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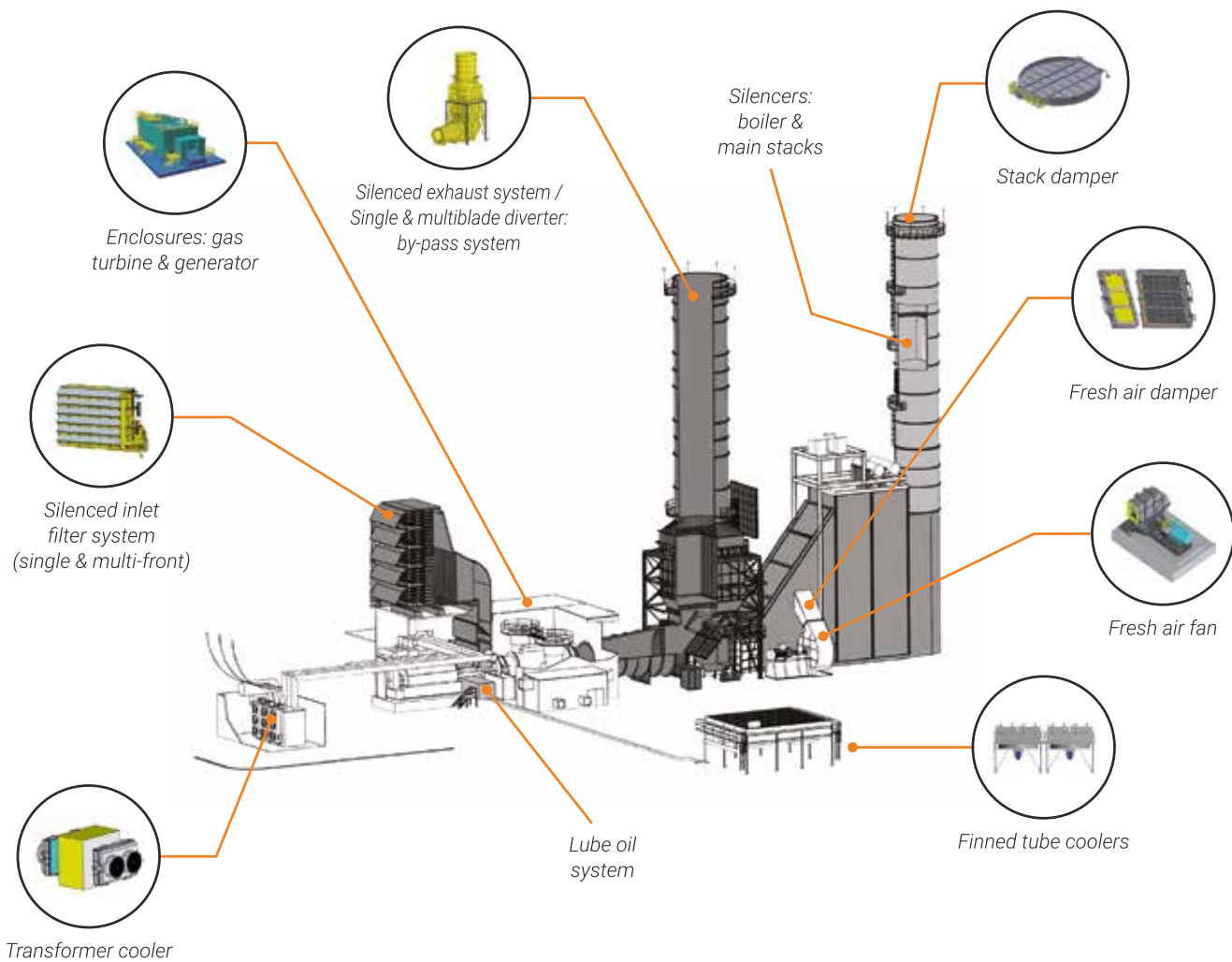


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Contents

2025



CORTEM GROUP

- 9 EDITORIAL**
Focusing on natural gas as a key player in the Energy Transition
Marco Villa, Chief Business Officer, Technip Energies
President of ANIMP
- 13 MAIRE and SIMEST in partnership to expand Italian supply chain globally**
Pilar Molina, Head of Department Group Supply Chain Transformation
Alberto Pelizza, Group Finance VP
MAIRE Group
- 18 Steel giant: Fagioli's engineering challenge for Polynt reactor in Ravenna**
Martina Bertorelli, Project Engineer
Fagioli
- 25 Tracking progress with eShare at the BDAll biodiesel plant**
David Branchesi, Mechanical Engineer
Trillini Engineering
Gianluca Ricozzi, Technical Sales Director
Cadmatic
- 30 Logistics management efficiency: a new success in multimodal transport from China to Qatar**
Sameh El Hadad, Operations Manager – Special Projects, Industrial Projects
DHL Global Forwarding (Italy) S.p.A.
- 36 Innovation in the North Sea for green hydrogen production**
Fabio Iarocci, CEO
Fabio Cavina, Innovation & Technology Development Manager
Fores Engineering
- 41 New Ways to deliver Capital Projects: How digital technologies can improve the way to meet schedule, budget and enable an operations-ready digital plant**
Michele Cacciari, Head of the Energy Industry
AVEVA
- 46 Transforming industrial plant operations with Immersive Digital Twins**
François-Olivier Lavery, Technical Support Manager
Prevu3D
Giancarlo Russano, CEO
+Reality
- 53 The most reliable solution in hydrocarbon condensate applications**
Andrea Boccotti, Sales Director and Business Developer
Camilla Navicello, Application Engineer
LEWA ITALY
- 57 Advanced pump & valve solutions meeting the demands of the offshore market**
Daniele Cecchini, Regional Sales Manager (Pumps)
David Shaw, Control & Isolation Valve Applications Manager
Trillium Flow Technologies
- 61 Ensuring business continuity at the Duferco Travi e Profilati steel mill in Italy**
Claudio Raimondi, Project Engineer
ABB Italy
- 66 Bonatti in the Americas: energy, mining and sustainable infrastructure**
Gustavo Blejer, Commercial Director, Americas
Luigi Di Vincenzo, Commercial Team, Americas
Bonatti
- 72 Energy Capital Projects enter a new era of execution**
Cristian Corbetti, Managing Director, Industry X, Global Resources Lead
Accenture
- 76 Digitalization with mobile technology and digital factory management**
Luigi Tornaghi, Sales Manager and founding partner
Enrico Trivini Bellini, architect and founding partner
3Units



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FIG 01 >

Focusing on natural gas as a key player in the Energy Transition

Concentrating our efforts to achieve steady progress along the road to decarbonization, by relying – initially – on proven, competitive low-carbon energy forms



Marco Villa
Chief Business Officer,
Technip Energies
President of ANIMP

As the President of ANIMP, the Italian Association of Industrial Plant Engineering Companies, I am pleased to introduce the latest number of *Industrial Plants*, our yearly publication for international audiences.

Our Association with more than 500 members - energy providers, engineering firms and general contractors, plant component manufacturers, service suppliers as well as universities and consulting firms - strives to develop a world-class supply chain, competitive globally in any industrial plant market, as well as to promote growth, development, innovation and international cooperation

The global economy has started cautiously this year due to ongoing geopolitical tensions, uncertainty around trade policy and tariffs, China's slower growth rate, and lingering inflationary pressures.

“In the energy sector, green energy is not moving forward as expected earlier, since the focus today is not on decarbonization but rather on affordability and security

In the energy sector, green energy is not moving forward as expected earlier, since the focus today is not on decarbonization but rather on affordability

and security. However, green energy displaces gas consumption with a competitive, fixed price that is not subject to the volatility of commodity markets.

We are facing a dilemma: we can choose to be the environmental example-setter and absolutist, at the risk of undermining competitiveness, or we can concentrate our efforts to achieve steady progress along the road to decarbonization, by relying – initially – on proven, competitive low-carbon energy forms.

“We must adopt a pragmatic approach, recognizing that decarbonization will be a continuous process, deploying a spectrum of technologies from ‘blue’ to ‘green’

In the end, the cost of energy is the foundation of industrial competitiveness. The status of a global economic power cannot be maintained for long without affordable energy.

The energy transition will take shape as key players implement competitive decarbonization solutions. However, we must adopt a pragmatic approach, recognizing that decarbonization will be a continuous process, deploying a spectrum of technologies from ‘blue’ to ‘green’.

Navigating this new energy reality, where balancing energy security, affordability and sustainability is a major challenge, requires pragmatism, realism and a

collective effort across the entire energy system. We need to produce low-carbon energy competitively – for sure nuclear power is an important component. We need to work on it but it will take time to build new power plants, therefore natural gas is the most important ally of the energy transition: not only does it support continuous electricity generation to smooth renewables' intermittence, it can also be decarbonized, thanks to advances in carbon capture and storage. This is precisely what the United Kingdom's state-of-the-art Net Zero Teesside gas power plant project is set to achieve, by delivering low-carbon electricity to more than 1 million homes while capturing nearly 2 million tons of CO₂ annually.

“Nuclear power is an important component for the Energy Transition. We need to work on it but it will take time to build new power plants, so the natural gas is the most important short-term ally

Surely, natural gas is indispensable to the energy transition and plays a crucial role in maintaining both energy security and grid stability, but emissions must be addressed to ensure that gas remains a viable long-term solution.

Natural gas can also be combined with carbon capture to produce low-carbon energy derivatives, such as blue hydrogen or ammonia, which in turn help to decarbonize heavy industries or supply

the low-carbon fertilizers our agriculture needs. Accelerating the blue solutions is key to the aim at sustainable future being more affordable than green.

“Accelerating the blue solutions is key to the aim at sustainable future being more affordable than green

Focusing on natural gas as a key player in energy transition, we are all fully aware of what is happening in the so called “developed countries” and in the most important gas producing countries. I am fully convinced that the companies which belong to ANIMP – as players in the engineering, in the construction of energy infrastructures, in the technologies and in the supply of critical equipments – can have and must have a key role in the gas development of the so called “countries under development”.

In those countries, for example in Africa, vast gas reserves are being discovered, offering unprecedented opportunities, but resources alone are not enough. The true challenge—and opportunity — lies in transforming this potential into sustainable, prosperous and inclusive growth.

I believe that natural gas is more than a commodity, it is a strategic driver for a decarbonized journey, the key for industrialization and energy security. It can power factories, illuminate cities, fuel industries, and create millions of jobs.

To make it happen we need to leverage upon three key pillars.

First, support nations, national companies and international operators have to co-operate in



developing competitive export infrastructures. Export projects—whether large-scale LNG, FLNG, or FPSOs—are essential. They secure long-term revenues, attract foreign investment and strengthen the position of a country in global energy markets.

Second, while exports are vital, we firmly believe that local valorization of gas is equally crucial.

In these countries I am convinced that gas can be a lever for domestic transformation, fueling power generation, enabling petrochemical industries and supporting agribusiness through fertilizer production, fostering the industrialisation and reducing dependence on imports and increasing the quality of life of the population - all the above with the full commitment to reduce their carbon footprint

The third pillar is the strength of public-private partnerships.

In many countries, gas development cannot thrive

without close collaboration between governments, National Oil Companies, International Oil Companies, financial institutions, and solid industrial partners.

I firmly believe that the key to successful development lies in this alliance between political vision, industrial expertise and local engagement

“I firmly believe that the key to successful development lies in this alliance between political vision, industrial expertise and local engagement

The ANIMP associates are ready for the new challenges. We also remain particularly grateful to the Italian and other partner industries for their strong and continuing commitment and support.

Marco Villa

Marco Villa, the President of ANIMP since 2022, is the Chief Business Officer of Technip Energies, after having held the position of Chief Operating Officer. Prior to these assignments, he was the President of TechnipFMC Onshore / Offshore (now Technip Energies) for Europe, the Middle East, India and Africa. From 2003 to 2017, Marco Villa held various management positions in Technip, including President Europe, Middle East, India and Africa, President and CEO of Region B, Chief Financial Officer of Region B and Head of Export & Project Finance of Technip Italy. Before joining Technip, he had worked as a financial specialist in Finmeccanica, the Italian multinational company specializing in the aerospace, defense and security industries, and as the head of the Finance and Risk Management Division of Telespazio (Telecom Italia Group), a European services company for space flights. He graduated with honors in Economics and Commerce at the University of Rome.

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MAIRE and SIMEST in partnership to expand Italian supply chain globally

The SIMEST 'Filiera d'impatto' project provides MAIRE's supply chain companies with access to subsidized financing for investments in sustainability, digital and technology innovation, and specialized skills development

Pilar Molina, Head of Department Group Supply Chain Transformation

Alberto Pelizza, Group Finance VP

MAIRE Group



In the dynamic world of international business, Italian companies are making significant strides in expanding their global footprint. MAIRE, a key player in the Italian technology and engineering supply chain, is leading this charge, bolstered by pivotal partners like Assolombarda. This business association

representing companies in Milan and surrounding Lombard area provides a roadmap for them to expand globally by leveraging its extensive network.

Another strategic partner in this effort is SIMEST, part of state-controlled Cassa Depositi e Prestiti Group, that supports businesses throughout

their international expansion journey. From initial market evaluations to direct investments, SIMEST offers strategic support through soft loans, financing support for export activities, and equity investment in establishing Italian companies abroad.

Under the strategic guidelines of the Ministry of Foreign Affairs and International Cooperation, SIMEST has launched the 'Filiere d'impatto' (High-Impact Supply Chain) project. It is designed to support the growth and competitiveness of companies in Italian supply chains, particularly those led by industry leaders.

“In a landscape marked by geopolitical uncertainties and major technological and environmental transitions, companies are focusing on medium-to long-term internationalization strategies

Recently, the project was presented at MAIRE's Milan headquarters where over 70 small- and medium-sized Made in Italy manufacturers attended to discuss opportunities and challenges to further expand and grow the Italian technology and engineering supply chain globally.

The partnership between SIMEST and these companies allows for a tailored approach to identifying the needs of the supply chain, aligning with the industrial objectives of the companies taking part.

In a landscape marked by geopolitical uncertainties and major technological and environmental transitions, companies are focusing on medium-to long-term internationalization strategies. An ecosystem comprising diverse expertise offers local companies a unique opportunity to access support and know how to achieve their expansion goals.

The 2023 Assolombarda survey, updated in 2025, shows that 96% of respondents export to foreign markets. Additionally, digital platforms are increasingly integral to internationalization



strategies, with 40% of exporting companies utilizing at least one active digital export channel and 7% preparing to implement one.

The SIMEST 'Filiere d'impatto' project provides MAIRE's supply chain companies with access to subsidized financing for investments in sustainability, digital and technological innovation, and specialized skills development. These companies also receive support in optimizing efficiency, identifying new target markets, and planning strategic investments.

MAIRE: Investments in training, sustainability and technology innovation

MAIRE posted revenues of 6 billion euros in 2024. Operating in 50 countries with approximately 11,000 Italian suppliers, MAIRE's supply chain is a cornerstone of the Group's international growth and development.

“The presentation in March of SIMEST's 'Filiere d'impatto' project, guided by the Ministry of Foreign Affairs and International Cooperation, was held at MAIRE's headquarters and attended by over 70 small and medium-sized Made in Italy manufacturers

Its overall expenditure for the supply chain in 2024 was 3.3 billion euros, with 1 billion euros spent in Italy, accounting for 30% of the total. Engineering services expenditure totaled 83 million euros, with 36 million euros spent in Italy, representing 43%.

