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For she's a jolly good fellow – Kirsty's call to arms

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Technical knowledge for a low-carbon future

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Getting the right people for the right jobs is key

PAGE 8



# WNE TRIBUNE

DECEMBER 1, 2021 // PARIS NORD VILLEPINTE



## ZERO CARBON FUTURE NEEDS NUCLEAR PUSH

**N**uclear is coming back – our time has come! That was the key message from yesterday's opening session keynotes, with France's finance minister saying that three years ago there was talk of shutting down the industry – but now it should be seen as the driver for a zero-carbon future.

"This is the only way we can go to be carbon neutral," said Bruno Le Maire, the minister of economy, finance and

recovery. Le Maire stressed that nuclear needed to be part of the solution alongside renewable energies, but the nuclear industry faces the challenges that have come from losing experienced workforce in recent years while there were doubts over the sector's future. There is a need to encourage more people, from a variety of jobs and skills, to join the industry.

Le Maire said President Emmanuel Macron would be negotiating with the

new German government in the coming weeks, to ensure that nuclear energy becomes part of the EU Taxonomy, the common classification system to steer investment into sustainable projects.

Fatih Binol, executive director of IEA, said in his keynote that the organisation will be preparing a major report in May to set out the role of nuclear in meeting net zero goals.

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“This is the only way we can go to be carbon neutral”

### OPPORTUNITIES

## NUCLEAR TOP IN CREATING JOBS: REPORT

A report published today by SFEN (B140), the French nuclear energy association, has found that the nuclear industry creates more jobs per megawatt-hour in electricity generation than the other sectors, including renewables, and is likely to continue to do so.

The study set out to clarify whether certain energy sectors create more jobs than others. It concludes that, while comparing sectors is difficult because the associated jobs come at different points in the complete life cycle, 70 per cent of jobs today are in nuclear energy, a proportion that is not expected to fall significantly in the future.

In addition, it says, the job density in nuclear power is greater, which indicates better economic efficiency. This was measured using full-time equivalent per installed capacity (FTE/MW).

Based on these findings, SFEN concludes that employment is not a discriminating criterion in the choice of the electricity mix over the long term. This should include other elements such as the robustness of the trajectories allowing the achievement of the objectives of decarbonization, security of supply and re-industrialisation.

Nuclear is France's third-largest industrial sector behind aeronautics and automotive, with a total workforce of 220,000 spread across more than 3,000 companies, 85 per cent of which are SMEs/VSEs.

**70%**  
per cent of energy sector jobs today are in nuclear energy

## Genesis project gives boost to digital transformation

**G**enesis, a digitalisation project launched in May by GIFEN (B144) with more than €10 million in match-funding from industry and government, has attracted strong interest from across the French nuclear industry.

The project's goal is to accelerate the digital transition of the industry by building clusters around key themes – digital twin, extended enterprise, cybersecurity, interoperability etc – and offering digital services to companies of all sizes, to digitalise manufacturing and make the exchange of data simpler and more secure.

It has the involvement of major players including Andra, CEA, EDF, Framatome and Orano – all sponsors of WNE. Under Genesis, two digital productivity-enhancing platforms

initiated by EDF and supported by GIFEN have been deployed. Two more are under development.

The first, ESPN Digital, is designed to give operators, manufacturers and certification bodies a centralised and standardised conformity assessment of equipment subject to the Nuclear Pressure Equipment (ESPN) regulations.

The second, ISIS, helps increase productivity by simplifying and securing data exchanges between the nuclear fleet

operator and engineering companies involved in modifications to its fleet. More than 100 companies have been affected.

Under development are a platform for exchanging Digital Works Packages needed for site operations and maintenance, and another to improve the management of waste.

David Roux, head of GIFEN's digital programme, said: "Genesis supports a sector-wide approach that will complete and maximise the benefit of individual digitalisation programmes."

“Genesis supports a sector-wide approach that will complete and maximise the benefit of individual digitalisation programmes—David Roux

### inbrief

#### IAEA, CHINA LINK UP IN THIRD WORLD SUPPORT

The IAEA and China have signed a five-year deal, considered groundbreaking, to help developing countries reach their Sustainable Development Goals (SDGs). The IAEA said it will strengthen South-South and triangular cooperation. Under the Memorandum of Understanding, the IAEA and the China International Development Cooperation Agency (CIDCA) will pursue cooperation in applied research and development, education, development of civil nuclear infrastructure and implementation of IAEA initiatives.



