approaches, we ensure high-quality execution and address complex challenges with precision. Our commitment to excellence continues post-project with robust after-sales support.

Our expertise in decarbonisation is enhanced through strategic local and international partnerships that help us implement sustainable practices across oil and gas, petrochemicals, and renewable energy. These collaborations enable us to optimise infrastructure, integrate carbon capture technologies, and improve energy efficiency, delivering tailored solutions to address industry-specific challenges.

A notable example of our work is the SIWAP (Smart Injection Water Additive Polymer) project with ADNOC Onshore. This initiative represents a significant leap forward in water management for enhanced oil recovery. By incorporating specially formulated polymers into water injection streams, the SIWAP project reduces the volume of water required for injection, optimises reservoir performance, and enhances oil mobilisation. This innovative technology improves extraction efficiency, increases production rates, and reduces both operational costs and environmental impact, promoting a more sustainable approach to hydrocarbon recovery.

At ADIPEC 2024, we are eager to leverage the power of collaboration by engaging with industry leaders and stakeholders to explore and advance cutting-edge decarbonisation strategies. We believe that fostering strong partnerships and open dialogue is crucial to addressing the complex challenges of the energy transition. By collaborating with experts from diverse backgrounds, we can pool our collective knowledge and resources to drive innovation and implement effective, sustainable solutions.

We look forward to showcasing our latest technologies that are pivotal in facilitating the shift towards a low-carbon future. Through dynamic networking opportunities, we aim to exchange ideas, share best practices, and develop synergistic solutions that enhance our collective efforts in decarbonisation.

MOCEAN ENERGY I STAND: **8450** I HALL: **8**

A LOW CARBON JOURNEY

Ocean energy remains one of the world's greatest untapped renewable energy resources, says Mocean Energy

Mocean Energy is a Scottish-based, pioneering ocean energy company developing a range of technologies to help decarbonise maritime operations and accelerate the journey to net zero.

Their flagship product is Blue Star, a floating wave energy converter (WEC) which combines wave and solar power with battery technology to deliver reliable green power to subsea operations.

This technology has already been proven at scale as part of a 13-month pan-industry test programme which completed earlier this year and formed part of the £2 million Renewables for Subsea Power (RSP) project. During the sea testing, a prototype Blue Star WEC – named Blue X – was connected with a Halo underwater battery storage system developed by Aberdeen intelligent energy management specialists Verlume. The system also included autonomous under water vehicle (AUV) supplier Transmark AS, along with Baker Hughes subsea control modules (SCM) demonstrating remote underwater vehicle residency and subsea well head operations

Located 5km east of the Orkney islands in Scotland's far north, the world-leading RSP project proved that wave and solar power can be combined with energy storage to provide reliable and continuous low carbon electricity and communications to subsea equipment, offering a cost-effective future alternative to umbilical cables, which are carbon intensive with long lead times to procure and install.

The RSP project was led by Mocean Energy and Verlume, alongside participants including energy majors TotalEnergies and Shell Technology – Marine Renewable Program, PTTEP, Serica Energy, Harbour Energy, Baker Hughes, Transmark Subsea, and the Net Zero Technology Centre (NZTC).

Mocean Energy is now evaluating potential partnerships worldwide and to introduce the commercially ready Blue Star, delivering reliable low carbon power solutions and communications to subsea equipment.

Mocean Energy is also developing Blue Horizon, a mid-scale machine which can deliver power to the grid, and to remote and island communities. The technology was recently selected as finalist in the EU-funded EuropeWave initiative, securing over £3 million to develop and deploy the product offshore in Scotland.

The company ultimately envisions Blue Horizon machines being deployed in large farms, potentially alongside other renewables such as offshore wind, or floating solar, maximising the utility of offshore projects, and providing diverse and balanced renewable power.

At ADIPEC, Mocean Energy hopes to meet investors and organisations interested in joining them on their exciting low carbon journey.

NZTC I STAND: **8450** I HALL: **8**

PROPELLING THE ENERGY SECTOR TOWARDS A DIGITAL, AUTOMATED AND DECARBONISED FUTURE

NZTC's technology due diligence service provides invaluable insight to investors

Technology innovation and digital transformation are fundamental to the energy transition. Realising the value of nascent technologies takes time, however the urgency for energy security and affordability against the backdrop of the climate crisis that envelops us, means time is not on our side.

The Net Zero Technology Centre (NZTC) was created in 2017 as part of the Aberdeen City Region Deal (ACRD), with £180 million of UK and Scottish Government funding to develop and deploy technologies that reduce emissions, unlocks the full potential of an integrated energy system and propels the energy industry towards a digital, automated, decarbonised future.

Reducing emissions from offshore operations, whether through eliminating leaks, flaring and venting or employing low emission logistic strategies, and reusing and repurposing infrastructure, must be a priority for the offshore energy industry. For example, along with Siemens Energy, NZTC recently completed a key deliverable in our Alternative Fuel for Gas Turbines project with a successful demonstration of running an aero-derived gas turbine on green methanol. The use of green methanol has the potential to significantly cut carbon dioxide emissions, enabling offshore assets to operate using low carbon fuels without extensive modifications.

Technology can look good on paper, but understanding if it stands up in practice is key when it comes to investing in it. NZTC's technology due diligence service provides insight to help investors make better technology investment decisions; ascertain the legitimacy of a technology, its true technology readiness level, gaps in readiness and scalability, and how investable it is.

NZTC has also been actively delivering projects in the UAE. The Decarbonisation Technology Challenge, for example, was a global competition delivered in partnership with ADNOC to identify the world's most impactful technology scale-ups. 650 applications were received, culminating in a Grand Final at COP28 where the top 10 pitched for a US$1 million pilot in ADNOC's operations.

At ADIPEC 2024, NZTC have again partnered with ADNOC to deliver another Grand Final, this time focused on technology innovation to advance and diversify the utilisation of sulfur in the Middle East.

NKT I STAND: **8812** I HALL: **8**

LEADING THE CHARGE IN GREEN ENERGY WITH HVDC TECH

NKT specialises in low-carbon power cables and is excited to showcase its products and services at ADIPEC

NKT is at the forefront of creating a greener world through high-quality power cable technology, taking centre stage as the global shift towards renewable energy accelerates.

In Karlskrona, Sweden, NKT has produced the world's first HVDC power cables using low-carbon copper, with its production facility operating on 100% renewable electricity. For Dogger Bank C, the third phase of the world's largest offshore wind farm, NKT has entered into agreements with its suppliers and customers to utilise low-carbon copper for the 320 kV HVDC cables, which have been delivered to the North Sea wind farm. This low-carbon copper is sourced from a Swedish mine where vehicles and smelters are powered by fossil-free electricity, and the copper cathodes are delivered domestically via electric train.

This initiative is set to reduce the carbon footprint of the HVDC power cables by over 23,000 metric tonnes of CO2 equivalent (low-carbon copper from Boliden has a carbon footprint of less than 1.5 kg CO2eq/kg of copper, which is significantly lower than the European average of 4.1kg CO2eq/kg of copper). This is comparable to the emissions produced by 7,700 average gasoline-powered family cars driven for a year. Moreover, it aligns with NKT's ambition to achieve net-zero emissions by 2050.

Once fully operational, the Dogger Bank Wind Farm will be the largest offshore wind farm in the world, capable of supplying green power equivalent to the consumption of six million UK homes.

Join our experts at Adipec in Hall No. 8 to discuss our comprehensive offerings, including the design, manufacturing, and installation of power cable solutions that enable sustainable energy transmission.

NKT has produced the world's first HVDC power cables using low-carbon copper, with its production facility operating on 100% renewable electricity.

NAVARINO I STAND: **15187** I HALL: **15**

ENVIRONMENTAL SOLUTIONS

Leading tech company Navarino, commits to planting trees with its Starlink Tree Hub Initiative

Navarino is a leading technology company offering complete solutions to the maritime sector, including hardware, software and connectivity. The company develops cutting-edge services and innovative IT solutions to bring true value to ship operators and to create strong, long-term relationships built on a five-star customer experience.

With its new Tree Hub Initiative, which was introduced in the summer of 2024, the company has teamed up with Eden People+Planet to run the scheme, which will see Navarino plant 50 trees for every Starlink sold. The trees will be planted in a dedicated reservation in Honduras across a 96,500-hectare landscape restoration initiative, which is designed to protect water resources, prevent forest fires, restore landscape connectivity, and to strengthen climate resilience.

The reservation is comprised of a rich diversity of forest types, such as highland cloud forests, pine-oak, and broadleaf deciduous forests, and it integrates five protected areas, their buffer zones, and the biological corridors between them. By working across these different areas, the project directly secures water resources for over 1 million people, enhances biodiversity habitat, and develops sustainable livelihood opportunities for local communities.

This initiative is funded by Navarino's Starlink-related revenue and does not increase the end-customer price of Starlink terminals or their monthly fees.

Tassos Barbas, Navarino's CSR Manager said 'We are fortunate enough to be in the position to contribute to this important project, which will help preserve and protect vital areas of our planet. By choosing Navarino's Starlink, you're not just investing in reliable connectivity, you're also playing a vital role in environmental sustainability initiatives. We hope that many of our partners will find this initiative worthwhile and help us reach our initial target of having 135,000 trees planted'.

Of course, large maritime forums such as ADIPEC are an ideal place for us to publicise and discuss our sustainability initiatives. We look forward to engaging with regional ship operators to share and work together on further sustainability ideas.

NOV I STAND: **7250** I HALL: **7**

TECH-FOCUSSED SOLUTIONS FOR A BRIGHTER TOMORROW

NOV designs, engineers, and executes low-carbon custom-built systems for various industry applications

Founded in 1862, NOV has spent more than 160 years pioneering advancements in the oil and gas industry. We are dedicated to improving cost-efficiency, operational safety, and environmental sustainability in oil and gas operations worldwide. Building on this rich legacy, NOV continues to provide technology-driven solutions that bolster the global energy sector. As the world moves toward cleaner energy sources, NOV remains a leader in this transformation, broadening its expertise in engineering, manufacturing, and project management.

Leveraging a strong technological foundation and decades of global process engineering and gas treatment expertise, we design, engineer, and execute custom-built systems enabling hydrogen, carbon capture, conditioning, transportation, storage, and utilisation across various industry applications. Our global reach, experience with complex projects, and proven execution models provide the flexibility needed for optimal project economics.

As the world transitions to a low-carbon future, NOV is establishing itself as an essential partner in this global transformation. On the Gulf Coast of the United States, NOV is collaborating with a major publicly traded oil and gas operator on a project utilising our carbon dehydration technology. Dehydration is a vital step in the carbon capture process, ensuring the safe transfer of carbon through pipelines by removing water molecules and thereby preventing corrosion—a significant challenge in the global carbon capture, utilisation, and storage (CCUS) infrastructure. With the increasing momentum in CCUS, driven by evolving policies and industry growth, the significance of such technologies cannot be overstated.

Our global reach, experience with complex projects, and proven execution models provide the flexibility needed for optimal project economics.

In addition to our efforts in the United States, NOV is working with a global metals and mining giant in Australia to provide a hydrogen treatment package aimed at purifying hydrogen for maximum end-use efficiency. NOV's extensive experience and expertise in decarbonisation make us a preferred collaborator for companies worldwide, assisting them in addressing their most pressing carbon reduction challenges.

This year, we are excited to participate in ADIPEC and contribute to the broader conversation on decarbonisation efforts. ADIPEC has always been a platform for shared goals towards a cleaner and more sustainable future, aligning perfectly with NOV's objectives.

OILSERV I STAND: **7110** I HALL: **7**

SHAPING THE FUTURE OF OIL AND GAS WITH SUSTAINABILTY AT THE CORE

OiLSERV has developed solutions that eliminate flaring and emission of harmful pollutants into the atmosphere

At OiLSERV we are pushing boundaries and developing key technology partnerships to bring decarbonisation to the forefront in everything we do. Within our Production & Energy Solutions (PES) Business Line, we are collaborating with innovative technology companies who can add value and expertise in reducing the carbon footprint of our clients. These partnerships are key to a collective approach in developing and changing the wider market perspective and perception on how to focus, and be accountable, as a responsible business stakeholder.

We have developed and brought solutions to the MENA region for enclosed clean combustion systems that eliminate flaring, venting and emission of harmful pollutants into the atmosphere. These systems provide the additional benefit of being able to harness the waste heat, generate power via our ORC technology, as well as process heating through an enclosed heating coil.

Another key technology within our portfolio is the modular gas to liquids (GTL) solution that integrates a full process package to handle and convert waste gas from a range of sources (flare/vent/associated and biogas) into synthetic fluids (synthetic crude, synthetic diesel, synthetic methanol or SAF). These provide fast-track decarbonisation solutions with the ability to monetise the gas, thus producing a value-added product.

These two key technologies are the cornerstone of our decarbonisation strategy providing modular solutions to our clients to target specific problem areas driving their reduction of GHGs, methane emissions, and the overall decarbonisation of their assets.

At ADIPEC 2024, our focus is to address the decarbonisation challenge that we all face and bring together in a collaborative manner all stakeholders and technologies to make an immediate impact.

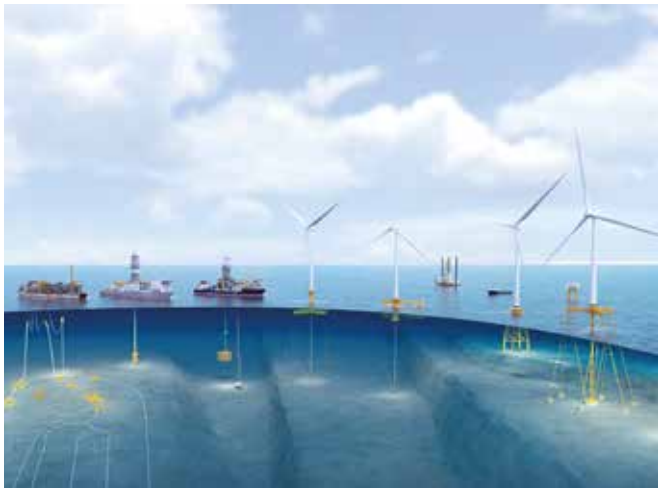
At OiLSERV, we believe that every step towards decarbonisation is a step towards a brighter, more sustainable future. We invite you to join us on this journey—whether as a customer, partner, or advocate—in making a more meaningful impact on our planet.

OIL STATES I STAND: **534** I HALL: **5**

CONNECTING THE ENERGY FUTURE

Oil States delivers technology that can be utilised to advance renewable energy technologies

Celebrating over 80 years in the energy industry, Oil States is a global provider of critical components, systems and services to the traditional and renewable energy sectors. Oil States is Connecting the Energy Future™ through prioritising solutions for accessing energy. Through innovation and collaboration, we leverage proven technology to pioneer new approaches. Deep customer understanding and strategic partnerships drive the development of our integrated solutions. By harnessing our collective momentum, we bring energy solutions online for a diverse, multisource energy mix that spans: drilling, completion, production, control, intervention, abandonment, removal and renewables.



By using products developed through our rich oil and gas heritage, which have a stable existing supply chain and fabrication capability in place. We can deliver technology today that can be utilised to advance renewable energy technologies without billions of dollars of investment in manufacturing facilities. Our field-proven well integrity and control offerings are being reimagined and used to advance CCS/CCUS, hydrogen and geothermal applications.

We're leveraging Oil States' 40+ years of fixed offshore and deepwater floating infrastructure expertise in our patent-pending FTLP to minimise the levelized cost of energy (LCoE) across the offshore wind life cycle and solve current offshore wind challenges. Conventional fixed wind foundations can only be deployed in water depths of around 50 to 60 meters, however our FTLP can safely go into water depths up to 150 meters – and potentially 200 meters, depending on environmental and seabed conditions.

Our award-winning Merlin™ Deepsea Mineral Riser System, is also the result of more than 40 years of deepwater expertise and enables us to be a Deepsea Minerals Systems Integrator and end-to-end partner for complete deepwater minerals riser systems or turnkey integrated systems from harvester to vessel.

Our technologies meet the rigorous requirements for these new energy approaches – and they've been used for years, which gives energy companies greater confidence when using them in new ways.

We rise to the challenge to meet growing global energy demand by supporting our oil and gas customers with development of traditional sources, while also identifying pathways to a lower-carbon, multisource energy mix.

OPT I STAND: **13014** I HALL: **13**

A CORE MISSION TO REDUCE THE CARBON FOOTPRINT

Decarbonisation efforts by OPT – a leading oilfield products and services company

Established in April 2006 in Houston, Texas, OPT has grown into a leading international oilfield products and services company. As one of the prominent providers of progressive and innovative technologies, OPT is committed to delivering high-quality services and products to the energy industry worldwide. Our offerings include a wide range of specialised solutions such as Oilwell Cementing, Reservoir Stimulation, and Specialty Chemical Manufacturing. In alignment with global sustainability goals, we are dedicated to strengthening our capabilities in non-hydrocarbon sectors, particularly in Carbon Capture, Utilisation, and Storage (CCUS). Our mission is to help diversify energy demand and significantly reduce the carbon footprint across the globe.

A key part of our decarbonisation strategy involves developing environmentally friendly, low-carbon footprint chemicals. We focus on creating cementing and stimulation chemicals that minimise carbon emissions during production and application, reducing their overall environmental impact. Additionally, we are committed to reducing carbon emissions from packaging by adopting eco-friendly materials and minimising packaging usage, thus decreasing the carbon footprint associated with production and disposal.

OPT has been at the forefront of supporting the decarbonisation efforts of industry players, especially in regions like China and Indonesia. Despite numerous challenges, we have increased our research and development investments, focusing on geothermal wells and CCUS applications. Our three R&D centres, located in Houston (USA), Dongying (China), and Jakarta (Indonesia), have collaboratively developed advanced and efficient cementing technologies tailored for these applications. These technologies have been successfully applied in multiple challenging wells and operations, delivering outstanding results and contributing to a significant reduction in carbon emissions.

As we look ahead to ADIPEC this year, we are eager to explore global collaborations, particularly in the areas of geothermal energy and CCUS. We aim to leverage our advanced, mature technologies to forge partnerships worldwide, accelerating progress in these critical sectors and making a meaningful impact on global decarbonisation efforts.

OPSEALOG I STAND: **15131** I HALL: **15**

A DATA-DRIVEN APPROACH

Tech company Opsealog, currently monitors over 400 vessels in the maritime sector

Opsealog is a French technology company specialising in performance manage-ment and digitalisation for the maritime industry. Since its creation in 2015, Opsealog has become a key player in merging maritime knowledge with smart data solutions. With its unique concept of efficiency as a service, Opsealog provides the maritime sector with innovative ways of improving performance and decarbonising operations through digitalisation - offering maritime expertise in a turn-key solution to clients globally.

