

**India's WNE** debut Vital role for nuclear in energy strategy

SEE P5



2 in the future Focus on Beyond Electricity SEE P6







NOVEMBER 04 2025 // PARIS NORD VILLEPINTE





# GALA OPENING FOR SIXTH WNE

sparkling assembly of VIPs, exhibitors and friends of WNE gathered at the elegant Pavilion Cambon last night for the second WNE Gala Dinner, to mark the opening of WNE 2025. Greeting guests, WNE President Sylvie Bermann extended a warm welcome on behalf of GIFEN and the organisers of the exhibition – "a celebration of our industry, its progress and the collective energy that drives us."

Joining Ambassador Bermann and GIFEN President Xavier Ursat at the head table were Mathieu Bihet, Belgian energy minister; Pietro Barabaschi, ITER director-general; Dr Fatih Birol, executive director of IEA; Anne-Marie Descôtes, secretary-general of France's ministry for Europe and Foreign Affairs; Dr Jimmy Gasore, Rwandan minister of Infrastructure; Rafael Mariano Grossi, director-general of IAEA; Stephen Lecce, minister for Energy and Mines of Ontario; and Dr Lassina Zerbo, Rwandan atomic energy board president. For additional photos turn to page 12.

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

## RENAISSANCE OF NUCLEAR BODES WELL FOR THE FUTURE

t gives me great pleasure to once again welcome the global civil nuclear family to Paris and the sixth edition of the World Nuclear Exhibition. We are gathering at a time when nuclear is experiencing a renaissance on every continent – and WNE is a perfect illustration of this new dynamic.

This year we are excited to be staging WNE in a larger hall at the Paris Villepinte exhibition complex, a move made necessary to accommodate more than 1,000 exhibitors from around the world – a quarter of them at the show for the first time.

We also have 25 national pavilions, a proud record that underlines both the growing support for our industry in many countries and a recognition of the importance of WNE as the catalyst for bringing together players large and small under one roof.

Our themes this year reflect major factors influencing the global shift in attitudes to nuclear that we have observed over recent years as populations become aware of universal challenges facing them and look for

'Nuclear, today and tomorrow' and 'Beyond

electricity'encapsulate these aspirations. Our first theme opens the door for discussions on making the most of existing installations, new nuclear programmes, new technologies, and new approaches to a

circular economy. Every development and innovation brings new opportunities for the industry; for the first time, WNE is organising a roundtable on fusion technology to highlight such opportunities, while elsewhere on the programme, artificial intelligence (AI) is a huge talking point as concrete examples of its current use and expected breakthroughs are discussed.

'Nuclear tomorrow' will demand more

young people to discover the nuclear industry, its jobs and its many opportunities. Innovation has its dedicated platform in our Startup village which showcases 20 of the most promising ones in the sector from around the world. Nuclear science is integral to many areas of life other than electricity generation,

human resources. This is the

focus of our Job and Training

village which invites

and this is highlighted under our theme 'Beyond electricity'.

In another first for WNE, we are featuring nuclear's role in medicine, agriculture, and industrial applications such as hydrogen, urban heat and e-fuels – even space – which I expect will be a real talking point of this year's

It remains for me to thank our many sponsors without whose support WNE would not be possible, and to wish everyone an enjoyable and successful show.





09.30-10.30 Opening ceremony



10:30-11:15 Ministerial session



14.00-14.15 Keynote speech



**14.15-15.15** – Panel discussion: Fast-tracking new nuclear programmes: international experiences



15.45-16.30 EDF Tribune: From supply chain to value chain: Lessons for nuclear's next

wave

16.45-17.30 Orano Tribune: Fuelling nuclear ambition to sustain small, advanced and large



17.45-18.30 WNE Innovation Awards ceremony







Nuclear science is integral to many areas of life other than electricity generation, and this is highlighted under our theme 'Beyond electricity'















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# MATCH highlights impact of France's nuclear revival



rance's nuclear revival is under way and projets are gathering steam. These are the conclusions of GIFEN's MATCH programme in its third annual update, published on the eve of WNE 2025.

MATCH is a tool designed to support the development plan of the French nuclear industry consistent with the strategy announced by President Emmanuel Macron in 2022. Based on a 10-year workload plan, it monitors the alignment between resources and needs and drives a framework for companies in the nuclear industry to share their experiences and actions for the benefit of that

The 2025 results highlight the effective impact of the nuclear revival, with a 30% increase in planned purchases by project owners over a five-year period. In total, across all roles, approximately 100,000 new full-time equivalent positions (FTEs) will be required throughout the sector by 2035, the vast majority of which will be technicians.

Enhancements to MATCH's features have strengthened its ability to define action plans for human and industrial needs. These action plans, tailored to each segment and offering a more precise response to specific needs, are currently being designed.

Xavier Ursat, chairman of GIFEN (pictured top left), said the 2025 results show that "our industry, which brings together nearly 2,000 companies employing around 250,000 FTEs, is mobilised to deliver the programmes entrusted to it." At WNE 2025, he added, "everyone will be able to witness the strength and momentum of our industry."

Olivier Bard, chief executive of GIFEN (pictured below left) said the MATCH 2025 report "illustrates the work carried out by GIFEN with a strengthened and more robust methodology. We continue to develop segmentbased work for an even more accurate understanding of the situation, trends and needs in the nuclear industry, in order to build and deploy operational action plans.

"MATCH is a valuable measurement tool, but above all, it serves an industrial sector that is vital for our country, to enhance its performance and to build its capabilities and industrial capacities."



Hear Xavier Ursat's keynote speech

[MATCH] monitors the alignment between resources and needs and drives a framework for companies in the nuclear industry to share their experiences for the benefit of that alignment



## Unlocking the potential of new radioisotopes

creation of specialist radioisotopes for a variety of uses, Montreal-headquartered AtkinsRéalis (M058) – a WNE gold sponsor – stands ready to exploit the unique structure of its CANDU reactors to offer the medical community customised solutions.

CANDU reactors in Ontario, which currently produce 60% of the world's supply of the medical isotope Cobalt-60, could potentially unlock other isotopes with important medical

The company says this is made possible by the structure of the reactor – horizontal tubes in a geometric pattern, which are surrounded by low pressure and relatively low temperature water.