**Two panel discussions to attend**



1 Waste Management at 12.30 / 2 Hydrogen at 16.00

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EDITORIAL

# MORE THAN EVER, IT'S IMPERATIVE TO GET NUCLEAR'S MESSAGE OVER

Welcome – and welcome back – to WNE 2021. If you were here yesterday, you will have seen or heard the excitement generated by our opening ceremony. To have guests of honour from the highest levels of government and industry sharing our stage was truly wonderful, and sends a strong message about the important place of nuclear in the future energy mix. Now, more than ever, it's imperative that we get this message through.

At the other end of the day, we applauded the winners of the WNE Awards. These seven companies, four large and three small, are shining examples of the calibre of the drive and innovation that permeate our industry. In my mind, everyone who entered this year's WNE Awards is a winner, especially after the struggles of the last 18 months. Well done to all!

Two panel discussions this afternoon promise food for thought and action. In the spotlight are Waste Management at 12.30 and Hydrogen at 16.00. These

hour-long sessions bring together leading policy, governance and industry representatives to offer insights into these key areas of interest. Both take place in the Panel Discussion room.

You may be aware that WNE has gone digital for 2021. Many of our workshops and panel discussions – including Hydrogen and Waste Management – are being streamed live via the WNE Live & Connect platform. It's a logical development in the present day, and will give those who could not attend in person a flavour of WNE.

Elsewhere in the programme, I'd recommend making time to hear some of the pitches in the Start-up Planet. As the name suggests, this feature is all about newcomers to the nuclear industry and the ideas they bring. Each participant gets 10 minutes to make the case for their concept. It promises to be interesting, to say the least!

**Sylvie Bermann**  
Ambassador of France  
and President of WNE



“...We applauded the winners of the WNE Awards. These seven companies, four large and three small, are shining examples of the calibre of the drive and innovation that permeate our industry...”

CONTINUED FROM p1

## Nuclear push for zero carbon

“We look at all the trends and there is one clear trend: nuclear energy is set to make a comeback – unless there are some surprises on the government and industrial side.

“It is very clear politically, economically and technologically, nuclear is coming back.”

Binol said the recent energy market volatility, with natural gas and electricity price rises – seven times higher than they were just a few months ago – is making people understand the value of electric security.

“Natural gas industry has scored an own goal,” Binol said. “It was sold to us as a reliable, clean and affordable energy but the very high prices have not got good marks from millions of consumers around the world and this has made governments and decision-makers look again at alternatives. One of these is nuclear, with its security and stability the drivers to the comeback.”

But Rafael Mariano Grossi, director-general of the IAEA warned about complacency.

“We are not there yet. For these ambitious goals that the international community has set for itself in Glasgow, and before that, achieving these goals without nuclear would be far more difficult if not impossible.

“This is not something to celebrate: it is a big challenge, a big burden on this sector to face this challenge and find solutions.”

Grossi said the nuclear industry is about what we have today, but also what our economies will need in the future. “We have great expectations about the ‘new nuclear’ and the small and modular reactors that everybody talks about, but is also about the current fleet too.

“This is a global challenge and nuclear is already part of the solution. The challenge to us is to make it economically viable, secure and safe for all.”

Nuclear is not just about energy: it saves lives as well, Grossi said. The IAEA has been deeply engaged in the fights against Covid-19 and cancer.

Grossi said he had met with President Macron on Monday and together they would launch the initiative Rays of Hope, to support increased access to cancer care in low and middle-income countries.

“Too many people die of normally preventable and curable cancers, particularly in Africa,” Grossi said. “We are looking to donor countries and private sector partners to work with us and help developing countries address the gap in care.”

## inbrief

### TRILLIUM SAFETY VALVES AT WORK IN CHINA, UK

Trillium Flow Technologies France (J109) has signed multi-million-euro contracts with long-standing customer and partner CNNC to supply equipment and services for newbuild nuclear power plants (NPPs) in China.

TFT France will supply nuclear safety valves in its SEBIM ranges for Zhangzhou 1/2 NPP and Hainan 3/4 NPP, with delivery planned from 2022 to 2024. The contracts also cover spare parts and tools, installation and commissioning, and training.

The French valve specialist is also supplying Hinkley Point C NPP with Sarasin-RSBD auxiliary systems and turbine island pressure relief valves, and delivering similar valves to the JHR and ITER research reactors. TFT France has more than 50 years' experience in designing, qualifying, manufacturing and supplying safety valves and other types of nuclear valves all around the globe for different applications.

Trillium: spare parts and safety valves a speciality



## WNETRIBUNE

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WNE Tribune is produced by Aerocomm Ltd

e [dailies@aerocomm.aero](mailto:dailies@aerocomm.aero) on behalf of Reed Expositions France for GIFEN.