At the core of our business is the digitalisation of fleet operations and the enhance-ment of performance management practices. We're committed to supplying charter-ers and shipowners with straightforward, effective tools necessary for improved effi-ciency, reducing environmental impact, and complying with environmental regula-tions.

Opsealog currently monitors over 400 vessels worldwide with its solutions, using its unique combination of digital tools and human expertise to optimise marine logistics operations for clients across the globe.

Winner of the OSJ Environmental Award in 2022, we believe that enhancing energy efficiency is key to the decarbonisation process, and accurate and compliant moni-toring of the emissions will serve as the basis to future innovations and strategies.

Since our foundation, with the unique combination of in-house algorithms and mari-time expert follow-up and recommendations, we have successfully reduced emis-sions which represented 27 970 Teq of CO^2 saving in 2023 for our clients.

In January 2021, following ADIPEC, Opsealog began a long-term partnership with ADNOC Logistics & Services, the maritime logistics arm of ADNOC Group, support-ing Abu Dhabi's oil and gas supply chain through operations monitoring and fleet performance optimisation. Recognising the value of digital solutions and their ability to unlock new operational efficiencies and emissions reductions, ADNOC L&S commissioned Opsealog to apply its cutting-edge performance management solu-tions to its wider offshore fleet. The success of the initiative is evaluated through precise data analysis, real-time monitoring, and continuous improvement of fuel ef-ficiency and emissions reduction. For example, in 2023, 5.853 Teq of CO^2 emis-sions were avoided.

At ADIPEC 2024, we look forward to meeting ship owners and charterers to discuss how Opsealog's data-driven approach can bring a significant change in their opera-tions, and ultimately, reduce environmental impact.

PARKER HANNIFIN I STAND: **7235** I HALL: **7**

REDUCING RESOURCE CONSUMPTION AND GREENHOUSE GAS EMISSIONS

Parker Hannifin, **a Fortune 250 global leader in motion and control technologies, is committed to delivering engineering solutions for a sustainable future**

Parker Hannifin is committed to solving complex engineering challenges with innovative technologies that help create a cleaner, smarter, and safer world. Using advanced motion and control solutions enables us to adopt cleaner energy sources, implement electrification, utilise lightweight materials, and engineer systems that contribute positively to the global environment.

Parker's portfolio offers a diverse range of products including hydrogen-compatible instrumentation components, advanced thermal management solutions, coatings, adhesives, and vibration control technologies. Parker innovations also support various clean energy sources such as batteries, fuel cells, hydrogen, sustainable fuels, and renewable energy.

Parker's portfolio offers a diverse range of products including hydrogen-compatible instrumentation components, advanced thermal management solutions, coatings, adhesives, and vibration control technologies.

In addition to this Parker has a comprehensive line-up of motion technologies. These include electro-hydraulic, electro-mechanical, and pneumatic actuators, valves, pumps, motors, controllers, and filtration technologies, along with software, and conveyance systems designed for electric aerospace, mobile, and industrial applications.

The latest Parker product development is SuparShield Corrosion Management Technology. This cutting-edge solution enhances corrosion resistance without requiring any de-rating of pressure or temperature specifications. It does not require alterations to the assembly process and its corrosion protection is particularly effective in preventing pitting and stress corrosion cracking.

Parker is dedicated to achieving carbon-neutral operations by 2040, establishing a series of emissions targets to ensure continuous progress. This commitment to reducing carbon emissions to minimise the impact on the environment and conserve natural resources is a vital step toward creating a sustainable future for generations to come.

Parker's goal is to reduce emissions from the business operations by at least 50% by 2030 and achieve carbon neutral operations in the next decade. The company also aims to decrease other indirect emissions related to materials sourcing, logistics, and services (Scope III) by 15% by 2030 and 25% by 2040.

PD & MS I STAND: **8450** I HALL: **8**

TAILORED SOLUTIONS TO REDUCE CARBON INTENSITY

Energy efficiency and decarbonisation specialists PD & MS, share their range of services

PD & MS are dedicated in-house energy efficiency and decarbonisation specialists, our offerings include:

Advisory & Business

- Net zero roadmap planning, including full carbon neutral strategy development for businesses and their supply chain
- Scope 1, 2 & 3 emissions policy development, reporting and GHG accounting
- SECR & ESOS compliance support
- Due diligence, legislative and regulatory advisory services
- Carbon reduction/energy efficiency and carbon offsetting assessments and studies

Operation Carbon Reduction, Onshore & Offshore Infrastructure

- End to end low carbon energy services, from development of investment case and identification of carbon reduction opportunities through to detailed design, engineering, construction and commissioning of low carbon solutions
- Low carbon energy project development and execution
- New technology integration assessments
- Energy network feasibility studies with a range of energy sources
- Environmental improvement activity assessment including environmentally friendly and biodegradable corrosion prevention, wax, tar and crude removal
- Circular economy assessment including re-use of decommissioned plant, recycling of materials

We worked with BP, who aspire to improve efficiency and reduce emissions over the next five years on their late life asset Clair. We delivered a comprehensive baselining study broken down across key operating equipment. As a result, we reduced their carbon intensity from 16.42kgCO2e / boe to 11.51 following SCR / VRU and to 2.71 following electrification and planned a phased, but significant, reduction in emissions leading to reduced carbon tax costs. We also supported Well-Safe Solutions, who wished to reduce their emissions footprint within five years. Our Carbon Management Reduction Plan covered their three well intervention vessels and office headquarters and identified potential savings over £200k-£300k per year on carbon tax.

At ADIPEC 2024, we look forward to identifying other innovative decarbonisation technologies, as well as discussing our current solutions within the market.

PELI PRODUCTS I STAND: **4210** I HALL: **4**

A DEDICATION TO ENVIRONMENTAL STEWARDSHIP AND SOCIAL RESPONSIBILITY

Specialists in protective cases and lighting systems, Peli Products share an overview of their initiatives

Peli Products, the global leader in designing and manufacturing high-performance protective cases and advanced lighting solutions, is at the forefront of the transition to a more sustainable future. Our commitment to the United Nations Sustainable Development Goals (SDGs) underscores our dedication to environmental stewardship and social responsibility.

By avoiding single-use materials and ensuring our products are fully recyclable, we contribute significantly to reducing waste and conserving energy and water. Our sustainability efforts are not limited to product design; they extend to enhancing energy efficiency across our operations, including installing LED lighting in many of our facilities to cut down on energy waste.

Specific Examples of Decarbonisation Solutions

Peli Products has implemented several initiatives that have directly aided industry players in achieving their decarbonisation goals:

- **Product Recyclability and Reusability:** Our protective cases and lighting systems are designed for reuse, providing an eco-friendly alternative to single-use packaging. This approach not only minimises waste but also reduces the environmental impact associated with sourcing virgin materials and transporting disposable products.
- **Energy Efficiency Improvements:** By transitioning to LED lighting in our facilities, we have significantly reduced our energy consumption, showcasing how operational changes can lead to substantial decarbonisation benefits.
- **Sustainable Manufacturing Practices:** Six of our seven manufacturing facilities are ISO 9001 certified, ensuring that our processes meet international standards for quality and efficiency. This certification reflects our ongoing efforts to improve product durability and reliability, reducing the need for frequent replacements and thereby lowering overall resource consumption.

Anticipation for ADIPEC 2024

At ADIPEC 2024, we are eager to engage with industry leaders and stakeholders to further the dialogue on decarbonisation. Our focus will be on sharing insights and innovations that can drive the energy transition, enhance energy efficiency, and promote sustainable practices across the industry. We look forward to discussing our latest advancements in recyclable materials and energy-efficient manufacturing, as well as exploring new partnerships that can amplify our impact on global sustainability efforts.

PENSPEN I STAND: **8551** I HALL: **8**

A PATHWAY TO NET ZERO

Using their deep industry heritage, Penspen deliver high-impact decarbonisation solutions

The energy transition brings a myriad of opportunities to decarbonise hydrocarbon intensive industries. Having been at the forefront of the design and engineering of much of the world's existing energy infrastructure, international engineering consultancy Penspen, is now using more than 70 years' experience in traditional energy to help countries access lower carbon fuels through the development of new infrastructure, and by extending the useful life of existing energy infrastructure.

Attending ADIPEC 2024 on the EIC's Pavilion, Penspen look forward to discussing how our teams have used our deep industry heritage, combined with disruptive thinking, to deliver high-impact decarbonisation solutions for clients across the world. With a mission of improving access to sustainable energy infrastructure, Penspen helps bring cleaner energy to millions of people in thousands of communities across the Middle East, Africa, Asia, Europe, the UK, and the US, delivering more than 15,000 projects in over 100 countries.

Having worked on some of the industry's forefront future fuels projects, Penspen's primary hydrogen and CO2 capabilities include engineering consultancy for the development of new infrastructure, repurposing of existing infrastructure, and operations and maintenance services.

These energy transition capabilities are built around four pillars and cover a range of areas such as Engineering & Project Management, Asset Integrity, Asset Management, Digital Solutions, alongside Penspen's Centre of Engineering Excellence.

With a dedicated Energy Transition consultancy formed to support the international energy industry on low carbon and hydrogen-related projects, Penspen's team of industry-leading energy transition experts can help define the pathway to net zero.

The company's global energy consultants bring experience, knowledge, and expertise to effectively advise the industry on low carbon-related opportunities from a project financing and development, regulatory, and infrastructure, standpoint. We have been involved in many first-of-a-kind sustainability projects across the global energy industry – from complete engineering, design and consenting expertise to hydrogen assessment and blending feasibility studies.

With a rich history of operations in the Middle East, our team look forward to meeting with clients, both current and future, to discuss how Penspen can support you in delivering the low-carbon energy future of this vibrant region.

PERGAM GROUP I STAND: **4210** I HALL: **4**

HELPING ENERGY INDUSTRY ACHIEVE SUSTAINABILITY GOALS

Pergam Group provides customers with innovative systems in remote gas detection ensuring safety within the oil and gas industry

Text Pergam Group is a pioneering multinational corporation specialising in remote gas detection solutions along with gas leak detection and power line inspection services. Pergam advanced gas leak detection systems and inspection services featuring the unique patented ALMA and SELMA systems, are tailored to meet the increasing needs of the natural gas and power industries. With branches in Europe, Asia and North America, Pergam Group is well-positioned to support global energy markets, providing customers with top-tier innovative systems and services for industrial safety.

Pergam solutions are instrumental in helping industry players achieve their decarbonisation goals. By providing state-of-the-art gas leak detectors tools and systems to the oil & gas industry worldwide, we empower customers to determine gas leaks more efficiently, thereby significantly reducing carbon emissions. For example, our ALMA, SELMA, LMS-mini, LMS-Open Path and other systems enable companies at early stage to identify leaks that would otherwise go unnoticed, preventing the release of harmful greenhouse gases into the atmosphere. This not only aids in meeting environmental regulations but also contributes to the global effort to combat climate change.

The technology behind Pergam's gas detection solutions is highly innovative: it uses a diode that generates a laser beam with a particular spectral length, sensitive exclusively to methane, which allows the systems to detect the presence of the gas remotely in real time and without generating false alarms. The stationary systems also have an optical unit which scans the critical points following a pre-set path. In this way, a single instrument can control a large surface area, constantly scanning in total automation and ensuring its monitoring 24/7. Such systems are well perceived by international downstream customers with install base increasing year over year.

At ADIPEC this year, we are excited about the growing focus on decarbonisation and look forward to engaging with more players in the market. We see this as an opportunity to expand our network of customers and collaborators equally committed to reducing carbon emissions. As the industry increasingly prioritises sustainability, we are eager to demonstrate how our cutting-edge technologies can play a pivotal role in achieving these vital environmental goals.

PROCONTROL I STAND: **2136** I HALL: **2**

DELIVERING SOLUTIONS THAT MEET TODAY'S NEEDS AND CONTRIBUTE TO A SUSTAINABLE TOMORROW

PROCONTROL are committed to supporting global decarbonisation efforts through their range of high-performance actuators and gearboxes

At PROCONTROL, we are committed to supporting global decarbonisation efforts through our range of high-performance actuators and gearboxes. Specialising in Carbon Steel and 316 Stainless Steel Scotch Yoke and Linear Actuators, our products are designed to perform in the most challenging environments, ensuring reliability and efficiency in various industries, including offshore, severe service, and desalination, where maintaining consistent performance is critical.

One of our standout offerings is the 316 Stainless Steel Actuator. Renowned for its superior mechanical properties, 316 Stainless Steel offers excellent resistance to corrosion, particularly in harsh environments. This durability directly contributes to a longer lifespan, reducing the need for frequent replacements and thus minimising waste. Additionally, 316 Stainless Steel is highly recyclable, aligning with sustainability goals by promoting resource efficiency and circular economy, reducing the environmental footprint.

Our actuators have proven to be invaluable in helping industry players meet their decarbonisation targets. By ensuring both efficacy and efficiency in operations, our products not only enhance performance but also contribute to the reduction of energy consumption and associated carbon emissions. For example, in desalination projects, our actuators ensure optimal valve control, leading to significant energy savings and lower operating costs, all while maintaining high performance under extreme conditions.

At ADIPEC 2024, we look forward to engaging with industry leaders who share our vision of a low-carbon future. We believe that long-term value is not just about the initial cost, but also about the product's lifecycle impact on operational efficiency and sustainability.

Join us at ADIPEC and explore how PROCONTROL can be your partner in driving decarbonisation across your projects.

RAKGAS I STAND: **7132** I HALL: **7**

DELIVERING ROBUST DECARBONISATION SOLUTIONS

RAKGAS has ensured energy security and supported economic growth since 1984

Initially focused on natural gas, RAKGAS, a state-owned energy company in Ras Al Khaimah, is now diversifying to become an integrated energy company.

In its commitment to long-term energy security, RAKGAS is actively developing strategies for energy transition and decarbonisation. The company's approach looks at natural hydrogen exploration and carbon capture via mineralization (CCM), utilising the unique chemical properties of the ultramafic rocks (rich in iron and magnesium) in the Semail Ophiolite, extensively outcropped in Ras Al Khaimah, Fujairah, and Oman. This ophiolite is recognised as a world-class protolith for natural hydrogen generation, an ideal host for carbon capture.

RAKGAS is collaborating with various industrial entities to develop low-emission solutions for energy-intensive processes. We are currently conducting commercial analyses and developing business cases for implementing lower-carbon intensity fuels. In anticipation of potential carbon mandates in the UAE or the GCC region, we are also preparing comprehensive carbon solutions, including capture, transport, permanent sequestration, and market participation.

Our efforts include transitioning industrial operations from coal to natural gas for thermal power and integrating renewable energy systems. As we advance hydrogen exploration and carbon sequestration/mineralization projects, RAKGAS is committed to delivering robust decarbonisation solutions to help achieve the UAE's net zero goals.

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RAKGAS is collaborating with various industrial entities to develop low-emission solutions for energy-intensive processes. Our goals at ADIPEC this year include discovering credible and actionable solutions to shape the future energy system while accelerating the decarbonising of existing energy systems and industrial processes. We are particularly excited about exploring global innovations, fostering international collaboration, and leveraging digitalisation as critical drivers of progress.

RATNAMANI METALS AND TUBES LTD I STAND: **10214** I HALL: **10**

HELPING THE WORLD HARNESS CLEAN ENERGY SOLUTIONS

Ratnamani Metals and Tubes Ltd's high-quality tubes are helping companies champion their sustainability goals

At Ratnamani Metals and Tubes Ltd, we are not just manufacturers; we are architects of a sustainable future. Our commitment to harnessing nature's bounty is reflected in our innovative products and eco-friendly practices that aim to create a cleaner, greener world.

Renewable Energy

Our high-quality tubes play a crucial role in channeling the sun's energy into solar panels and harnessing the wind's power for turbines. By contributing to renewable energy solutions, we are actively participating in the transition to a cleaner tomorrow.

Water Conservation

We advocate for responsible water management through initiatives such as rainwater harvesting, promoting water security and environmental well-being. Our efforts in this area are designed to safeguard this vital resource for future generations.

Minimal Waste

At Ratnamani, we strive for near-zero discharge through effective wastewater treatment and reuse practices. By minimising our environmental footprint, we ensure that our operations align with sustainable principles.

Promoting Social Afforestation

We take pride in our active participation in social afforestation initiatives, planting thousands of trees each year in collaboration with local communities. These efforts not only enhance biodiversity but also contribute to the restoration of natural habitats.

> *At Ratnamani Metals and Tubes Ltd, our commitment to sustainability is not just words; it's action. We invite you to join us on this journey towards a brighter future, where nature and technology work together in harmony.*

Protecting Our Sparrows

Our commitment to conservation extends to supporting sparrow conservation programmes. By providing nesting boxes and raising awareness, we aim to ensure that these vital members of our ecosystem thrive in their natural environment.

Cleaner Energy Choices

To further reduce our carbon footprint, we utilise natural gas for heating. This choice reflects our dedication to cleaner energy solutions and our commitment to sustainability.

At Ratnamani Metals and Tubes Ltd, our commitment to sustainability is not just words; it's action. We invite you to join us on this journey towards a brighter future, where nature and technology work together in harmony. Visit our website to learn more about our Corporate Social Responsibility (CSR) initiatives and how you can be a part of our efforts to make a positive impact on the planet.

RIDART I STAND: **2255** I HALL: **2**

DOUBLE FUNCTION VALVES HELP PROTECT THE ENVIRONMENT

Ridart are committed to actively participating in the energy transition with their unique range of safety valves

Our Italian company Ridart produces valves and fittings for petrol stations and petrol storage tanks. We manufacture a wide variety of safety valves such as, overfill prevention valves, shut-off valves, check valves, pressure vacuum vents, and flame arresters.

The pressure vacuum valve with flame arrester has a distinct double function.

It avoids the vapours inside the tank to be released into the surrounding atmosphere and then re-enters in the recovery process for gasoline production. This provides an example of circular economy. Moreover, it allows the release of exceeding gases when an overpressure may occur, protecting the integrity of the storage tank.

We manufacture a wide variety of safety valves such as, overfill prevention valves, shut-off valves, check valves, pressure vacuum vents, and flame arresters.

Finally, the flame arrester element, positioned inside this valve, works as a safety device. If an explosion were to occur outside the tank, it will protect people and the environment.

Firmly on the path to sustainable development, the Ridart production plant in Gazzada close to Varese, has been entirely covered with photovoltaic panels with an installed power output of 73 kW. The new eco-covering contributes to saving more than 32 tonnes of CO2 per year, and in the summer months the factory can self-power its own energy needs.