“The project aims at supporting the companies in MAIRE's supply chain on a path of growth, development, and increased competitiveness in both domestic and international markets

Within MAIRE's Integrated E&C Solutions business unit, Tecnimont Services (a Tecnimont's subsidiary) has developed significant expertise in process digitalization, offering digital, cybersecurity, green cloud, and energy efficiency services, thereby enhancing the value of the Engineering, Procurement and Construction (EPC) chain for suppliers, partners, and clients. MAIRE supports its supply chain by offering financial instruments that allow suppliers to receive cash advance payment of their invoices to MAIRE under the best market conditions, more specifically through reverse factoring and supply chain finance programs. The utilization of MAIRE credit lines dedicated to such financial instruments allows Italian and foreign suppliers to access these programs without increasing their exposure towards the banking system. These programs are ESG-linked, making them even more advantageous because MAIRE suppliers – mainly small- and medium-sized enterprises – can access those financing instruments with costs based not only on MAIRE's credit rating but also on their ESG rating, that they can certify through a provider supplied by MAIRE itself. MAIRE therefore has worked with the SMEs in its supply chain for years to promote their growth. Now, thanks to the new partnership with SIMEST, along with Assolombarda, these companies will have even more opportunities to work together to create, promote, and enrich a world-class Italian supply chain.



Pilar Molina

Pilar Molina is the Group Supply Chain Transformation Head at MAIRE. She holds a degree in Business Administration from the University of Buenos Aires and started her EPC industry career in Italy in 2001. Since 2016, she has led the digital transformation of MAIRE's Procurement, Post-Order, and Logistics processes with a new "innovation by subtraction" approach focusing on automating clerical tasks to enhance core activities and optimize business operations. Her role also includes overseeing supplier onboarding, qualification, performance evaluation, and ESG measurement for over 40,000 suppliers with a service-oriented approach.



Alberto Pelizza

Alberto Pelizza graduated in Economics and Commerce. He has worked in corporate finance for over 30 years, primarily in the engineering and international main contracting sectors. He gained experience in the ENI Group as Project Finance Manager at Snamprogetti SpA and Administration & Finance Manager of the UK subsidiary. In 2006, he joined the MAIRE group, first as Finance Manager at Tecnimont SpA, and then at the parent company as Head of Corporate & Trade Finance. In 2015, he was appointed Deputy Group Finance Director, and in 2022, he assumed his current role as Group Finance VP.



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Steel giant: Fagioli's engineering challenge for Polynt reactor in Ravenna

A millimeter-by-millimeter operation to transport and install a 458-ton reactor in the heart of an operating refinery, overcoming obstacles and tight spaces thanks to innovative solutions and outstanding know-how

Martina Bertorelli, Project Engineer
Fagioli



A nearly 500-ton steel giant has recently found its permanent home inside the Polynt refinery in Ravenna. It was a complex and spectacular operation successfully completed by Fagioli, a global leader in transportation engineering and heavy lifting. The project required about four months of on-site work, preceded by an intensive study and design phase, to orchestrate the transport,

verticalization and final installation of the R1101 reactor, an imposing cylindrical structure 27.6 meters long and an 8.3 meters diameter.

The main challenge for this special operation was working within an active industrial site, with all the limitations that this entails, like extremely limited maneuvering space, the presence of pre-existing infrastructure that could not be obstructed, and, above all, the need to maintain the highest safety standards. The challenge was successfully over-

come thanks to a door-to-door approach that saw Fagioli manage every single phase of the project, from the construction of the reactor at the Walter Tosto facilities in Ortona to its final placement on the foundation.

An exceptional journey by sea and land

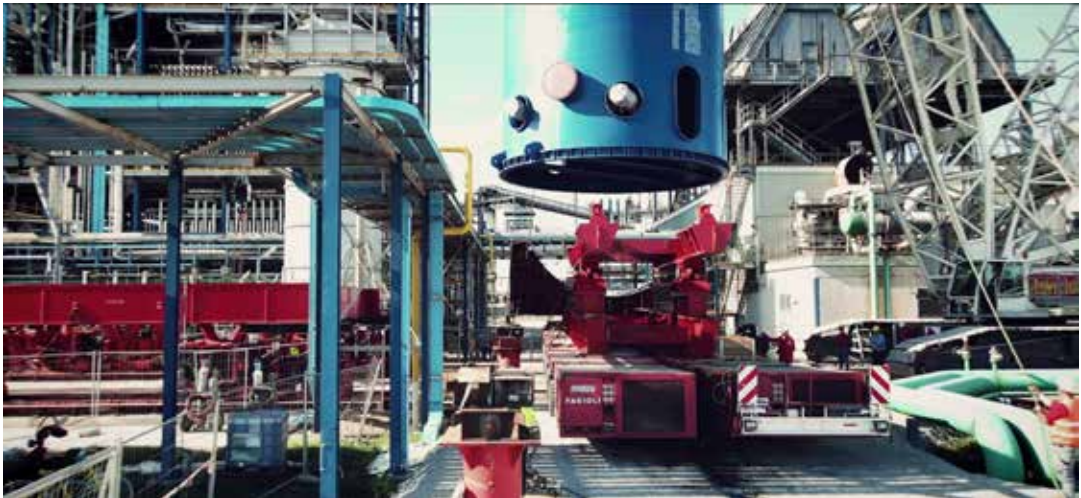
The first act of this engineering feat was maritime transportation. The reactor, once completed, was loaded onto a barge owned by the Fagioli group and, after meticulous securing and ballasting operations,

“Moving a nearly 500-ton steel giant to its permanent home inside the Polynt refinery in Ravenna was a complex and spectacular operation successfully completed by Fagioli, a global leader in transportation engineering and heavy lifting

began its sea voyage to the port of Ravenna.

Once landed, overland-transport was carried out using a convoy formed by 36-axle of Self-Propel-





“The main challenge for this special operation was working within an active industrial site, with all the limitations that this entails, like extremely limited maneuvering space, the presence of pre-existing infrastructure that could not be obstructed, and, above all, the need to maintain the highest safety standards

multi-axle trailers, remotely controlled and equipped with hydraulic suspension, are specifically designed for handling large, heavy-weight loads, offering crucial maneuvering flexibility in complex settings. Once it arrived near the installation site, the reactor was temporarily positioned on support saddles.

The main challenge for this special operation was working within an active industrial site, with all the limitations that this entails, like extremely limited maneuvering space, the presence of pre-existing infrastructure that could not be obstructed, and, above all, the need to maintain the highest safety standards.

led Modular Transporters (SPMTs). These special





Overcoming obstacles with ingenuity: verticalization and “skidding”

The real challenge arose during the installation phase. The designated area was confined and crossed by a pipe rack containing methane lines and electrical cables essential for the refinery’s production, which was impossible to remove. In addition, the size and weight of the reactor precluded the use of a conventional crawler crane powerful enough to lift and position it directly.

Fagioli’s engineering team responded with a solution that was both ingenious and daring: a progressive vertical installation. The reactor was first lifted upright position using a CC2800 crawler crane, assisted by a specially designed “tailing frame” system assembled on SPMT trailers. This tailing frame, attached to the reactor base, guided and stabilized the load, following the angles created during the verticalization phase, while the SPMTs move forward in perfect synchrony.

At the end of this crucial phase, the reactor was temporarily placed on supports to allow the installation of four “support shelves” at the bottom of the reactor. These elements were crucial for the next step: skidding. The reactor was then lifted again by the crawler crane, rotated, and moved over the existing pipe rack.

In the meantime, Fagioli operators had prepared

“The innovative approach not only overcame complex logistical and environmental challenges but was also recognized at European level with an award in the ‘INNOVATION’ category by ESTA, the leading European association for the heavy road transport and mobile crane rental industry

a custom-made square support frame provided with clamps, which was fixed on four skid shoes of 1,000 tons capacity each, placed onto skid tracks. This high-performance system is designed to self-load and move items horizontally from one point to another. The reactor was then gently lowered onto this frame, distributing the load progressively, with load releasing stages in steps of 20% at time.

At this point, the horizontal skidding operation began, which allowed the reactor to be moved along the tracks until it reached an intermediate staging area.

After careful verification that there was no anomalous deformation or interference, the skids used for horizontal movement were removed. Four more skids were then placed on transverse tracks, at 90 degrees to the previous ones. The reactor, still supported by the frame, was then taken over by

these new skids, thanks to the internal jacks that are integrated into the skid shoes and slide transversely to its final position above the foundations. The last stage involved the controlled lowering of the reactor and its final bolting.

An engineering and safety success story

The entire project, from conception to implementation, marked a significant milestone for Fagioli. The ability to provide turnkey solutions, combining top-notch engineering know-how with an extensive fleet of up-to-date equipment - group owned-barge, SPMT, high-capacity crawler cranes, and sophisticated skidding systems - proved decisive. Also crucial

was the design and fabrication of tailor-made structures, such as the tailing frame and skidding support frame, which allowed the different equipment to interface safely and efficiently.

This innovative approach not only overcame complex logistical and environmental challenges but was also recognized at European level with an award in the "INNOVATION" category by ESTA, the leading European association for the heavy road transport and mobile crane rental industry. This success was underscored by the most significant achievement: the entire, complex operation ended with zero accidents, highlighting Fagioli's constant commitment to maintaining the highest safety standards.



Martina Bertorelli

Martina Bertorelli is a Civil Engineer with a strong focus on structural engineering. She has been part of Fagioli for the past eight years, serving as a Project Engineer. Throughout her time at the company, Martina has played a key role in the planning and execution of complex engineering projects, combining technical expertise with a pragmatic, solution-oriented approach.



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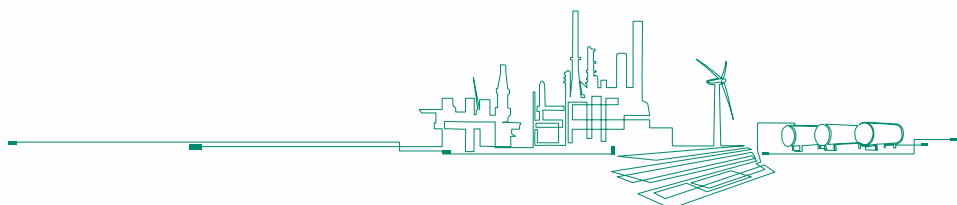
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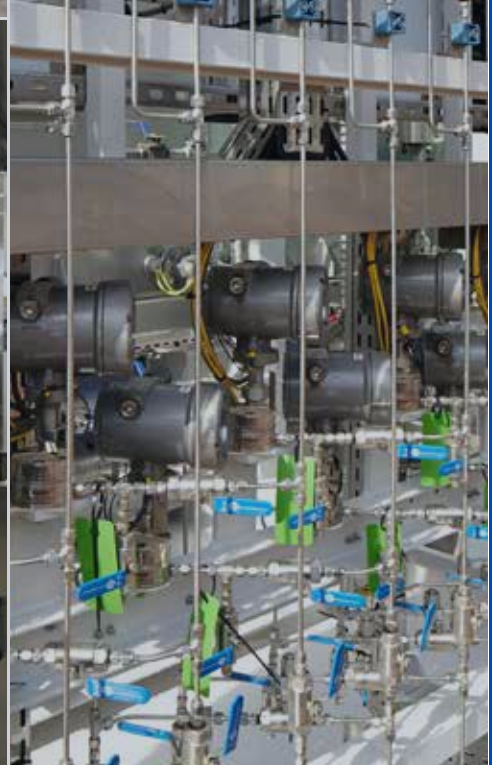
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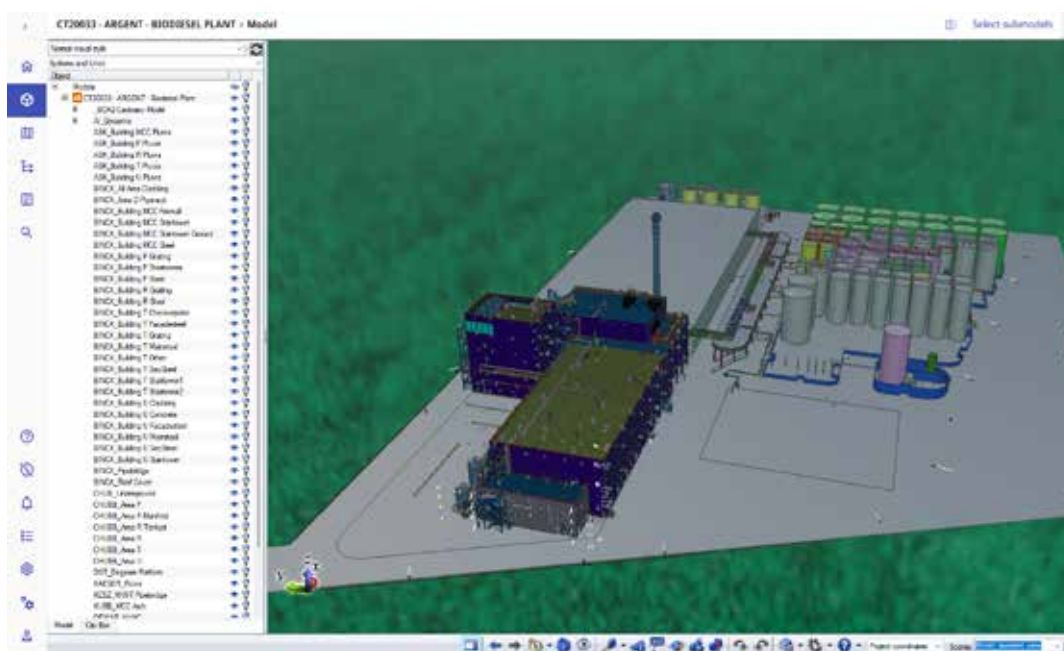


Tracking progress with eShare at the BDAII biodiesel plant

The recent case study of the BDAII biodiesel plant in Amsterdam, developed for Argent Energy by our valued client Trillini Engineering, showcases how eShare can streamline processes and enhance collaboration in complex projects

David Branchesi, Mechanical Engineer
Trillini Engineering

Gianluca Ricozzi, Technical Sales Director
Cadmatic



At Cadmatic, we are committed to providing innovative solutions that transform the way engineering projects are managed. Our flagship product, CADMATIC eShare, exemplifies this commitment by offering a powerful platform for tracking engineering progress and facilitating documentation management. The recent case study of the BDAII biodiesel plant in Amsterdam, Netherlands, developed for Argent Energy by our valued client, Trillini Engineering – an Italian engineering company operating

in the field of integrated design in the energy sector – showcases how eShare can streamline processes and enhance collaboration in complex projects.

eShare – More Than Just a 3D Model Viewer

Michael Rijk, Construction Manager involved in the project since August 2024, stated that “eShare is a powerful tool during the construction phase where supervisors can check the status of completion for systems. It is easy to use with visual

“eShare is a powerful tool during the construction phase where supervisors can check the status of completion for systems. It is easy to use with visual overviews of systems, with documents required for construction available per system.” (Michael Rijk, Construction Manager)

overviews of systems, with documents required for construction available per system.”

eShare is designed to be more than a mere visualizer for federated 3D models. It functions as a comprehensive database that connects essential documents directly to 3D objects within the model. This unique capability allows project teams to click on specific pipelines or components and access all relevant information – ranging from isometric drawings to piping layouts and P&IDs – instantly. By doing so, eShare enhances accessibility and context, empowering teams to work more efficiently and effectively.