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**60%**  
WNE sponsor Assystem draws about 60 per cent of its business from nuclear

## Energy transition is at the heart of Assystem strategy

A decision in 2017 to focus on energy transition and the development of nuclear programmes worldwide has paid dividends for WNE sponsor Assystem (D53).

That focus has cemented the position of the group, a leader in energy transition, complex project management and digital engineering, as the No 2 independent nuclear engineering company in the world in the ENR ranking. It now draws about 60% of its business from nuclear.

Stéphane Aubarbier, chief operating officer of Assystem, says newbuilds are one of three work streams in the company's 'cradle-to-grave' approach, sitting alongside maintenance of the existing fleet, and dismantling and waste management.

A full lifecycle focus is crucial if the company is to "capitalise on its expertise", he says. The company's success has been in positioning itself "to help governments with no domestic nuclear industry evolve their roadmap to nuclear, then to assist operators on the design, construction, commissioning, and operation of nuclear power plants (NPPs)."

As recent examples, Assystem has just produced the Preliminary Safety Analysis Report (PSAR) for Uzbekistan as required by the IAEA, while in Saudi Arabia, the company has completed the impact assessments report and the site characterisation on two potential sites for new nuclear installations.

Aubarbier said Assystem's second route to the international market is to "follow" the main nuclear technology providers, starting with France and Russia, which currently manufacture three of every four reactors installed worldwide.

This independence from any technology provider has, for example, carried Assystem into the UK, China, Finland and India with EDF and the French nuclear industry, and into Turkey, Hungary and Egypt with the Russian industry, led by Rosatom.



*Assystem leads a discussion on 'Re-thinking the nuclear industry to deliver the nuclear power needed for a low-carbon society' – 14.00 today, Panel Discussion room*



### ASSYSTEM AND MVM ERBE ENERGETIKA TEAM UP

Assystem and MVM Erbe Energetika have sealed a three-year framework contract for engineering services on the two new units of Hungary's Paks II nuclear power plant.

Stéphane Aubarbier, Assystem chief operating officer, is pictured (right) with Norbert Lajos Korom, COO of MVM at WNE yesterday.



Kirsty Gogan, honoured for the "remarkable and unique role" she has played in publicising nuclear energy, accepted her award at a ceremony on Monday evening

## 'YOU, MY FRIENDS, ARE GOING TO DELIVER IT...'

The nuclear industry has a duty to rise to the challenge of communicating the benefits of nuclear energy.

That was the message from the first WNE Fellow, Kirsty Gogan, as she accepted her award from WNE president Sylvie Bermann.

Gogan, who was honoured for the "remarkable and unique role" she has played in publicising nuclear energy, told WNE Tribune she was "extremely surprised" to be named the WNE Fellow because, unlike a decade ago when she started Energy for Humanity, today there are so many "fantastic organisations and individuals" communicating about nuclear energy as a climate solutions that "I almost feel like retiring."

In accepting, she paid tribute to the "incredible people" she works with. "It's nice to have the recognition that we're doing something that's meaningful to people and helpful to the larger good."

The nuclear industry, she said, had to improve the way it tells society about its

many benefits. "One thing we haven't done well is demonstrate how the benefits of nuclear energy vastly outweigh any risks."

In an inspirational acceptance speech, she called on leaders "to get educated about nuclear technology", putting the risks and opportunities into context to support "informed evidence-based and outcomes-based decisions."

"Climate strategies that do not have climate justice at their heart have a high risk of failing."

She wondered aloud what it would take for the world to finally recognise the climate emergency as a genuine emergency and act on it in the way the planet responded to the Covid-19 emergency.

"Start thinking about the level of the response that will be needed," she told her audience. "We're going to need to reimagine nuclear energy as part of a planet-wide response to preventing the extremes of climate change – and you, my friends, are going to deliver it."

### inbrief

#### AVEVA TO SUPPORT TRANSFORMATION AT EDF NUCLEAR

AVEVA (L40) has signed a long-term strategic deal with EDF to help transform EDF's nuclear engineering capabilities.

This partnership will deploy AVEVA E3D Design to improve collaboration, reduce development work times, enhance data consistency and strengthen EDF's nuclear design processes.

"With secure access to trusted data, their team can build and share 3-D models securely, communicate best practices in real time, and make the next generation fleet of nuclear plants a reality sooner than anyone thought possible," says a spokesman.

#### ASSYSTEM GAINS ISO FOR NEWBUILD

Assystem (D53) has been awarded the new ISO 19443 certification by SGS for its nuclear new-build support activities in France. The company becomes one of the first independent engineering companies to certify its nuclear activities to the highest existing nuclear quality standards.