"The inherent design of a CANDU reactor, and how easy it is to access the core, allows us to produce very high volumes of Cobalt-60

s medical research looks deeper into the | without having any negative impact on the power operations of the reactor," said Julianne den Decker, senior vice-president, Operations, Candu Energy.

"This became the starting point for discussions with the medical community about what else we could put into that reactor for different periods of time, which potentially could allow us to unlock other types of medical isotopes."

As the CANDU reactor is refueled online, it offers the flexibility to insert the radioisotope and extract it in whatever time frame is required. Den Decker said: "At Ontario Power Generation, they started working with the medical community on Molybdenum-99 and that is now used for cancer imaging and cancer treatments.

"At Bruce Power, they are producing Lutetium-177, which is used for targeted treatments in cancers that have metastasized throughout the body.

"There have been remarkable results from some of these treatments."

The reactors producing these radioisotopes have been retrofitted with harvesting systems through the existing access ports, but newer designs will have them built in.

AtkinsRéalis has had interest from CANDU operators in Asia in harnessing this capability. The design allows incredible flexibility and opens opportunities for research.

Den Decker said: "I like to say that we're the oven makers and the medical community are the chefs. They provide the recipes to go into the oven and decide to put it into an area of high neutron flux or into an area of lower radioactivity, as well as whether they want to put it in for seven months, seven days or seven hours"

### Partnership model eyed for nuclear new build in Nordic climes

For the Nordic countries of Northern Europe, the challenges to the development of new nuclear projects are partly brought about by their own efficiency. The region offers the most competitive electricity prices in Europe, generated through a decarbonized electricity

However, the conclusions of a recent twoyear feasibility study, conducted by the Nordic energy company and WNE gold sponsor Fortum (G048), identify market potential for new nuclear to enable further decarbonisation through the electrification of industries and to strengthen the security of supply by adding firm capacity to the grid.

To achieve this, Fortum is exploring an investment solution using strategic partnerships that could bring together utilities, the state, vendors and consumers.

Jesper Marklund (right), the company's senior manager for strategic partnerships, explained: "The state has an essential role in any new nuclear development. Our feasibility study shows that public-private co-investment partnership is the way forward." In addition to sharing the risks, the

partnership advantages go further: "A balanced strategic partnership brings experience and input from different parts of the private sector into the project company from utilities, but also possibly

vendors and off-takers. "The idea is to have a strong owners' organisation and strong owners bringing relevant skills and competencies to build the project company The possible involvement of off-takers is suggested to ensure that the new supply is coupled to the new demand for electricity.

"These partnerships could be through ownership of the new plant, or through possible power purchase agreements." The company is still exploring the balance

of such a proposed project company.



Jesper Marklund leads a workshop on the partnership approach at 16:00 today in Workshop Room 3.

**INTERVIEW BERNARD FONTANA, CHIEF EXECUTIVE OF EDF** 

### **EDF: COMMITTED TO DOMESTIC** AND GLOBAL NUCLEAR EXCELLENCE

s nuclear energy gains renewed momentum in France, across Europe, and worldwide, EDF, along with its subsidiaries Framatome and Arabelle Solutions and its industrial partners, is undertaking an unprecedented effort to expand its industrial capabilities and transform the sector.

The EDF sponsor tribune, alongside representatives from our industrial value chain, will focus on the practical levers driving transformation.

Furthermore, EDF will underscore the significance of evolving today's supply chain into a true value chain – more integrated, standardised, and diversified – based on partnerships, to capitalise on lessons learned and support the development of a sovereign, high-performing nuclear

EDF expects this 2025 edition of the World Nuclear Exhibition to foster stronger industrial partnerships. We aim to share our progress and visions to build a successful nuclear industry worldwide.

Our motto is: GO Electric, BUILD Nuclear with EDF. First, we aim to express our common support for the development of low-carbon energy sources, particularly nuclear power, which is essential in the fight against climate change. Second, we seek to exchange ideas and

projects on enhancing safety and security, quality, lead time and competitiveness, recognising that nuclear success cannot rest on the achievements of a few companies alone.

Finally, with humility, we view WNE as an opportunity to strengthen existing partnerships and forge new ones to advance the goals of the nuclear industry. The nuclear industry faces several key

challenges, including ensuring safety and operational excellence, enhancing efficiency under reduced lead times, and improving quality control while preserving the agility required for executing major

EDF is addressing these challenges through a commitment to safety, streamlining approvals, modernising project governance, and investing in digital tools. EDF applies these principles to its major programs, notably for new construction programmes such as Hinkley Point C and Sizewell C in the UK, and the new French EPR2 programme, as well as for our long-term operation (LTO) programme for our domestic fleet.

EDF's message at WNE is that we are committed to delivering safe, reliable, competitive and sovereign nuclear projects in France and worldwide, contributing to the global goal of tripling nuclear

We believe that reducing lead times, improving quality, and ensuring cost efficiency are crucial for delivering nuclear energy infrastructure faster, at lower cost, and with greater precision

We believe that reducing lead times, improving quality, and ensuring cost efficiency are crucial for delivering nuclear energy infrastructure faster, at lower cost, and with greater precision.

We invite you to join us in building strong partnerships to turn this ambition into reality with you. And of course, come and visit our booth (F064) which physically embodies our group's ambitions for the



**BOOKSHOP** 

#### **POP-UP BOOKSHOP BRINGS TOPICAL BOOKS AND AUTHORS TO WNE**

**WNE** is launching the Ephemeral Library - a pop-up bookshop where visitors can discover and take home essential works on the civil nuclear industry, authored by some of the world's most influential voices.

Works by thought leaders such as Jean-Marc Jancovici and Bernard Blain among well-known experts, feature in the selection of books in both French and English selected exclusively for WNE by GIFEN and book industry experts. "Our on-site bookshop gives everyone an opportunity to take away some of the knowledge that powers the industry," said a spokesperson for the organisers. There will be signing sessions at the event every day, so come along, meet the authors and leave with your signed copy!



14:00-15:00 **GEOPOLITIQUE DU NUCLEAIRE: POUVOIR ET PUISSANCE D'UNE INDUSTRIE DUALE** 

Teva Meyer, Associate Professor of Geopolitics at the University of Upper Alsace, Research Fellow, IRIS





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**INTERVIEW NICOLAS MAES, CHIEF EXECUTIVE OF ORANO** 

# A ROBUST NUCLEAR FUEL CYCLE TO SUSTAIN EVERY AMBITION

o achieve net-zero emissions, energy policies must reconcile decarbonisation goals with long-term security of supply of competitive energy.

