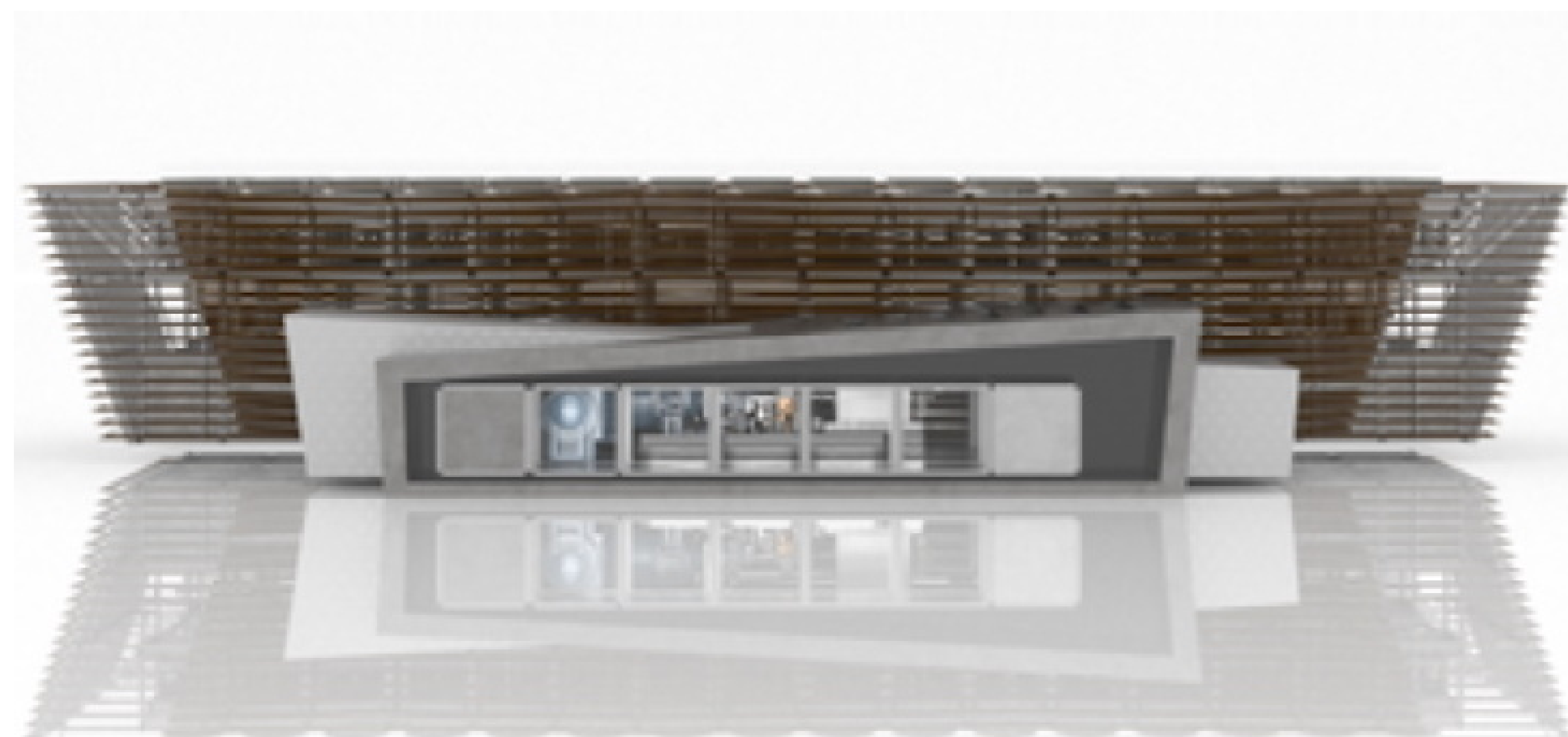


Industrial users eye small reactors for power supplies

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US micro reactor developer Last Energy has announced power purchase agreements for 34 units of its plants with four industrial partners across Poland and the UK. Meanwhile, Finland's Fortum is collaborating with Outokumpu to explore the use of small modular reactors (SMRs) to power its steel manufacturing operations.



A power plant based on Last Energy's micro reactor technology (Image: Last Energy)

Last Energy said the agreements represent "the largest pipeline of new nuclear power plants under development in the world", with 10 plants planned for the Katowicka Special Economic Zone (KSSE) in Poland and a further 24 plants in the UK. In total, the deals represent power purchase agreements for more than USD18.9 billion in electricity sales, it said.