Inside the BDAll Biodiesel Plant Project

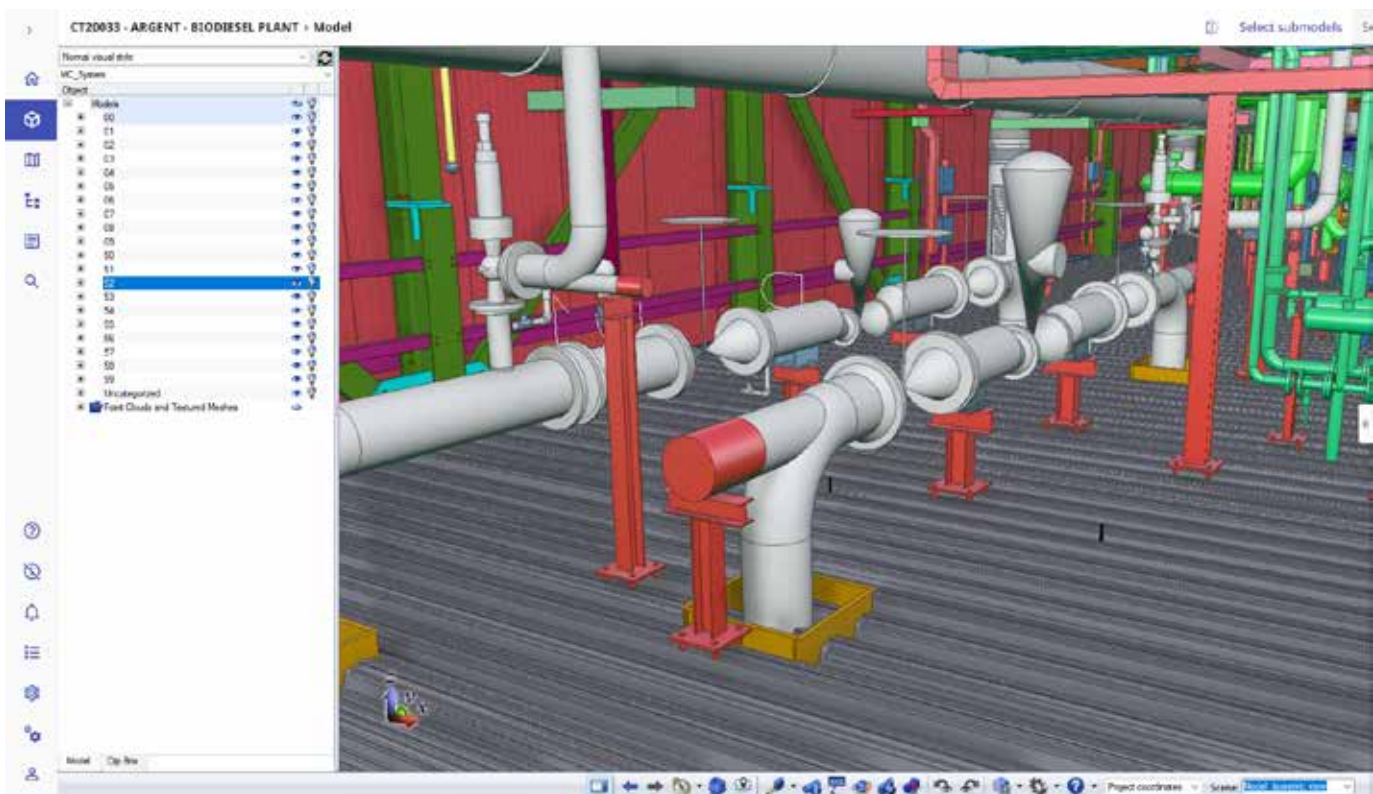
Initiated in 2020, the BDAll project employed our

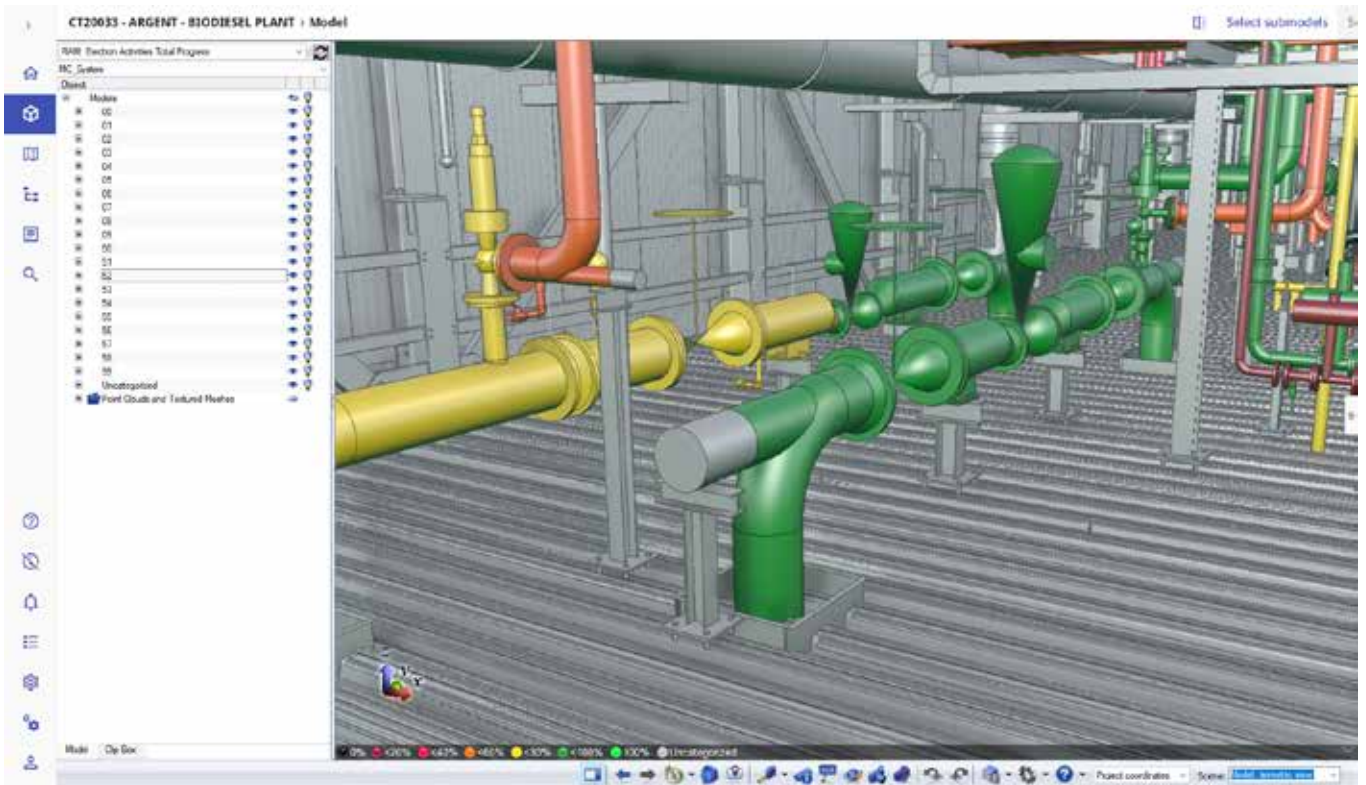
integrated 3D-P&ID modeling system, Cadmatic, to create a cohesive design framework. While Trillini Engineering initially recognized the potential of eShare, they embraced its full capabilities over the past two years, integrating the software into their workflow to track engineering and construction progress more effectively.

In the opinion of Luis Madruga, Civil Engineer at Argent Energy and involved in the BDAll project since May 2021, *“From project inception to commissioning, eShare is a versatile and powerful tool that allows for direct and easy project collaboration between owner, engineers, and contractors.”*

“Initiated in 2020, the BDAll project employed our integrated 3D-P&ID modeling system, Cadmatic, to create a cohesive design framework

The BDAll project construction began with an early start-up phase for one of the plant's units, during which Trillini Engineering provided hands-on training to the mechanical construction team on utilizing eShare for tracking installed lines and extracting progress data directly from the software. This step was crucial for generating accurate reports, including the Progress Report presented to the client.





After speaking with the team on-site, we noticed they faced challenges in presenting progress reports clearly. We thought eShare could be the solution for them. We knew there was a way to track progress with fully customizable entries, so we got to work. By discussing with those who had been managing these reports for years, we identified the key information to extract from the 3D model. We created a tool that allows users to simply select an isometric view, enabling them to mark 'Pre-fabrica-

ted line,' 'Installed line,' and 'Tested line,' and then generate a report in eShare showing the weighted progress (30% Pre-fabricated, 60% Installed, 10% Tested).

Following this initial phase, the systems and subsystems for the BDAll project were defined through close collaboration between Trillini Engineering and their client, Argent Energy. This crucial stage is foundational for achieving mechanical completion and commissioning. By clearly defining

these systems and subsystems, Trillini Engineering ensures that each component is meticulously tracked. Once multiple subsystems have been successfully installed and tested, the project can move into the commissioning phase. Upon completing the commissioning of all individual subsystems, the focus shifts to the commissioning of entire systems. This systematic approach continues until all systems are commissioned, allowing for a seamless handover of the plant to operational teams.

Currently, construction progress is reported by the mechanical contractor, who adheres to their established project standards. These progress sheets are created externally; however, eShare's versatility enables Trillini Engineering to import them seamlessly for comprehensive tracking of advancements, using color codes for various completion percentages (0%, <20%, <40%, ..., 100%). Additionally, progress sheets from the Mechanical, Electrical, and Plumbing (MEP) contractor are also integrated into eShare. By cross-referencing these datasets with the defined systems and subsystems, Trillini Engineering and Argent have gained valuable clarity regarding their status in the mechanical completion phase, which is essential before transitioning to line testing and commissioning activities.

John Van Egmond, Quality Manager and part of the construction team since January 2024, noted that *"eShare really surprised me. As a quality engineer, I have a lot of interfaces with local authorities and notified bodies. The aspects of making systems visible make it really helpful to generate reports and work instructions, such as hydrotest packs and future inspection plans. The possibilities are endless."*

eShare as a Client-Focused Knowledge Repository

Harry Gregan, Senior Process Engineer at the Leaven Team and involved in the project from the start, expressed *"At the beginning of construction, we were able to monitor progress using the field app CADMATIC eGo, which aided contractor management. Ad hoc modifications were quickly implemented. Subsequently, in collaboration with Trillini Engineering, we discovered its functionality to keep ourselves and project stakeholders upda-*

"The BDAll biodiesel plant project illustrates how CADMATIC eShare can revolutionize the management of engineering progress and documentation in large-scale industrial projects

ted on various progress fronts."

Moreover, eShare serves as a vital knowledge repository, enabling clients like Argent Energy to access essential documents independently. This functionality enhances transparency and allows clients to monitor project progress effortlessly, fostering a collaborative atmosphere that benefits all stakeholders involved.

Conclusion

The BDAll biodiesel plant project illustrates how CADMATIC eShare can revolutionize the management of engineering progress and documentation in large-scale industrial projects. As the project is still under construction, Trillini Engineering continues to seek ways to maximize the potential of eShare and Cadmatic, striving to push the boundaries of efficiency and collaboration.

At Cadmatic, we are excited to witness the ongoing impact of eShare in shaping the future of industrial engineering, helping our clients achieve exceptional project outcomes through enhanced processes and technology integration.



David Branchesi

David Branchesi is a mechanical engineer at Trillini Engineering, where he has been working since 2019 as Project and Field Engineer, specialising in piping systems and industrial plant design. He has contributed to the development of complex process facilities across Europe, handling tasks such as 3D modelling, P&ID drafting, piping class definition, equipment specification follow-up, and contractor bid evaluation. Since 2023, he has been operating as Field Engineer on a large-scale industrial plant in Northern Europe, providing site coordination, commissioning support, and as-built documentation. He holds a Master's degree in Mechanical Engineering (Thermomechanical curriculum), obtained in 2019 from Università Politecnica delle Marche (Italy), and completed part of his academic training at Universidade da Beira Interior in Portugal.



Gianluca Ricozzi

Gianluca Ricozzi is an accomplished Technical Sales Director at Cadmatic. With over a decade of experience at Cadmatic, Gianluca has been instrumental in delivering and implementing the eShare IM solution for clients, enhancing their operational efficiency and optimizing information management strategies. Prior to this, he founded and led net.engineering srl, a company dedicated to introducing advanced, user-friendly software solutions to the Italian market. Ricozzi holds a Master's degree in European Public Relations from ATENEO Impresa and a Bachelor's degree in Communication Science from LUMSA University. He further enriched his skills through the prestigious Program on Negotiation at Harvard Law School. Gianluca combines deep technical expertise with strong strategic vision, making him a trusted partner in digital transformation initiatives.



Logistics management efficiency: a new success in multimodal transport from China to Qatar

DHL Global Forwarding demonstrated its expertise in coordinating a seamless multimodal transportation and safe handling of critical materials by completing the transport of an exceptional cargo of its kind

Sameh El Hadad, Operations Manager – Special Projects, Industrial Projects
DHL Global Forwarding (Italy) S.p.A.



Operations began with a logistics feasibility assessment in Qatar, including verification of item design and optimization of saddles and support points to comply with local regulations and weight restrictions for port access. A DHL surveyor was sent to China to monitor the project and coordinate with the team in Qatar.

“DHL Global Forwarding has successfully completed a complex logistics project, transporting 85 items, including 4 exceptional loads totalling 2,286 tons from China to Qatar

After defining the size and requirements, negotiations began with the shipowner to choose the most suitable shipping means, considering the delivery schedule and the specific needs of the construction site. The cargo was divided into two separate shipments to optimize logistics. The first, from Dalian, included lighter material, while the second, from Zhangjiagang, involved loading voluminous items directly from the barge into the ship. Overall, more than 17,000 m³ of material was loaded. In addition to the 4 exceptional cargoes, 50 items were out of gauge, with average widths of about 4 meters and heights of 5 meters, but weighing between 30 and 40 tons. Handling these loads required special attention in stowage planning and transport coordination to ensure that all operations complied with international regulations

In the industrial logistics sector, handling oversized cargo is one of the most complex challenges. DHL Global Forwarding, DHL Group's air and ocean freight specialty, once again demonstrated its expertise in coordinating seamless multimodal transportation and safe handling of critical materials by completing the transport of an exceptional cargo of its kind. The project involved shipping 85 items, including four major parts, totalling 2,286 tons, from the ports of Dalian and Zhangjiagang, China, to Ras Laffan, Qatar. The HAN YI ship was chosen to ensure a unique shipment, optimizing time and cost. The operation was particularly challenging and required the deployment of the expertise of the entire Industrial Projects division to ensure its success.







“The cargo was shipped by HAN YI vessel, optimizing time and cost, and requiring careful management of oversized cargo and local regulations

and local logistical requirements. Handling in China involved barges to transport the exceptional cargo, as road transport was impractical. At the port of Ras Laffan, Qatar, coordination was equally complex, with cargo landed in order of size. The main challenge was manifested in the weather conditions: strong winds caused a delay of several days in disembarkation. Since the port

only allows landings in winds up to 23-24 knots, operations were suspended for safety reasons. Despite these difficulties, the team managed to complete the delivery successfully, meeting the timeline and ensuring safety throughout the process.

“Planning included logistical assessment, media optimization, and selection of the appropriate means of transportation

This project presented a complex logistical challenge, but through careful coordination

“Despite difficulties, including unfavorable weather conditions, the project was completed on time and safely

among our international team and detailed planning, we were able to overcome the difficulties

encountered along the way. Every step of the process, from planning the stowage of items to the choice of routes, was approached with careful attention to the client’s needs and local regulations. Our experience and ability to adapt to circumstances enabled us to ensure timely and safe delivery, confirming DHL Global Forwarding’s reliability and efficiency in handling complex industrial projects.



Sameh El Hadad

Sameh El Hadad is currently Operations Manager – Special Projects, Industrial Projects at DHL Global Forwarding, a role he took on in 2024 after more than 14 years with Fagioli. Throughout his career, he has successfully organized and coordinated numerous large-scale and complex transportation projects worldwide, often managing operations directly on-site for major clients.