#### TERRAPOWER SELECTS DEMO SITE

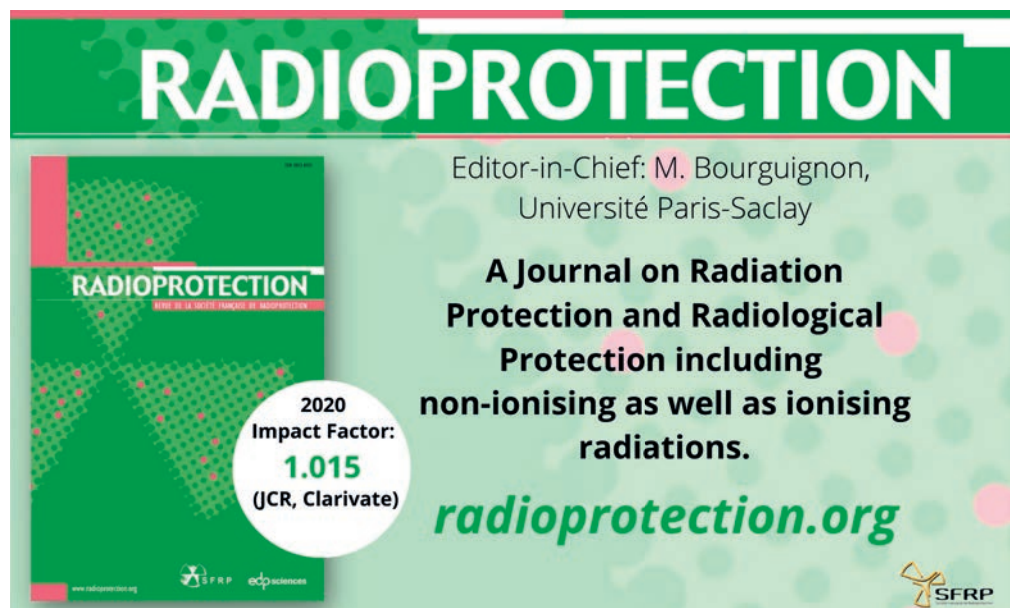
TerraPower, the nuclear power company founded by Bill Gates, and its partner GE Hitachi Nuclear Energy (H110), plan to open a demonstration nuclear power plant (NPP) on the site of a coal plant in Wyoming in 2028. The \$4bn project will receive \$1.9bn from the US government.

## RADIOPROTECTION

Editor-in-Chief: M. Bourguignon,  
Université Paris-Saclay

**A Journal on Radiation  
Protection and Radiological  
Protection including  
non-ionising as well as ionising  
radiations.**

**radioprotection.org**





**€200 bn**  
The value of the global dismantling market by 2050

**16**  
The number of steam generators that Cyclife will treat for PreussenElektra

## inbrief

### FULL-LIFE NUCLEAR PROJECT MANAGEMENT SOLUTIONS

KEP Technologies (F80) is at WNE to share its expertise and solutions for leading projects, from conception through installation, training and maintenance. The company will also provide information on radiation measurement and the advancement of safety in nuclear environments. Full nuclear asset lifecycle solutions and next-generation systems are the speciality of Jacobs UK (D102) which supports clients with strategic advice, programme and project management, siting and environmental assessment, and regulatory compliance.

### EDF SUBMITS OFFER FOR POLAND NEWBUILD NPPS

EDF (D117) has submitted a non-binding preliminary offer to the Polish government for engineering, procurement and construction (EPC) of 4-6 EPR reactors in Poland. The offer addresses the objectives of the 2020 Polish Nuclear Power Programme (PPEJ) and supports Poland's ambitious energy transition plan, aligned with the European carbon neutrality target.

### EDF'S SIZEWELL C IN LINE FOR NEW UK FUNDING

The UK government has pledged up to £1.7bn (\$2.3bn) for a new nuclear power plant. The Guardian reported the "most likely" project is Sizewell C plant in Suffolk, which is being developed by EDF (D117). The funds would help secure a final investment decision before the end of the current parliament.

### NEW TECHNOLOGIES IN RADIATION MEASUREMENT

Visitors to CEA (D124) can learn how the French atomic and alternative energy research agency is investigating difficult-to-measure radionuclides and using MAUD (Digital Autoradiography Measurement) technology to measure radioactivity on surfaces and localise it with good accuracy. Elsewhere, ICHUP (M27) is promoting its innovative 'Rium' technology.

# CYCLIFES CLEANS UP IN BURGEONING WASTE MARKET

With the dismantling market expected to be worth €200bn worldwide by 2050, nearly half of it in Europe, the EDF decommissioning and waste management specialist Cyclife (D117) will be in increasing demand.