In this context, nuclear energy stands out as a strategic asset: a proven, low-carbon, and reliable source that not only supports electricity generation but also strengthens emerging uses such as process heat for industry, and district heating. By doing so, nuclear energy is increasingly regarded as indispensable to building resilient and diversified energy portfolios.

The world is in a period of unprecedented energy and natural resource transition. Developments in the nuclear industry include operating lifetime extensions of existing large reactors and significant efforts to launch the next generation of reactors including small modular reactors and advanced modular reactors.

Nuclear energy requires a sustainable, accessible, robust nuclear fuel cycle to support this momentum. Orano's ambition is to support the development of today's and tomorrow's reactors by delivering efficient solutions.

Orano's Tribune, 'Fuelling Nuclear Ambition to Sustain Small, Advanced, and Large Reactors', will focus on the industry efforts, to ensure that the global nuclear fuel cycle meets the increasing needs and expectations of nuclear reactors operators.



Orano is involved in every stage of the nuclear fuel cycle, including mining, conversion, enrichment, reprocessing and recycling of spent fuel, manufacturing of MOX fuel assemblies, as well as nuclear material packaging and transportation.

At Orano, we are not passively waiting for the future, we are already entering a new era of investments across the fuel cycle:

SOLUTIONS

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TO SUPPORT GLOBAL NUCLEAR GROWTH

**#German Pavilion** 

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- To supply the global uranium market and meet the challenge of tripling uranium production, we have a balanced and diversified portfolio of mining projects for the short, medium and long term, particularly in Canada and Central Asia, while maintaining significant efforts in exploration and innovation to optimise our projects and unlock previously inaccessible uranium resources.
- For conversion, we are maximising the production of the newest OECD industrial conversion facility.
- For enrichment, we are expanding our Georges Besse II plant and actively investigating the IKE project in the United States.
- In the back end, we are preparing the long-term continuity beyond 2040 of our existing assets at La Hague and Melox and simultaneously launching their renewal through the 'Aval du Futur' programme.
- Orano is also building partnerships to develop advanced fuel solutions with SMR, AMR and fast neutron reactors. In addition, Orano is also present at the BEE exposition with Orano Med, front-runner in the development of a new generation of targeted alpha-therapies to fight against cancer.

#### inbrief

# ADVANCED SOLUTIONS FOR FULL LIFECYCLE

Amentum (K072), at WNE for the first time, is promoting its advanced engineering and innovative technology solutions for the full nuclear lifecycle. Headquartered in Virginia, the company provides strategic advice, programme and project management, siting and environmental assessment, regulatory compliance, design and engineering. Amentum has more than 53,000 employees worldwide, with nuclear expertise in many locations. Its projects include Sizewell C project management, clean-up at Fukishima and Dalgety Bay in Scotland, reactor operational support for South Africa's Koeberg NPP, marine works at Hinkley Point C, and construction management and coordination at ITER.

# FORGE MONCHIERI PROMOTES EXPERTISE

Italian forging company Forge Monchieri (N146) is at WNE to promote its experience and expertise in new nuclear power plants, plant revamping, SMRs and waste management.

The Brescia-based company –
"the ideal partner for forging
products" – is a leader in the largescale forging industry whose
expertise and state-of-the-art
manufacturing systems underscore
the quality of its output and enable it
to respond quickly to the demands
of a rapidly evolving market.

## ADDRESSING THE CLIMATE CHALLENGE

A global leader in air filtration,
Camfil (C040) has been supplying
high-quality filtration and ventilation
equipment to nuclear power plants
for more than 60 years, during which
time it has equipped more than
90 plants worldwide. At WNE, its
experts are on hand to explain how
the company is addressing climate
and safety challenges in the nuclear
industry with its filtration systems,
acoustic enclosures, ventilation,
exhausts, dampers, ducts, as well
as maintenance and refurbishment
services.



## AI 'POISED TO RESHAPE' INDUSTRY PROCESSES

he growing role of artificial intelligence (AI) within the industry is a hot topic at this week's WNE. Platinum sponsor Westinghouse Electric Company (F104) believes the technology is already delivering real-world efficiency improvements.

Westinghouse has seen a strong response from the market since launching its Hive generative Al system last September at the World Nuclear Symposium and the company's director of digital optimisation solutions, Mike Drudy, will be highlighting how Al can "supercharge engineering efficiency" at a workshop at WNE today.

"It's a chance to see a real-time demonstration of how AI is already delivering measurable value in day-to-day operations," says Drudy (pictured).

At the heart of Westinghouse's Hive solution is bertha – its nuclear-aware Al assistant that is contextually knowledgeable based on decades of industry data. "Engineers in the nuclear industry can spend upwards of 30% of their time searching for information," says Drudy, noting that bertha "helps them get that time back".

Drudy says the company's Al solutions have demonstrated double-digit efficiency

gains across several engineering workflows. "For example, integrating bertha into CMIS

has reduced engineering change package preparation time," he says. "In our EPC teams, we are exploring ways to use AI tools to reduce costs and improve planning.

"Material development

is another area – engineers are using it to research new material characteristics and for ways that we can improve our overall processes."

Drudy says that since launching bertha a year ago, it has gained traction from utilities and industry groups. "The potential is boundless," he says. "Al is poised to reshape how nuclear OEMs and utilities handle engineering, operations, and compliance.

"From predictive maintenance and automated inspections to real-time licensing support and training, we believe AI will shift workflows from manual and reactive to intelligent and proactive.

"Over time, we expect AI to double productivity in some domains, reduce outage durations, and even improve safety margins," he adds.



'Supercharge your engineering efficiency with Al', 13:30, Workshop Room 2

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### INDIA: NEW INROADS INTO NUCLEAR

India's growing nuclear capabilities will be on display for the first time at WNE, with both individual exhibitors and a dedicated national pavilion (B004).

Nuclear energy plays a vital role in the country's long-term energy strategy. The government has implemented a three-stage nuclear power programme with an ambitious target of at least 100 GW by 2047.