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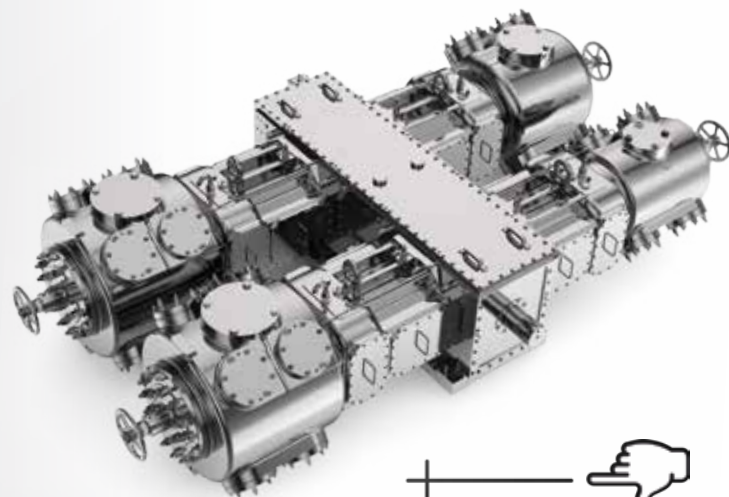
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Innovation in the North Sea for green hydrogen production

CrossWind 2.5 MW electrolyzer project overview: operational context and objectives

Fabio Iarocci, CEO

Fabio Cavina, Innovation & Technology Development Manager

Fores Engineering

In the landscape of offshore renewable energy, an innovative project is taking shape in the North Sea. The BLPH project represents a pioneering implementation in the renewable energy sector, aimed at optimizing intermittent power generation through green hydrogen production and energy storage systems.

The joint venture, established by Shell (80%) and Eneco (20%), has designed and commissioned the Hollandse Kust Noord (HKN) offshore wind farm, located 18.5 kilometers off the Dutch coast. With an installed capacity of 759 MW and an estimated annual output of 3.3 TWh, the wind farm can sup-

ply electricity to over one million households in the Netherlands.

The BLPH pilot platform—the first of its kind in the world to be installed offshore and currently under construction and undergoing testing at Rosetti Marino's yard in Marina di Ravenna—converts surplus renewable energy from wind and solar farms into green hydrogen using a PEM electrolyzer. The hydrogen is then stored and, when required by the grid, converted back into electricity through fuel cells.

This one-of-a-kind pilot plant also includes a battery system for short-term energy storage. In the event

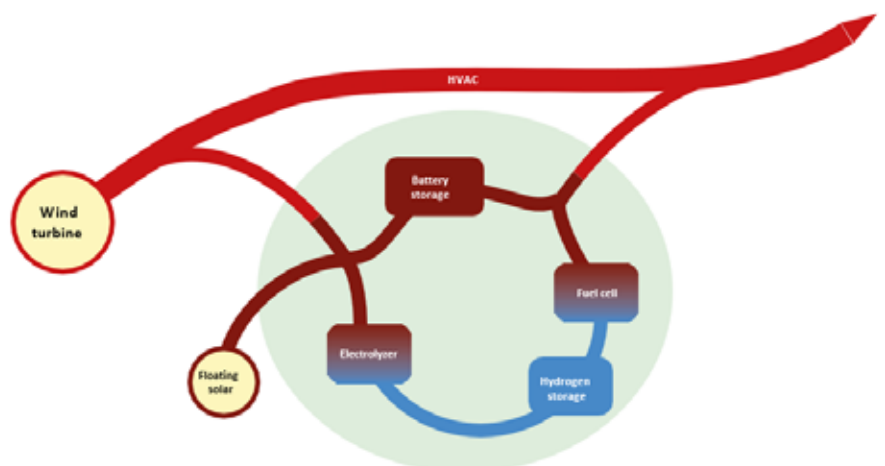


Figure 1: HKN Wind Farm

Figure 2: BLPH concept

of low renewable energy generation, it releases the stored energy to ensure a continuous power supply, regardless of wind or solar conditions.

Integration with the “Base Load Power Hub” platform

The electrolyzer has been designed as an integral part of the “Base Load Power Hub” (BLPH) platform—an advanced infrastructure that combines multiple energy storage technologies. The system was developed with a modular approach, allowing integration with other energy storage systems, including lithium-ion batteries (BESS).

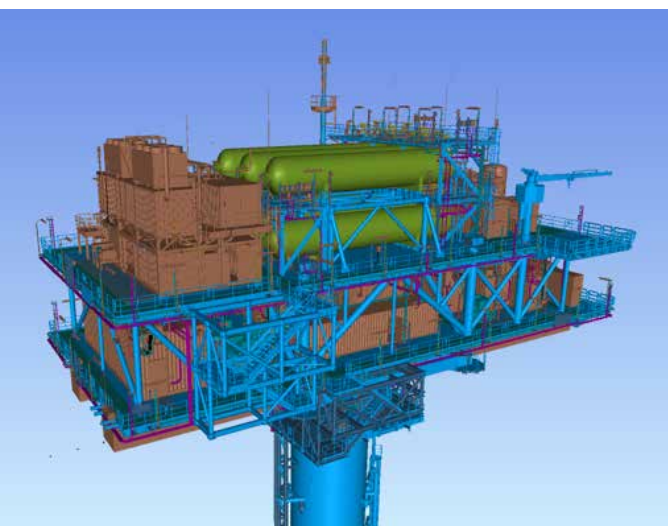


Figure 3: BLPH Platform 3D model

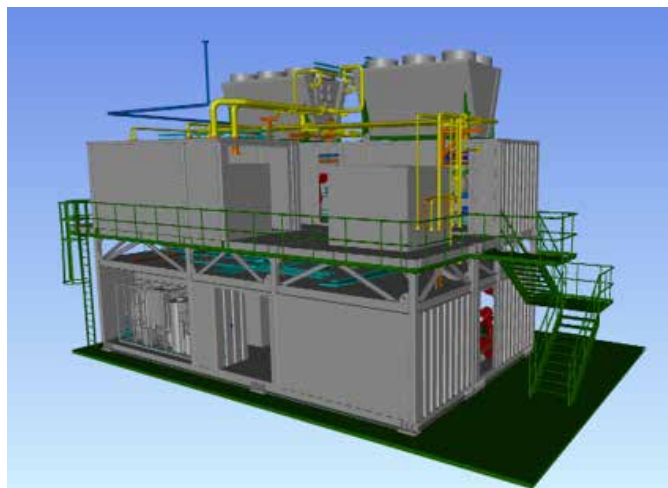


Figure 4: 3D model electrolyzer



Figure 5: Electrolyzer in Fores construction site

Fores Engineering: expertise and innovation in green hydrogen production

Fores Engineering was commissioned by CrossWind to integrate the Electrolyzer Package—a 2.5 MW electrolyzer specifically designed for off-shore transport and installation, capable of operating in a marine environment. The unit was developed to work in synergy with wind and solar farms, converting surplus renewable energy into green hydrogen through the electrolysis of seawater. The plant's production capacity has been sized to optimize the balance between energy generation and storage, ensuring efficient management of power peaks.

Project analysis

The electrolyzer project required a significant investment in both resources and work hours, totalling 90,000 hours across multiple phases and areas of expertise including management, detailed engineering (including 3D modelling), procurement, construction, and assembly in confined spaces

“The 2.5 MW electrolyzer – just completed by Fores Engineering - is the core of the innovative ‘Base Load Power Hub’ (BLPH) platform in the North Sea, which is currently under construction and is undergoing testing at Rosetti Marino’s offshore yard in Marina di Ravenna for CrossWind (80% Shell, 20% Eneco). Its final intended destination is the Hollandse Kust Noord wind farm, located off the Dutch coast

“The electrolyzer has been developed using multiple custom-designed shelters engineered for offshore transport and installation, incorporating engineering solutions specifically tailored to meet the demands of the marine environment

adopting fast-track methods to meet the client’s re-

quirements and deadlines.

From a materials and infrastructure standpoint, the project involved the installation of 12 tons of piping and approximately 17 kilometres of electrical and control cables. The main structure consists of four stacked shelters, weighing a total of 70 tons, designed to house the plant’s various subsystems. These shelters integrate critical components such as the electrolyzer stacks, process units, the hydrogen purification unit, and the water purification system. Additionally, the plant features essential auxiliary sy-



Figure 6: Electrolyzer placement on BLPH platform

stems such as the ventilation and cooling units, as well as the electrical power supply system.

Technical challenges and optimized solutions

The technological core of the electrolyzer consists of eight 330 kW PEM (Proton Exchange Membrane) stacks supplied by Elogen, a company specialized in this advanced technology. The PEM stacks are distinguished by their high conversion efficiency, rapid response to load changes, and the ability to produce hydrogen with high purity (>99.9%). This technology is particularly well-suited for the offshore environment due to its compact design and operational flexibility—essential features for integration within limited spaces and to accommodate the fluctuations typical of renewable energy generation. The choice of PEM technology enabled the creation of a system capable of modulating hydrogen production based on energy availability, thereby maximizing the overall plant efficiency.

“The system is designed to operate on the platform in integration with hydrogen storage systems, battery storage, and fuel cells enabling the optimization and management of intermittent energy supply from offshore wind and floating solar farms

The design of the shelters required a thorough analysis of the structural stresses typical of the offshore environment. Fores developed the hydrogen production and treatment system within custom-made containers, specifically engineered to withstand the stresses of the marine environment while housing the electrochemical cells (stacks). The structures were built according to the following criteria:

- mechanical resistance to dynamic stresses caused by wave motion;
- corrosion protection through dedicated insulation systems;
- optimization of internal space to maximize operational efficiency;

“The electrolyzer project is part of a broader prototype initiative led by Rosetti Marino, which marks a significant milestone for both the Dutch government and the industry as a whole in the development of technologies, training, and knowledge-sharing for the offshore production of green hydrogen

- implementation of ventilation and environmental control systems;
- integration of evacuation routes compliant with SOLAS regulations;
- a control system compatible with the platform's Energy Management System (EMS), capable of managing all planned operating modes.

Strategic partnerships for success

The project is founded on a network of strategic partnerships, including collaboration with Elogen (OEM) and Rosetti Marino, the parent company of Fores, which is responsible for the EPCIC of the BLPH platform and the integration of its various systems. This synergy between diverse technical expertise has enabled the team to tackle the complex challenges of the project with an integrated and innovative approach, perfectly suited for the development of the world's first prototype.

Future prospects and industry impact

The implementation of the electrolyzer in the CrossWind project for offshore electricity balancing provides essential operational data and technical parameters for the development of future similar installations and offshore hydrogen production in general. The analysis of performance in the marine environment and the identification of operational challenges are key elements for optimizing subsequent projects. Data collected during installation, commissioning, and the planned two-year demonstration period will provide a clearer understanding of technological solutions and the actual costs associated with produ-

cing green hydrogen production offshore. The Dutch government and the client aim to expand the experience gained from renewable energy-based hydrogen production plants to help establish new technical standards, with particular focus on safety requirements and operational procedures. Integration with existing renewable energy systems will allow further exploration of specific needs related to power management and control systems, leading to the development of replicable technical solutions for future installations. From an energy market perspective, the operational data collected will enable a more accurate assessment of the operating expenses (OPEX) of offshore plants. Information regarding the efficiency

of the energy storage system and green hydrogen production will help fine-tune economic models for industrial-scale installations. This information is especially valuable for planning similar projects and evaluating their economic sustainability. In conclusion, analysing the plant's performance under diverse operating conditions will provide concrete insights into the technology's potential and limitations, allowing a more accurate assessment of its role in the energy transition. The collected data will contribute to defining more precise technical specifications for future electrolyzer projects, optimizing plant sizing and integration requirements with existing infrastructure.



Fabio Iarocci

Fabio Iarocci has built a professional career spanning over 24 years within the Rosetti Marino group. He started as a Project Manager before advancing to the role of Commercial Manager. He later served as Executive Director of Rosetti's main subsidiary in Kazakhstan, before becoming the group's Chief Operating Officer. Today, he is the CEO of Fores Engineering, a company specialized in engineering and technological solutions in the renewable energy, carbon neutrality, and Oil&Gas sectors.



Fabio Cavina

Fabio Cavina has developed his professional career at Fores Engineering for over 10 years, progressing through roles of increasing responsibility: starting as a Project Manager, then becoming Technical Manager, and subsequently General Manager of the Fores do Brasil branch. His professional background also includes six years at Rosetti Marino as Head of Proposal Engineering. Today, as Innovation & Technology Development Manager at Fores, he primarily focuses on Renewable Energy and Energy Transition.



New Ways to deliver Capital Projects: How digital technologies can improve the way to meet schedule, budget and enable an operations-ready digital plant

Capital Projects have always experienced schedule delays and cost overruns, a new data centric approach enabled by digital technologies improves visibility, control and trust leading to a more efficient project delivery and potential benefits around 15% of the total installed cost

Michele Cacciari, Head of the Energy Industry
AVEVA

Many EPCs and Owner Operators struggle to manage traditional project headaches while overcoming newer market. It's no wonder that, according to Accenture, 95% of major projects with a budget over \$1 billion experience delays or cost overruns. Only 25% of these projects are completed within 10% of the original

deadlines, and just 31% come within 10% of the cost baselines. The cause? Organizations often cite missing or incomplete engineering data, a lack of project transparency, and poor communication amongst teams.

While alignment between EPCs and Owner Operators is critical to efficient project completion, such alignment remains a widespread challenge in the industry. A new integrated data-centric approach

From disconnected systems, teams and project data.

...to 'Connected' Systems, Teams and Project Data

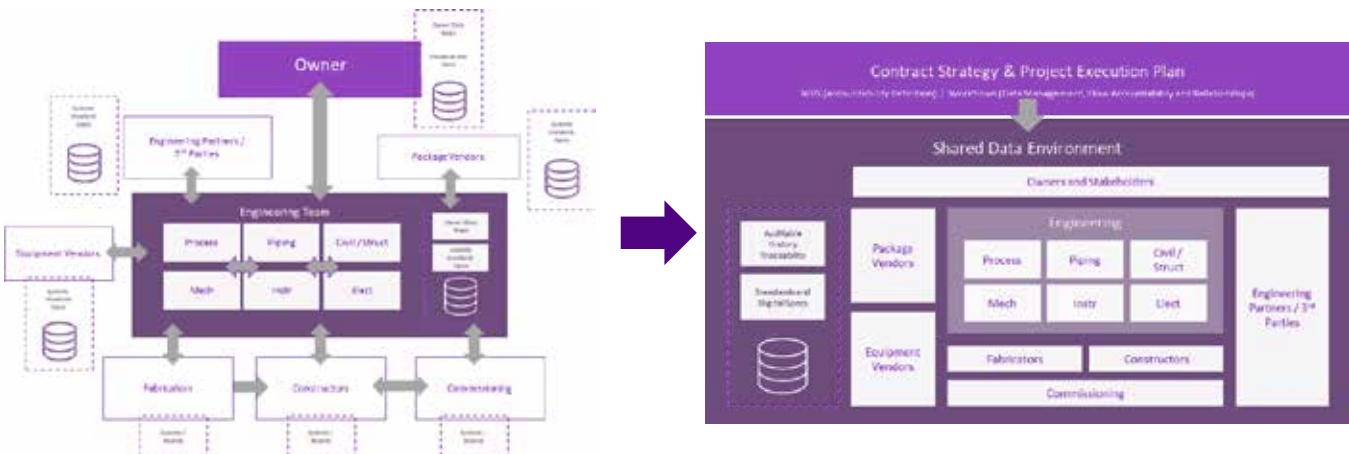


Figure 1 - New Integrated Data-Centric approach to Capital Project Delivery

“The delivery of Capital Projects in asset intensive industries has always been a challenge with continuous schedule delays and cost overruns, due mainly due to missing and incomplete data, lack of visibility of project data between the multiple stakeholders and poor communication amongst project teams that are often working from multiple locations

to engineering and handover can improve this relationship and its result – deliver the project itself on time and on budget and ensure that the plant achieve stable design conditions in the shortest possible time.

With digital engineering and project execution tools, both parties gain a centralized, collaborative platform in which to work together throughout the project life cycle while improving visibility, trust and control.

Key components of a “state of the art” data centric Capital Project delivery are the following ones:

- **Information Management Standard:** information standard management to define data requirements and promote consistency, completeness and correctness of engineering data in alignment with industry standards such as CFIHOS, ISO 15925 and/or ISO 14224 etc.
- **Process Simulation:** from the earliest sta-

ges of concept development, engineers need to rely on process simulation to understand the potential behaviour of the plant across any range of future scenarios. It provides insight and knowledge during the early phases of a project lifecycle. It eliminates errors and mistakes in the design before committing capital and when the cost to correct an error is the lowest.