The ADIPEC event plays a very interesting role in the unparalleled engagement among operators in the world. It provides the opportunity to present the latest innovations in artificial intelligence and digital technologies, which are fundamental for climate mitigation and transition energy. Ridart are committed to helping create a sustainable future and supporting net zero goals, and very much look forward to this event.

RIGHT CHOICE GROUP I STAND: **13391** I HALL: **13**

OVERCOMING ENERGY CHALLENGES WITH TECH-ENABLED SOLUTIONS

Right Choice Group's Thermacool is a groundbreaking thermal coating that reflects over 85% of solar heat and provides insulation against residual heat, effectively lowering internal building temperatures

At ADIPEC 2024, Right Choice Group is eager to engage with industry leaders and stakeholders to advance our collective decarbonisation efforts by adopting innovative nanotechnology for sustainable building solutions. We recognise that platforms like ADIPEC are essential for fostering collaboration and innovation in the fight against climate change.

We are particularly excited to showcase Thermacool, our groundbreaking thermal coating that leverages advanced nanotechnology to address energy challenges. Thermacool reflects over 85% of solar heat and provides insulation against residual heat, effectively lowering internal building temperatures. This reduction significantly lowers the reliance on air conditioning systems, which are major energy consumers in

both residential and commercial sectors. By cutting energy demand, Thermacool plays a vital role in minimising the carbon footprint associated with electricity generation, especially in regions reliant on fossil fuels.

A key focus at ADIPEC will be exploring solutions to combat the urban heat island effect, a pressing issue in cities where concrete surfaces absorb and retain heat, resulting in heightened energy consumption for cooling. Thermacool directly addresses this challenge, creating cooler urban environments that enhance resident comfort while improving overall energy efficiency, thus contributing to sustainable urban development.

We look forward to sharing insights and case studies that demonstrate the tangible impact of Thermacool on decarbonisation goals. By connecting with like-minded organisations and policymakers, we aim to foster discussions that can lead to innovative strategies for reducing greenhouse gas emissions.

We're excited to connect with all participants to explore creative pathways for sustainability. Together, we can make a real difference and pave the way for a healthier, more sustainable future. We warmly invite attendees to stop by our booth to learn how Thermacool can be a game-changing solution in their decarbonisation efforts, opening new opportunities for energy efficiency and a better environment for all.

ROCKFIN I STAND: **14162** I HALL: **14**

VERSATILE SOLUTIONS FOR THE ENERGY SECTOR

Rockfin drives Poland's green transition with advanced hydrogen technologies

Poland is undergoing a significant transformation in its approach to energy, as the nation moves away from its historical reliance on coal. Once notorious for some of the worst air quality in Europe, Poland is now at the forefront of the green revolution, driven by ambitious projects in renewable energy, nuclear power, and hydrogen production. These initiatives are part of Poland's broader commitment to achieving NetZero emissions by 2050, in line with European Union targets.

This shift comes at a time when Poland's economy is one of the most stable and fastest growing in the European Union. Alongside economic growth, there is a growing environmental awareness among the Polish population, leading to a heightened demand for eco-friendly, sustainable solutions. Poland is already known for its high-quality organic farming and livestock production, and there is a growing recognition that the carbon footprint of products and services will soon be a key indicator of quality.

Rockfin, an international company headquartered in Poland, is playing a pivotal role in this green transition. The company supplies advanced machinery and systems to the energy, mining, chemical, and marine industries. By collaborating with leading technology firms from Europe, the United States, and Japan, Rockfin has developed equipment that supports low-emission turbines and gas engines, natural gas and LNG transport systems, and carbon capture and recovery installations. The company's products are increasingly being used in offshore and onshore wind farms, hydroelectric power plants, energy storage systems, and green hydrogen production facilities.

Rockfin is also committed to reducing its own environmental impact. The company has systematically expanded its photovoltaic sources, which now have a capacity of nearly 0.5 MW. Additionally, Rockfin is investing in an electric fleet of vehicles, reducing water consumption, and minimising plastic use within its operations.

To further support energy transformation and decarbonisation, Rockfin launched a program to develop green hydrogen production, storage, and utilisation technologies. This initiative has led to the creation of a new product line tailored to the emerging hydrogen industry. Rockfin's hydrogen technology offerings, including electrolyzers, purifiers, compressors, and storage tanks, are distinguished by their high level of technical sophistication, integration, and efficiency.

The company's latest innovation, a containerized alkaline electrolyzer, exemplifies this advanced technology. Capable of producing hydrogen and oxygen at a pressure of 28 bar with 99.0% purity (up to 99.999% with a purifier), the device operates with only tap water and electricity. Depending on the output—ranging from 5 to 200 Nm3/h—the electrolyzer can be housed in a 10", 20", or 40" enclosure, making it a versatile solution for the energy sector.

Rockfin's efforts are positioning us as a key player in the global energy transition, driving sustainable development both domestically and internationally.

SAMYANG METAL I STANDS: **7210-2** I HALL: **7**

A ONE-STOP SHOP FOR THE MARINE SECTOR

Leading manufacturer of nonferrous pipe fittings and flanges, SAMYANG METAL provide a complete package to the smallest single piece fitting for clients

SAMYANG METAL has firmly held a leading role in the marine industrial development of South Korea for many years. Supplying nonferrous quality products at low and reasonable prices, we are confident that customers will be more than satisfied with our services and the excellent quality of our goods. We are fast becoming one of the world's premier pipe fittings and flanges manufacturer by striving to continue in management innovation and technological development.

With our experience of over 40 years, we provide a full package service for copper-nickel materials. We supply all types of fittings, flanges, and even miscellaneous fittings so clients avoid searching for multiple manufacturers trying to obtain copper-nickel materials.

Dedicated and experienced in how an EPC company works within the oil and gas industry, including multiple projects in the Middle East, SAMYANG provide high quality products, packaging, documentation, and inspection. We are not just a one-time supplier. When we begin a project, we take full responsibility until the very end - advising, supplying customised items, and helping to supply even single piece fittings.

Longer-Life Expectancy of a Copper-Nickel Pipeline:

Under proper maintenance activities, the copper nickel pipeline can be utilised for longer than 20 years. This feature will reduce the maintenance cycle and guarantee a long-life expectancy.

Introduction of Cuni 90/10 and Cuni 70/30 Alloy:

The corrosion and biofouling resistance of copper-nickel alloys in seawater and related environments have led to their substantial use in the marine service for many years. The two main wrought copper-nickel alloys chosen for seawater service contain 10% or 30% nickel, respectively. Development work began in the 1930s in response to a requirement by the British Navy for an improved condenser material. Since the 1950s, the 90/10 Alloy has become widely accepted for condenser service as well as for seawater pipe work in the merchant and naval service.

In naval vessels, the 90/10 copper-nickel is the preferred alloy for surface ships, whereas the 70-30 alloy is used for submarines due to its greater strength making it more adaptable to higher pressures. These alloys are also used for power station condensers and offshore seawater pipe work on oil and gas platforms. Large quantities are selected for the desalination industry, and they are additionally used for cladding and sheathing of marine structures and hulls.

SAP I STAND: **14265** I HALL: **14**

ACCELERATING THE TRANSITION TO A MORE SUSTAINABLE FUTURE

Driving effective business solutions with SAP's sustainability suite

SAP, a global leader in enterprise software, is dedicated to driving sustainable business practices through its cutting-edge technologies and solutions. With a firm commitment to decarbonisation, SAP provides a suite of products and services designed to help companies across various industries achieve their environmental goals. Central to SAP's sustainability strategy is its focus on integrating carbon management into everyday business processes, thereby enabling organisations to track, manage, and reduce their carbon footprints effectively.

SAP's sustainability suite includes several key solutions. The SAP Cloud for Sustainable Enterprises offers tools for carbon accounting, enabling businesses to calculate and report their greenhouse gas emissions accurately. The SAP Product Footprint Management application helps companies understand the environmental impact of their products throughout their lifecycle. Additionally, SAP's Supply Chain Management tools facilitate sustainable procurement and logistics, ensuring that businesses can source and distribute goods with a reduced environmental impact.

Shell and SAP intend to co-innovate on greenhouse gas emissions accounting solutions and supply chain management practices so all players along value chains can measure and reduce their greenhouse gas footprint. Driving this transformation from the energy supply side creates the necessary transparency on the demand side — all the way to consumers like you and me.

Looking ahead to ADIPEC 2024, SAP is excited about the opportunity to showcase its innovations in the realm of decarbonisation. The event will be a platform for SAP to highlight new advancements in its sustainability & AI solutions and engage with industry leaders on best practices for reducing carbon emissions. SAP is eager to collaborate with other stakeholders to accelerate the transition to a more sustainable future and drive meaningful progress in global decarbonisation efforts.

SCOTTISH DEVELOPMENT INTERNATIONAL | STAND: 8450 | HALL: 8

A COMMITMENT TO ENERGY TRANSITION

Scottish Development International lead the way in promoting Scotland's low-carbon trade and investment capabilities

Whether it's in carbon capture and storage, hydrogen, offshore wind or tidal, Scotland is leading the way when it comes to decarbonising the energy system and identifying ways to help the world reach net zero. The Scottish Government's ambitious climate change legislation sets a target date for net zero emissions of all greenhouse gases by 2045, and Scotland's international trade and investment agency, Scottish Development International (SDI), are playing a pivotal role in supporting those targets.

For example:

- Scottish history and experience in the North Sea oil & gas sector, and the chemicals industry, provides the necessary workforce skills and infrastructure to apply to carbon capture and storage. The geology surrounding depleted subsea fields are highly suitable sites for the underground storage of captured carbon deep below the seabed. And in August 2023, the Acorn CCS Project in North-East Scotland was selected by the UK Government as one of the first four carbon capture clusters in the UK.
- As part of its Hydrogen Action Plan, the Scottish Government aims for Scotland to produce 5GW of renewable and low carbon hydrogen by 2030 and 25GW by 2045, with up to 94 TWh green hydrogen for export.
- Scotland is home to one of the world's largest offshore leasing rounds, ScotWind, which will deliver up to 27GW worth of new offshore wind power.

The Scottish Government's ambitious climate change legislation sets a target date for net zero emissions of all greenhouse gases by 2045, and Scotland's international trade and investment agency, Scottish Development International (SDI), are playing a pivotal role in supporting those targets.

- Scotland is pioneering wave and tidal technologies, with more test and demonstration devices deployed here than in any other country.

Visit our Scottish Pavilion, as part of the UK Pavilions, where 28 Scottish companies will highlight the innovative products and services produced by our world-class energy transition businesses, as well as showcasing our country as an incredible investment opportunity for companies to achieve their net zero aspirations.

We look forward to attending ADIPEC 2024 to promote Scotland's low-carbon trade and investment capabilities, as well as sharing our commitment to energy transition.

SCHIEBEL I STAND: **14372** I HALL: **14**

EVOLUTION THANKS TO INNOVATION

Schiebel's electric actuators pave the way for a brighter future

Energy transition, standardisation and digitalisation are buzzwords that are reflected in the product development of Schiebel's electric actuators. With their energy-efficient electronics and integrated health monitoring, they meet the latest requirements for climate-friendly technology. Safety being the key issue.

Until now electric actuators were still equipped as standard with a three-phase asynchronous motor and control via a reversing contactor combination. Nowadays, modern electric actuators, such as the CM series from Schiebel, are equipped with energy-efficient systems such as BLDC technology paired with a compact and modular design

All features are complemented by maximum safety: the failsafe function guarantees safe opening/closing in the event of a power failure. The safety position is reached by means of a mechanical spring that stores a safety stroke. This feature, which has been tested for decades and constantly being developed, is a central component of Schiebel's safety strategy. In the event of a malfunction, a maximum safety level can be achieved through very high closing speeds, which can also be used in normal operation.

Power-Optimised Braking and Energy Savings of More Than 50%

Newly developed electronics take the supply of electrical energy to the active failsafe brake to a new level. The required torque of the brake is measured and individually adjusted to suit the specific application of the actuator. This results in energy savings of up to 50 percent and helps customers to reach their sustainability goals. This is achieved by means of pulse width modulation integrated into the electronics, i.e. a square-wave voltage pulse that can be variably adjusted in width and length.

Depending on the application, the supply voltage can be reduced from 24 VDC to up to 18 VDC - without affecting functionality, availability, and safety. With this relatively small but technically complex measure, Schiebel achieves a high benefit, thus contributing to a lower total cost of ownership and reducing the duration of the RoI. The energy-related advantage of electromechanical failsafe systems over hydraulic or pneumatic solutions is thus further increased. Thanks to the new solution, the use of 10 failsafe actuators in a system, for example, can save more than 1.6 tons of CO2 over a period of 10 years.

SEEKOPS I STAND: **7610** I HALL: **7**

AWARD-WINNING SENSOR TECHNOLOGY

SeekOps' industry-leading technology plays a crucial role in emissions measurement

SeekOps® couples its industry-leading sensor technology with autonomous enterprise-grade drones to provide field-proven measurement systems for methane Leak Detection and Quantification (LDAQ™). Our award-winning sensor technology, SeekIR®, provides critical ESG emissions measurement, reporting, and verification to meet stringent OGMP 2.0 Level 5 and MiQ certification requirements for onshore and offshore energy operators, as well as renewable natural gas and waste management customers around the world. Originally developed by NASA for ultra-sensitive methane measurement on Mars, as part of the Curiosity Mars Rover mission, SeekIR is a Tunable Diode Laser Absorption Spectrometer (TDLAS) sensor which has been optimised for field use closer to home. Lightweight enough at 0.6kg to be easily carried by a drone, the device is sensitive to less than 10 parts per billion of methane. Measuring methane concentration in the air passing through the sensor 10 times per second allows a detailed concentration profile along the flight path to be obtained and transmitted to a ground station in real time. The drone-agnostic system is fully self-contained and can be deployed by most enterprise-grade UAVs. Missions can be executed manually or autonomously and repeated easily and efficiently.

By delivering consistent, repeatable measurements across their global facilities, onshore and offshore, SeekOps delivers actionable emissions data to prioritise LDAR programs for their customers and enable them to achieve OGMP 2.0 Level 5 requirements. Operating on 6 continents through a network of factory-trained and certified drone service providers, SeekOps deploys locally and provides rapid, scalable surveys wherever our customer's demand.

We are looking forward to learning more about the evolving demands of oil and gas operators to lower their emissions on the path to Net Zero, as well as sharing the latest techniques and capabilities of the SeekOps solution.

SENSIA SOLUTIONS I STAND: **4210** I HALL: **4**

SEEING IS BELIEVING: CONTINUOUS EMISSIONS MONITORING WITH AI-POWERED OPTICAL GAS IMAGING

Using RedLook technology, SENSIA Solutions have been able to automate gas emission detection

Mitigating methane emissions into the atmosphere is not just a task, but a crucial and urgent responsibility that society, including oil and gas operators, must undertake to decelerate global warming. Acting now will allow us to see the impact of our actions in the next 10-year cycle.

One can't mitigate what one can't see, and seeing methane emissions is not easy. Many technologies can detect methane when its concentration in the air is too large or when a laser beam, fortunately, crosses a methane cloud. On the other side, we have the Optical Gas Imaging (OGI), a specific case of an InfraRed (IR) Camera spectrally tuned for seeing gases. The grade of sensitivity to visualise any gas emission, even the smallest ones (in terms of a few g/hr), has been widely demonstrated in the last decade. But, additionally to its unmatchable detection limit, probably the most significant benefit is the emission awareness that the operator achieves when a leak is revealed with the level of evidence that only OGI produces. This awareness of emissions leads to almost immediate repairing/corrective action. It has been proven that operators who use OGI technology intensively do not have significant methane emissions; naturally, they do not report super-emitters or relevant intermittent and uncontrolled emissions.

Typically, OGI has been used as a handheld tool for inspections, but thanks to SENSIA AI-powered RedLook technology, currently being adopted worldwide by many oil and gas majors, we have been able to automate gas emission detection. Today, RedLook can detect the same leaks as a trained surveyor, but in a continuous monitoring way, and report directly to the DCS or any other digital platform that the customer desires. But RedLook does not only offer gas emission detection; it also can detect and alert in case of a fire or can monitor the operating temperature of a component to anticipate a failure or an anomaly. RedLook is becoming a gold standard for the efficiency, safety and sustainability challenges of modern industry.

We are looking forward to witnessing all the exciting developments in the decarbonisation space at ADIPEC 2024 and demonstrating how our RedLook OGI technology can serve as an invaluable decarbonisation tool for operators.

SERIMAX I STAND: **14416** I HALL: **14**

A COMMITMENT TO PEOPLE AND PLANET

Serimax offers specialist welding expertise while upholding their values every step of the way

Since 1978, Serimax has built a global reputation as industry leaders in pipeline infrastructure welding. The company offers specialist welding expertise, developing advanced technology across the full range of grades, materials and applications including subsea, landline, water trunk main and aqueduct pipeline infrastructure projects.

At Serimax, we are committed to meeting our responsibilities to the communities in which we operate. At the core of our mission lies a commitment to both people and planet. Leveraging our combined expertise and resources, we actively empower our team, ensure safe and efficient services for our customers, and contribute significantly to uniting communities through the provision of clean, sustainable energy, resources, and infrastructure. As individuals and as an organisation, we consistently strive to uphold our values in every action we take.

Our mechanised welding solutions (Saturnax) reduce the amount of welding consumables needed and allows us to perform high-quality welds with repeatable results.

We are also part of the FitFor Offshore Renewables, have made the Switch to HVO (Hydrotreated Vegetable Oil) as a preferred fuel source for project-based generators in the Serimax NEU Region, and are committed to providing robust welding services in wind energy, hydrogen, nuclear energy, carbon capture, and utility pipelines.

Saturnax 01 is a testament to our commitment to innovation, but also upskills local resources. Local workforces are able to perform high-quality welds, reducing the need for extensive travel and transport of specialised welders. This not only lowers emissions, but also supports local economies by providing skilled job opportunities.

We also provided a spatter-free welding solution on a potable water line in the UK where we worked with a consortium of five companies looking to develop a 500km utility pipeline, comprising 200km of steel pipe welded by Serimax. Our solution prevented expensive repairs which are costly for the environment. We completed the E-Joint end prep and welding work, for which we created a bespoke solution, positioning ourselves as a valuable welding partner. Our unique approach has dramatically reduced internal pipe repairs – a technique that prevents costly, wasteful and avoidable repairs.

At ADIPEC, we look forward to meeting and greeting more like-minded attendees wanting to collaborate and make decarbonising our industry possible.