The industry in coming decades will face a significant increase in the amount of radwaste from decommissioning operations. In Europe for example, metallic waste from dismantling will amount to more than 1m tons, half of it from France.

Cyclife, with nuclear licensed sites in the UK, Sweden and France, provides a 'full service', which includes delicate high-tech operations and a turnkey service from component dismantling to waste treatment.

Last May, Cyclife Sweden signed a new long-term contract with German nuclear operator PreussenElektra for transport and treatment of 16 steam generators. It follows a 2020 contract to dismantle the same 16 steam generators.

Cyclife, with its subcontractor Framatome, will remove the components from the different reactor buildings and make them fully available for shipment and external treatment.



During the same period, Cyclife UK renewed important contracts for the treatment of waste from Sellafield and won first contracts for studies on the dismantling of graphite reactors in collaboration with Graphitech.

Estelle Desroches, CEO of Cyclife, said: "These successes give a clear illustration of

*Ship to shore: German steam generator in transit*

the synergies inside the EDF Group to provide our customers with a unique combination of expertise and services in the fields of nuclear waste treatment and decommissioning."

## First batch of innovative Rosatom Remix fuel gets the green light

The first batch of WNE sponsor Rosatom's innovative uranium-plutonium Remix nuclear fuel has passed acceptance, a major step toward licensing the assemblies made with recycled fuel.

Rosatom (D62) says the characteristics of Remix fuel mean it could be safely introduced into light-water reactor (LWR) cores without changing the reactor design. Its use would close the nuclear fuel cycle and remove the need for storage of spent fuel.

Remix fuel bundles will now undergo a full operation cycle in one of the country's VVER-1000 reactors, the company says.

The bundles are made from reprocessed uranium and plutonium, extracted from spent nuclear fuel. Each consists of Remix fuel rods with uranium-plutonium pellets instead of the traditional enriched uranium dioxide.

Alexander Ugryumov, vice-president for Research, Development and Quality at Rosatom's TVEL Fuel Company, said the full cycle of the test assemblies will provide more

information about Remix fuel behaviour in the core and its influence on reactor physics.

"Thus, we would obtain the necessary data for licensing full refuelling of the core with Remix assemblies, as well as a reference experience for commercialisation and introduction of such fuel."



Rosatom fuel assembly

### NEW JV LOOKS TO BROADEN USE OF VITRIFICATION

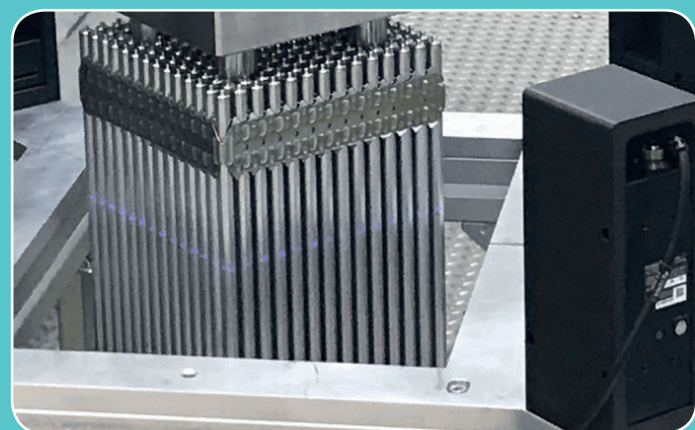
EDF and Veolia yesterday at WNE announced the creation of Waste2Glass, a joint venture (JV) to develop innovative treatments for radioactive waste. Their respective subsidiaries, Cyclife and Astaralis, will base their work on Veolia's Geomelt vitrification technology.

The new JV will build on the work of Graphitech, a JV set up two years ago to develop solutions for the deconstruction of graphite-gas reactors.

Due to its technical nature and its cost, vitrification has until now been reserved for highly radioactive waste. The partners anticipate that Waste2Glass will be able to make the vitrification process applicable to a wider range of waste.



GeoMelt: industrialised solution for the treatment of nuclear waste - 10.00 today, Workshop 2



Framatome delivers industry's first complete accident-tolerant fuel assembly

## World first accident-tolerant fuel assembly delivered

WNE sponsor Framatome (F124) has achieved "a huge milestone" by delivering what it describes as the nuclear industry's first 100% accident-tolerant fuel assembly (ATF).

The lead fuel assembly (LFA) containing 176 chromium-coated rods and chromia-enhanced pellets, developed with funding from the US Department of Energy (DOE) under Framatome's PROtect programme, was inserted at Exelon Generation's Calvert Cliffs nuclear power plant in Maryland, USA, during the plant's recent refuelling outage.