- **Connected Engineering Design Platform:** Connected technologies create the framework and insights needed to align people, processes and data. The integration of process and 1D, 2D, and 3D engineering on a single platform leveraging the same database and predictive/generative AI capabilities draws efficiencies from conceptual planning through project completion. Teams can submit their projects into detailed design with confidence that the FEED designs are valida-

“In recent years digital technologies have evolved allowing for a more integrated data-centric project delivery approach, by leveraging integrated platforms where project data are continuously exchanged between the different stakeholders and so improving control, visibility and consistency and overall project efficiency

ted and that they can revalidate at any time as the design matures. When multi-discipline engineers contribute and share data in real time using integrated, on-premises tools or by leveraging cloud collaboration, they achieve new levels of efficiency while reducing costly errors and rework.

- **Material Management:** An advanced material management capability integrated with engineering design to improve sourcing, material utilization and reduce waste. Capturing an error in engineering might take a few hours of time to identify and rectify the issue across the other disciplines, but if equipment and material has been already ordered and construction teams mobilized the downstream costs and time wasted of any change can spiral quickly and impact the overall profitability of the project.
- **Construction Management:** 3D model integration, built-in analytics, and construction work package (CWP) visualization allow engineering, procurement, and construction teams to execute according to advanced work packaging and integrated project delivery best practices to speed up project cycles and minimize costs, while reducing the overall risk of inevitable late project changes.
- **Engineering Datawarehouse (EDW):** to collect all project data into a single tool where execution teams can assess data readiness, visualize engineering progression, conduct data quality check for completeness and con-

“It is estimated that adopting an end-to-end digital approach to project delivery can lead up to 15% reduction in the overall total installed cost

sistency leveraging the information standard management capability and building the plant digital twin

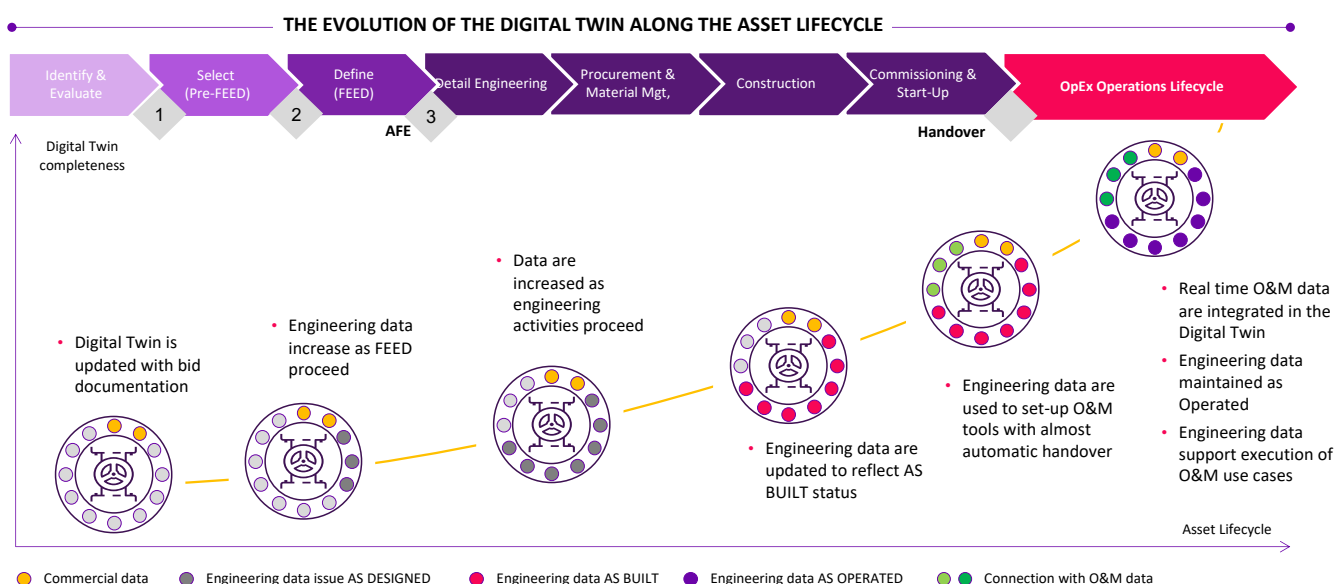
Having understood the power of collaboration and the engineering data, Owner Operators are increasingly asking EPC Contractors adopt this data centric approach to capital project delivery to enable a continuous data handover where project deliverables are progressively delivered as they become available.

As shown in the figure below, Owner Operators can now have a better view of the progress of the project and can start engaging their Operations and Maintenance Team earlier to populate their systems and plan for startup and operational readiness early in the process to get to the nameplate production as quickly as possible.

We believe an integrated project delivery provides the following benefits:

- **Conceptual Design:** Optimize complex design processes by simulating layouts, configurations, operating conditions, and risk scenarios. Ensure efficient, net-zero design using referenceable design data.

Figure 2 – The evolution of the digital twin along the asset lifecycle enabled by the continuous handover



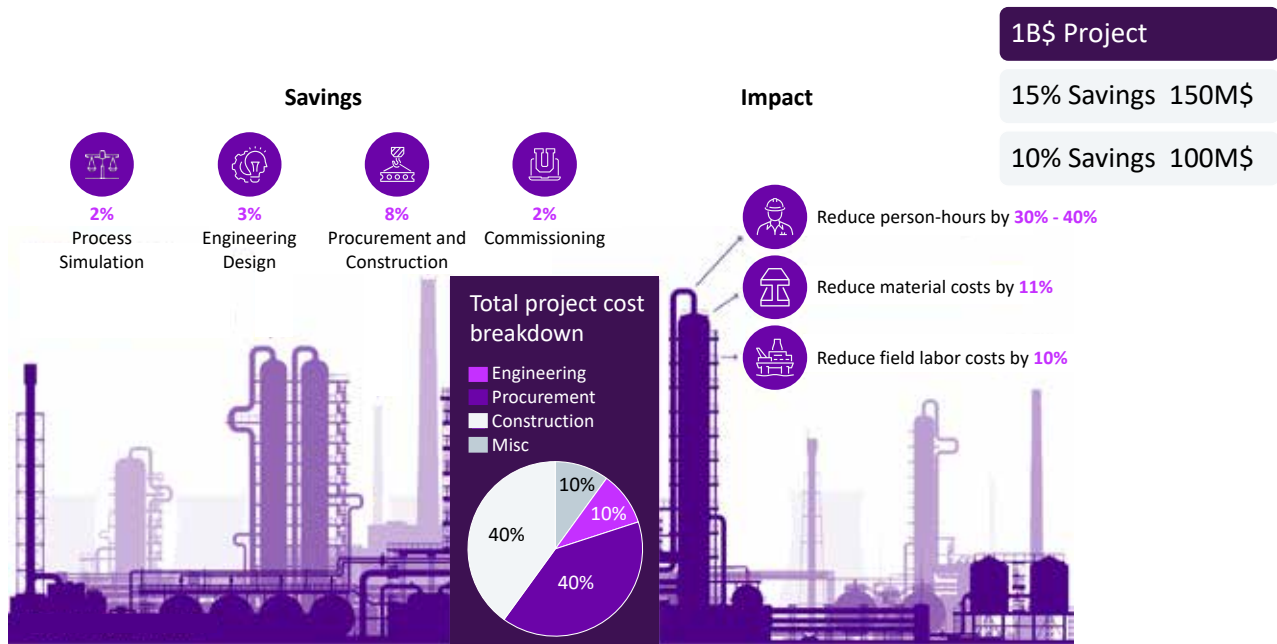


Figure 3 – The business benefits of an integrated Capital Project delivery

“A digital approach to capital project also allows for the creation of an operation ready digital twin that speeds up commissioning and start-up to reduce the time to achieve full operations

- **Front-End engineering design (FEED):** Create a living digital repository for engineering and design data and deliverables to identify potential clashes, optimize resources and construction, and facilitate continual handover and remote collaboration.
- **Detailed Design:** Give all stakeholders visibility into the design process, automate progress monitoring, set deliverable expectations, and ensure a straightforward handover, all of which improves remote communication and reduces onsite activity.
- **Procurement:** Reduce lead time by integrating procurement planning into the design process. Cross-reference design documentation, such as work orders and 3D models, with procurement and commissioning to improve workflows and increase transparency.
- **Construction:** Link design, procurement, and construction processes to enable parallel activities. Create virtual replicas of construc-

tion sites to identify potential issues, optimize resource allocation, reduce rework, and improve construction timelines.

- **Commissioning:** Use digital documentation and deliverables to speed up commissioning and ensure a smooth handover to operations.
- **Operations:** Leverage engineering and design data in operations to increase safety and agility while reducing operational and travel costs, particularly for assets in remote or inaccessible locations.

All combined together these benefits lead to a more efficient capital project delivery that have seen savings up to 15% of the Total Installed Cost (TIC).



Michele Cacciari

Michele Cacciari is the Head of the Energy Industry in AVEVA where he is responsible for developing and executing the commercial strategy, providing industry expertise and business value consulting to Customers operating in Oil & Gas, EPC and New Energies (Hydrogen, Renewables and CCUS). He has more than 20 year's experience in working in leadership positions for International Consulting and Leading Industrial Software Companies supporting Companies in transforming their business leveraging the latest digital technologies such as IT-OT Convergence, Industry 4.0, Integrated Manufacturing Operations Management, Analytics and cloud.

Transforming industrial plant operations with Immersive Digital Twins

A new strategic partnership between +Reality and Prevu3D

François-Olivier Lavery, Technical Support Manager

Prevu3D

Giancarlo Russano, CEO

+Reality



In complex industrial environments, gaining accurate, up-to-date insights into facility conditions—without being physically on site—has become essential for optimizing operations, engineering, and maintenance. This is especially true in the oil & gas sector, where spatial accuracy, safety, and efficiency are paramount.

To meet these demands, +Reality, an Italian digital twin specialist, partnered with Prevu3D to deliver an immersive digital twin solution to a leading Italian oil company. The result: a highly detailed, visual model that streamlines collaboration, accelerates design validation, and enhances operational planning across both onshore and offshore assets.

“+Reality, an Italian digital twin specialist, partnered with Prevu3D to deliver an immersive digital twin solution to a leading Italian oil company

The strategic partnership: +Reality x Prevu3D

+Reality was born in 2024 out of decades of experience in industrial measurement and laser scanning. Its founders, Giancarlo Russano and Riccardo Panichi, recognized a growing demand among their

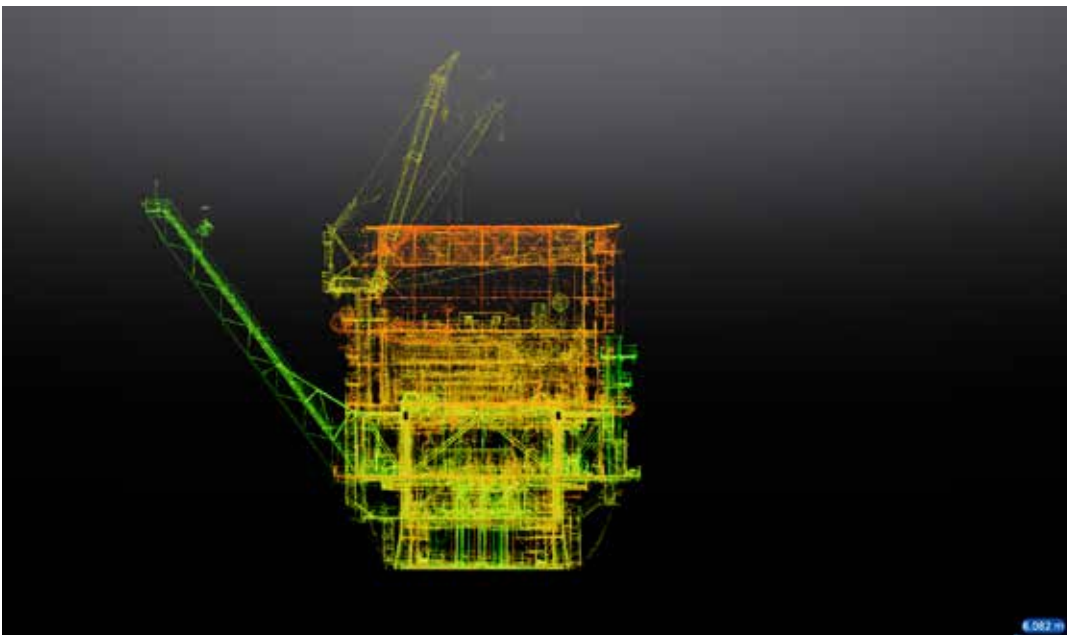
clients—especially in Oil&Gas—for a more visual, immersive, and user-friendly way to interact with reality capture data. Their mission: to go beyond traditional deliverables and provide clients with actionable, high-fidelity environments that reflect the current state of their facilities.

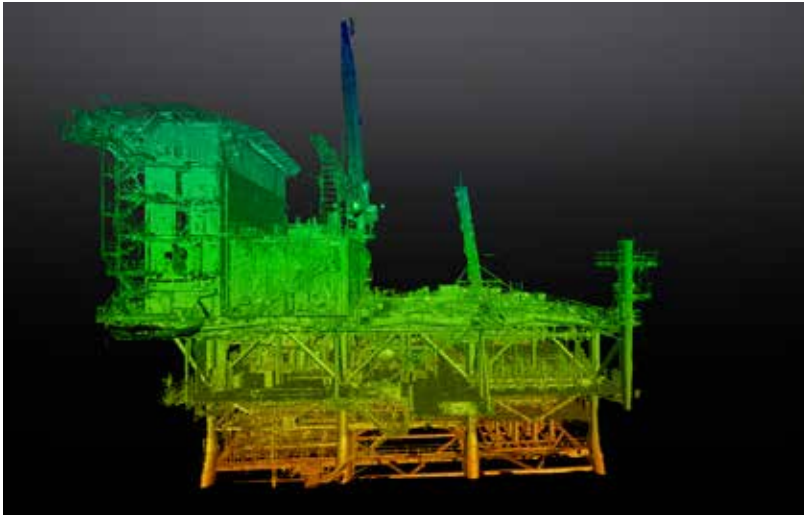
To do this, +Reality formed a strategic partnership with Prevu3D. Their goal was to offer Italian industrial clients a visual twin solution that would not only replace conventional point clouds and CAD workflows but would also offer real-time access, rapid insight, and intuitive navigation across departments.

The project: visualizing complex oil&gas assets

+Reality and Prevu3D partnered to support a major Italian oil company seeking a digital twin following a comprehensive laser scan—now a standard step in many industrial projects. The site's complexity, including offshore and onshore infrastructure, required careful planning and execution.

“Working on a live Oil&Gas site always comes with challenges. But our approach - combining field experience with agile communication - allowed us to capture the data efficiently and deliver a solution that exceeded expectations





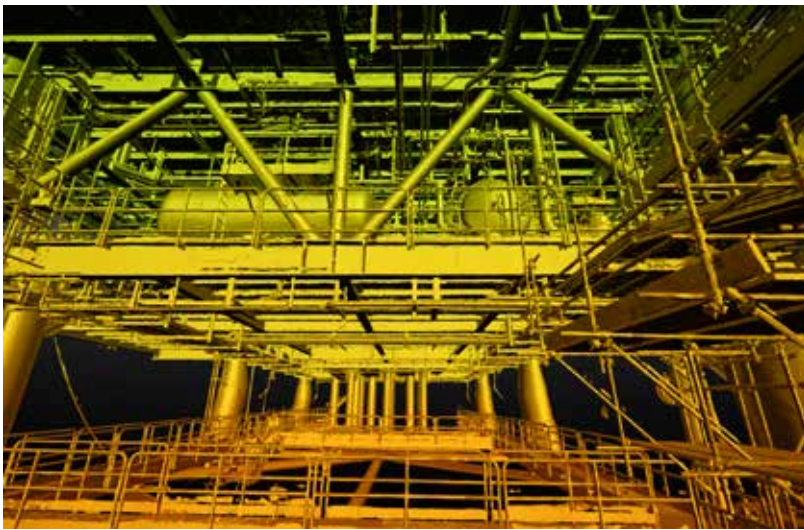
+Reality's field teams, supported by their technical staff, conducted the survey across multiple zones with minimal disruption. Using Prevu3D, the data was quickly processed into a textured mesh and exported in FBX format. The result was a highly accurate, immersive 3D representation that enabled instant spatial awareness and streamlined collaboration.