A recent power ministry panel report, widely reported, said India will need almost \$217 billion of investment to meet its target. The report comes at a time when Prime Minister Narendra Modi's government has promised ambitious legal reforms, including limits to operator and supplier liability, to encourage private investment in the sector.

As of September, India's nuclear power plants run 24 reactors with a total installed capacity of 7,943 MWe. Six reactors are currently under construction, which will contribute a further 4,768 MWe.



Construction site at Kudankulam nuclear power plant

Driven by earlier trade bans, a lack of indigenous uranium and vast thorium reserves, the country has been making advances in the field of thorium-based fuels, working to design and develop a prototype for an atomic reactor using thorium and lowenriched uranium.

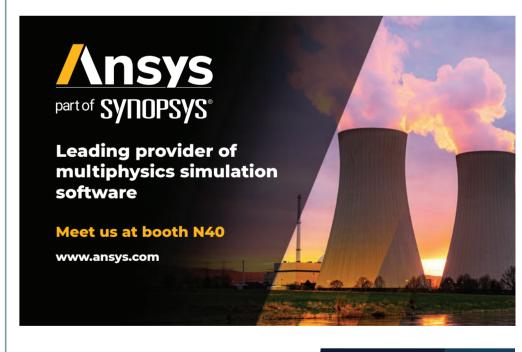
The inaugural India pavilion will play host to a variety of companies and national industry bodies, including the Confederation of Indian Industry, Adani Group and the

National Thermal Power Corporation (NTPC). In addition, Indian companies from across the country, several of them newcomers to WNE, have individual stands.

Aruna Alloy Steels (K084) an experienced manufacturer of machined steel castings for nuclear service, returns to WNE, as does Larsen & Toubro (E134), which offers turnkey construction, equipment manufacturing (including nuclear-grade forgings), and services, certified with ASME N and NPT stamps.

Newcomers include Core Energy Systems (D126), which creates EPC, O&M, and automation solutions for complex nuclear systems – specialising in life extension, waste management, and precision refurbishments, and Hylenr Technologies (C017), which develops revolutionary reactors based on low energy nuclear reaction (LENR) technology.

First-time exhibitor Enpro Industries (L148) is described as a global leader in mechanical fluid systems, process equipment, and renewable energy projects, while Kirloskar Brothers (E130), a world-class pump manufacturing company with expertise in the engineering and manufacturing of fluid management systems, is at the show with its pumps and pumping solutions for nuclear power plants and SMRs.





NUCLIAR EXPERIES

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## Dexterous solutions for stroke patients

Silver sponsor Veolia (H030) is demonstrating the flexibility of its nnovations in the Beyond Électricity Expo (BEE) with Dexter, a remote handling manipulator, which was deployed successfully at Fukushima and has been adapted for wider application.
Simon Delavalle, chief technology

officer at Veolia, explained: "We developed a system of Dexter that did everything a human can do, but could not do in that dangerous environment Things that could not be automated, because the tasks are complex, but als because they are not planned. Having human skills in that environment is

Dexter features force, or haptic, feedback, which means that anything interacting with the robot is felt by the operator. Delavalle said: "If you lift something you will feel the weight of what you are lifting. If you are tightening a screw, you will feel if the screw is loose

or tight." This force feedback instigated a current project with the University of Hasselt in Belgium, which integrated stroke patients. The technology aims to stimulate the rebuilding of crucial neura pathways, enhancing a patient's ability to move and control their arm and hand Delavalle said: "These patients are having treatment to enable reactivation other machines...

of the nerves in their arms, but this requires the right motion. There are machines that can do elements of this but they are often restricted. What Dexter offers is a wide movement, reflecting human capability. The patients can try intricate tasks, such as pouring coffee or tying a shoe, which are not possible on other machines." Therapists can also adjust Dexter's level of assistance to tailor exercises or games to each patient's needs. "Initially we can offer assistance, as if a helping hand was assisting them. And the reverse, as they are improving we can offer some resistance to help train their muscles, depending on which stage of

rehabilitation they are in."
In trials, the participants exhibited life changing progress, with some patients regaining the ability to independently dress and feed themselves and embrace

Dexter offers a wide movement, reflecting human capability. Patients can try intricate tasks - such as pouring coffee or tying a shoe - not possible on

# **'SEEING RADIATION' MADE POSSIBLE**

Nuclear imaging technology designed to offer greater access to imaging across medical departments, for patient-centred care, cost efficiency and improved workflow, is a highlight at WNE on the stand of UK-based Serac Imaging Systems (A014B), a featured startup company.

Nuclear imaging, which uses gamma cameras to image the distribution of radiolabelled tracers within the body, is currently restricted mainly to facilities with large SPECT/CT scanners in dedicated nuclear medicine departments. Serac's compact portable Seracam was "designed from the outset for its practical application" to allow simple, small organ imaging at the point of care, whether in an outpatient

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clinic, hospital ward, physician's office, intensive care unit, or operating room, reserving SPECT cameras for more complex

The company says its Seracam "leverages technology designed for NASA space observatories" to match or exceed the performance of current systems.

effective and more efficient operations."

The device is undergoing testing at clinical sites in preparation for regulatory

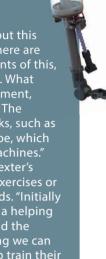
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UCLEAR SOLUTION



# Nuclear's vital role beyond electricity

# A BEE IN WNE'S BONNET

The civil nuclear industry's vital and growing role in improving lives and securing a sustainable future – beyond providing clean energy – is one of the themes of WNE 2025. It is dramatically illustrated at the entrance to the show with a new feature, BEE – the 'beyond electricity expo'. Visitors are greeted by the BEE immersive experience that offers highlights into sectors benefiting from nuclear technology, notably the key areas of medicine, agriculture, space and heat, plus desalination, propulsion and waste disposal.

#### **Healthy expansion**

Nuclear medicine is expanding rapidly in areas including diagnostics, treatments and new radioisotope production technologies. Examples abound throughout the show.

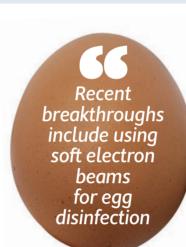
Growth in this sector is also powered by the success of specialised radiopharmaceutical firms in developing diagnostic and therapeutic radiopharmaceuticals, with innovations driven by advances in targeted radioligand therapies and new radioisotope production technologies.