Lionel Gaiffe, senior executive vice-president, Fuel Business Unit at Framatome, said it was "a huge milestone for Framatome and the

nuclear energy industry.

"This is the next step in our PROtect programme and further demonstrates our commitment to advancing nuclear fuel technology by offering more efficient and reliable solutions to support the production of low-carbon energy."

The ATF assembly builds on previous work that included an 18-month fuel cycle test on LFA in the US and Switzerland. Framatome says its PROtect ATF technology is more tolerant to changes in reactor core temperatures, increasing coping time while reducing corrosion and the production of hydrogen under high-temperature conditions.

The LFA was fabricated at Framatome's manufacturing facility in Richland, Washington.



# WNE AWARDS 2021



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2



3

## PRODUCTS & SERVICES

- 1) Big Group: Veolia Nuclear Solutions – Treatment of problematic nuclear waste streams - GeoMelt Vitrification of Reactive Metals
- 2) SMEs/VSEs: Avnir Energy – SK-DIZI (Surveillance system for ionized zones)

## OPERATIONAL EXCELLENCE

- 3) Big Group: EDF – Stop corrosion
- 4) SMEs/VSEs: Oakridge SAS – NESTERS (Nuclear ex-core instrumentation system) app

## SKILLS & KNOWLEDGE MANAGEMENT

- 5) Big Group: CEA – Create your MOOK

## NUCLEAR SAFETY

- 6) Big Group: EDF – Radiation protection shells
- 7) SMEs/VSEs: Cathelain and co-applicants – C-Bolt



Everyone's a winner! Smiles all round from the 2021 WNE award-winners



# MAGNIFICENT SEVEN

Seven awards, seven grand prize winners. Those were the results revealed yesterday evening at the third WNE Awards presentation. But the judges were unanimous in their declaration that all 137 entrants were winners, thanks to the exceptionally high quality of their entries...



4



5



6



7



**€100 m**  
Framatome continues to invest more than €100 million annually in R&D

**20 %**  
Boccard has interests in eight main markets, nuclear is the largest, accounting for close to 20% of its business



Framatome chief executive Bernard Fontana, at the show

# FRAMATOME SETS MARK FOR KNOWLEDGE MANAGEMENT

Preserving and expanding technical knowledge in nuclear energy is key to ensuring a low-carbon future. For WNE sponsor Framatome (F124), central to its focus on helping customers maintain existing low-carbon capacity and expand their sustainable capabilities is the “thoughtful” transfer of knowledge and development of technical expertise. “After all,” says chief executive Bernard

Fontana, “our customers rely on Framatome to ensure the deployment of a global and robust supply chain and foster innovation that contributes to a responsible clean energy future. “Our ambition is to be the industry benchmark for knowledge management.

“We will help the next generation of nuclear professionals succeed through a systematic knowledge management

approach that leverages today’s expertise for tomorrow.”

To achieve this, Framatome employees transition their personal expertise and learnings, gained from hands-on experience, into company knowledge that can be easily accessed by other employees with specific customer needs.

“This is particularly important for knowledge-intensive industries like ours,” says Fontana, “and especially in a period of generational change like today.”

The benefits of this knowledge transfer is apparent in initiatives such as Framatome’s Excell in Quality programme for the standardization and industrialization of heavy components, including anticipating industry demand to secure competencies, quality and the supply chain.

“Our suppliers’ quality is our quality,” adds Fontana. This recognition drives a collaborative approach which ensures a robust and resilient global supply chain.

Framatome leads regular worldwide communication events to share perspectives on safety, quality, delivery and standardization with supplier and partners.

Fontana says: “The global nuclear industry benefits from having good knowledge management practices and supplier quality programmes because, at the end of the day, the technical expertise of our employees and suppliers is our main competitive advantage.”

Framatome continues to invest more than €100 million annually in R&D. This year, work on advanced manufacturing techniques resulted in the installation of the first 3D printed object in an operating nuclear power plant in the U.S.

Virero, a robotic solution that sorts radiated materials for decommissioning, stems from R&D in advancing artificial intelligence and machine learning, while Framatome’s PROtect Enhanced Accident Tolerant fuel – already operating in five reactors worldwide – is shortlisted for a Global Energy Award.

In addition, the company continues to support advanced reactor developments in the U.S. and Europe.

## inbrief

### MAJOR INVESTORS DROP FOSSIL FUEL HOLDINGS

Dutch pension fund ABP, one of the world’s largest, will divest €15bn (\$17.5bn) of investments in fossil fuel producers by 2023, a move described by Reuters as a major turnaround. The move by ABP comes as financial firms around the world change their investment portfolios.