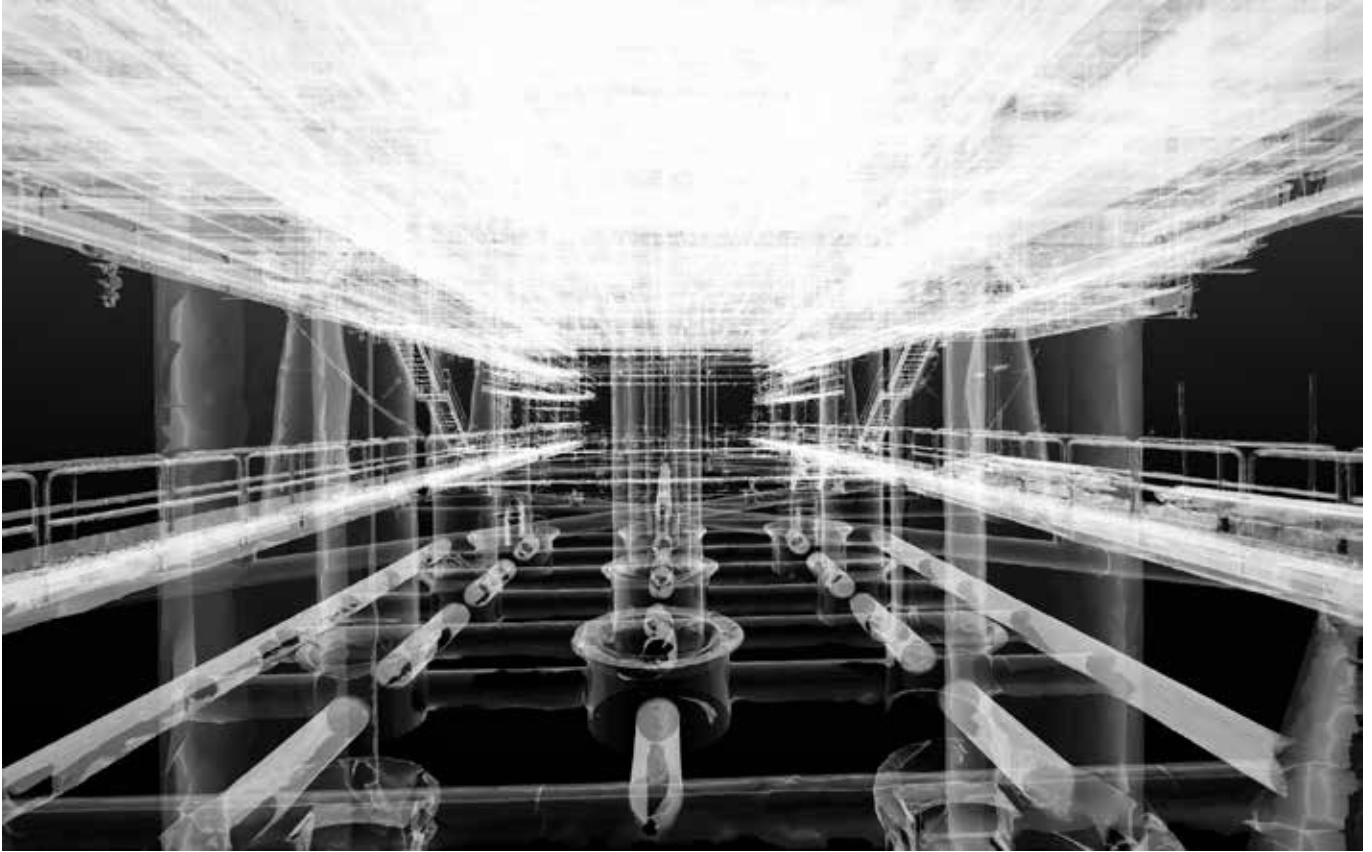
Challenges solved, results delivered

Before implementing Prevu3D, the client relied on static documentation and traditional 3D modeling workflows, which were often slow, costly, and disconnected from real-world conditions. By contrast, the textured mesh solution provided immediate access to a navigable, photo-realistic environment—without the need for a full 3D model build-out.

Key benefits included:

- **Speed of access:** The mesh was available almost instantly after data processing.
- **Improved collaboration:** Engineers and operators could navigate and annotate the environment remotely.
- **Reduced costs:** Avoided the expensive point cloud-to-model conversion step.





- **Interoperability:** Easy integration with Cadmatic and other plant design tools.

Client feedback was immediate and positive. They praised the ease of use, the quality of visual representation, and began requesting additional capabilities to integrate with their workflows and asset management processes.

How Prevu3D powers Industrial Digital Twins

Prevu3D stands out in the visual twin space for its ability to unify reality capture data, CAD models, and enterprise systems into a single 3D interface. In this project, its mesh generation capabilities enabled a cost-effective alternative to traditional modeling while providing the spatial intelligence necessary for accurate planning, safety assessments, and training.

Unlike typical BIM tools, Prevu3D's RealityPlatform delivers a real-time, immersive experience accessible through a secure cloud environment. Engineers and stakeholders can virtually walk through their facilities, perform measurements,

validate designs, and plan interventions—all from their browsers.

The Prevu3D suite includes:

- **RealityPlatform** – A cloud platform for managing, visualizing, and sharing 3D scan data, including point clouds, CAD, and mesh files.
- **RealityPlan** – A desktop app for rapid design iterations, asset documentation, and 3D model exports—integrated with Prevu3D RealityConnect plugins.
- **RealityConnect** – A suite of plugins enabling seamless, bidirectional data exchange between Prevu3D and CAD/BIM tools, enhancing reality capture workflows.

This level of interoperability is crucial in environments like Oil&Gas, where design accuracy, safety planning, and operational continuity are non-negotiable.

+Reality: Listening, guiding, delivering

At the heart of this project was +Reality's ability to act not just as a service provider, but as a partner. From initial consultation through capture, processing, and delivery, their team maintained open communication



with the client to anticipate risks, resolve issues, and customize the final deliverable to fit specific engineering requirements.

“We don’t just deliver data—we build partnerships. Our clients know they can count on us to tailor solutions to their operational reality, not the other way around

This client-first approach, combined with their technical depth and deep understanding of Italian industrial challenges, sets +Reality apart. In partnership with Prevu3D, they are now positioned to bring immersive, actionable insights to facilities across Italy and beyond.

Looking ahead: what’s next for Visual Twins

As more industrial players embrace mesh-based visual twins to streamline collaboration and reduce modeling overhead, solutions like Prevu3D are becoming a critical part of digital transformation strategies.

Building on this momentum, Prevu3D is preparing to launch RealityTwin—its next-generation platform designed to bring even deeper value to planning, maintenance, and operations. Tailored for complex brownfield environments, RealityTwin will unify point clouds, meshes, and CAD into a persistent, asset-centric interface optimized for cross-team collaboration.



François-Olivier Lavery

François-Olivier Lavery works at Prevu3D, supporting CAPEX and engineering managers in the Oil&Gas, EPC, and manufacturing sectors with the deployment of 3D digital twins derived from reality capture data. He collaborates directly with engineering teams to integrate accurate site models into capital project planning, design reviews, and maintenance strategies, helping streamline decision-making and reduce rework in complex industrial environments.



Giancarlo Russano

Giancarlo Russano, CEO of +Reality, a young company born from the experience in plant engineering that has grown over the years. Synergies are the basis of our corporate strategy, important partnerships with market-leading companies such as Prevu3D for digital twin, Cadmatic for software and Gaia Group for laser scanning surveys allow us to offer our customers innovative solutions. +Reality is characterized by the desire to overcome the boundaries of its comfort zone, with a competitive approach, essential to respond promptly to the demands of increasingly complex markets. The strategy of +Reality is to offer high-quality products, customized and created specifically to meet the specific needs of customers. +Reality is not a simple service provider but a partner serving the needs of our customers.



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The most reliable solution in hydrocarbon condensate applications

A case history of the successful implementation of LEWA's "Triplex G3G" diaphragm pumps for hydrocarbon condensate treatment in a gas extraction field, replacing problematic piston pumps

Andrea Boccotti, Sales Director and Business Developer

Camilla Navicello, Application Engineer

LEWA ITALY

Founded in 1952 by German engineers Herbert Ott and Rudolf Schestag, LEWA has experienced extraordinary growth and significant transformation over its 70-year history. Initially a manufacturer of positive displacement pumps for water treatment, the company has evolved into a global leader in the field of metering pumps, dosing processes, and complete systems for the energy and chemical industries.

The name LEWA derives from 'LEonberg', the city where it was founded, and 'WAter' for its initial focus on water treatment.

LEWA's growth has been constant, also thanks to a significant change in 2005, when the company transitioned from a family-run business to ownership by a German private equity firm. This transition marked a new chapter in LEWA's history. The private equity firm restructured the company, making it more like a modern large enterprise, and in 2009 it was acquired by the Japanese group Nikkiso, specialized in the production of cryogenic pumps for the oil and gas industry.

Recently, in 2022, LEWA took a further important step in its global development by joining the Atlas Copco group. We are now part of Atlas Copco's Industrial Flow division, which allows us to further expand our range of solutions and access new resources to innovate and grow in key markets.



Oil&Gas: the core of LEWA's business

The supply of positive displacement pumps and dosing systems for the Oil&Gas sector represents the core of the company's business, which has consolidated its position over the years as a reference part-

“The project addressed challenges including the aggressive nature of the condensate, space constraints, and suction pressure requirements

ner in the upstream and downstream segments of the energy sector.

Advanced technology and customization: LEWA's strengths

One of LEWA's distinctive elements is its ability to customize solutions for its customers, many of whom are large EPC contractors and multinational corporations. LEWA does not offer simple pumps, but complete systems designed according to the specific needs of customers. LEWA's pumps, such as those with “M9” patented diaphragms, are renowned for their reliability, precision, and resistance, essential qualities in extreme environments like those of the oil industry.

Furthermore, LEWA's diaphragm technology ensures safety and reliability even in the most critical operating conditions, thanks to the pumps' ability to handle aggressive, viscous, or high-temperature fluids without compromising performance. This is particularly important in oil and gas treatment, where processes must be flawless to avoid costly downtime or failures that could have serious environmental and financial consequences.

The success story: LEWA delivers advanced “Triplex G3G” diaphragm pumps for hydrocarbon condensate treatment in gas extraction field

In 2024, LEWA successfully delivered its advanced “Triplex G3G” diaphragm pumps for the treatment of hydrocarbon condensate in a gas extraction field. Hydrocarbon condensate, a valuable byproduct of natural gas extraction, is a light liquid hydrocarbon

that is separated from raw natural gas. It is used in various applications, including as a feedstock for petrochemical plants and as a blending component for gasoline.

Challenges and solutions

The project presented several challenges primarily due to the aggressive nature of hydrocarbon condensate, which had previously caused significant issues with piston pumps. The aggressive fluid compromised the piston seals, leading to frequent maintenance and downtime. For this reason, LEWA decided to pursue a solution with diaphragm pumps, as they are completely leakage-free and can pump the fluid without any leakage into the hydraulic parts or outside.

1. Overall space availability - Diaphragm pumps generally have a larger footprint compared to piston pumps. However, the LEWA Triplex model, without stroke adjustment, is a monobloc pump with a single gearbox, making it one of the most compact designs on the market for triplex diaphragm pumps. This allowed for easier integration into the existing plant layout, despite the space constraints.

“LEWA's solution involved utilizing its compact “Triplex” design, conducting detailed pulsation studies, and creating a custom skid

2. Suction conditions - The gap in minimum required suction pressure for diaphragm pumps, compared to piston pumps, posed another challenge. LEWA oversee this issue by utilizing its specialized pulsation study program and expertise to perform detailed analyses of the client's piping conditions. The solution included the special sizing of suction manifolds and valves to minimize pressure losses, ensuring reliable operation and optimal performance. Additionally, the pumphead with “M9” technology, featuring the DPS system, ensures safety and reliable diaphragm positioning during startup and superior suction capability compared to other diaphragm pumps on the market.

“The deployment of key technologies like the ‘M9’ pumphead and the DPS system, with their reliability and safety, resulted in reduced downtime and maintenance costs, demonstrating LEWA’s commitment to providing innovative and reliable solutions for demanding industrial applications

- 3. Custom skid design** - LEWA Italy played a crucial role in adapting the pump design to the client’s system. The team worked closely with the client to create a custom skid that met the specific process and space requirements. This involved the detailed design and realization of all components, turning theoretical estimates into a practical and functional solution. The skid design also included a temperature control sensor that eliminated the need for cooling water, thanks to a thorough study of historical installations.



densate. The pumps have effectively handled the aggressive fluid, reducing downtime and maintenance costs while ensuring continuous and efficient operation.

Technology and innovation

LEWA’s “Triplex G3G” diaphragm pumps, compliant with API 675 standards, were chosen for their superior chemical resistance and robust design. These pumps replaced the existing piston pumps, providing a more reliable and maintenance-friendly solution. The patented PTFE diaphragm heads of the “Triplex G3G” pumps offer exceptional resistance to aggressive fluids, ensuring long-term durability and reduced maintenance needs. The “M9” pumphead is the state-of-the-art in LEWA technology, equipped with a pressure transmitter to detect diaphragm ruptures and enable preventive maintenance planning. The DPS technology, patented by LEWA, facilitates operation and reduces downtime. LEWA’s Triplex diaphragm pump is the most compact in the sector, often used on offshore platforms due to its extreme compactness.

Application examples

The deployment of LEWA’s “Triplex G3G” pumps in the gas extraction field has demonstrated significant improvements in the treatment of hydrocarbon con-

Collaboration and partnership

LEWA’s success in this project was made possible through close collaboration with the client and leveraging the expertise of its international teams. The partnership allowed for the seamless integration of the new pump technology into the existing infrastructure, ensuring a smooth transition and enhanced performance.

Conclusion

The successful delivery and implementation of LEWA’s “Triplex G3G” diaphragm pumps for hydrocarbon condensate treatment highlight the company’s commitment to providing innovative and reliable solutions for challenging industrial applications. With this project, LEWA continues to demonstrate its leadership in the field of advanced pump technology, paving the way for future advancements and collaborations.



Andrea Boccotti

Andrea Boccotti is the Sales Director and Business Developer, in LEWA ITALY Srl since the 2008. MBA graduate by MIP *Politecnico di Milano*.



Camilla Navicello

Camilla Navicello is the Application Engineer, in LEWA ITALY Srl since 2021. She graduated with a Bachelor's Degree in Chemistry from the University of Milan.

Advanced pump & valve solutions meeting the demands of the offshore market

With its extensive experience and broad portfolio of offshore pumps and valves, Trillium Flow Technologies (Trillium) is able to meet the needs of FPSO and FLNG operators in terms of innovative, reliable, efficient and safe solutions

Daniele Cecchini, Regional Sales Manager (Pumps)

David Shaw, Control & Isolation Valve Applications Manager
Trillium Flow Technologies

Ensuring energy security is crucial during the global energy transition. With oil and gas accounting for 55% of global energy, the industry is increasingly using floating production systems to tap into new and existing offshore reserves.