Platinum sponsor **Orano Med** (H054), whose Alpha Therapy Laboratory focuses on producing radioligand therapies, is developing a new generation of targeted therapies.

Known as targeted alpha therapy (TAT), these use the unique properties of lead-212 (212Pb), a rare alpha-emitting radioisotope and one of the most potent therapeutic payloads against cancer, to treat patients not responding to existing

**NuviaTech Healthcare** (F046) is

promoting its ISOMED series for treatment delivery, designed to simplfy and extend the application of nuclear medicine. The



NuMED x40 dose calibrator - successor of the well-known ISOMED series using the proven NUVIA measuring chamber – is used to measure precisely the activity of radiopharmaceuticals to ensure that patients receive the correct radioactive dose for diagnostic imaging or therapeutic procedures.

**Veolia** (H030), meanwhile, is showcasing its work in adapting technologies originally developed to protect workers in the nuclear sector to applications in other sectors, such as health. Its advanced telemanipulator platform Dexter demonstrates how

VIRTUAL HANDS-ON EXPERIENCE OF REACTOR ASSEMBLY

In the BEE expo area, Czech company Simopt presents its | models of nuclear, fusion and renewable energy systems,

Veolia's technologies combine robotics, teleoperation, and AI to enhance safety and efficiency across industries.

#### The final frontier...

In space – the so-called last frontier developments in nuclear space travel focus on developing both power systems and propulsion, with NASA and partners exploring new radioisotope fuel for deepspace power.

In Europe, Tractebel (K019), a Belgianbased global engineering company, is leading a consortium that includes the French Alternative Energies and Atomic **Energy Commission** (CEA – H064), ArianeGroup, Airbus and Frazer-Nash (N045), on the ESA RocketRoll project to harness nuclear electric propulsion (NEP) for space exploration.

The consortium aims to equip Europe with advanced propulsion systems capable of undertaking long-duration missions, including manned expeditions to Mars.

#### Back down to earth

Here on Earth, as climate change brings greater uncertainty, the nuclear industry is exploring ways to provide space and water heating to towns and cities as a low-carbon alternative to fossil fuels.

Calogena (B084), a French startup specialising in innovative nuclear technologies, has developed a 30MW thermal nuclear boiler designed for urban heating networks.

The app is available free on the Meta Quest Store.

This facility, which uses uranium fuel, aims

to provide cities with carbon-free heat and help reduce dependence on fossil fuels.

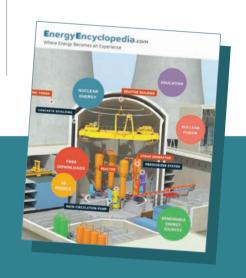
Nuclear science innovation in agriculture is also growing globally, enabling the industry to cultivate stronger, healthier and more nutritious crops, boost agricultural productivity, develop resilient systems in the face of climate change and ensure international food security.

The FAO-IAEA Joint Centre's Atoms4Food initiative is central to these developments, providing tailored solutions to agricultural

Current developments in the sector focus on mutation breeding for resilient pest-resistant crops, isotopic techniques for efficient fertilizer and water management, and good practice in food irradiation to increase shelf and eliminate pathogens.

Recent breakthroughs include using soft electron beams for egg disinfection, cosmic ray neutron sensors for soil moisture monitoring, and Al with genomics for accelerated crop variety development.

All nuclear science applications demand care to maintain appropriate levels of safety. Lemer Pax (F081) is a specialist in this field, and for decades has been researching, designing and assembling radiation protection solutions for the industrial, nuclear, research and medical sectors, notably radiopharmacy and nuclear medicine.



# WITH PORTABLE GAMMA CAMERA

"Surgically precise gamma video images are overlaid on live optical video stream showing the operator the location of sources and watching them move in real time. 'Seeing radiation' enables safer, more



VR Energy Encyclopedia

FREE

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STORE

#### virtual reality (VR) Energy Encyclopedia, an immersive including a virtual lab where they can assemble PWR or educational application that is part of the broader SMR reactors or a steam turbine and then watch them EnergyEncyclopedia.com project. The VR experience operate in full-scale animated demonstrations.

Enjeux du Centre d'Excellence France (CoE) pour la sécurité nucléaire, créé par les opérateurs nucléaires français (ANDRA, CEA, EDF, FRAMATOME, ORANO) et désigné par l'AIEA « Collaborating Centre for Computer Security and Artificial

Intelligence for Nuclear Security ».

Pitch: Lounge France le 5/11

allows users to explore more than 20 interactive 3D





Stand F 125

Collaborating Centre



**6** WNE DAILY WNE DAILY 7

The prestigious WNE Innovation Awards programme, this year in its fifth edition, aims to showcase key players in the civil nuclear industry who have demonstrated excellence and innovation in their fields of operation. It is a unique opportunity to recognise the remarkable achievements of the industry and promote innovation in this sector

# CELEBRATING EXCELLENCE

or 2025, the programme has been revamped with four redefined categories – an evolution that reflects that of the industry itself over the past decade since the awards were launched. Eight awards,

'Boosting nuclear

installation

performance and LTO'

WNE secretary general Farahnaz Laldjee said feedback from previous editions underlined the need for the awards to be

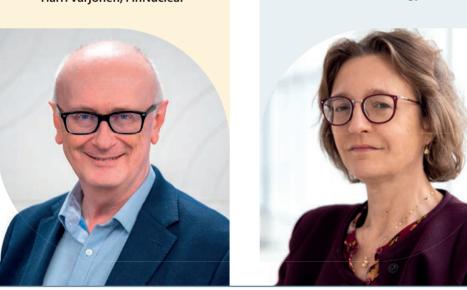
one each for small and large companies

afternoon at 17:45 (Main stage).

in all four categories, are up for grabs this

#### 'More adaptive solutions to new challenges'

Dr Andrew Vickers, Aline des Cloizeaux, **Capgemini Engineering (chair)** IAEA (chair) Janaki Devi Kompella, Elsa Merle, Grenoble INP/PHELMA PRA Consulting (Assystem) Carolina Losin, Teva Meyer, **Westinghouse Electric University of Upper Alsace** Archita Rajkumari, ENS-YNG Agnes Mutoni, Rwanda Atomic Energy Board Harri Varjonen, FinNuclear



both relevant and useful for the industry worldwide. She said: "Three objectives guided revision of the categories: having categories that reflect the main challenges of the global nuclear industry; having more international projects; and drawing in more small companies as entrants."