SHANDONG NANHAI AIRBAG ENGINEERING CO LTD I STAND: **15364** I HALL: **15**

SUSTAINABLE SOLUTIONS IN OFFSHORE WIND POWER

Shandong Nanhai Airbag Engineering Co Ltd's products and technical support have been key for players striving to meet their decarbonisation goals

Established in 2006, Shandong Nanhai Airbag Engineering Co Ltd (NANHAI) has emerged as a leading manufacturer of marine fenders and marine airbags, with a presence in over 80 countries across seven continents. With more than 400 projects undertaken annually, the company exports over 70% of its products worldwide.

In 2008, NANHAI embarked on research and development (R&D) focused on floating technology, leading to the creation of its 'Series Floating Modules'. This innovative technology is integral to the construction of offshore wind power farms.

Versatile solutions for offshore projects: NANHAI's floating modules are crafted from rubber or foam, tailored to meet various application requirements. Currently, its floating technology supports both near-sea and deep-sea wind power projects. The company's goal is to leverage advanced technology to reduce operational costs in offshore wind power and to foster the growth of offshore wind initiatives.

Certified products, trusted widely: NANHAI is preparing to supply rubber products made from EUDR-compliant natural rubber. We are collaborating with NSF, the Public Health and Safety Organization, to obtain ISCC PLUS certification, ensuring that our suppliers maintain robust due diligence systems for traceability and compliance of natural rubber and stearic acid—two critical components in our products. We aim to establish a sustainable and resilient supply chain, providing EUDR-compliant products to the market by 2024.

Decarbonising the Offshore Wind Power Industry: NANHAI's products and technical support have proven essential for industry players striving to meet their decarbonisation goals. Our R&D team manufactures the 'Floating Module', which has been successfully applied to various offshore projects, including marine aquaculture, marine salvage, offshore oil and gas, marine pipeline floating, and marine facility floating.

> *Our goal is to leverage advanced technology to reduce operational costs in offshore wind power and to foster the growth of offshore wind initiatives*

A notable example is the HuiZhou Port Offshore Wind Power Project, where NANHAI customised floating modules to provide sufficient and stable buoyancy — up to 560 tonnes, with a maximum capacity of 3,500 tonnes — for the wind power jacket foundation. These floating modules, in collaboration with floating cranes, facilitate the successful placement of the jacket foundation on the seabed. This innovative floating method reduces the tonnage required for floating cranes, and in some cases, eliminates the need for them entirely, while ensuring safe project operations and significantly lowering operational costs.

NANHAI's floating technology offers the offshore wind power industry a more convenient, safer, and cost-effective construction method, supporting global sustainable development.

SIEMENS ENERGY | STAND: **3550** | HALL: **3**

SUPPORTING THE TRANSITION TO A MORE SUSTAINABLE WORLD

With its portfolio of products, solutions and services, Siemens Energy covers almost the entire energy value chain – from power and heat generation to transmission and storage

Siemens Energy is one of the world's leading energy technology companies, working with its customers and partners on energy systems for the future. The company's portfolio includes conventional and renewable energy technology, such as gas and steam turbines, hybrid power plants operated with hydrogen, and power generators and transformers.

Its wind power subsidiary Siemens Gamesa makes Siemens Energy a global market leader for renewable energies. An estimated one-sixth of the electricity generated worldwide is based on technologies from Siemens Energy. Siemens Energy employs around 98,000 people worldwide in more than 90 countries.

Siemens Energy has significantly aided industry players in achieving decarbonisation goals through innovative solutions. For instance, our advanced gas turbines, like the SGT-800, offer high efficiency and lower emissions, enabling power plants to reduce their carbon footprint. Additionally, our hydrogen production technologies, such as electrolyzers, facilitate the transition to green hydrogen, a clean energy source. In the industrial sector, our digital solutions, like the EnergyIP platform, optimise energy consumption and enhance operational efficiency. These technologies collectively support industries in reducing greenhouse gas emissions and advancing towards a sustainable, low-carbon future.

At ADIPEC 2024, Siemens Energy is excited to showcase and explore cutting-edge decarbonisation technologies and strategies. We look forward to engaging with industry leaders on advancements in green hydrogen production, carbon capture and storage (CCS), and renewable energy integration. Our focus will be on collaborative efforts to accelerate the energy transition, highlighting successful case studies and innovative solutions. Additionally, we anticipate discussions on policy frameworks and investment opportunities that support sustainable energy initiatives. But most of all we look forward to engaging with our partners, our customers, and our suppliers, to see how we can work together most effectively, to deliver a faster energy transition. ADIPEC 2024 promises to be a pivotal platform for driving forward the global decarbonisation agenda and fostering partnerships for a cleaner energy future.

SHANDONG KERUI I STAND: **10550** I HALL: **10**

ONE-STOP INTEGRATED SOLUTIONS

Shandong Kerui are committed to advancing green and low-carbon development within the oil and gas industry

Kerui,is an international comprehensive industrial group specialising in the oil and gas industry. Our company offers global customers integrated solutions in the oil and gas energy sector, encompassing the research, development, and manufacturing of high-end oil and gas equipment. Kerui has successfully pioneered the world's first Flue gas recovery and injection thermal oil production equipment, as well as China's first Truck-mounted Pipeline Gas Recovery Compressor Unit, both of which have been effectively deployed in several oil and gas fields.

Take the truck-mounted Pipeline Gas Recovery Compressor Unit as an example: during the maintenance and emergency repair of natural gas pipelines, the unit can be connected to the natural gas transmission pipeline through a detachable temporary pipeline, allowing for significant recovery of vented natural gas. While operating for PipeChina, this equipment achieved China's first recovery of vented gas from a large-diameter long-distance natural gas pipeline. Within the specified 35-hour period, a total of 1.564 million standard cubic metres of natural gas was recovered, reducing emissions by 23,400 tons of CO_2 equivalent. The equipment has now been successfully deployed in oil and gas fields in countries such as Ukraine and Uzbekistan.

Kerui aims to leverage this year's ADIPEC to engage with more partners, sharing and exchanging solutions for the low-carbon and efficient development of oil and gas resources, thereby contributing to global emission reduction efforts.

SIGMA ENTERPRISES
STAND: **1130** I HALL: **1**

ROBOTS AND DRONES PLAY A SIGNIFICANT ROLE IN DECARBONISATION

SIGMA is a distributor of engineering products and scientific equipment from leading brands in the United Arab Emirates and GCC countries

SIGMA is part of Mazrui International, one of the UAE's most prestigious family businesses established in 1972. SIGMA currently offers solutions across various applications segments like Robotics and Drone Technology, NDT Inspection, Material Science and Civil Engineering Products, Advanced Positioning and Surveying Instruments, Construction Technology, Surface Preparation and Power Generation.

In an ever-changing world, we recognised early on that staying ahead requires a willingness to evolve and adapt. SIGMA's journey to support decarbonisation in the UAE's industrial market started with the introduction of innovative and cutting-edge technology solutions in our portfolio, such as Autonomous Inspection Robots from ANYbotics, one of a kind Indoor Inspection Drones Elios 3 from Flyability, Surveying and Mapping Drones from Wingtra -introducing the latest innovative technology solutions along with the traditional equipment in the Oil and Gas, Education & Research, Defence & Security sectors in the UAE.

The introduction of robots and drones can play a significant role in the decarbonisation of various industries by enhancing efficiency, reducing emissions, and enabling new technologies for sustainability. By leveraging robotics and drone technology, industries can accelerate their decarbonisation efforts, making processes more efficient, sustainable, and less reliant on fossil fuels.

The ANYmal – Autonomous Inspection Robot from ANYbotics automates industrial inspection resulting in increased uptime and improved preventive maintenance through asset health monitoring.

The Elios 3 Indoor Inspection Drone makes your confined space inspections safer, cheaper and faster.

The Wingtra OneGenII surveying and mapping drone helps carry out topographic surveys of the same quality as the highly accurate measurements collected by traditional methods, but in a fraction of the time.

At this year's ADIPEC we hope to meet and interact with industrialists in the UAE to demonstrate how the products in our portfolio can help their company achieve decarbonisation in an efficient way, and to help them use sustainable technologies in their everyday work.

SIGMA is the authorised distributor and service provider for ANYbotics, Flyability, Wingtra, Evident, NavVis, Radiodetection and MFE Inspection in the United Arab Emirates.

SINOPEC I STAND: **15145** I HALL: **15**

ADVANCING A SUSTAINABLE FUTURE

Sinopec is reducing emissions using CCUS technology

Sinopec takes the initiative to embrace green change, takes net zero carbon emissions as the ultimate goal, accelerates the building of low-carbon competitiveness, and is committed to reducing carbon emissions through innovative technologies such as carbon capture, utilisation and storage (CCUS), in order to achieve green, circular and low-carbon development.

In 2022, Sinopec's Qilu Petrochemical - Shengli Oilfield CCUS Project, was officially put into operation, marking a key step for China's CCUS industry to enter commercial operation. This project is the first CCUS project on a million-ton scale in China, which can reduce carbon dioxide emissions by 1 million tons per year, equivalent to planting nearly 9 million trees, which is of great significance for building an artificial carbon cycle model and provides more practical engineering experience and technical data for China to carry out large-scale CCUS project construction. Subsequently, Sinopec signed a memorandum of understanding with Shell, China Baowu and BASF in Shanghai, and the four parties will carry out cooperative research and jointly launch China's first open 10-million-ton CCUS project in East China, to decarbonise existing industries in East China and build a low-carbon product supply chain.

Sinopec fully fulfils its economic, environmental and social responsibilities, is committed to sustainable development, actively promotes green and clean production, develops circular economy, protects biodiversity, actively responds to global climate change, and runs the concept of green and low carbon through the whole process of building the Belt and Road.

Sinopec will continue to strengthen cooperation in the Middle East, contributing to global decarbonisation efforts and advancing a sustainable future.

SOLUFORCE I STAND: **11330** I HALL: **11**

PIONEERS OF REINFORCED THERMOPLASTIC PIPE TECHNOLOGY

SoluForce: innovative pipeline solutions that play a crucial role in minimising emissions—both for current and future energy infrastructure

As the global push towards decarbonisation intensifies, reducing CO2 emissions has become a top priority across the energy sector. SoluForce is at the forefront of this effort.

With over 20 years of experience in non-metallic pipeline systems, SoluForce pioneered Reinforced Thermoplastic Pipe (RTP) technology to prevent corrosion in oil and gas pipelines. Today, this innovative solution is leading the way in hydrogen transport as well, offering a sustainable, cost-efficient, and rapidly deployable infrastructure solution.

SoluForce's non-metallic pipelines offer significant environmental and economic advantages. First, their production and use generate up to four times less CO2 emissions compared to traditional steel pipelines, contributing directly to decarbonisation efforts. Additionally, the system's Total Cost of Ownership (TCO) is much lower, and the product's 400 metres coils allow for faster installation, reducing both installation time and costs. By using SoluForce pipelines, companies can immediately reduce their carbon footprint, making progress toward climate goals while continuing to meet today's energy demands.

In parallel, SoluForce is well-positioned to support the global hydrogen transition. Its flexible and sustainable pipeline systems are already in use in hydrogen projects worldwide, helping facilitate the production and transport of hydrogen. Whether for decentralised hydrogen production in the Netherlands or large-scale projects in countries like Chile and Namibia, SoluForce solutions are ideal for many hydrogen applications.

In the Middle East, SoluForce is already widely used, and many regional energy companies are also adopting non-metallic pipelines. Not only to enhance efficiencies and unlock greater value, but also as part of their decarbonisation strategies. Significant strides can already be made in reducing CO2 emissions through the materials we use for energy transport. By offering a flexible, sustainable, and efficient solution, SoluForce is revolutionising the way energy is transported, driving the decarbonisation forward.

SIEMENS INDUSTRIAL I STAND: **14130** I HALL: **14**

A COLLECTIVE APPLICATION TO TRULY AMPLIFY EFFECTIVENESS

For global tech leader, Siemens Industrial, the goal to achieving net zero is clear

The urgency to decarbonise the energy industry is intensifying, as climate goals demand a rapid reduction in greenhouse gas emissions. Innovative technologies play a pivotal role in reshaping the future and driving a transition to cleaner operations.

Siemens, a global technology leader, is driving transformative change in the energy sector – and this starts with us.

Our goal is clear: All Siemens production facilities and buildings worldwide are to achieve a net zero carbon footprint by 2030. This program not only benefits humanity and the environment, but also comes with sustainable economic advantages for our company.

We actively collaborate with Carbon Reduction@Suppliers Program and encourage climate protection measures with the aim to reduce relative Scope 3 GHG emissions.

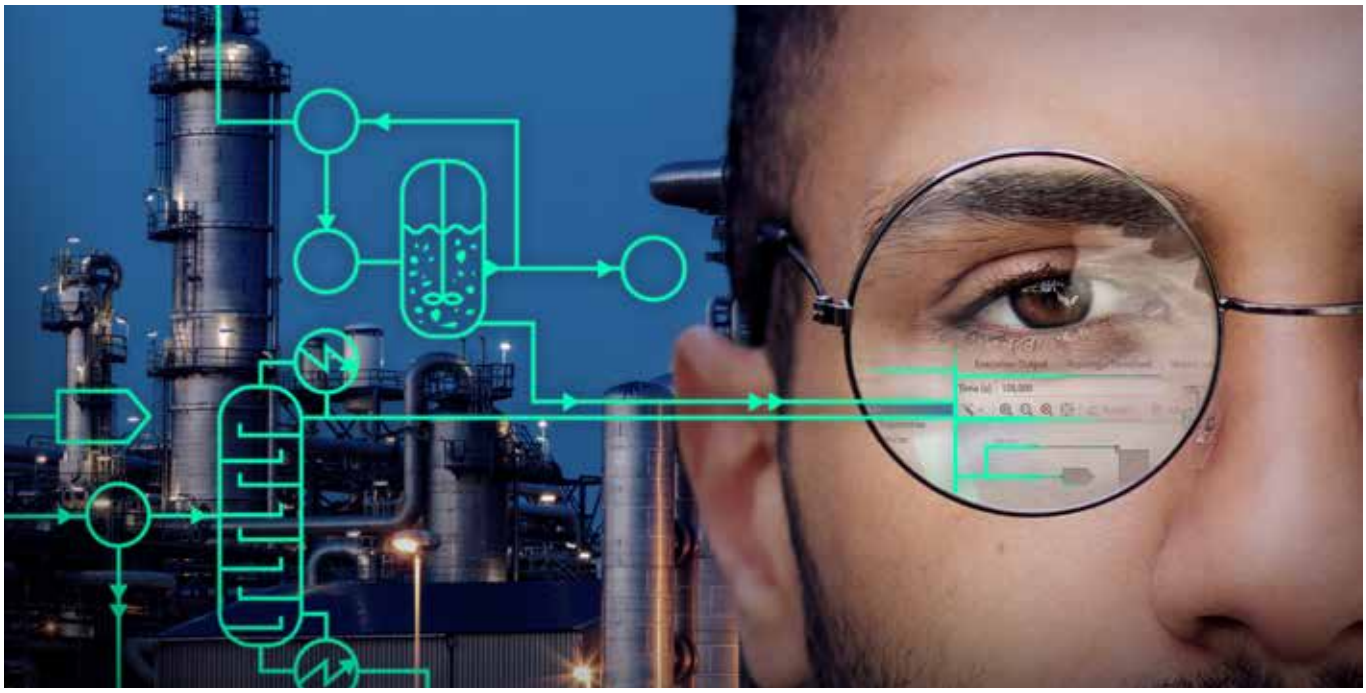
At the same time, we help our customers meet their individual decarbonisation goals.

With Siemens proprietary technology, a process digital twin of the entire Carbon Capture and Utilisation (CCU) chain from the carbon producing plant, all the way to CO2 export/storage can be developed. This enables clients to optimise their CCUs, to maximise carbon capture while maintaining all product requirements of the process plants.

With this technology, Siemens has helped clients like Shell, Carbon Clean Solutions, DNV, Cambridge Carbon Capture among others, to minimise CAPEX cost through optimal metallurgy design selection, reduced CO2 emissions, optimised power and electricity requirements, improved utility requirements, and allowed clients to scale up with confidence.

Our goal is clear: All Siemens production facilities and buildings worldwide are to achieve a net zero carbon footprint by 2030. This program not only benefits humanity and the environment, but also comes with sustainable economic advantages for our company.

The role of technology to decarbonise the energy sector is both transformative and essential. Many new innovations bring their unique strength in addressing environmental issues, but it is their collective application that truly amplifies their effectiveness. This convergence – from the insight of digital twins to the 'great enabler' industrial AI, the efficiency of additive manufacturing, the insight of decarbonisation platforms, and the balance provided by smart grids – creates a comprehensive force for sustainability. Together, they are reshaping our approach to a cleaner, more sustainable future.



SONIHULL - AGITATE ULTRASONICS I STAND: **8259** I HALL: **8**

ULTRASONIC SOLUTIONS FOR A LOW-CARBON FUTURE

Sonihull - Agitate Ultrasonics proudly present their latest innovation, Agitate Pro, the pinnacle of ultrasonic antifouling technology, designed specifically for industrial applications

At Agitate, we are committed to driving the global decarbonisation agenda by delivering advanced ultrasonic antifouling and anti-scaling solutions. Our technology is designed to eliminate dependence on harmful chemicals and reduce energy consumption, effectively cutting carbon emissions across various industries. By safeguarding and extending the life of critical assets such as pipes, cooling systems, and valves, Agitate's solutions not only enhance operational efficiency but also contribute significantly to a lower-carbon, higher-growth world. With over 15 years of dedicated research and a proven track record in the maritime sector, our technology has been adapted and refined to meet the rigorous demands of industrial applications, offering a green and sustainable alternative to traditional methods.

Agitate's ultrasonic technology has demonstrated significant returns in various sectors, particularly in food and beverage applications where it has increased productivity by over 30%. By reducing the need for frequent cleaning cycles, as well as lowering energy and chemical usage, Agitate is proving to be a game-changer in operational efficiency and sustainability. Additionally, our solution has been successfully implemented at a British water treatment site to combat marine growth, eliminating the need for costly alternatives and leading to plans for further deployment across other sites in England.

A prime example of our impact is the collaboration with New Fortress Energy on their FSRU, Energos Winter, in Brazil. Our ultrasonic antifouling system replaced their previous chemical dosing system, Chloropac, a crucial upgrade that enabled them to pass an environmental audit in the state of Santa Catarina. This audit approval was essential for obtaining the license to operate in the region. The successful installation not only ensured the uninterrupted operation of critical assets but also contributed to the reduction of the vessel's overall carbon emissions, exemplifying how Agitate's technology is pivotal in meeting strict environmental regulations.