With its extensive experience and portfolio of oil and gas pumping solutions, Trillium Flow Technologies can meet the needs of FPSO and FLNG unit operators for innovative, reliable, efficient, and safe pump and valve solutions.

Trillium offers tailored pump solutions through its Gabbioneta Pumps® and Termomeccanica Pompe brands for offshore applications, covering high-pressure applications such as water injection, seawater lift, fire water, and oil shipping. The solutions proposed are available in a wide range of configurations and materials, such as Super Duplex meeting NACE MR0175 / ISO 15156 and NORSOK M-650 standards. Trillium's offshore solutions also feature skids with Anti-Vibration Mountings (AVMs) and Three-Point Gimbal Mountings to handle ship and deck movements and deformations. The company uses Finite Elements Analysis (FEA) to design these solutions and conducts extensive in-

“Trillium offers tailored pump solutions through its Gabbioneta Pumps® and Termomeccanica Pompe brands for offshore applications, covering high-pressure applications such as water injection, seawater lift, fire water, and oil shipping

house testing to guarantee reliability. In addition to all the typical pump vibration tests, vibrations are also measured at AVM/gimbal connection points when installed. Additionally, Trillium's Oil and Gas pump solutions incorporate a complete vibration monitoring system with a dedicated human-machine interface per API 670 standards to prevent

Termomeccanica Pompe BB5 pump skid with 3-point (gimbal) mounting for FPSO



malfunctions and failures.

Trillium also provides engineered valve solutions that meet the demanding requirements of the offshore environment.

Through its Sarasin-RSBD brand, Trillium recently designed a robust and efficient block-forged pilot-operated pressure relief valve (POPRV) without tubing to withstand the high pressure (up to 643 barg) on the Gas Compression Units of a customer's new FPSO platform design. This solution, using technology proven in the nuclear market, ensures the highest pressure and capacity while maintaining reliability, safety, and cost-effectiveness. It resulted in a 60% reduction in the total cost of ownership of the valves in question.

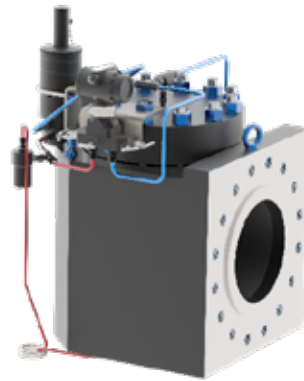
“Through its Sarasin-RSBD brand, Trillium recently designed a robust and efficient block-forged pilot-operated pressure relief valve without tubing to withstand the high pressure on the Gas Compression Units of a customer’s new FPSO platform design

With its Red Point brand, Trillium provides a range of non-commodity and fast-track delivery solutions for offshore applications. They include ball, gate, globe, check, and double block and bleed valves with compact designs for space-saving or the API 6A monogram for wellhead and other applications. For a customer who was looking for a 3-way ball valve to divert an incoming flow of 120m³ evenly between two outlets for an FPSO project, Red Point showcased its expertise by proposing a 3-way globe valve instead for a more accurate flow diversion, also designing an adjustable lock on the stem to accommodate for possible changes in flow conditions. The valve was developed via CFD software and underwent physical flow tests to demonstrate its functionality and efficiency.

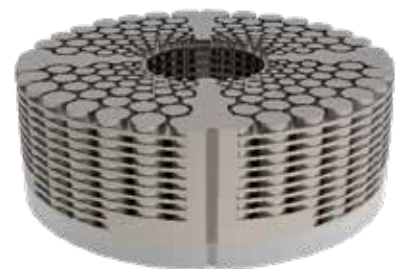
“With its Red Point brand, Trillium provides a range of non-commodity and fast-track delivery solutions for offshore applications



Sarasin-RSBD Block-Forged Pilot Operated Pressure Relief Valve - 76 VHP Series



Sarasin-RSBD Block-Forged Pilot Operated Pressure Relief Valve - 76 VHP Series



Blakeborough X-TREAM trim for high-pressure drop services (3D render)

Trillium also offers tailored choke valve solutions for the Oil&Gas market through its Blakeborough brand, leveraging decades of experience and field feedback. Each application, such as Production, Water Injection, Gas Lift, Gas Injection, and Gas Blowdown, is uniquely addressed to ensure optimal performance and minimal maintenance. Trillium's choke valves can meet ASME B16.34 and API6A standards, guaranteed by rigorous in-hou-

se testing. The innovative X-Stream trim solution, used in high-pressure drop services like on- and offshore water injection, where sand or contamination is present, is more resistant to blockage

than other multistage trims and is also available in erosion-resistant solid Tungsten Carbide for extended service life.



Daniele Cecchini

Daniele Cecchini holds a master's degree in Nautical Engineering from the University of Genoa. After a research project at Newcastle University in 2011, he embarked on his career in the yachting industry, working for the R&D Department of the Azimut/Benetti group. In November 2012, Cecchini joined Termomeccanica Pompe (now part of the Trillium Flow Technologies Group), starting as a Project Engineer. This role allowed him to deepen his expertise in centrifugal pumps and related auxiliary systems, with a particular focus on the Oil & Gas sector. He then moved on to a Sales Area Manager position, overseeing strategic markets such as the United Arab Emirates, South Korea, and Japan. Today, he is part of the Original Equipment Global Sales Team at Trillium, focusing on new market development for the Termomeccanica Pompe and Gabbioneta Pumps® brands.



David Shaw

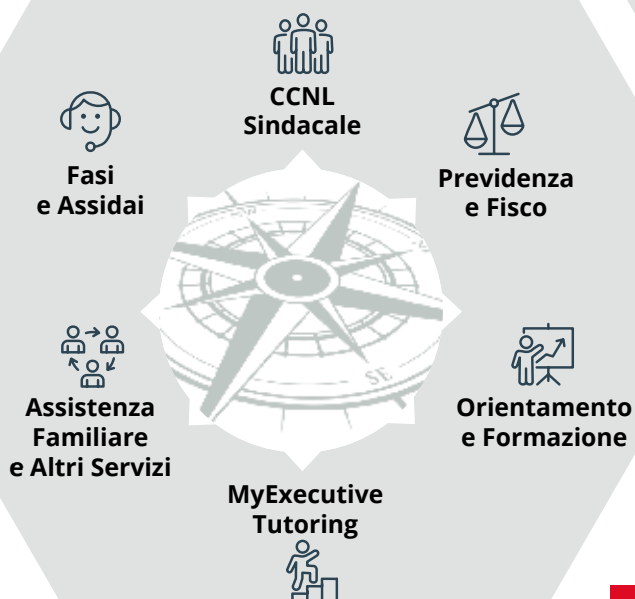
David Shaw is Control & Isolation Valve Applications Manager at Trillium Flow Technologies. He holds a degree in Mechanical Engineering from Huddersfield University and boasts 20 years of experience in the valve sector. Shaw has extensive knowledge of valve applications, troubleshooting, sizing, selection, and sales. He is a specialist in Control, Severe Service, Choke, Anti-surge, and Butterfly valves and his expertise spans various markets, such as on- and offshore Oil&Gas (including LNG), and nuclear and traditional power.

TUTELA, RAPPRESENTA E VALORIZZA I MANAGER

80
ANNI DI STORIA

14.000
ISCRITTI

SCOPRI I NOSTRI SERVIZI



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Ensuring business continuity at the Duferco Travi e Profilati steel mill in Italy

The VD4-AF1 circuit breaker by ABB, an efficient and reliable solution for improving productivity and reducing operating costs in arc furnace application

Claudio Raimondi, Project Engineer
ABB Italy

The Duferco Travi e Profilati steel mill in San Zeno Naviglio in northern Italy is the Duferco Group's largest plant. It has an area of about 491,860 m² and a production capacity of about 950,000 tons per year of steel for the steel mill and 700,000 tons for the rolling mill.

The steel mill has an electric furnace, two refining furnaces - including a twin furnace capable of simultaneously processing two steel castings - a degas-

ing plant, two continuous casting lines, and a water treatment facility.

The primary processing occurs in the large electric arc furnace, which heats materials such as scrap metal, cast iron, or graphite to very high temperatures through an electric arc created between electrodes and the material to be melted. This process requires a significant amount of electricity, supplied through a medium-voltage substation, to generate the heat necessary for melting the materials.



“For our production we need an efficient electricity distribution network and for this reason we are constantly committed to updating our plants. As regards medium voltage, and in particular for the power supply of the furnaces, we have found a valid partner in ABB



The arc is generated several times during the melting process, requiring that the circuit breaker that controls the ignition to perform more than 30,000 operations annually. Therefore, it's crucial that the medium-voltage circuit breaker can handle a high number of operations reliably. To meet this need, Duferco steel mill selected the VD4-AF1 circuit breaker, designed to ensure safe and reliable operation in arc furnaces. One of the main advantages of the VD4-AF1 circuit breaker is its significant reduction in operating costs. With its long service life and reduced downtime, operating costs can be substantially lowered. Additionally, the VD4-AF1 features advanced diagnostics functionality that prevents misuse, ensuring safe and reliable operation with performance 5-10 times better than standard solutions, offering enhanced protection and increased efficiency.

The circuit breaker uses vacuum technology to provi-

de a high-quality, reliable solution. For contact closing operation it employs an advanced actuator system based on servomotors controlled by electronics.

This specialized circuit breaker achieves synchronized switching through a dedicated voltage sensor, which reduces inrush currents when switching inductive loads, thereby reducing stress on the transformer, which extends the average life of the transformer by about 10%.

Thanks to its advanced technology, this circuit breaker

has an exceptional operational life, capable of up to 150,000 maintenance-free close-open mechanical operations.

Available in a fixed version for applications with voltage rating up to 40 kV, current rating up to 3150 A and breaking capacity up to 31.5 kA, the VD4-AF1 is an efficient and reliable solution for improving productivity and reducing operating costs in arc furnace application.





“The VD4 AF1 circuit breaker, thanks to the high number of mechanical closing-opening operations, guarantees us greater continuity of service with a consequent reduction in operating costs”, said Walter Romidi, Head of Plant Maintenance at the Duferco Travi e Profilati in San Zeno Naviglio

In addition to this specialized version, several ABB VD4 circuit breakers are also installed for medium- voltage distribution within the steel mill.

These circuit breakers are renowned for their reliability, safety, and high performance. With over 2 million units installed globally, they set the market standard.

The Duferco Group is dedicated to minimizing the environmental impact of its operations. By constantly monitoring environmental performance and continuously improving production efficiency through the adoption of the best available technologies, the company also prioritizes sustainability in its supplier selection process. Duferco’s decision to partner with ABB for key plant components is rooted in the shared commitment to strive for a sustainable future.



Claudio Raimondi

Claudio Raimondi is an engineer graduated from the Politecnico di Milano with a solid experience in the electrical engineering sector, gained in the field of B2B marketing and communication. For over a decade, he has been working on content strategies for the industrial world, with an approach oriented towards technical clarity and narrative impact. Alongside his professional career, he cultivates a great passion for writing. He is the author of several books and insights, and is actively dedicated to dissemination, with particular attention to issues related to innovation and digital transition. As a content writer, he works at the intersection of technology and language, translating complex concepts into accessible and engaging stories.



Working in the Sonoran Desert, Mexico

Bonatti in the Americas: energy, mining and sustainable infrastructure

From a solid presence in Mexico's midstream sector to key mining water projects in Chile, Bonatti is building a continental vision with integrated engineering solutions for the energy and mining industries

Gustavo Blejer, Commercial Director, Americas

Luigi Di Vincenzo, Commercial Team, Americas

Bonatti

In 2012, Bonatti took its first step into the Americas by securing the Gasoducto Morelos project in Mexico. Since then, the company's growth across the region has been constant, supported by an integrated operating model and a direct execution capability that enables the company to respond quickly to complex challenges.

In just over a decade, Bonatti has built thousands of kilometers of pipelines, five compressor stations, and three storage terminals in Mexico, establishing itself as one of the country's leading EPC

contractors in the midstream sector.

“In just over a decade, Bonatti has built thousands of kilometers of pipelines, five compressor stations, and three storage terminals in Mexico, establishing itself as one of the country's leading EPC contractors in the midstream sector

The roots of success in Mexico

Mexico is where Bonatti's American journey began, and the company's success has been built on deep integration with the local environment: today, most of its workforce is Mexican, supported by an extensive and well-established network of suppliers and partners.

The global expertise gained over the years has been applied to strategic projects in the country, including the completion of the Topolobampo hydrocarbon storage terminal and the record-time delivery of the Hermosillo compressor station.

A flagship example is the EGRO (Expansion Gasoducto Rosarito) project for Sempra Infraestructura, which involved the EPC of a 215-km, 30-inch gas pipeline and a 49.5 MW compressor station. The project, recently completed, included challenging mountainous sections through La Rumorosa and is now part of the supply system for Sempra's LNG Energia Costa Azul plant.

This project adds to a decade-long collaboration with Sempra, which has included numerous energy transportation projects.

Expanding the gas network: new regions and LNG projects

Having built a solid reputation in Mexico, Bonatti is now strengthening its presence in new areas such as Southeast Mexico and the Yucatán Peninsula—regions that are seeing significant gas network expansion initiatives.

Among the key projects is the Cuxtal II - Mayakan system, built for ENGIE: over 690 km of pipeline, three compressor stations, and various auxiliary infrastructures. The project is crucial to ensure energy security for the region while contributing to Mexico's decarbonization targets through increased use of natural gas.

Other strategic developments are the expansion of the capacity of the existing Gasoducto Rosarito transport capacity and electromechanical works in the LNG Energia Costa Azul plant reversion (from a regasification-only facility to a regas / liquefaction terminal), both projects key enablers of Mexico becoming an exporter of LNG, and clear examples of Bonatti's ability to work in brownfield initiatives side by side with our clients.

Beyond midstream: O&M services, Net-Zero solutions and technology innovation

In parallel with its traditional EPC business, Bonatti is expanding its offering with operation & maintenance services for oil & gas and power plants. The aim is to provide an integrated value proposition that covers the entire lifecycle of energy assets. Bonatti is currently managing two O&M contracts in Mexico, confirming its role as a reliable partner for critical asset management in both onshore and offshore environments.

Since 2021, the company has also been running



Cuxtal II Project, logistics base, Mexico



Bonatti's automated welding system in operation

a dedicated Net-Zero business unit, focusing on hydrogen, biogas, carbon capture, energy efficiency, and emerging green technologies.

“In parallel with its traditional EPC business, Bonatti is expanding its offering with operations & maintenance services for oil & gas and power plants

In Mexico, where some energy transition projects are taking off, Bonatti is positioning itself ahead of the curve by preparing its capabilities to seize future opportunities. The company's engineering expertise and proven technologies—refined in European markets—are ready to be applied locally when the time is right.

In parallel, Bonatti continues to invest in technological innovation. Recent examples include the internally developed ROB.E 10:01 automated welding system and the SAFE-T-REX sideboom, awarded by IPLO-CA for its exceptional safety standards. These proprietary solutions not only enhance site productivity and quality but also meet the latest sustainability and emissions-reduction requirements demanded by advanced clients.

Another important growth area is multiphase pumping systems, a technology that Bonatti has successfully developed through a proprietary fleet already operating in North Africa and the Middle East.

These modular systems, provided on a rental basis, enable clients to increase production in mature fields without making new capital investments (CAPEX), shifting costs toward operating expenses (OPEX).

The systems integrate multiphase pumping unit, control units, and remote monitoring capabilities, and are now under evaluation for deployment in the Americas—particularly where rapid, flexible, and scalable solutions are required. Bonatti manages the full cycle of these units, from supply and commissioning to the operation and maintenance, offering a full-rental model that delivers both operational efficiency and economic optimization.