The industry has risen to the challenge. Eleven countries are represented this year, an increase on previous iterations, and the revamped categories have attracted almost the same number of entries, despite there being one fewer category than in 2023.

Andy Vickers, Capgemini Engineering's technical director for AI who chaired the jury for the 'Boosting nuclear installation performance and long-term operation' category, was surprised – as were his four jury colleagues – by the breadth of innovation in entries. "We had examples of innovation at the individual component level through to plant level impact, and across every discipline,"

Entries from both large and small companies were "full of amazing ideas" and the majority had corporate energy and will behind them. Al entries are now slowly starting to appear, although many entries sought to exploit the benefits of digitalisation for efficiencies. Everyone was driving to "get everything quicker and cheaper while maintaining a stringent level of quality".

Innovators grapple with seizing the opportunities arising from technological disruption while navigating geopolitical instability in a risk-aware regulatory environment. "Most innovation has something to do with 'squaring that triangle", he said. "Nuclear has to play its part."

Echoing this, Aline des Cloizeaux, jury chair The solutions offered to the challenges of



WNE

INNOVATION

AWARDS

2025

winner

for the category 'More adaptive solutions to

new challenges', said she and her team were

solutions related to technologies or services

also surprised by the diversity of entries.

"It was difficult for us to choose between

already implemented with specific fields

"Another surprise," said des Cloizeaux,

"was the relatively high number of cases

Given that deployment lead time is

entrants addressing this time-to-market

partnerships, or deploying solutions from

As for the awards programme, beyond

whole industry "by fostering cross-cutting

innovation, showcasing the dynamism of the

nuclear sector, and reinforcing attractiveness

For her part, Velina Argirova, chairing the

jury for 'Optimising construction costs and

lead times', said the impact on individuals

considerable. Speaking from experience,

team-building and can strengthen those

Velina, who is nuclear business line leader

at Vulcain Engineering Group, was surprised

by the number of entries and their innovative

approaches. "Every time I opened and read an

entry, I was convinced it was a winner... until

involved in each award entry was also

she said the application process "is like

relationships. It's very important."

I read the next one."

the visibility it brings, it benefits the

for the young generation."

other industries.

challenge with innovative solutions including

a major issue, it was comforting to see

using AI and robotics, sometimes coupled."

director of the IAEA's Nuclear Power division,

of application, and very promising R&D

developments with lower technology

readiness levels but wider uses.

### construction costs and Lead times'

Velina Argirova, Vulcain (chair)

Pauline Blanc, Assystem Sheng Lyu,

Andrzej Sidlo, **Polish Ministry of Energy** Emmanuelle Veran, **ECM Technologies** 



#### 'Innovating beyond electricity'

Loyiso Tyabashe, **South African Nuclear Energy Corporation (chair)** 

Fred Dermarkar, **Atomic Energy of Canada** Saran Diakité Kaba, Independent R&D Fiona Rayment, **University of Manchester** Prof Yahya Tayaliti,



For further details of the companies and projects short-listed for awards, please check out their posters on the Innovation Wall, situated close to Workshop No 3

building quicker, better and cheaper without compromising quality were "impressive", she said. Her jury of five reached consensus quickly, independently selecting the same top three for both the large and small company

For the completely new and broad category of 'Innovating beyond electricity', the job of judging was helped by a streamlining of the entry guidelines, said jury chair Loyiso Tyabashe, chief executive of the South African Nuclear Energy Corporation (Necsa). He noted especially the use of videos to explain the entry and introduce the "people behind the submission".

A greater percentage of international entries would be welcome, he said, although the standard of entries received was "very high". Companies should continue entering their projects in the awards as these

"offer innovators within organizations an opportunity to test their solutions amongst peers, thus shortening a path to deployment." With 'beyond electricity' offering such broad scope, the jury assessed benefits to society as the basis for comparison. "If you look at it from that perspective – economic and human benefits – it allows you to compare quite different things," he said.



### **ITALY HOSTS ROUNDTABLE TODAY IN WORKSHOP RM2**

'From Legacy to Future: The Italian Nuclear Supply Chain' - 5:30pm today

exhibiting companies and a programme of workshops and panel discussions that reinforce its growing role in the global nuclear supply chain.

The Italian Trade Agency (ITA), in collaboration with AIN (Italian Nuclear Association), ANIMA (Confindustria Meccanica Varia), and ANIMP (National Association of Industrial Plant Engineering), leads a collective participation of 28 companies at stand M095 – more than doubling the presence recorded in 2023. In addition, some 30 Italian companies are exhibiting independently

The Italian pavilion features a broad range of advanced solutions, including industrial components for the nuclear sector, thermal systems, and pressure equipment. Exhibitors are also presenting

taly arrives at WNE 2025 with around 60 engineering, consulting, and certification services, alongside industrial valves, safety and protection technologies, and systems for industrial handling and radioactive waste treatment

Italian industry is keen to seize this opportunity to showcase its excellence, innovation, and versatility to an international audience, while exploring cutting-edge technologies shaping the future of the nuclear value chain

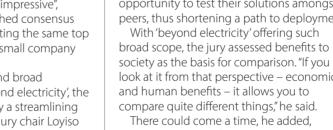


**Technology Platform** 

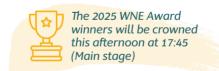
As part of the exhibition programme ITA and the partner associations host a workshop during which Nicola Daniele Ippolito, Head of the Nuclear Division at the Ministry of the Environment and Energy Security, will outline the institutional framework of Italy's nuclear sector.

This will be followed by a round-table discussion moderated by Stefano Monti, President of AIN, with contributions from Luca Mastrantonio, CEO of Nuclitalia and Head of Nuclear Innovation at Enel, Daniela Gentile, CEO of Ansaldo Nucleare, and Stefano Buono, CEO of NewCleo SA.



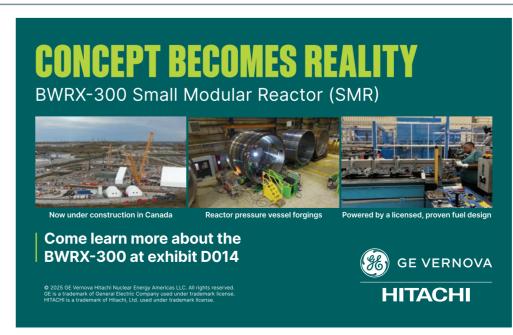


when the volume of entries necessitated subdividing the category into areas of activity, echoing this year's BEE theme.