With over 15 years of dedicated research and a proven track record in the maritime sector, our technology has been adapted and refined to meet the rigorous demands of industrial applications, offering a green and sustainable alternative to traditional methods.

As we look forward to ADIPEC 2024, we are excited to present our latest innovation, Agitate Pro. Launched in early 2024, Agitate Pro represents the pinnacle of ultrasonic antifouling technology, designed specifically for industrial applications. With features such as ATEX Zone 0, 1, and 2 certified transducers, intelligent thermal management, and comprehensive system integration capabilities, Agitate Pro is set to redefine industry standards. This powerful system not only enhances operational efficiency but also extends the lifespan of critical assets, all while maintaining our commitment to reducing environmental impact. Currently, within the USA, 23% of total carbon emissions come from industrial facilities, underscoring the urgent need for solutions like Agitate Pro that can drive significant reductions in these emissions.

SPECIALIST VALVE SERVICES
STAND: **8450** I HALL: **8**

PARTNERSHIPS TO ACHIEVE GREATER SUSTAINABILITY

SVS specialises in Total Valve Management with a clear focus on decarbonisation

Based in Aberdeenshire, Scotland, Specialist Valve Services (SVS) specialises in Total Valve Management. For 25 years, we have excelled in providing equipment, testing, repair, reconfiguration, design, maintenance, and inspection of topside and subsea valves, actuators, and ancillary equipment for the global market. This has been achieved through sustainable organic growth, adding resources, facilities, and diversification, including hydrogen and carbon capture.

Over the last three years, we have focused on decarbonisation and driving sustainability within our circle of influence, and subsequently driving our external providers, manufacturers, and utility providers to collectively contribute, reducing our carbon footprint and promoting sustainability.

Our decarbonisation strategy includes:

Assessing current emissions: Direct and indirect impacts are identified, including company-owned vehicles, machinery, energy usage in the servicing of valves, transportation of valves, and waste generated from servicing.

Setting clear targets: Achievable goals within the business are set and monitored.

Engaging stakeholders: Engagement with stakeholders ensures cross-business adaptation to the ethos. This includes employee training, supplier collaboration, and customer communication.

Implementation and Monitoring: Engagement of stakeholders is important action plans. Timelines, responsibilities, and resources ensure success. Monitoring is imperative for working towards targets. Annual sustainability outputs are disseminated for continual improvement.

Leveraging technology and innovation: The utilisation of initiatives and technology is essential in Total Valve Management (Energy Management). We are actively working with Scottish Enterprise to further develop our strategy and discuss innovations to reduce our environmental impact.

By engaging with customers and influencing the supply chain, we can collectively brainstorm and identify areas for reduction in cohesion, which can subsequently be passed on to clients. At ADIPEC, SVS looks forward to understanding key strategies and outputs from other operators and service providers that we may be able to adapt and incorporate into our strategy, working in cohesion and sharing experience and expertise previously encountered.

SPIRA POWER GROUP
STAND: **11032** I HALL: **11**

A POWERFUL STEP TOWARDS AN ENERGY-EFFICIENT FUTURE

Spira Power Group employ sustainability measures at their new, and existing, manufacturing plants using technologies and alternative materials to support decarbonisation

Text: Spira Power Group was opened as Specialist Manufacturers of Industrial Gaskets & Sealing Products for oil, gas, marine, refineries and power generation companies. We have a manufacturing facility in Dubai, Mussafah and KEZAD in Abu Dhabi, and in Sohar Oman. We evolve better and sustainable facilities using technologies and providing alternative materials to support decarbonisation. Spira Power Group is committed to driving sustainable development and ensuring that its practices have a strong positive impact on the people and communities

Spira Power Group invested in our first-owned manufacturing plant located in ICAD-1 industrial area, Mussafah. The investment will also enhance the company's capabilities at existing manufacturing facilities. In today's climate, customers are being deeply driven by quality, health, safety, environmental and social responsibility.

The new plant will strengthen the lighting system within facilities by transitioning to LED technology as a powerful step towards an energy-efficient environment, in addition to conserving energy and resources. The new plant will also use sustainability measures to minimise emissions, waste and water use, to maximise quality and improve operational efficiency.

Spira Power frequently participates in ADIPEC to boost our market position on a wider scale of industries and marketplaces. ADIPEC 2024 also provides an excellent opportunity for us to promote our latest products that meet existing industry standards and to connect with industry peers, potential partners and clients.

SPP PUMPS I STAND: **12117** I HALL: **12**

HIGHLY ACCLAIMED PROJECT DELIVERS POSITIVE RESULTS

SPP Pumps has recently provided large seawater lift pumps for the Kasawari CCS platform, making them the first offshore CCS project in the world

For nearly 150 years, SPP Pumps has been a global leader in the design and manufacture of centrifugal pumps and associated systems across multiple industry sectors. SPP has been actively contributing to decarbonisation efforts through various products, services, and initiatives including:

- Energy-efficient pump solutions
- Innovations in wastewater and water treatment
- Lifecycle services and monitoring solutions
- Sustainable materials and manufacturing practices
- Collaboration with green energy sectors
- Circular economy and product longevity

Through these initiatives, SPP Pumps actively supports the reduction of carbon emissions and helps industries transition toward greener operations.

Case Study:

Supply of Seawater Lift Pumps for Kasawari Carbon Capture & Storage (CCS) Project

This year SPP has successfully completed the delivery of three large seawater lift pumps (rated at 3000 m3/hr) which will provide the cooling water for the Kasawari CCS platform. This project is highly acclaimed by being the first offshore CCS project in the world.

Operated by PETRONAS Carigali Sdn Bhd, the Kasawari CCS project will divert the permeate from the Kasawari compression (CPP) platform into CO2 sequestration facilities. It is expected to reduce an average of 3.7 million tonnes of CO2 per annum, providing a major contribution to PETRONAS sustainability agenda seeking to achieve net zero carbon emissions by 2050.

SPP Pumps is proud to be a supplier to such a prestigious project and supporting towards the overall decarbonisation goals.

SPP are looking forward to participating in ADIPEC 2024 and showcasing our expertise, products, and services for decarbonisation.

SSE SPA I STAND: **1450** I HALL: **1**

REDUCING EMISSIONS WHILE IMPROVING EFFICIENCY

SSE Spa deliver turn-key engineered solutions, believing real progress lies in revamping projects that address existing infrastructure

With over 40 years of history, SSE has been successfully operating as a trustworthy EPCC, evolving from the design of turbomachinery control systems to the development of cutting-edge solutions for the oil and gas, petrochemical, refinery and power generation industries, completing thousands of projects worldwide. Our core business is to deliver turn-key engineered solutions. Striving to minimise total installed and operating costs, we aim at reducing emissions while improving availability, efficiency, and operating range of the installed turbomachine fleets, regardless of which original equipment manufacturer the equipment is.

The Continuous Emission Monitoring System (CEMS) is a crucial tool for tracking and regulating emissions from industrial sources, ensuring compliance with environmental regulations. By measuring critical pollutants like SO2, NO2, CO, CO2, THC, and O2, CEMS helps maintain environmental standards and improve operational efficiency. This system's integration of real-time data provides operators with actionable insights into the combustion process, enabling adjustments that can optimise performance, reduce pollution, and enhance overall turbine reliability.

On-line combustion-dynamics monitoring adds further value by offering real-time diagnostics that can prevent failures in the gas turbines combustion system. This system acts as an enabler to avoid the combustion dynamics reaching an upper level that can result into a catastrophic failure of the gas turbine. Despite the initial investment, the system's ability to increase turbine availability and operational flexibility translates to significant cost savings over time. By monitoring combustion conditions continuously, power generators can pre-emptively address issues, improve system longevity, and avoid unexpected downtimes, thus enhancing the overall health and efficiency of the power plant. This makes combustion monitoring a vital part of modern industrial operations.

We're particularly looking forward to engaging with industry leaders and stakeholders focused on tangible decarbonisation efforts. Our company operates in real brownfield applications, and we believe that true progress lies in concrete revamping projects that address existing infrastructure. We hope to see more discussions around practical, actionable strategies rather than high-level concepts that may not translate into real-world solutions. It's essential for us to collaborate on initiatives that can deliver measurable results in decarbonisation and truly benefit our industry and the environment

STRATUM RESEARCH | STAND: **7446** | HALL: **7**

DEDICATED TO THE DELIVERY OF NET ZERO TARGETS

Stratum Reservoir: Providing almost 50 years expertise in core and fluid laboratory analyses

Stratum Reservoir are proud to exhibit at ADIPEC 2024 where we will be sharing insights on how our innovative technologies and cutting-edge research are driving progress towards decarbonisation in the industry.

As members of the Norwegian CCS Research Centre and the Global CCS Institute, we are dedicated to the delivery of global net zero targets.

Stratum Reservoir brings almost 50 years of experience with applicable methodologies, laboratory practices and are actively working with ~30 CCUS projects globally. Our people and processes enable our customers to quantify data to precisely categorise subsurface structures and identify good primary and backup sealing lithologies to map a specific site's integrity and safety.

Your Key to a Net Zero Solution

An ever increasing imperative to reduce carbon emissions is driving the demand for carbon capture sequestration utilisation and storage solutions (CCUS). With the Oil & Gas sector accounting for more than one quarter of all carbon emissions, working with industry leading geoscientists ensures the right expertise is convened to craft the right solution, and our CCUS solutions offer an effective option for energy producers and other large-scale industries.

Risk Reduction With Us

Mitigating CO2 safely is an increasingly urgent business imperative. As one of the leading scientific firms in the industry, we bring a strong background in core and fluid laboratory analyses and experience in large-scale composite core stacks. This deep domain expertise results in accurate displacement testing and yields high precision lab models, empowering our clients to address critical business risks and mitigate environmental impact.

Ccus Recommended Workflow

At Stratum Reservoir we understand the many challenges you face in meeting net zero targets, including precisely defining your unique program, predicting how injected CO2 may migrate through the subsurface over time, how fluids will interact with each other and the rock matrix, and more.

We partner with you every step of the way, from precisely defining your needs to drilling down to the specifics of your bespoke CCUS solution. We also provide monitoring programs, crafting data-driven optimisation models and fine tuning each program from initiation, throughout operation, to decommissioning and abandonment.

STONE RIDGE TECHNOLOGY I STAND: **14268** I HALL: **14**

HIGH PERFORMANCE COMPUTING SOLUTIONS

Stone Ridge Technology develops innovative solutions to significantly accelerate reservoir engineering workflows

Stone Ridge Technology (SRT) is a pioneering software company. Our novel approaches are a result of our deep expertise in high performance computing (HPC) and strong collaboration between in-house engineers and valued clients and partners.

ECHELON, the company's flagship reservoir simulator jointly developed with Eni S.p.A., is the world's first to run on modern hardware Graphics Processing Units (GPUs), that include both NVIDIA and AMD.

Existing workflows with little to no modifications run an order of magnitude faster than legacy CPU simulators.

ECHELON's broad modelling capabilities, subsurface physical models and field scheduling, allow its clients to target traditional applications ranging from unconventionals to integrated deep-offshore assets. ECHELON runs efficiently on a laptop, even with limited GPU capabilities, and more-so on a massively parallel cluster for large-scale simulations, providing a significant reduction in both hardware footprint and power requirements.

ECHELON is perfectly poised to tackle new and important challenges faced by the energy industry such as Carbon Capture and Sequestration (CCS) by combining its speed with modern technologies such as AI/ML. For example, due to the enormous spatial extents, time scales, and resolution required for accurate subsurface modelling of CCS projects, extreme performance at high fidelities are an absolute requirement. ECHELON can model complex multi-phase flow involving injected CO2 and formation fluids, both in aquifers and depleted hydrocarbon fields, enabling energy companies to assess the viability and safety of potential CCS sites in practical timeframes.

> *Our broad modelling capabilities, subsurface physical models and field scheduling, allow clients to target traditional applications ranging from unconventionals to integrated deep offshore assets.*

Characterisation of uncertainties in such workflows are helped by the use of state-of-the-art Scientific Machine Learning techniques that are being pioneered at SRT.

Furthermore, use of generative AI techniques such as Large Language Models (LLM) can help boost productivity by intelligently managing workflows for seamless interpretation of input data and simulation results.

As we look forward to ADIPEC, there is a growing focus on decarbonisation approaches. SRT's role in these efforts, particularly in accelerating carbon sequestration studies, will likely be a topic of significant interest. We encourage participants to visit us, and attend our two presentations, during the ADIPEC technical program to learn how ECHELON is currently being used by our partners and clients, and how we can help with your subsurface flow simulations for CCS applications and beyond.

TAI CREST RESOURCES
STAND: **13250-16** I HALL: **13**

AN INITIATIVE TO HELP MALAYSIA REACH ITS 2050, NET ZERO GOAL

Tailored EPC solutions for vent-to-flare conversions, signifies TCR's active contribution to decarbonisation

Tai Crest Resources Sdn. Bhd. (TCR) is actively contributing to decarbonisation efforts by providing tailored EPC solutions for vent-to-flare conversions. Cold venting of natural gas is 60 times more harmful to the environment than flaring, where waste gas is combusted and converted to CO2.

TCR has successfully completed projects, such as remote vent jacket conversions and flare towers, for major clients like Petronas, Shell, and JX Nippon.

One of TCR's key achievements was delivering a flare package for the Kasawari CPP platform (Phase 1- photo inset), where the waste gas contains 75% CO2. The Kasawari field is located in Block SK316, approximately 200km off the coast of Bintulu, Sarawak. Phase 1 focuses on gas extraction from the field.

TCR has successfully completed projects, such as remote vent jacket conversions and flare towers, for major clients like Petronas, Shell, and JX Nippon.

In addition, TCR's pilot burners, certified to API 537 standards, ensure energy efficiency and improved combustion, leading to more complete burning of waste gas and further reducing CO2 emissions.

The launch of Phase 2 of the Kasawari project, focused on Carbon Capture and Sequestration (CCS), will reduce CO2 emissions from flaring by 3.3 million tonnes annually. The Kasawari CCS platform, part of Phase 2, will be bridge-linked to the Kasawari Phase 1 Central Processing Platform (CPP).

TCR's flare system, installed on the Kasawari CPP platform, will also handle emergency flaring from the CCS platform. Overall, 71 to 76 million tonnes of CO2 will be re-injected into the M1 field via pipeline, making this one of the largest offshore CCS projects. This initiative plays a significant role in helping Malaysia reach its goal of achieving net zero emissions by 2050.

TRE I STAND: **15012 I** HALL: **15**

EFFECTIVE TECHNOLOGY FOR REDUCING CARBON FOOTPRINTS

TRE: Pioneering decarbonisation solutions in the offshore industry

Founded in 2014 in Abu Dhabi, Technical Royal Excellence (TRE) is renowned for its expertise in offshore third-party lifting inspections, non-destructive testing (NDT), training, crane repair and maintenance, safe load indicators and equipment rentals. With successful projects across more than 10 countries on three continents, TRE has built a strong reputation in the industry. Now, it is expanding its focus towards decarbonisation and sustainability.

TRE has taken up the challenge set by ADNOC to achieve net-zero emissions by 2045. Central to this mission is the I-Phi (Incremental-Partial Hydrogen Injection) Gen 2 System, a patented hydrogen-on-demand technology designed for diesel engines. This Canadian-developed innovation significantly enhances engine performance while reducing both fuel costs and carbon emissions, making it a critical tool for industries committed to decarbonisation.

The I-Phi™ unit generates hydrogen and oxygen gases on-demand through the controlled electrolysis of distilled water. These gases are injected into the engine's air intake, improving combustion efficiency, which in turn boosts engine power, extends fuel efficiency, and reduces harmful emissions. Extensive third-party testing has demonstrated the technology's environmental and performance benefits, leading to six patents and an ISO 14064 Part 2 Carbon Plan, which allows for carbon credit verification.

The I-Phi™ system delivers substantial emission reductions:

- 8% to 30% decrease in CO2 levels.
- 11% to 23% decrease in NOx levels.
- 22% to 86% decrease in particulate matter (PM).
- 10% to 20% decrease in Total Hydrocarbon (THC).

The i-Phi™ unit provides 8%-30% fuel savings, reduced maintenance costs, longer engine life, and lower DEF usage, delivering an overall cost reduction of 20%-30% for businesses.

Leading diesel engine manufacturers like Caterpillar, Cummins, Detroit Diesel, Electro Motive, Hitachi, Komatsu, Volvo and other OEMs, confirmed that I-Phi doesn't void the warranty of the engines. With over 300 million kilometres of on-road experience using hydrogen injection technology, I-Phi™ is a proven, effective solution for reducing carbon footprints.

Additionally, TRE has developed HSE and technical training programs using virtual reality (VR), further demonstrating its commitment to reducing carbon emissions and enhancing operational safety.

TRE is seeking new partnerships with companies ready to retrofit their diesel engines and achieve up to 30% carbon emission reductions.

TECNICAS REUNIDAS I STAND: **4256** I HALL: **4**

THREE PILLARS OF SUCCESS

Técnicas Reunidas has a strategic plan to guide their cutting-edge services towards a low carbon future

Técnicas Reunidas is at the forefront of the transition to a low carbon economy, with a strategic focus on the origination, design and build of low carbon projects, the decarbonisation of existing assets and the entry into new industries. These three pillars guide its innovative services, aimed at helping clients reduce their carbon footprints. Técnicas Reunidas is expanding its expertise into new industries such as steel, cement, and other carbon-intensive sectors, showcasing its commitment to driving decarbonisation across diverse fields.

Engineering and technology are at the core of Técnicas Reunidas' offerings. It provides renowned FEED (Front End Engineering Design) and EPC (Engineering, Procurement, and Construction) services, supported by a robust network of partnerships with licensors and technology providers. The company has already delivered more than two million hours in engineering services for low carbon projects.

Additionally, Técnicas Reunidas has put in place new business lines for project definition at their early stages, through project origination and co-development and the provision of early-stage engineering services. Market intelligence is a key component of the approach, shaping opportunities and validating projects through market and trends analysis and project regulatory fit, among other criteria. This approach is leading to the development of groundbreaking low carbon investment opportunities, as green ammonia initiatives in Spain and blue ammonia projects in the USA. These ventures involve significant partnerships with major industrial players, highlighting Técnicas Reunidas' capabilities for partnering with energy and other industry relevant players.