### FRAMATOME, RWE CYBERSECURITY PROJECT

Framatome (F124) has signed a contract with RWE Nuclear of Germany to assist in the development of autonomous cybersecurity at a shutdown nuclear power plant in Germany. The project, which leverages Framatome expertise in safeguards of instrumentation and control systems, is expected to be completed in 2024.

### REACTORS, RENEWABLES CRUCIAL FOR GOALS

A new study by French grid operator RTE says France needs 14 new nuclear reactors, together with more investment in renewables by 2050, to meet its carbon neutrality goals at the least cost and without endangering supply.

### PUBLIC DEBUT FOR GAMMA CAMERAS

Damavan Imaging (L25) is using WNE 2021 for the first public view of its innovative gamma cameras. The company says they provide a breakthrough in radiation protection.



Glovely-stuff: Pedi’s Mark Bransch demonstrates some of the handling possibilities in its working tent

## MULTI-PURPOSE PROTECTION

Working in a safe and secure environment is a great demand for the nuclear industry and Swiss company Pedi (F32) has a hand on the solution.

The Zurich company is showing its portable working and decontaminating tents which are used for cleaning, inspection and maintenance works as well as an immediate storage facility for radioactive components, products and substances.

Mark Bransch, manager of sales, explained that the working tents had seen interest growing from outside its

traditional nuclear customer base, as the tents protect against asbestos and infectious agents.

“The tents are manufactured to meet a customer’s particular requirements,” Bransch said. “Due to the hermetically tightly welded plastic films and by means of vacuum, the housing effectively prevent any spread of gases, vapours, liquids, and particles into the environment,” he said.

The tents can have several safe enclosures and connected by locking systems.



Framatome leads discussion on ‘Contributing to the future of nuclear power generation as a safe, competitive and reliable low-carbon energy’ - today at 10.30, Panel Discussion room

## Cross-sector innovation gives Boccard a boost

The nuclear sector, with its highly regulated structure and exceptional levels of safety and human performance, can sometimes be regarded as very different from other industries.

However, that does not mean companies involved in nuclear projects cannot learn lessons from other branches of engineering or technology.

That is the message from Bruno Boccard (pictured), the fourth-generation owner of the industrial turnkey construction company and WNE sponsor that bears his family’s



name (D95). “Boccard has developed quite a lot of new technologies in other markets and these are applicable to nuclear markets,” he told WNE Tribune. The company has

interests in eight main markets, with nuclear being the largest, accounting for close to 20% of its business.

One key proprietary tool is Boctrack, a seamless project management tool for engineering, procurement, manufacturing and construction. “Boctrack is really a differentiator,” said Boccard. “Our other differentiator is the

ability to prefabricate piping systems. We can prefabricate up to 85% of the welding, reducing tremendously the amount of time spent on-site, and increasing safety, quality and productivity.”

He said WNE 2021’s ‘responsible future’ theme fits well with the company’s raison d’être. “Our obligation is for the next generation – not only for the company but for humanity.

“The immediate challenges we face in achieving a net zero carbon emission target have to be the priority in all that we do.”

Boccard’s workforce numbers 4,000 full-time employees, rising when a major project is under way. However, despite its size, the fact that it remains a family concern gives it

advantages over larger corporations, he said.

“We have tremendous benefits in being a private, family-owned business. Firstly, we’re independent and thus we have tailored a long-term vision closely aligned to the market needs.

“We have very agile management that can make expedient decisions; that makes a difference in very competitive markets. And, since we’re using our own resources, we’re very cautious in the way we invest.

“Our first investments are in people and we take care of them. With all humility, we feel our team members are happy within the organisation. We offer a lot of empowerment to our employees and also, through the Boccard Academy, the means to improve their abilities.”





### WALKIES! CHECK OUT ANYBOTICS' ROBOT DOG

Anybotics robot "dog" can be seen walking around the exhibition. Its "keeper" Audrey Marullaz says the robot is designed for industrial inspections and has a battery that can last up to 1.5 hours. Even better, it is fully autonomous and goes back to its charging station and recharges itself automatically. And it doesn't need feeding either!



### HOLD THE DRONE: FLYABILITY'S EYE IN THE SKY

Flyability (D9) is showing its drones for confined spaces. Johan Mlouka (pictured) explained that the drones are modelled after flying insects in that they can bounce off surfaces without sustaining damage. Thanks to its proprietary collision tolerant flight algorithm, Flyability's latest product - Elios 2 - can perform remote visual inspection in confined spaces and is complete with a radiation detector.