8 WNE DAILY WNE DAILY 9

The timescale for developing a nuclear programme for both countries which already have nuclear installations, and **Vears** those new to the community





### QUESTIONS

with Jonathan Barr, nuclear segment leader for Flowserve

Flowserve has seven decades of experience supplying vital flow control components to nuclear power plant developers, constructors and operators; and Flowserve continues to be deeply committed to partnering with our customers to enable the global expansion of nuclear energy.

This is an exciting time for the nuclear industry, and we're thrilled to be on stage at WNE, the premier international nuclear exhibition, sharing how we've prepared ourselves to meet this moment.

With global nuclear power demand accelerating, our focus is on enabling customers to meet these opportunities through robust supply chain partnerships, trusted flow control solutions and continuous innovation, including support for SMRs and advanced reactor designs. We have more than 15 manufacturing sites around the world that support our nuclear customers. And with more than 20,000 critical assets operating in more than 300 reactors, we have the global reach and unmatched technical and operational experience to support our customers.

Our Flowserve team looks forward to the insightful discussions and presentations on stage and the valuable opportunities to strengthen our key business relationships at WNE. It's always energising to be at an event like this with the brightest minds in the industry.



#### SHARED LEARNING KEY TO ACCELERATING NUCLEAR DEVELOPMENT

ccelerating nuclear programmes to meet the commitment – endorsed by 31 countries – to triple nuclear capacity by 2050 presents a complex, multidimensional challenge that will be addressed in a WNE panel discussion this afternoon.

Nuclear programmes require rigorous planning, significant investment, and strict risk management, none of which will be unfamiliar to the expert panel comprising lan L Edwards of AtkinsRéalis, French MEP

Christophe Grüdler, Xavier Gruz from EDF, Fan Liuyan of CNEC, R Scott Rowe of Flowserve, and Arnada Prasad Samal of NTPC. It will be moderated by Linda Nyberg.

Even under the most conducive scenarios, the timescale for developing a nuclear programme is considered to be 10-15 years, for both countries which already have nuclear installations, and those new to the community.

The imperative now is to shorten the

timescale, benefiting from each other's experiences.

Panel attendees can expect to learn about different countries' approaches to planning, management, and regulation of new nuclear programmes, as well as dealing with technical, economic, environmental, and safety challenges.



'Fast-trackina New Nuclear Programmes: International Experiences', 14:15, main stage

Water works: Aerial photo of peripheral flood protection works (PPINO) completed by Eiffage at a French nuclear power plant



## CONTRIBUTING TO A SUSTAINABLE FUTURE

At Eiffage Génie Civil, we have always believed that it is possible and necessary to contribute to the energy of the future by leveraging existing infrastructure.

This is why we support nuclear stakeholders over the long term, reinforcing structures to extend their lifespan and adapting sites to new safety challenges, thanks to the rigor and inventiveness of our teams, as well as the collective strength of the Eiffage Group.

Nuclear facilities require very high standards and safety: our teams are trained and hold the most advanced certifications. Working in a nuclear facility calls for diverse expertise: we know how to leverage this expertise within the Eiffage Group to offer integrated solutions tailored to the needs of the industry. Construction projects on a nuclear site cannot be improvised: our indepth knowledge of the existing facilities, our processes, our high level of technical standards, and our safety culture have made us adept at handling sensitive and complex

Today, nuclear industry stakeholders are

looking for contractors to carry out the work necessary to ensure the long-term sustainability of basic nuclear facilities. At Eiffage Génie Civil, we believe that a single point of contact is essential for this mission!

Demolition, asbestos removal, earthworks, civil engineering, repairs... come meet our teams at stand F039.

Contact Jean-Denis Peigner, **Business Director** jean-denis.peigner@eiffage.com +33 6 27 22 59 30

#### **WE ARE WORKING FOR** THE NUCLEAR **FUTURE. JOIN US!**









With over 50 years of expertise and over 1000 nuclear specialists, REEL designs, manufactures, and integrates highsecurity lifting and handling equipment.

# 'A sector in urgent need' **BUILDING THE PIPELINE OF TALENT**

ith countries around the world turning to nuclear as a key part of their future energy needs, the demand for qualified personnel has never been greater. In France alone with its new EPR programme, it is estimated that more than 100,000 workers will be needed in the next decade, leading some commentators to describe it as "a sector in urgent need".

Few would disagree, which is why WNE's Job and Training programme is such an important part of the show. "Young people are the lifeblood of our industry," said a GIFEN spokesperson. "It is imperative that we build and sustain a pipeline of talent. You can have the best technology in the world, but without trained people to operate it through its entire lifecycle, it will not deliver the desired results."

Over the three days of WNE, more than 1,000 students and their teachers are expected to visit the show and take part in the programme, which includes hearing from industry experts, HE directors and junior professionals about opportunities in nuclear, taking part in activities and workshops, and guides tours of the show all the while gaining valuable networking

This year, the WNE programme organisers are also working with several continuing education organisations to support upskilling, career development and professional retraining.

Our industry partners include Assystem,

Capgemini, SNEF, Tractebel, Vulcain, and Women in Nuclear (WiN).

As those in the industry know, the range of job opportunities in nuclear is huge; the varying levels of expertise and training needed underscores the outstanding potential for anyone interested in joining and growing within the nuclear industry.

The three pillars of a successful career – an attractive sector, plentiful job opportunities, and further training for advancement – will be presented in the Job and Training programme by industry players, clusters, associations and experts.

For visitors, the programme offers the opportunity to learn about the nuclear sector, to ask questions, and to meet people already working in the industry whose own career trajectories can help shape their



#### **EU PROJECT TACKLES SKILLS SHORTAGE CHALLENGE**

The nuclear industry is a major job provider in Europe, currently supporting around 900,000 jobs across EU member states. Growth prospects in the sector, with many projects on the horizon for both large and small new build, will translate into a strong increase of the nuclear workforce... if the skills shortages challenge is addressed.