Técnicas Reunidas is also building its carbon management practice, providing a comprehensive solution to its clients, from carbon capture to its final storage, and through the intermediate logistics. Another business line, methane management, implements frameworks for the identification and quantification of methane emissions, implementation of mitigating solutions and continuous reporting to meet the most demanding regulatory requirements.

Técnicas Reunidas' dedication to decarbonisation positions it as a leader in the low carbon industry.

TEDDINGTON ENGINEERED SOLUTIONS
STAND: **5120** I HALL: **5**

HIGH-PERFORMANCE PRODUCTS WITH ENERGY-EFFICIENT TECHNOLOGIES

As part of their commitment to sustainability, Teddington Engineered Solutions actively support global decarbonisation efforts by supplying expansion joints to various key projects

At Teddington Engineered Solutions, we specialise in designing and manufacturing high-performance expansion joints, or bellows, vital for industrial systems. Our products accommodate thermal expansion and contraction in pipelines, vessels, and machinery, ensuring safety and efficiency.

Significant contributions involve Teddington's work with ecoVGC® and ecoVLAC®, eco-friendly systems for LNG and LPG transport. These systems, deployed on eight new vessels, mark a major step toward cleaner, greener long-haul shipping of LPG and ammonia. Our expansion joints are crucial in ensuring the reliability and efficiency of these eco-friendly technologies.

Teddington also contributes to advanced plastic recycling plants, which turn used plastics into a recycled oil called TACOIL, used to produce new plastics, reducing waste and promoting a circular economy. Our expansion joints play a key role in supporting the plant's pipeline systems funnelling molten plastic into TACOIL.

In the rapidly growing hydrogen energy sector, Teddington supplies critical components for hydrogen research and energy generation. Our expansion joints will soon be integral in future hydrogen-powered fuel-cell applications.

Additionally, Teddington supports geothermal energy, supplying joints for steam pipework at plants in Scandinavia like Wairakei and Reykjavik and nuclear energy since its early days, from supplying joints to the first-ever nuclear power station at Calder Hall, to the latest generation of PWR plants across Europe, America and Asia.

Finally, Teddington is also involved in fusion energy research, supplying expansion joints to projects such as CERN and ITER, which aim to create clean and practically limitless energy.

At ADIPEC this year, Teddington is excited to explore new opportunities to contribute to decarbonisation efforts by partnering with organisations and projects focused on cleaner, more energy-efficient technologies, paving the way for a more sustainable future.

TETRATECH RPS GROUP I STAND: **3115** I HALL: **3**

MITIGATING THE IMPACTS OF CLIMATE CHANGE

TetraTech RPS Group: Helping businesses and governments achieve their net zero emissions target

TetraTech RPS Group (RPS) is a global professional services firm that offers a wide range of services to support decarbonisation across a number of industries. RPS's work has been instrumental in helping businesses and governments around the world reduce carbon emissions and transition towards a more sustainable, low-carbon economy.

We are committed to supporting the global decarbonisation effort and helping our clients meet regulatory demands, improve sustainability, and mitigate the impacts of climate change.

Key services include:

Strategic Advisory and Planning:
We help organisations develop and implement decarbonisation roadmaps. For example, we have assisted the Irish government in formulating strategies to achieve its net zero emissions target by 2050. Tasks included, setting clear carbon reduction goals, analysing potential pathways, and integrating sustainable practices into business models, ensuring alignment with regulatory frameworks and market trends.

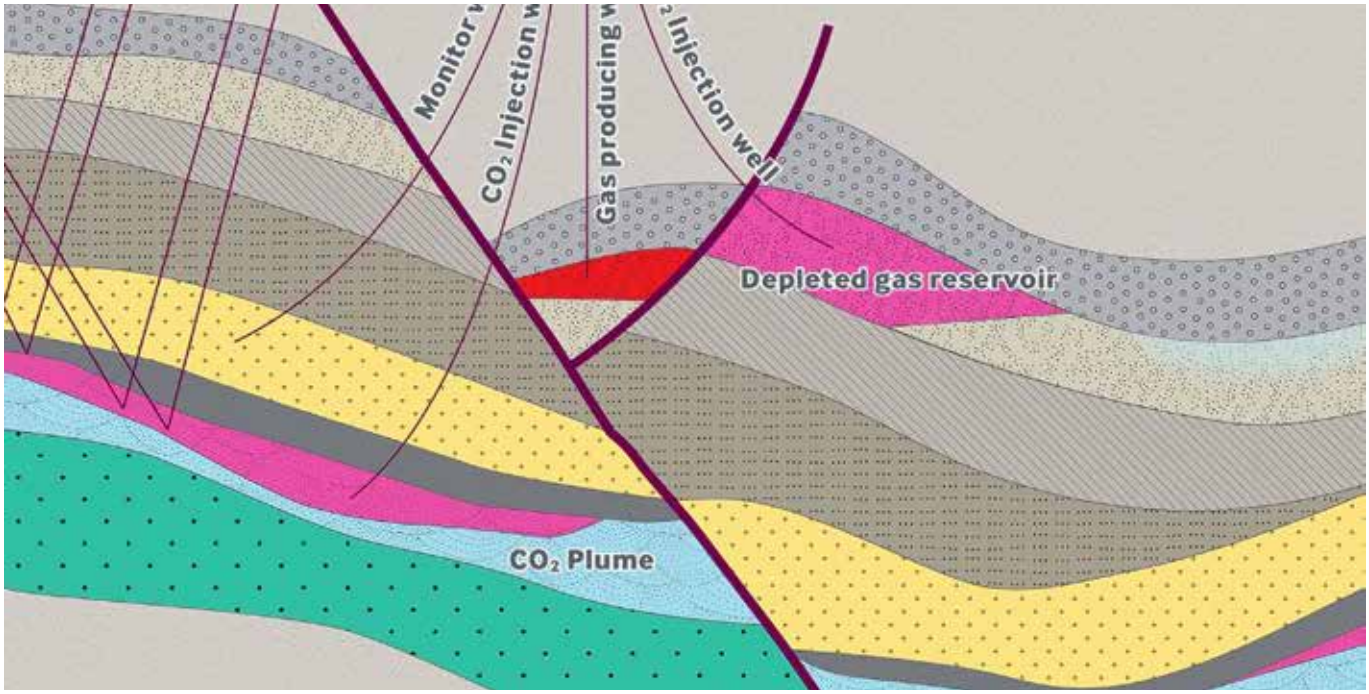
Renewable Energy Development:
We are involved in the entire lifecycle of renewable energy projects, from feasibility to execution. Our work on the Hornsea Two offshore wind farm, one of the largest offshore wind projects in the world, included both environmental and engineering consultancy services, to optimise the project's design and minimise environmental impacts.

Carbon Management and Offsetting:
We offer comprehensive carbon management services, including detailed carbon accounting and development of offsetting strategies. We have worked with numerous companies on carbon capture and storage programs, including Equinor's flagship Northern Lights project, and have provided guidance on reducing operational emissions and identifying offsetting projects for clients globally.

Energy Efficiency and Optimisation:
We help clients optimise their energy usage. This includes conducting energy audits and designing energy-efficient systems for major industrial facilities, leading to significant reductions in energy consumption and operational carbon footprints.

Climate Risk and Resilience:
We examine climate risk across various industry sectors, including water, buildings/infrastructure and energy. For example, our project management team coordinated a US$25 million program of civil repair works across New South Wales' Mid-Coast region, following infrastructure damage from natural disasters in 2021 and 2022, helping the community to build resilience against future climate-related events.

RPS is committed to supporting the global decarbonisation effort and helping our clients meet regulatory demands, improve sustainability, and mitigate the impacts of climate change.



THE KANOO GROUP I STAND: **12105** I HALL: **12**

DECARBONISATION SOLUTIONS FOR HARD-TO-ABATE INDUSTRIES

The Kanoo Group and its partner company, Clean Carbon, are revolutionising carbon capture sector with innovative projects

Carbon Clean, a co-exhibitor with Kanoo Energy, is the point-source carbon capture expert, driving the decarbonisation of hard-to-abate industries for more than 15 years. With 50 technology references globally, we have one of the largest project portfolios of any independent carbon capture business. We are revolutionising the carbon capture sector, having amassed 105 active patent assets across 18 patent families covering 30 countries.

Our award-winning technology has clocked up more than 2.6 million operational hours. We are on track to achieve our mission to capture 1 billion tonnes of CO_2, accelerating progress to a net zero world.

CycloneCC: A Pragmatic Path to Decarbonisation

Our breakthrough modular CycloneCC technology eliminates the two biggest barriers that have previously hindered widespread adoption of carbon capture: cost and space.

CycloneCC cuts the total installed cost by up to 50% compared with conventional solutions. The unit's footprint is up to 50% smaller than conventional carbon capture plants, with its largest equipment sizes reduced by a factor of 10.

Prefabricated, skid-mounted and delivered in truckable modules, CycloneCC reduces the costs associated with transport, logistics, site preparation and installation. Its 'Lego-block', 'plug and play' design is modular and replicable, making it simple and cost-effective to install.

We are focused on commercialising CycloneCC so it can be deployed at scale globally.

Deployed by Decarbonisation Pioneer ADNOC

ADNOC's deployment of CycloneCC recently achieved the major milestone of over 2,000 operating hours and has moved CycloneCC to Technology Readiness Level 7 (TRL 7). The modular unit was installed on site in under a week (a record for the carbon capture sector) at Fertiglobe's 100% owned nitrogen fertiliser plant in the Al Ruwais Industrial Complex in Abu Dhabi, where the high purity CO_2 product from the unit is being used to produce additional urea. System validation confirmed that the industrial demonstration unit is ready to be further scaled up and commercialised.

A Forum for Accelerating the Clean Energy Transition

ADIPEC provides a forum for projects, policy and financing to move in cohesion, with an increased focus on funding first-of-a-kind (FOAK) decarbonisation deployments. We are proud to exhibit in partnership with Kanoo Energy and look forward to demonstrating how together we're helping hard-to-abate industries achieve net zero.

THERMON I STAND: **6250** I HALL: **6**

THERMAL TECHNOLOGY DESIGNED TO DRIVE SUSTAINABILITY

Thermon is powering the future with their sustainable energy solutions

Thermon is a global leader in providing advanced thermal solutions designed to drive sustainability and support decarbonisation efforts across various industries. With over 70 years of experience, Thermon offers a comprehensive range of products and services that ensure operational efficiency while minimising environmental impact. From heat tracing systems to industrial heating, our solutions are engineered to meet the highest standards of performance and reliability, playing a crucial role in enabling industries to transition towards greener operations.

Supporting Industry Decarbonisation

Thermon's commitment to decarbonisation is reflected in our diverse range of solutions that help clients significantly reduce their carbon footprints. Our innovative electric heat tracing (EHT) systems, for example, are pivotal in enhancing energy efficiency and reducing emissions in process plants. By maintaining process temperatures, preventing freezing, and protecting critical infrastructure, these systems optimise energy usage, reducing the need for fossil fuels and lowering greenhouse gas emissions.

A standout example of our impact is our partnership with a major refinery in Sweden where we replaced a traditional gas-fired heater with an electric one. This switch not only improved energy efficiency but also drastically reduced CO2 emissions, aligning with the client's ambitious decarbonisation targets. Similarly, our collaboration with a leading bourbon distiller, involved replacing their gas-fired steam generator with a Vapor Power Jet electrode boiler. This upgrade significantly reduced their reliance on fossil fuels and contributed to a cleaner production process, showcasing Thermon's versatility in supporting diverse industries in their decarbonisation journeys.

Anticipating ADIPEC 2024: A Platform for Decarbonisation

Thermon is excited to engage with industry leaders and explore new avenues for decarbonisation at ADIPEC 2024. Our focus this year is on showcasing the latest advancements in thermal management technologies that align with global sustainability goals. We are eager to present our new energy-efficient products that further enable industries to decarbonise.

At Thermon, we believe that by harnessing technology and innovation, we can power a more sustainable future for all.

THT-EX I STAND: **14112** I HALL: **14**

EXPLOSION-PROOF LIGHT ENGINEERED TO LOWER CARBON FOOTPRINT

THT-EX provides innovative lighting solutions designed to improve energy efficiency and support decarbonisation

Top Hi-Tech THT-EX is at the forefront of providing innovative lighting solutions designed to enhance energy efficiency and support decarbonisation efforts across various industries. Our explosion-proof light is engineered to meet the rigorous demands of hazardous environments while promoting significant energy savings. The THT-EX features advanced dimming and sensor capabilities, which allow it to automatically adjust brightness based on environmental conditions and usage patterns. This smart technology not only reduces power consumption but also lowers overall operational costs, making it a reliable and economical choice for industries aiming to reduce their carbon footprint.

THT-EX's lights have been instrumental in helping industry players meet their decarbonisation goals. For example, in petrochemical plants and oil drilling platforms, the dimming function of the THT-EX light has enabled a reduction in lighting brightness by 30-50% during breaks, resulting in substantial savings on electricity costs and a notable decrease in carbon emissions. Additionally, our sensor technology has proven effective in warehouses and low-activity areas, by automatically adjusting lighting based on ambient light and personnel activity. This has led to an impressive 40-60% reduction in energy consumption compared to traditional mercury lamps, showcasing our commitment to energy efficiency and environmental responsibility.

At ADIPEC this year, we are excited to showcase the latest advancements in our explosion-proof lighting solutions and to engage with industry leaders about the future of decarbonisation. We look forward to exploring new opportunities for collaboration and discussing how our innovative lighting technology can further support the industry's efforts in reducing energy consumption and carbon emissions. We are eager to exchange insights on emerging trends and solutions that drive sustainable practices, and to demonstrate how our products continue to evolve to meet the growing demands for energy efficiency in hazardous environments.

TRILLIUM I STAND: **1252** I HALL: **1**

SUPPORTING GROWTH IN THE NUCLEAR MARKET

Facilitating decarbonisation with Trillium's expanded valve offerings

At Trillium, we aim to facilitate decarbonisation where our existing skills and know-how bring value, also investing in New Product Introduction (NPI) that aligns with market trends. For example, we are expanding our valve offerings to support the growth in the nuclear market, including Small Modular Reactors (SMRs). Both our pump and valve ranges have also been made ready to support CO2 sequestration. Similarly, we are watching the growth of hydrogen and developing valves to facilitate its use.

At Trillium, our efforts to reduce carbon emissions start with providing energy-efficient equipment. For example, we supplied pumps with CFD-optimised hydraulic components used as Hydraulic Power Recovery Turbines that help in overall plant energy recovery. Trillium also offers pump upgrade and re-rate service solutions focused on energy savings. Recently, we re-rated the API 610 BB5 multistage MOL pumps at an offshore platform to meet new plant requirements. The re-rated MOL pumps showed a 24% increase in efficiency, a 40% reduction in power consumption, and improved Mean Time Between Failures (MTBF) at the new duty flow rate. These improvements resulted in a reduction in energy costs of 10.5 GWh per year at the plant level, equivalent to a saving of 2.4 million dollars per year, and a decrease in CO2 emissions by 4,400 tons per year.

At Trillium, our efforts to reduce carbon emissions start with providing energy-efficient equipment.

ADIPEC remains the largest global energy exhibition and conference, setting the tone for the industry. We are eager to gain vital insights into industry initiatives and future developments related to energy transition and decarbonisation.

TROUVAY & CAUVIN I STAND: **9350** I HALL: **9**

PROMOTING GREEN STEEL

TROUVAY & CAUVIN: A global leader in material supply, advances decarbonisation in energy projects

Sustainability at the Core

TROUVAY & CAUVIN's commitments to decarbonisation starts by actively reducing the carbon footprint of its own operations. In Jebel Ali, Dubai, we've installed a 200 kWp solar panel system, generating up to 321 MWh of solar energy annually. Covering nearly 90% of our head office and yard electricity needs, this initiative reinforces our dedication to sustainability. Our commitment has earned us the EcoVadis Bronze Medal, placing us among the top 35% of companies across all industries for CSR and sustainability.

Preferred Supply Partner for Low-Carbon and Renewable Energy Projects

Our contribution to decarbonisation is evidenced by our involvement as key supplier to major low-carbon and renewable energy projects.

Since 2017, TROUVAY & CAUVIN has been a significant supply partner to the ITER project in France, which aims to develop nuclear fusion energy as a cleaner power source. We provide stainless steel and carbon steel pipes, fittings, flanges, plates, and beams for this groundbreaking endeavour. Additionally, our APAC office played a crucial role in the Formosa offshore wind farm off Taiwan's coast, supplying critical materials. This 376 MW wind farm will power 380,000 households annually, contributing significantly to Taiwan's renewable energy transition.

Green Steel Pipes: A Sustainable Alternative

As a key supplier, we endeavour to reduce the carbon footprint of the energy supply chain, by actively promoting green steel products. By advocating these eco-friendly options to EPC companies, TROUVAY & CAUVIN actively contribute to lowering the carbon footprint of major energy projects.

At ADIPEC 2024, we eagerly look forward to engaging with industry leaders and stakeholders to discuss advanced materials and technologies that further reduce the carbon footprints of the Energy industry, as well as exploring new collaborations and innovations in our decarbonisation strategies.

TÜV SÜD I STAND: **8854** I HALL: **8**

DECARBONISATION GOALS

TÜV SÜD - protecting people, the environment, and assets, against technology-related risks

Headquartered in Munich Germany, TÜV SÜD is a leading provider of technical services, including testing, inspection, certification, auditing, and training. Ever since its inception close to 160 years ago, the organisation has remained committed in providing its customers with the assurance that they are meeting today's regulatory requirements and boosting confidence in their investment decisions, by delivering accuracy and transparency of greenhouse gas (GHG), accounting and reporting. Today, we are driving the decarbonisation industry through innovative solutions, supporting our customers to achieve their goals, and be the most sustainable versions of themselves.

Understanding and evaluating the risks and mitigation measures associated with the climate and sustainability arena is vital for investors, operators, and other stakeholders, since they can pose as big a threat with loss of revenue, as they can with reputation. Another challenge is credibility - a key component of climate change projects and sustainability commitment. It increases investors and regulators' confidence, as well as public support.

At TÜV SÜD, we provide a better understanding of GHG emission impacts across the business value chain, organisational level and/or product life cycle, by providing independent validation, verification, and assurance services.

Our service portfolio helps organisations meet their decarbonisation goals, reduce carbon emissions, and provide validation and verification against relevant certification and safety standards.

As one of the leading scientific firms in the industry, we bring a strong background in core and fluid laboratory analyses and experience in large-scale composite core stacks. At TÜV SÜD, we provide a better understanding of GHG emission impacts across the business value chain, organisational level and/or product life cycle.