## KEEPING AN EYE ON THINGS...



### DOING THE HEAVY LIFTING

Based in Le Havre, AXS Ingénierie (J16) specialises in the study, technical expertise and calculations on heavy lifting equipment and metal structures. General manager Fouad Elbaroudi said its team is made up of mechanical and structural engineers that together have more than 30 years' experience in lifting equipment.



### TECHNETICS' SEAL OF APPROVAL

Technetics (L100) Philippe Favre demonstrates the company's expertise in metal seals. The company makes them for the nuclear industry for use in reactor pressure vessels, control rods, primary pumps, pressurisers and spent fuel casks.

### A BONDING REVOLUTIONARY

Coton Peyre of Cold Pad (L136) is showcasing the company's durable composite bonding and fastening solutions that revolutionise construction and maintenance operations on reinforced concrete. Capable of lifting up to one tonne, its revolutionary para-seismic anchors offer a true alternative to doweling in nuclear power plants.

### PARAGONS OF VIRTUE...

Paragon's vision (E8) is to be the nuclear industry's most trusted supplier. Dedicated to quality, safety, reliability, and carbon-free energy, it delivers premium products to its clients. It says it also provides nuclear energy facilities with proven reductions in direct costs, parts inventory, improved process efficiency, and obsolescence solutions. Paragon's Keith Porter (left) and Tighe Smith are pictured.





## LIVESTREAM / REPLAY CONTENT

Look for this icon to watch this content live or on replay via the WNE LIVE & CONNECT platform



2-300

students expected to be in attendance on Student's Day



Human capacity building is a big issue for the current fleet...



## DAY TWO

## Programme highlights

Venue: Panel Discussion room unless otherwise stated



**09.30-10.20** Rosatom: Will nuclear take on the global challenges?



**10.30** Framatome: Contributing to the future of nuclear power generation as a safe, competitive and reliable low-carbon energy



**11.30-12.20** Westinghouse: Moving nuclear to 4G and beyond – reliably, together



**12.30-13.30** Round table: Waste management

**14.00-14.50** Assystem: Re-thinking the nuclear industry to develop the nuclear power needed for a low-carbon society



**15.00-15.50** Boccard: How a low-carbon future is delivered via operational excellence minimizing the total cost of ownership

**15.00-16.00** Start-up pitches; Start-up Planet



**16.00-17.30** Round table: Hydrogen

# FINDING THE RIGHT PEOPLE FOR THE RIGHT JOBS IS KEY

Men and women are the backbone of the nuclear sector: it is about finding the right people in time for the right jobs. Nuclear stakeholders pay special attention to human capacity building, skills, competences, education and training.

Yet the nuclear industry is facing a shortage of qualified people in specific areas, and the situation is going to get worse without a collective effort to take the necessary corrective steps. That's the view of Karen Daifuku, newly appointed acting director of I2EN (L97), the Paris-based nuclear education and training organisation.

"What I've heard from some companies is that they have more jobs than people interested," she says. "Their concern is attracting more people to the sector. Human capacity building is a big issue for the current fleet, but also for newbuilds."

Students' Day tomorrow at WNE is a step in the right direction. I2EN, in cooperation with Gifen, has organised the day-long programme in Hall 6 to showcase the nuclear industry to the next generation of talent, both French and international.

Keynote speakers led by Alexandre Perra, EDF's senior executive vice-president for Innovation, CSR and Strategies will address the expected 200-300 students in attendance, with many more viewing the proceedings online.

Perra will be joined by Gifen president Xavier



Karen Daifuku, newly appointed acting director of I2EN (L97), the Paris-based nuclear education and training organisation

Ursat, Muriel Hautemulle, director of Human Resources of the EDF Nuclear and Thermal Generation Division, and William Magwood, director-general of the OECD Nuclear Energy Agency, who will bring an international perspective.

The programme includes presentations to introduce students to the jobs of operations engineers and technicians in domestic, regional and international markets.

They will hear about progress on Nuward, a French-designed SMR under development by CEA, EDF, Naval Group and TechnicAtome, as

well as a recently announced programme called the University of Nuclear Trades (UMN) and workshops on international opportunities for French students to study and work abroad, and for international students to study and work in France.

It's not just engineering: the supply chain needs a variety of jobs – welders, for example – where a qualification to nuclear industry standards is transferable to other industries. "Those kinds of jobs are interesting because you can work in multiple areas and move around," says Daifuku.



## Program of events of the day

### Stand J100

**10h00 / Certification ISO 19443 & 3834**  
ISO 19443 & ISO 3834 certifications : advantages and impact on your organisation

**14h00 / AI : Semaphore Nuclear**  
Artificial intelligence for improving the efficiency of your inspection

**15h30 / New Training capabilities**  
Training to work in a french nuclear environment : immersive versus old school practices

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