Bonatti - Company Profile

Bonatti is an international contractor with over 80 years of experience in the energy sector. Its expertise spans the entire project lifecycle—from engineering, procurement, and construction to the operation and maintenance of plants and pipelines.

The company actively contributes to the decarbonization process, helping its clients achieve their Net Zero targets and building the infrastructure needed for a sustainable energy future.

Bonatti operates across four continents, tackling even the most challenging environments with reliability. Safety and quality are core principles in every project, alongside a commitment to respecting biodiversity and supporting the development of local communities. With a results-driven approach and a strong focus on reducing incidents, Bonatti supports its clients throughout the global energy transition.

Chile: tackling the water challenge for the mining industry

From Mexico, Bonatti has extended its outreach to South America with major mining-sector projects in Chile. Here, water scarcity is driving mining companies to develop infrastructure to transport seawater—often desalinated—to high-altitude processing sites. The availability of water is now a strategic factor in ensuring the operational continuity and sustainability of mining activities.

“Bonatti has extended its outreach to South America with major mining-sector projects in Chile

Bonatti is executing EPC contracts for water transportation projects on behalf of Antofagasta Minerals, including:

- **PAO (Proyecto Adaptación Operacional):** a 61-km, 28-inch pipeline; a new 125-km slurry line; and various auxiliary works, including a 3.5-km tailings canal and the relocation of two existing pipelines.
- **Purickair / SIAM II:** a 143-km pipeline with three pumping stations, supplying sustainable water to mining operations in the region.

These projects involve significant technical comple-

xity, stringent environmental constraints, and highly challenging logistics. The pipeline routes traverse remote plateaus and mountainous areas, in some cases requiring special works such as tunnels, bridges, or installations on narrow platforms.

Such experiences further strengthen Bonatti's position as a contractor capable of delivering critical infrastructure in extreme environments.

Canada: engineering excellence under extreme conditions

Completing its continental presence, Bonatti recently successfully delivered—together with joint-venture partner Kiewit—one of the most technically demanding sections of the Trans Mountain Expansion project in Canada.

The Dry Gulch crossing, executed using the HDD methodology, posed an extraordinary engineering challenge: an extremely complex crossing under harsh environmental conditions.

The project required more than two years of preparation, including detailed FEM analysis of mechanical stress during the pullback phase, the placement of over 900 meters of rollers on steep terrain, and the use of 8 cranes and 17 sidebooms (including Bonatti's SAFE-T-REX units).



Operations in Chile





Dry Gulch HDD
Crossing, Canada

The successful execution of this operation confirmed Bonatti's capabilities in delivering critical trenchless crossings under extreme geological and environmental conditions.

Towards a continental role

According to Roberto Castelli, Bonatti's Chief Commercial Officer, "The American market offers a wide variety of opportunities, which are set to expand in the coming years thanks to investments in gas, energy, and strategic infrastructure. Our model—based on direct execution, proprietary technologies, and deep local knowledge—enables us to tackle the most complex challenges, from midstream projects in Mexico to water infrastructure for the mining industry in Chile, and the extreme conditions of Canada."

Bonatti's presence across the Americas is now structured and solid: a network of local offices, en-

gineering centres, and dedicated logistics hubs enables the company to manage complex projects with continuity and efficiency. Each country is approached with a long-term vision, fostering local talent development and building an integrated industrial value chain.

This journey continues thanks to the contribution of a new generation of local managers and engineers trained within the company, supported by an increasingly integrated continental organization. The expertise gained through landmark projects in Mexico, Chile, and Canada represents a valuable technical and human asset that positions Bonatti to tackle future challenges across the region.

The company's ambition is to strengthen its role as a trusted partner for major infrastructure projects in the energy, resources, and ecological transition sectors across the Americas—combining global expertise, proprietary technologies, and strong local roots.



Gustavo Blejer

Mr. Blejer has more than 25 years of experience in the oil and gas industry, including positions in South America, Mexico and Canada.

Gustavo is in charge of the Commercial Direction of the Americas Area of Bonatti, an Italian EPC (Engineering, Procurement and Construction) company based in Parma and currently present in more than 20 countries. In this role, Gustavo is responsible for the commercial activities in the countries where Bonatti is currently present in this region, in addition to seeking to expand the portfolio of projects in the area. Gustavo has been part of the Bonatti family since 2021, having held key commercial and operational roles in Mexico, Chile and Canada.

Previously, Gustavo served as Director of Engineering and Construction for TC Energy in Mexico, which included among others the development of the Tula - Villa de Reyes, Tuxpan - Tula, El Encino - Topolobampo gas pipelines, Land, Permitting and Community Relations (Indigenous and Non-Indigenous) for all projects under construction and operation of TC's Mexico Business Unit. Prior to his role at TCE, Gustavo had construction experience from his multiple roles in the Techint Group.

Gustavo Blejer has held roles as Project Manager in the construction of works for PEMEX, TOTAL and Enbridge among other companies and as Business Development Manager for South America and Canada.

Mr. Blejer holds a degree in Civil Engineering from the Universidad Nacional de Rosario, Argentina. He also holds a Master in Science of Management from Stanford University in the United States, as well as a Diploma in Energy Law from the Escuela Libre de Derecho (Mexico).



Luigi Di Vincenzo

Mr. Di Vincenzo has 10 years of experience in the oil and gas industry.

Luigi is part of the commercial team for Americas Area of Bonatti, an Italian EPC (Engineering, Procurement and Construction) company based in Parma and currently present in more than 20 countries. In this role, Luigi significantly contributes to the commercial activities in the countries where Bonatti is currently present in this region, in addition to seeking to expand the portfolio of projects in the area. Luigi has been part of the Bonatti family since 2014.

Mr. Di Vincenzo holds a bachelor's degree in economics and management from LUISS University, Italy and a master's degree in economics from Bocconi University Italy. He also holds an MBA from Insead, France.



Energy Capital Projects enter a new era of execution

To address the performance gap, energy firms need to embrace a new blueprint—one built on agility, digital integration, and outcome-focused delivery

Cristian Corbetti, Managing Director, Industry X, Global Resources Lead
Accenture

As the energy sector races to balance decarbonization with rising global demand, capital project execution is becoming a key differentiator—and a major challenge. In 2024, global investment in energy infrastructure surged past \$3 trillion, with two-thirds dedicated to clean energy (1). The remaining third still fuels fossil-based development, reflecting a dual mandate: build the future while maintaining today's supply. The result is a complex, high-stakes environment where outdated execution models are no longer viable.

“Many projects struggle to meet expectations. Recent global research from Accenture found that 64% of energy capital projects fail to stay on schedule, while 59% exceed their budgets by more than 10%. Only 7% of companies consistently hit their targets

Many projects struggle to meet expectations. Recent global research from Accenture (2) found that 64% of energy capital projects fail to stay on schedule, while

59% exceed their budgets by more than 10%. Only 7% of companies consistently hit their targets. To address this performance gap, energy firms need to embrace a new blueprint—one built on agility, digital integration, and outcome-focused delivery.

Instead of relying on static schedules that take weeks to adjust, project managers can now run hundreds of simulations in minutes. These systems account for supply chain volatility, weather patterns, resource costs and more—delivering actionable insights that optimize project timelines, costs and emissions.

A Turning Point for Project Execution

Traditional project delivery in the energy industry has traditionally relied on linear planning, rigid schedules and siloed responsibilities—often centralized with large engineering, procurement and construction (EPC) firms. But as renewables, power grids, hydrogen, and nuclear scale up, owner-operators are taking more control and facing new execution risks.

“The leaders of tomorrow will use AI and real-time collaboration to unlock value that was previously out of reach

“Digital transformation isn’t just about tools—it’s about reimagining how work gets done

Some firms are pairing AI with 3D modeling to visualize site risks before construction begins. These digital twins allow early intervention when materials are delayed or workflows conflict—helping to prevent cascading disruptions.

This shift toward intelligent, adaptive planning allows teams to respond in real time, rather than react after delays have already taken hold.

Four key areas are reshaping how energy projects succeed:

1. Smarter planning through AI

AI-enabled project forecasting is changing the game.

2. Stakeholder coordination gets a tech upgrade

Large-scale energy projects depend on a broad network of investors, regulators, engineers and communities. Misalignment among these groups often leads to slowdowns and budget overruns.

To solve this, companies are turning to project “control towers”—digital platforms that provide a shared,



real-time view of project health. These tools aggregate data across the value chain and issue AI-generated alerts when potential risks arise, such as permitting delays or late deliveries.

Beyond the tech, these platforms drive cultural change.

3. ESG moves from reporting to results

Environmental, social and governance (ESG) goals are becoming a central pillar of energy project planning. But most efforts still focus on operational emissions, neglecting the embodied carbon found in building materials like steel and concrete.

That's a costly oversight. Accenture research shows nearly half of a built asset's emissions come from these upstream sources.

Forward-thinking firms are embedding ESG across the entire project life cycle. From selecting low-carbon suppliers to implementing circular material flows, these practices are being backed by AI-powered carbon tracking and IoT monitoring tools. Some organizations have reported up to 18% emissions reductions during construction alone.

What was once a regulatory checkbox is now a competitive advantage—lowering long-term costs and enabling access to sustainable financing.

**“It’s not just about managing data—
it’s about enabling faster decisions
and greater accountability across all
stakeholders**

4. Addressing the talent crunch with new models

The energy sector faces a severe talent gap. An aging workforce, combined with declining interest

among younger professionals, is making it harder to fill critical roles in planning, procurement and engineering.

Companies are responding with digital learning strategies and global talent models. AI-assisted training improves skill retention and shortens onboarding times. Virtual reality simulations and immersive experience labs allow workers to train in realistic, high-stakes environments before setting foot on-site.

Firms are also shifting from staffing individual contractors to forming partnerships with service providers who deliver integrated, outcome-based execution services. This model offers greater scalability, efficiency and resilience against workforce shortages.

Lead, innovate, execute

Digital transformation and advisory services once dominated the conversation. Now, the focus is on execution—on integrating technologies, people and strategies to deliver value.

The future belongs to those who combine AI, real-time collaboration, ESG alignment and scalable workforce solutions. The energy transition will be built on infrastructure, and success hinges on the ability to execute with speed, sustainability and resilience.

For energy leaders, the mandate is clear: adapt, innovate and lead—or risk falling behind.

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IEA, World Energy Investment, 2024

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Cristian Corbetti

Born in Venice and graduated with honors in Chemical Engineering, Cristian Corbetti joined Andersen Consulting (now Accenture) in 1999. He has 25 years of experience in Resources Industries - Energy, Utilities, Chemicals and Natural Resources. Currently Managing Director in Accenture Industry X, based in Rome, and Global Resources Industry X Service Lead and IX Capital Projects Lead for ICEG (Italy, Central Europe and Greece), with special focus on Engineering & Construction and Manufacturing & Operations. Formerly, ICEG Strategy & Consulting Energy Industry lead; Renewables industry lead for Europe, Account lead for a renewables and power generation utility client and a global energy client for a number of years. He developed skills in project controls, design, build and operations processes, plant data and document management, IT-OT systems integration and industrial digital transformation. He is a Certified PMP® Professional. Overall, Mr. Corbetti is passionate about energy transition and IX innovation, trying to be inspirational for people he works with and leads by example.

Digitalization with mobile technology and digital factory management

An integrated survey with SLAM technology, allowing complete, accurate and reliable digitalisation of complex systems in less time

Luigi Tornaghi, Sales Manager and founding partner

Enrico Trivini Bellini, architect and founding partner

3Units

A notable chemical plant in northern Italy, which covers an area of approximately 160,000 m², commissioned us to laser scan the plant with its consequent modelling. The problem, common to very old systems, is that the documentation in hand did not reflect the “as-is” conditions and represented an inadequate basis for the management/maintenance of the system which, as a consequence, can lead to safety problems or reworks which delay projects and increase costs. The scanning activities were performed

with “mobile SLAM” technology which guarantees a reduction in time and costs compared to traditional methods.

“The problem, common to very old systems, is that the documentation in hand did not reflect the “as-is” conditions and represented an inadequate basis for the management/maintenance of the system



A sales and management company located in Switzerland

3Units is a sales and management company located in Canton Ticino (Switzerland), which collaborates with primary companies for plant engineering and laser scanning activities; operationally we are characterized by our extreme organizational flexibility, flexible working hours that can be adapted to the needs of the project, a reduction in time and costs which is reflected in the services and systems created.

Our staff is mainly composed of resources with more than twenty years of experience in the commercial and marketing sector, plant engineers, professionals in the maintenance engineering and software development fields. The sales department, in addition to being enriched by the significant collaboration with Hexagon AB, world leader in the supply of software for infrastructure engineering, is mainly involved in: plant engineering and 3D modelling, analysis engineering, laser scanning activities and BIM design, project management and project control activities, software and services for digital automation, digital twin, maintenance engineering and asset management software and services, software solutions and services for productivity activities, logistics and port services.

Our Company is registered at the CC-TI Chamber of Commerce of the Canton Ticino, ATED ITC Ticino and ANIMP National association of industrial plant engineering.

Our solution

We have developed a workflow that allows us to obtain complete, accurate and reliable digitalisation of complex systems in less time. In approximately two days a complete survey was carried out with a mobile laser scanner, integrated with traditional support topography and geo referencing.

“We have developed a workflow that allows us to obtain complete, accurate and reliable digitalisation of complex systems in less time

The introduction of mobile technology in an industrial environment has allowed the digitalisation of all structures, guaranteeing speed and accuracy. The survey activities involved a team of four operators.

Initially, a topographic polygon was laid out to cover the entire area, the apexes for georeferencing were drawn and the control points (specific points materialized on the ground or on elevated surfaces) necessary to improve and guarantee the required accuracy of the point cloud were measured. An instrument equipped with a double LIDAR sensor (2 x 300,000 points/second and 100 m range) equipped with 4 full HD cameras (4x20 MPixel) was used for the mobile survey.

The limited weight, less than 9 kg, and the particu-





lar ergonomics simplified the field work and allowed to always work in safety from the ground.

By using the mobile scanner in parallel with a colour point cloud, it is possible to obtain a virtual tour of high resolution photographic spherical images.

Once the field activities were completed, the post-processing phase was started for the creation of the final dataset; the data from the mobile laser scanner were processed by entering the coordinates of the control points previously acquired for the verification and correction of the final trajectory and then reprocessed to obtain the final point cloud.

The entire dataset, filtered, cleaned and coloured, was then published and made accessible on a web-based platform for consultation and measurement.

In the platform, the metric data of the point cloud are completed in high resolution spherical photographic images, giving full understanding and insight compared to a traditional point cloud.

Tagging

All the items and assets of interest were then geo-tagged within the platform, linking additional information such as ID, parameters and characteristics as well as attachments in different formats (text, images, audio, video or HTML) to the coordinates of the surveyed object, which can then be synchronized with maintenance management systems such as HXGN EAM for example.

Modelling

Starting from the detailed dataset obtained, three-dimensional models of piping, equipment, pipe racks and all elements useful for a detailed understanding of the "As-Is" of the existing system were extracted. The modelling performed in CADWorx® was fully supported by the detail and richness of information inherent of the point cloud. Point cloud modelling can also be managed with Hexagon SMART 3D®, Aveva E3D® and generally with the most common CAD platforms.



Luigi Tornaghi

Sales manager and founding partner of 3Units, Luigi Tornaghi is the director of the sales and management department. He has over 25 years' experience working with companies that provide software solutions to several business industries. He has now been working for 3Units, where he covers the role of Director of sales and marketing for software area and plant design solutions.



Enrico Trivini Bellini

Founding partner at WESCAN and 3Units partner for laser scanning and BIM modelling activities. The Company transforms reality into digital through laser scanner, aerial photogrammetric and LiDAR surveys performed using the best technology available. Thanks to an accurate Scan To BIM process, 3UNITS processes the point clouds obtained to obtain digital BIM models, geometrically correct and implementable with further information, coming from executive projects, as-built documentation or direct investigations.

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