At ADIPEC 2024, TÜV SÜD is excited to engage with industry leaders, policymakers, and innovators, to explore collaboration opportunities in hydrogen economy, carbon management, and sustainability, in achieving its decarbonisation goals. We are keen to discuss technological advancements, best practices, acceleration towards transition to a low-carbon economy, challenges, solutions, and the way forward.

VALPRES AND QUAM | STAND: **1434** | HALL: **1**

ADVANCING DECARBONISATION WITH INNOVATIVE LOCPOWER TECHNOLOGY

With a focus on innovative valve solutions, Valpres and Quam are enhancing the efficiency and sustainability of industrial processes

Valpres and Quam, two leading companies of the Bonomi Group, will be exhibiting at ADIPEC 2024. Both companies play a crucial role in supporting global decarbonisation efforts, particularly in the oil and gas sector.

Quam's axial flow valves and electrohydraulic valve control systems offer significant advantages for decarbonisation strategies. Axial flow valves, with their low-pressure drop and compact design, enhance system efficiency by reducing the weight and footprint of installations. This leads to a more streamlined compression and pumping process, lowering the energy requirements and associated emissions. Additionally, the transition to electrohydraulic control systems marks a pivotal shift in emissions reduction. These systems will gradually replace traditional control methods that use pipeline gas, directly contributing to lower atmospheric emissions in the coming years.

Valpres is advancing the decarbonisation agenda with its control ball valves and the innovative Locpower technology. The control ball valves, like axial flow valves, offer increased plant efficiency due to their low-pressure drop and minimal footprint, optimising both energy use and system performance. However, the standout innovation is Locpower, the unique energy-recovering control valve. In its current version operating on pipelines for liquids, Locpower captures energy that would otherwise be lost during pressure reduction or flow control, delivering an immediate recovery of this energy. The potential environmental impact is substantial, with each Locpower valve for liquids capable of reducing CO2 emissions by hundreds of tonnes per year.

Case study: a 10" Locpower installation in Veneto, Italy, is successfully recovering 28kW on average over 8600 annual operating hours, yielding a recovery of 240MWh/year. This equates to a reduction of approximately 100 tonnes of CO2 emissions. Without Locpower, the power dissipation would have been around 50kW with an increase in CO2 emissions by 190 tonnes.

Looking ahead, Valpres is developing a Locpower for compressible fluids, which will further enhance the oil and gas sector's decarbonisation potential. By leveraging these technologies, the Bonomi Group is well-positioned to drive progress toward a more sustainable and low-carbon future, supporting both economic and environmental goals.

VALVITALIA I STAND: **444** I HALL: **4**

A SUSTAINABLE MISSION

Valvitalia: Supporting the ecological transition to becoming net zero

Valvitalia is an Italian multinational group specialised in the design, production, and distribution of valves, actuators, fittings, and gas systems for the energy industry, and fire protection solutions for the marine, rail, and infrastructure sectors. Founded in 2002 by current chairman, Cav. Lav. Salvatore Ruggeri, Valvitalia operates eight plants, five of which are in Italy and three abroad (in China, the UK and Canada). The Group employs around 800 people, including 650 at the Italian plants, and its products are distributed in 115 countries. In addition to a specialised R&D structure, Valvitalia has five business units: firefighting, Flow control Italy, Flow control China, Tecnoforge, and Broady UK.

The Group strongly supports the ecological transition toward the Net Zero Emissions goal, to accelerate the reduction of impactful gas emissions and address climate change adaptation practices. Hydrogen is among the crucial sources to hit the target, and Valvitalia is moving in the direction of providing solutions to support projects to develop this important energy resource.

The Group has recently, and successfully, tested new products suitable for 100% hydrogen applications over wide temperature ranges, thanks in part to its collaboration with the Milan Polytechnic University. The work on sustainability has also included issues such as CCUS and the limitation of exhaust gases into the atmosphere, an area in which the Zero Emission actuator was designed, which prevents the dispersion of fugitive emissions. The Group's sustainable mission also passes through new firefighting solutions that find application in the energy sector and combine energy saving, safety and water resource protection. Valvitalia has engineered and built Water Mist - low pressure systems, capable of cutting water consumption by 60% and energy consumption by 40%, increasing timeliness and efficiency of operations.

For Valvitalia, it is of strategic importance to present the latest green innovations to an audience of high-profile operators such as the one present at ADIPEC. For years, the event has been one of the key appointments for the Group to generate new opportunities and fuel technical discussion in the direction of the energy transition. We look forward to engaging with the world's most important players in the energy sector, giving rise to new stimuli and weaving new relationships.

VEM I STAND: **8853** I HALL: **8**

ADDRESSING THE INCREASING DEMAND FOR TECHNICAL SOLUTIONS

Reduce your carbon footprint with VEM High-Speed Drive Systems

Today, Oil & Gas and Petrochemical industries around the world are under huge pressure from their society and national laws to reduce their carbon footprint. Among other measures, electrification of steam and gas turbines that drive pumps and compressors in refineries and petrochemical plants is an important way to achieve carbon neutrality.

As an innovative, internationally active and reliable manufacturer of technically sophisticated motors, drive systems and solutions, VEM considered the increasing demand for technical solutions for the electrification in the market by starting the high-speed drive system project in 2021. A successfully tested VEM high-speed prototype was exhibited for the first time at the ACHEMA trade fair in Germany in 2022. Now, VEM high-speed drive systems are contributing to energy conservation and carbon reduction in the petrochemical industry in China, for instance.

Most of the petrochemical factories of our customers use gas turbines to drive compressors for their production. Although gas turbines can operate independently of the electrical supply system, its low efficiency and the working principle make gas turbines not only the main culprit of excessive carbon emissions, but also its lengthy and complicated equipment maintenance will increase the OPEX for owners. By introducing the VEM High-Speed Drive System to replace three of its gas turbines, our customer can reduce the carbon footprint at the petrochemical factory significantly. According to the customer's worst-case analysis, this electrification process would reduce carbon emissions at its chemical plant by approximately 100,000 tons per year.

Sustainability, continuity and reliability - that's what production and service at VEM stands for. High-tech engineering and quality of the products with the VEM trademark are groundbreaking on the market. The strong team of VEM makes it possible for our customers to step into a greener future.

VOYAGE GROUP I STAND: **15158** I HALL: **15**

SHAPING A SUSTAINABLE FUTURE FOR THE GLOBAL SHIPPING INDUSTRY

With over two decades of experience in the marine and oil & gas industries, Voyage Group has built a reputation for delivering state-of-the-art technologies through a global network of highly skilled professionals

Voyage Group is excited to showcase its innovative strategies for decarbonisation in the maritime sector at ADIPEC 2024. With the maritime industry playing a pivotal role in global sustainability efforts, we are committed to advancing sustainable solutions that align with international emission reduction goals.

In collaboration with our renowned partners who are leaders in proven emission measurement technology and maritime monitoring, Voyage Group is passionately dedicated to contributing to global decarbonisation objectives. We offer cutting-edge solutions in real-time emission monitoring, data analytics, and predictive maintenance, empowering ship-owners and operators to significantly reduce their carbon footprints.

By continuously tracking key exhaust gases, including CO2, NOx, and SOx, our technology provides actionable insights that enhance fuel efficiency, lower emissions, and ensures compliance with stringent regulations set by the International Maritime Organisation (IMO) and the European Union. These advancements not only drive environmental sustainability but also lead to substantial long-term cost savings by optimising fuel consumption and reducing maintenance expenses, positioning our clients as leaders in sustainable shipping. With predictive maintenance features, our solutions further minimise operational downtime, enhancing overall efficiency.

ADIPEC 2024 offers a unique platform for Voyage Group to connect with partners and clients committed to sustainable maritime solutions. By showcasing our innovative technologies and strategies, we aim to inspire collaboration and ignite innovation, driving the transition to a lower-carbon future in maritime operations.

Through this initiative, Voyage Group reinforces its dedication to shaping a sustainable and prosperous future for the global shipping industry, actively contributing to the decarbonisation agenda and solidifying its position as a leader in sustainable maritime innovation.

WALWORTH I STAND: **7516** I HALL: **7**

A LEGACY OF INNOVATION IN A CHANGING WORLD

Since its inception, nearly two centuries ago, WALWORTH has stayed committed to excellence in industrial valve manufacturing and decarbonisation

WALWORTH, a leader in industrial valve manufacturing, was founded in 1842 by James Walworth. In nearly two centuries, WALWORTH has continuously adapted to meet the evolving demands of the industrial landscape, including the current focus on decarbonisation.

As global industries pivot towards sustainability, WALWORTH's innovative approach to industrial valve manufacturing plays a crucial role in supporting decarbonisation efforts, particularly in regions such as the Middle East, CIS, and Africa. Through its trusted partnership with VALVETECH LLC, WALWORTH supplies top-quality valves designed to optimise energy efficiency and reduce emissions in industrial operations.

Innovating for a Low-Carbon Future

WALWORTH has always prioritised investment in research and development, staying ahead of industry trends and fostering innovation. This commitment is reflected in its extensive product lines, which now cater to the rising demand for energy-efficient, environmentally conscious industrial solutions.

By developing valves designed to minimise leakage and reduce energy consumption, WALWORTH directly supports companies striving to meet carbon reduction targets.

Expansion in the Middle East

The Middle East, with its focus on transitioning towards cleaner energy and reducing carbon emissions, presents a significant opportunity for WALWORTH's environmentally friendly valve solutions. By establishing a stronger regional presence, WALWORTH aims to play a vital role in helping industries adapt to the energy transition, offering reliable products that balance industrial demands with environmental responsibility.

Its upcoming facility in Dubai is a strategic expansion that will support the region's growing emphasis on decarbonisation.

Solutions at ADIPEC 2024

At ADIPEC, WALWORTH is showcasing its extensive range of industrial valves. With a renewed focus on research and development, the company has prioritised the creation of valves that contribute to the reduction of carbon emissions in energy-intensive industries such as oil and gas, power generation, and petrochemicals. The company will also highlight these innovations, offering visitors a chance to learn how its latest valve technologies can enhance operational efficiency while lowering environmental impact.

WASCO I STAND: **432** I HALL: **4**

MEETING IMMEDIATE NEEDS, DELIVERING LONG-TERM VALUE

Wasco sharpens focus on decarbonisation through engineering expertise

As the global shift towards decarbonisation intensifies, Wasco's Engineering & Fabrication division through its innovative and comprehensive EPC and fabrication services, is at the forefront supporting the energy industry achieve carbon reduction goals.

Building on Wasco Group's commitment to achieving net zero carbon emissions by 2026, the division supports a broad range of decarbonisation projects. These include advanced energy-efficient projects, modular solutions for renewable energy infrastructure, carbon capture and storage projects, and the development of clean energy facilities. Wasco's expertise in delivering efficient EPC solutions ensures these projects meet the complex demands of global standards on quality and safety.

At the heart of these efforts is Wasco's 38-hectare state-of-the-art fabrication yard in Batam, Indonesia. Recently upgraded with a USD50 million refurbishment, the yard features a 300-metre quayside and advanced facilities for modules and skids fabrication, pressure vessels, and heat exchangers. It also houses Wasco's Engineering Centre of Excellence, where over 450 multidisciplinary engineers collaborate seamlessly between design and construction teams, ensuring efficient project delivery.

Headquartered in Singapore, Wasco's Engineering & Fabrication division also operates facilities in UAE, Malaysia and Australia. With solid in-house multi-disciplinary engineering capabilities, the division provides conceptual design, FEED's, detailed engineering, procurement, and fabrication services, specialising in modules for FPSO, MOPU, process units, E-Houses, and substations. It also provides gas compression, gas engine generators, and Build, Operate & Transfer solutions for both offshore and onshore operations. Wasco's capabilities in the new energy sector includes offering FEED and hybrid EPC solutions for hydrogen and ammonia projects, advancing its role in clean energy.

"As the energy landscape evolves, our focus remains on developing sustainable solutions that meet immediate needs while delivering long-term value for our clients," said Shan Karupiah, CEO of Wasco Engineering & Fabrication.

Wasco plans to showcase its expertise at ADIPEC 2024, aiming to strengthen partnerships that align with global decarbonisation efforts.

WECONNECTENERGY | STAND: **8450** | HALL: **8**

RECOGNISING TALENT IN THE ENERGY SECTOR

WeConnect Energy: Leading the charge in renewable energy recruitment

2024 marks a pivotal year for WeConnect Energy with the launch of our dedicated Low Carbon and Renewables vertical. After more than 15 years of recruiting success in the Upstream sector, this initiative highlights our commitment to meeting the growing demand for skilled professionals in the renewable energy industry, especially as more companies embrace sustainable practices.

Recognising the critical role of skilled talent in the energy transition, our new division focuses on sectors primed for growth, including Wind, Hydrogen, Solar, and Storage. Having placed thousands in roles across the wider energy sector, our fine-tuned recruitment approach ensures we continue to connect top-tier candidates with leading companies worldwide.

Our vision for this evolution is strengthened by our expansion in the UAE. Since establishing a base in Abu Dhabi in 2015, we proudly opened our second UAE office this year in Dubai, recognising the UAE's vital role in leading this new chapter.

WeConnect Energy's approach to decarbonisation involves strategically sourcing talent from conventional energy sectors and guiding their transition into green energy. This not only supports career evolution but also ensures companies have the skilled professionals needed to drive decarbonisation strategies. By doing so, we contribute to reducing carbon footprints and promoting sustainability within the industry.

We are eager to learn about new decarbonisation initiatives at this year's ADIPEC, especially with its perfect timing ahead of COP29. Our Low Carbon and Renewables team is excited to promote our new sector and services while networking at the event. This year also marks our largest delegation attending ADIPEC, a significant milestone, with some attending the Decarbonisation Conference to hear from leaders and some of the sharpest minds in the industry.

We are absolutely thrilled to partner with the SDI (Scottish Development International) for the first time, joining their Scottish Pavilion and other Scottish-headquartered companies. This collaboration offers excellent exposure and opportunities to promote our green energy sector. As the only recruitment company within the SDI portfolio at ADIPEC, we are uniquely positioned to assist with the energy market's recruitment needs while proudly championing the Scottish brand.

Having placed thousands in roles across the wider energy sector, our fine-tuned recruitment approach ensures we continue to connect top-tier candidates with leading companies worldwide.

WEG I STAND: **11420** I HALL: **11**

A CLEAR VISION

WEG is committed to advancing technologies and solutions that contribute to a more efficient and sustainable world

With a mission centred on continuous, sustainable growth while maintaining simplicity, WEG's vision is clear: to be at the forefront of the global energy transition.

WEG's sustainability strategy is built on four pillars: sustainable products and solutions, circular and efficient operations, engaged employees and communities, and strong governance with ethical conduct. A testament to this commitment is WEG's ambitious climate change initiative, which pledges to reduce greenhouse gas (GHG) emissions by 52 per cent by 2030 and achieve Net Zero emissions by 2050. This commitment has not gone unnoticed — WEG earned Gold rating in the Eco Vadis sustainability management assessment and achieved the category Leadership at CDP in 2023.

As a trusted partner in the energy transition, WEG offers a comprehensive portfolio of energy efficient technologies that serve industries including oil and gas, construction, mining, marine and water management. Among the standout products are the newly developed W23 Sync+ and W23 Sync+ ULTRA motors, which have set new benchmarks for energy efficiency with the anticipated IE5 and IE6 efficiency ratings, respectively.

The W23 Sync+ ULTRA motor represents a significant leap forward in motor technology. Combining permanent magnet (PM) technology, ferrite or neodymium magnets and synchronous reluctance (SynRM) motor technology, the hybrid design reduces electrical losses by strategically using magnets, resulting in minimal efficiency loss even under varying speed and load conditions.

WEG has also recently released WEGSEE+ a powerful software tool that measures potential for energy savings and ROI. The system helps operators and managers to make strategic decisions to optimise resources based on equipment and system data.

Marek Lukaszczyk, European and Middle East marketing manager at WEG, explains, "The W23 Sync+ ULTRA IE6 efficiency motor is a huge advancement in motor technology. Its ultra-premium efficiency levels and hybrid design significantly reduce CO2 emissions, extend operational lifespan and lower maintenance costs. This is particularly crucial for the oil, gas, and construction sectors, which face increasing pressure to enhance efficiency and reduce GHG emissions. WEG is here to help them meet these challenges."

WINTERS INSTRUMENTS LTD
STAND: **3570** I HALL: **3**

A POWERFUL COMBINATION TO DECARBONISATION

Winters' flagship WinSMART line of transmitters has your net zero goals covered

Digital technologies are key to a decarbonised future, driving smarter, more efficient industrial operations. All around the world, Winter Instruments' pressure, differential and temperature smart transmitters are counted on for precise measurement in wastewater treatment, electric vehicle battery production and renewable energy generation applications. Winters' WinSMART products offer a powerful combination of analog and digital communications, with a proven history of providing precise measurement under the harshest conditions all around the world.

WinSMART transmitters are either CSA, Intertek or ATEX approved for explosion-proof or intrinsically safe areas and offer either stainless steel or die-cast aluminium housing.

The LY14 series offers pressure ratings from low pressure up to 3,000 psi, with all stainless-steel housing and wetted parts, ideal for pressure monitoring.

The LY16 series offers pressure ratings from vacuum, compound and up to 14,500 psi, with all rugged die-cast aluminium housing, stainless-steel wetted parts, designed for pressure monitoring.

The LY34 series is the differential transmitter rated from low pressure to 1,000 psi (d) with all stainless-steel housing and wetted parts, ideal for differential pressure monitoring.

The LY36 series is the differential transmitter rated from inches of water to 1,450 psi (d) with all rugged die-cast aluminium housing, stainless-steel wetted parts, designed for differential pressure monitoring.

The TY52 series is the temperature transmitter with a PT100 RTD sensor and an array of stem lengths. Utilised and installed anywhere where temperature measurement is required.

Configurations include 4/20mA, 4/20mA + HART, 1/5VDC or MODBUS communication options, allowing you to connect to any PLC or PAC device for efficient measurement in even the most extreme of applications.