At WNE, Skills4Nuclear - the EU-funded project fostering workforce development in the sector – will have representatives on hand at the Nucleareurope stand (K126) to discuss its aims to tackle these workforce

and skills challenges in EU nuclear fission and fusion sectors by establishing a longterm collaborative framework that integrates industry, research and training bodies.

Project partners will work together

to develop deliverables which provide

concrete solutions to support education and training, as well as reskilling and upskilling opportunities. **Examples of key project outcomes:** The creation of a European forum for

nuclear workforce and skills, which will

monitor workforce needs, identify emerging

The development of a nuclear skills

training programmes.

skills gaps and continuously update

strategy, a multi-annual roadmap guiding efforts to attract, retrain, upskill and reskill professionals for the nuclear sector. The implementation of reskilling and upskilling programmes enabling workers from other industries, such as fossil fuels, to transition into nuclear roles.



For more information, visit K126 or the website skills4nuclear.eu



# MATERIALS SCIENCE IN A NEW ERA

As global energy demand surges due to population growth, urbanization, Al models, and electrification, advanced solutions are essential. Nuclear power is emerging as a key player, offering safe, reliable, and low-carbon electricity.

The International Energy Agency (IEA) predicts nuclear capacity could double by 2050, with advancements in reactor technologies like small modular reactors (SMRs) and safe designs. Nuclear energy is set to play a crucial role alongside renewables and other innovative solutions.

Since 1988, 3M has been providing solutions throughout the nuclear fuel cycle. As one of the few commercial sources for boron isotope separation, 3M ensures secure supplies for water chemistry, neutron absorption, and fuel control.

"3M leads in solutions driving global energy security. Nuclear energy remains one of the safest, most reliable power sources, offering a stable, low-carbon

Left: 3M is committed to worker safety in the nuclear industry with a full line of personal protection equipment (PPE) designed to protect against the multiple hazards in the work environment

electricity baseload," said Stefanie Engbrocks, 3M's energy solutions director (pictured). "We will continue advancing materials science innovations to meet growing energy demands."

3M technology can help advance nuclear reactor design with enriched boron compounds, advanced metal matrix composites, and technical ceramics. We partner with industry leaders to enhance reactor modularity. accelerate construction, and improve material quality.

3M is committed to worker safety in the nuclear industry, offering respiratory, fall, and hearing protection. We also provide solutions for electrical grid connectivity, ensuring efficient nuclear power transmission and distribution.

3M's commitment extends to broader energy solutions, including production, transmission, EVs, mobility, and energy efficiency. Our innovative materials and technologies are ready to shape the future of energy across the value chain.

**10** WNE DAILY WNE DAILY 11

# AT WNE GALA



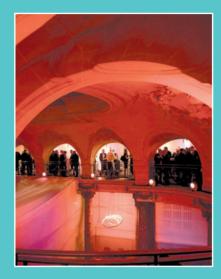
of Man Moteur with Sandra Andreu from OTV Veolia

Nuclear: the beautiful table setting revealed.









## National Pavilion **Opening ceremony times**

09:30 **POLAND PAVILION** N082, N072 **ITALIAN PAVILION** L106, M095, M096 Ribbon cutting ceremonies

10:45 **BRAZIL PAVILION** C020

Opening ceremony 11:15-11:40

**HUNGARIAN PAVILION F128** Ribbon cutting ceremony

> 13:00 **CZECH PAVILION** D046, E046, C046

Ribbon cutting ceremony 15:45-18:00 **UK PAVILION** 

D030/034, C034/034-14 Ribbon cutting ceremony & reception; happy hour 18:30-20:00

16:30 INDIA PAVILION B004, B004D Opening ceremony

## **WOMEN LEAD NEW ERA OF CONNECTION** AND CONFIDENCE IN NUCLEAR

cross Europe and beyond, WiN France connects people and expertise to strengthen mentoring, leadership, and collective engagement in the nuclear field.

Today, as the industry gathers at WNE 2025, WiN France launches the second iteration of the WiN France Initiative Award - Europe Edition, celebrating initiatives that promote leadership within WiN Europe, mentoring, and the creation of

new chapters. And this evening, as the WNE Innovation Award winners are announced, WiN will be noting the contribution of five of its members, including one jury chair, among the 19 judges.

With the industry accelerating to meet the challenges of energy sovereignty, decarbonisation, and skills renewal, WiN France is more than ever on board to support the nuclear sector in full confidence and openness.



WiN France members, mainly the executive committee, join Andrea Bachrata (standing, centre) for a group photo at the recent general assembly

Led by president Andrea Bachrata and a renewed board of 25 members – women and men from across the sector - the association unites professionals committed to building the future of nuclear through shared knowledge, visibility, and action.

"WiN France is more than a network, it is a movement of people who believe that confidence fuels innovation and that progress is a collective journey," said Bachrata.

Through its members serving in the WiN Europe presidency, WiN France has supported the creation of WiN Italy and WiN Netherlands, helping new chapters structure and connect to the wider network. Together with WiN IAEA, which actively supports WiN Europe, WiN France encourages the development of mentoring programmes between France, Finland, the Netherlands, and the Czech Republic, as well as in the fusion sector.

This cooperation illustrates a shared

commitment to strengthening diversity, confidence, and leadership across the international nuclear community.

Recognising the importance of role models - identified by the OECD-NEA gender balance group survey as a key factor in women's career progression – WiN France extends this commitment throughout its national network.

Across its eight regional groups, WiN France drives a vibrant community through leadership workshops, outreach, intergenerational dialogue, and thematic roundtable discussions, and celebrates excellence through the WiN France Awards and Fem'Energia initiatives.



Join WiN France for the launch of its second Initiative Award at 11:00 (Gifen stand). To learn more about WiN France, visit the website, follow on LinkedIn or email contact@win-france.org

# TODAY AT

### **BUREAU VERITAS BOOTH F053**



Shaping a World of Trust

11:30 - ISO 19443 Awards Ceremony (approx, 15 companies to be awarded)

Celebrate excellence and commitment to quality with Bureau Veritas!

14:30 – Partnership Agreements Signing Ceremony

Participate to the signing with new Bureau Veritas partners and major framework agreements.

Do not miss these key moments at the Bureau Veritas booth F053!





### Visit us at our booth H054

Scan the OR code to learn more about Orano's programme during these 3 days.

www.orano.group