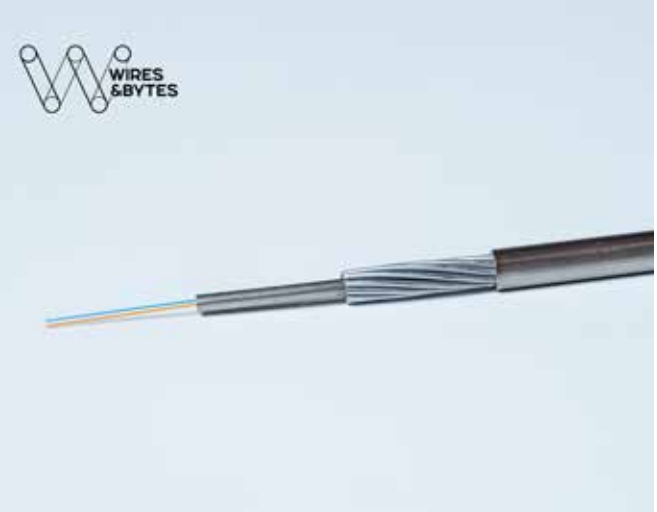
WIRES AND BYTES I STAND: **14312** I HALL: **14**

MONITORING SOLUTIONS

Wires&Bytes: Smart, high-tech fibre optic cables for the oil and gas industry

Wires&Bytes produce smart, energy-efficient, high-tech fibre optic cables for the oil and gas industry, which are an integral part of monitoring solutions. Such solutions based on DFOS technology can cover over 200 km and control critical objects such as wells and pipelines to prevent and detect leaks and other failures. Fibre optic cables do not need power, the only component in the system that requires energy is a measurement unit, which greatly reduces energy consumption.

Moreover, sensor cables support effective monitoring of assets and facilities and control emergency situations at the initial stage, helping to avoid wasting resources and polluting the environment



(e.g. leak detection of a crude oil pipeline), therefore contributing to decarbonisation.

We develop technologies that contribute to a lower fuel and energy consumption and fewer emissions for well intervention jobs. This involves operating efficiency with less staff and less equipment at the well (without sacrificing the results) and obtaining more data with modern acquisition systems and multifunctional DFOS cables.

A client in the Middle East deployed a multipurpose electro-optical SlickLight cable which has now been used for multiple jobs that combine distributed temperature and acoustic measurements (DTS/DAS) with SRO e-line PL logging tools from a major WL service provider. The impact is reducing the staff needed to do the job and providing an opportunity to monitor and control the well remotely, without having to travel to the well site.

Every responsible business should embrace the mission to reduce its ecological footprint. At Wires&Bytes we constantly think of how we can contribute to green energy, and we'll be sharing and exchanging ideas on decarbonisation efforts at ADIPEC.

Our goal is to make our manufacturing sustainable, ensuring that Wires&Bytes products improve our customers lean processes, and enabling our team and our partners to reduce energy consumption.

WOLLSCHLAEGER TECHNICAL SYSTEM
STAND: **5120** I HALL: **5**

AN INNOVATIVE TOOL TAKES A CRUCIAL STEP TOWARDS A GREENER FUTURE

The CRC Smart Washer by Wollschlaeger Technical System, enhances efficiency in parts cleaning

In the pursuit of a more sustainable future, industries are increasingly seeking solutions that minimise their environmental impact. The CRC Smart Washer, therefore, plays a significant role in decarbonisation efforts across various sectors.

Eco-Friendly Cleaning Solutions

Traditional cleaning methods often rely on harsh solvents that can release volatile organic compounds (VOCs) into the atmosphere, contributing to greenhouse gas emissions. The CRC Smart Washer revolutionises this process by using biodegradable, non-toxic cleaning agents. This eco-friendly approach reduces harmful emissions and minimises the ecological footprint of cleaning operations. By opting for the Smart Washer, businesses can significantly lower their contribution to air pollution and align with global decarbonisation goals.

Energy Efficiency

The CRC Smart Washer is designed with energy efficiency in mind. Its heated water system optimises the cleaning process, allowing for effective removal of grease and contaminants without the excessive energy consumption associated with traditional methods. This not only leads to lower operational costs but also helps decrease overall carbon emissions. By integrating this technology, companies can enhance their sustainability profiles while maintaining high standards of cleanliness.

Waste Reduction

Waste management is another critical aspect of decarbonisation. The Smart Washer's built-in filtration system extends the life of the cleaning solution, reducing the frequency of replacements and minimising waste. This contributes to a circular economy, where resources are reused and recycled, further decreasing the carbon footprint of cleaning processes.

Supporting Sustainable Practices

By implementing the CRC Smart Washer, businesses can showcase their commitment to sustainable practices. This is increasingly important in today's market, where consumers and stakeholders prioritise eco-conscious choices. Companies that invest in such technologies not only benefit from operational efficiencies but also enhance their brand reputation and customer loyalty.

CRC Smart Washer exemplifies how innovative technologies can facilitate decarbonisation in many sectors. By prioritising eco-friendly cleaning solutions, energy efficiency, and waste reduction, Smart Washer empowers businesses to take meaningful steps towards sustainability. Embracing this technology is not just a smart operational choice; it's a crucial step towards a cleaner, greener future.

XODUS I STAND: **8450** I HALL: **8**

THE ROAD TO NET ZERO

Xodus: Guiding clients towards a greener future

In the evolving landscape of climate awareness, key stakeholders – from investors and lenders to developers, owners, and operators – are increasingly recognising the impact of climate on enterprise value. While navigating this complex terrain, critical questions are being raised:

- What are the climate risks and opportunities linked to my assets?
- How do I set appropriate targets and metrics and respond to stakeholder expectations?
- How can I identify the most effective and economically attractive solutions?
- How do we anticipate different future market scenarios?
- How can I embed decarbonisation into my organisation and deliver a programme of decarbonisation projects?

Developing the right strategy, planning for an uncertain future, identifying and implementing solutions, are key steps in the road to Net Zero. Central to our process is the identification and mitigation of risk. This includes business exposure to climate-related transitions, building portfolios optimised for future carbon impact and profitability.

Xodus integrates technical, commercial, and financial expertise to enable our clients to navigate these complex challenges, with credible decarbonisation strategies and implementable plans. Balancing the complex nature of cost, abatement, and profitability, both now and in the future, we have assisted one of our clients in understanding how to unlock an additional US$70 million in NPV, through emissions reduction opportunities.

We partner with a diverse range of industries to tackle decarbonisation across short-, medium-, and long-term horizons. Our approach includes:

- Short-term Solutions: Implementing easy-to-adopt asset optimisations that swiftly reduce emissions at minimal cost, boosting profits and production.
- Medium-term Investments: Focusing on activities that not only significantly cut emissions, but also lay the groundwork and enable long-term initiatives to address hard-to-abate emissions.
- Long-term Vision: Preparing for the future climate and market scenarios to ensure sustained success and resilience.

ADIPEC offers the ideal location and backdrop to meet with our clients and together better understand the challenges of the decarbonisation journey we are all making. Using the lessons we've learned from over 19 years of supporting clients in Upstream, CCS, Hydrogen, LNG, Biofuels and Offshore Wind, our decarbonisation offering is continuing to grow and mature alongside our clients' ambitions across the region.

> *Xodus integrates technical, commercial, and financial expertise to enable our clients to navigate these complex challenges, with credible decarbonisation strategies and implementable plans*

ZCM I STAND: **13050** I HALL: **13**

A COMMITMENT TO ENVIRONMENTAL STEWARDSHIP

ZCM's custom pressure vessels are helping to accelerate decarbonisation by serving a variety of sectors worldwide

ZCM is a leading manufacturer of non-standard pressure vessels. We supply CO2 absorbers, CO2 strippers, and CO2 desorption towers for oil, chemical, and energy projects both in China and globally. Our products play a crucial role in supporting international carbon reduction initiatives.

Specialising in large custom pressure vessels, ZCM primarily serve sectors such as coal, chemicals, nuclear energy, and hydrogen energy. By innovating in design and manufacturing processes, ZCM are helping to lead the energy industry in sustainability by promoting practices and efficiency. The company's advanced pressure vessels facilitate the safe handling and storage of clean energy sources, ultimately contributing to reduced carbon emissions across various industries. With a commitment to environmental stewardship, ZCM not only meets current energy demands, but also supports the transition towards a greener future, ensuring compliance with stringent regulations and fostering a sustainable industrial ecosystem.

Specialising in large custom pressure vessels, ZCM primarily serve sectors such as coal, chemicals, nuclear energy, and hydrogen energy. By innovating in design and manufacturing processes, ZCM are helping to lead the energy industry in sustainability by promoting practices and efficiency.

ZTTSC | STAND: **10452** | HALL: **10**

STRIVING TO SET NEW STANDARDS IN THE INDUSTRY

ZTTSC is dedicated to environmental sustainability and social responsibility

Zhongtian Technology Submarine Cable Co., Ltd (ZTTSC) have set numerous carbon emission objectives — achieving carbon peak in 2030, carbon neutral in 2050, as well as issuing a Green Low Carbon Manufacturing Action Plan (GLCM), guiding our carbon emission reduction work. In 2023, ZTTSC achieved a B score in CDP climate change assessment, surpassing the global average of C. This year, the Science Based Targets initiative (SBTi) officially validated and approved the GHG emissions reduction targets submitted by ZTTSC. This significant milestone confirms that ZTTSC's targets conform with SBTi Criteria and Recommendations.

ZTTSC has initiated 10 energy saving technical reformations to realise energy conservation in production and to reduce carbon emission. ZTTSC has continuously reinforced investments on solar panel construction and green electricity procurement. ZTTSC has decided to apply 100% renewable electricity production for submarine cable in 2024, aiming to eliminate the carbon emission impact. ZTTSC adopts green design philosophy to carry out cable design and has conducted research on lead-free submarine cable which can realise 10%-15% in GHG reduction. Modular design for reusable carousel has been used in cable packages to realise material recyclable, reusable and reducible.

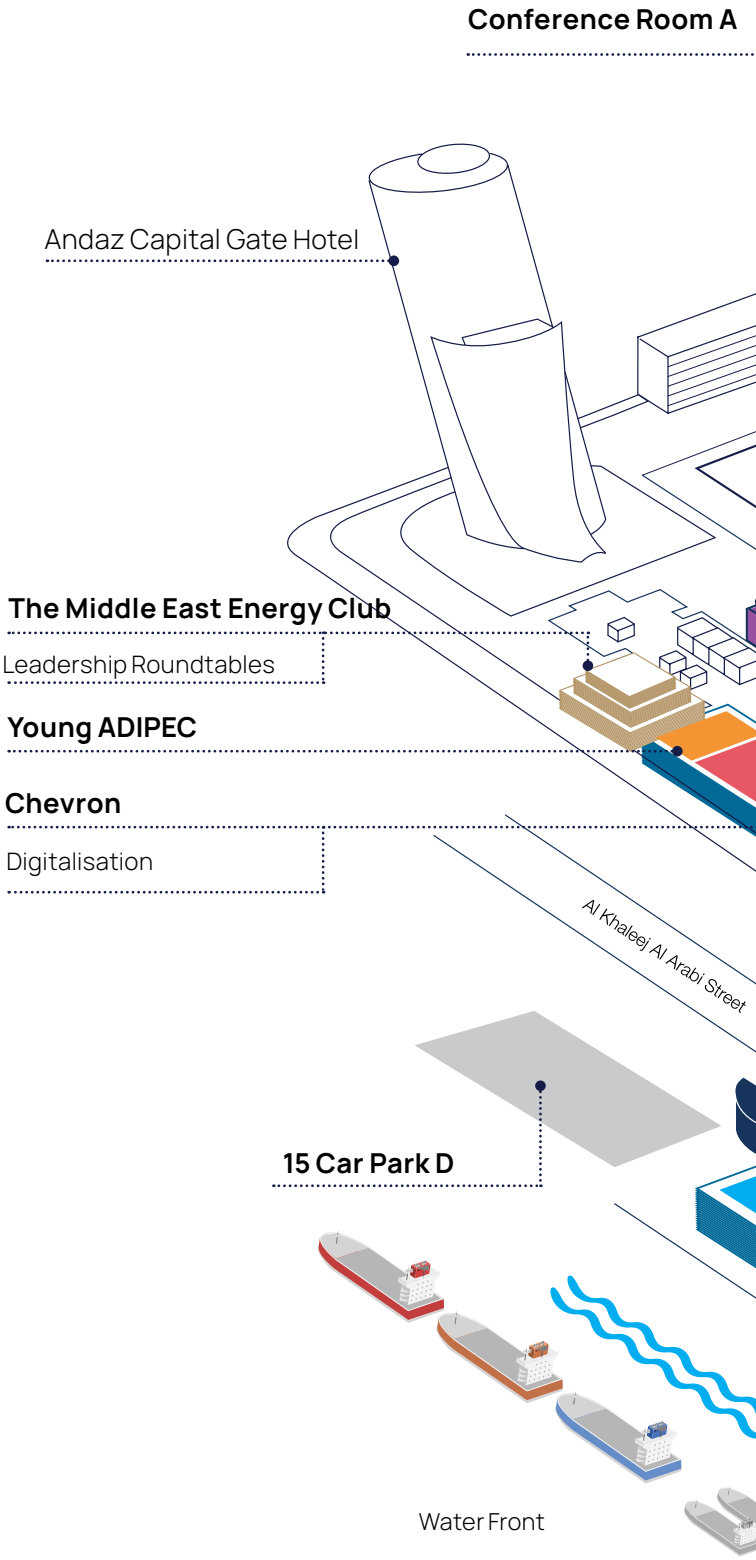
ZTTSC develops an online monitoring system to achieve comprehensive collection and management of production, as well as daily plant energy consumption data. ZTTSC has also established an energy consumption model for equipment, production line and workshop, to achieve energy consumption predictions, and warning to improve energy savings.

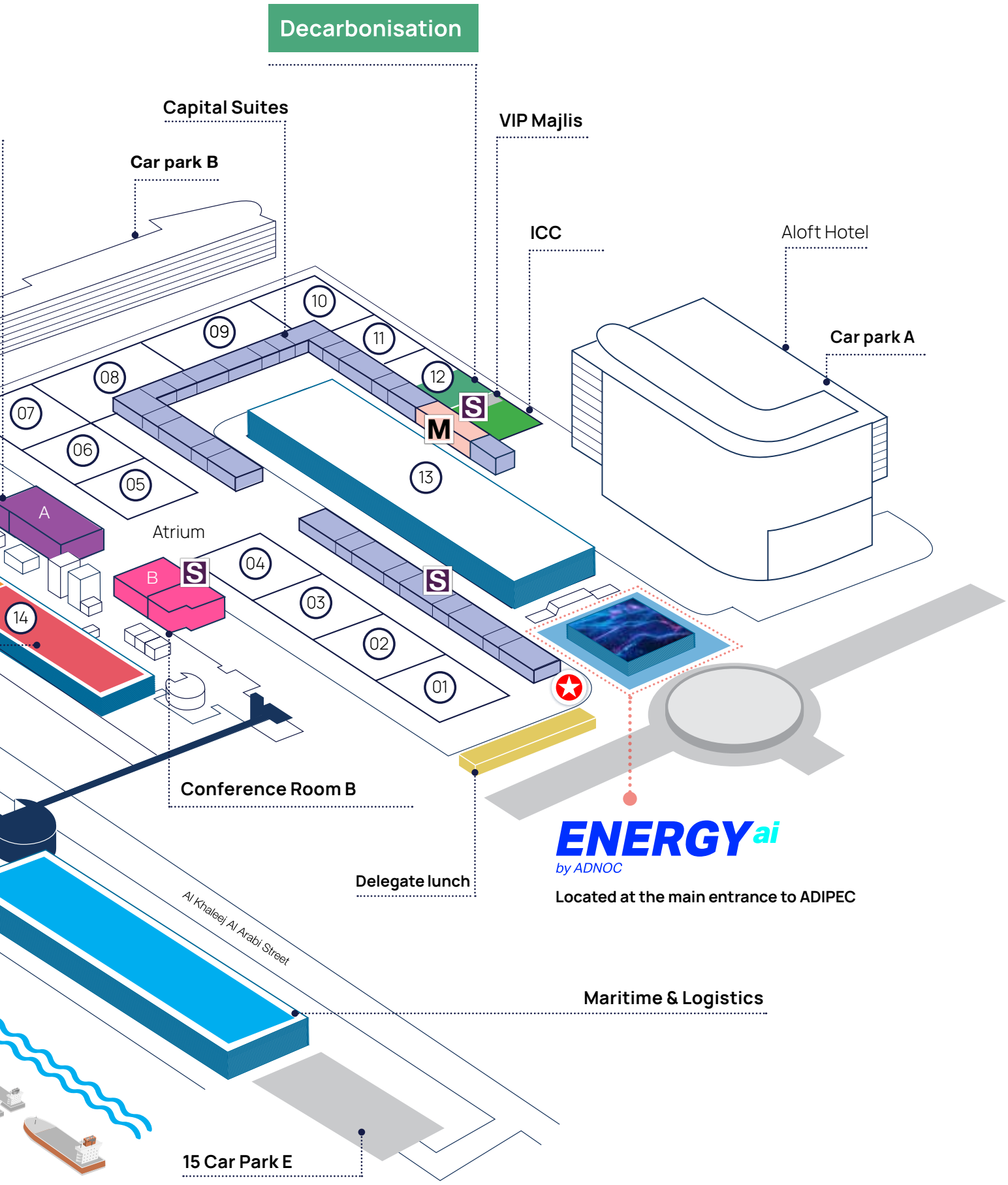
ZTTSC has made carbon emission reduction proposals for the Denmark Project: GHG reduction of 1. internal and external transportation
2. production 3. cable jointing work. ZTTSC is endeavouring to offer green solutions based on the specific project background, as well as contributing to the client's sustainability objectives.

As a representative of China's new energy enterprises, ZTTSC was invited to COP28 - UN Climate Change Conference, held in Dubai, showing the concept and solutions of green and low-carbon development to tackle global climate change. ZTTSC integrates comprehensive environmental, social, and governance strategies, to achieve dual carbon goals. We are committed to continuous improvement and transparency of ESG initiatives, striving to set new standards in the industry.

ADIPEC venue map

- 1 - 15 Exhibition Halls
- ADIPEC Booking Stand
- ICC Hall
- Middle East Energy Club
- Conference Room A
- Conference Room B
- Decarbonisation Zone
- Maritime & Logistics Zone
- Digitalisation Zone
- Young ADIPEC
- Capital Suites - Mezzanine level
- Delegate lunch
- M Media Centre
- VIP Majlis - ICC (12)
- S Speaker Room Locations
  - Near Conference Room B
  - Majlis
  - Capital Suite 6, Mezzanine Level (SPE speaker room)




Decarbonisation
Capital Suites
VIP Majlis
Car park B
ICC
Aloft Hotel
Car park A
10
09
11
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06
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05
A
Atrium
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04
03
14
02
01
Conference Room B
ENERGY ai
by ADNOC
Located at the main entrance to ADIPEC
Delegate lunch
Al Khaleej Al Arabi Street
Maritime & Logistics
15 Car Park E

Products & Solutions Guide

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