In Poland, Last Energy is targeting the commissioning of the first of 10 of its 20 MWe micro nuclear power plants at the KSSE in 2026. It said the agreement represents more than USD4.3 billion in electricity sales over the lifetime of the contract and USD1 billion in inward energy and infrastructure investment in the zone. The KSSE special economic zone - located in the southwest of Poland - is home to 540 companies and 90,000 industrial jobs.

"The KSSE is at the forefront of Poland's energy transition, and this partnership is a key part of securing our regional and national competitiveness," said Janusz Michalek, President of the Management Board of KSSE. "Industrial investors are looking for a secure supply of carbon-free power to power their operations today, and seamlessly scale as their power requirements increase. This project would provide the type of security and certainty in energy supply and price that our industrial partners need to make long-term investments in our area."

In the UK, Last Energy announced three new partnerships, with power purchase agreements for 24 plants. It said the partners represent a "diversity of UK industries, including a life sciences campus, sustainable fuels manufacturer, and a developer of hyperscale data centers".

In total, the power purchase agreements represent over USD14 billion in electricity sales, with the first UK plant targeted for commissioning in 2026. Total inward investment is expected to be USD2.4 billion.

"The specific partnerships and details of each project will be announced over the coming months, as project teams on both sides finalise arrangements for site selection and engagement with appropriate stakeholders," Last Energy noted.

"The demand for zero-carbon, baseload energy solutions is huge, and micro nuclear is an ideal solution for distributed energy users," said Last Energy UK CEO Mike Reynolds. "Our private-sector led approach to delivering new nuclear power supports the wider government efforts to promote growth and investment in the green industries of the future."

Last Energy is a spin-off of the Energy Impact Center, a research institute devoted to accelerating the clean energy transition through innovation. Its SMR technology is based on a pressurised water reactor with a capacity of 20 MWe or 60 MWt. Power plant modules would be built off-site and assembled in modules. Thanks to the use of ready-made modular components, a reactor is expected to be assembled within 24 months of the final investment decision. The assumed lifetime of the power plant is 42 years.

In July last year, Last Energy signed a Letter of Intent with the Legnica Special Economic Zone (LSEZ) - also in south-western Poland - and DB Energy on the construction of a power plant consisting of ten SMRs with a combined capacity of 200 MWe. The agreement also included a power purchase agreement with a minimum length of 24 years by LSEZ and its tenants.

Finnish study

Finnish utility Fortum announced it has signed a memorandum of understanding (MoU) to explore the decarbonisation of Outokumpu's steel manufacturing operations with emerging nuclear technologies, such as SMRs.

"The agreement initiates a long-term process with the aim to assess potential construction of SMRs in Finland," Fortum said. "One possible option for the location would be the Tornio region of Finland, where Outokumpu's largest mill is situated. In the first phase, the goal is to identify potential business models and technical solutions for further development".



Outokumpu's Tornio steel mill (Image: Outokumpu)

"Decarbonising heavy industries is a prerequisite for reaching carbon-neutrality in Europe and this requires significant amounts of clean energy," said Fortum President and CEO Markus Rauramo. "The Nordic market is extremely competitive when it comes to clean and affordable power, and Fortum is one of the very few European companies that can deliver it reliably, when needed and at scale to our customers already today.

"In the future, however, more will be needed. So, we are pleased to start collaboration with a steel industry forerunner like Outokumpu to explore the future potential of new nuclear power in the Nordics."

Outokumpu President and CEO Heikki Malinen added: "Looking into emerging technologies in our energy supply is a natural step in our ambition to reduce CO2 emissions. In addition to wind, solar, and hydropower, energy intensive industries and the whole society needs stable and CO2-free electricity generation. Today, nuclear power is the only alternative for this. Therefore, we are excited to explore the possibilities offered by small modular reactors together with Fortum, as part of our sustainability journey."

The MoU is part of Fortum's nuclear feasibility study launched in November 2022. During the two-year programme, Fortum will explore commercial, technological and societal, including political, legal, and regulatory conditions, both for SMRs and conventional large reactors in Finland and Sweden. The study also investigates new partnerships and business models. In addition to Outokumpu, Fortum has signed cooperation agreements with Rolls-Royce SMR of the UK, EDF of France, Kärnfull Next of Sweden and Helen of Finland.

Researched and written by World Nuclear News

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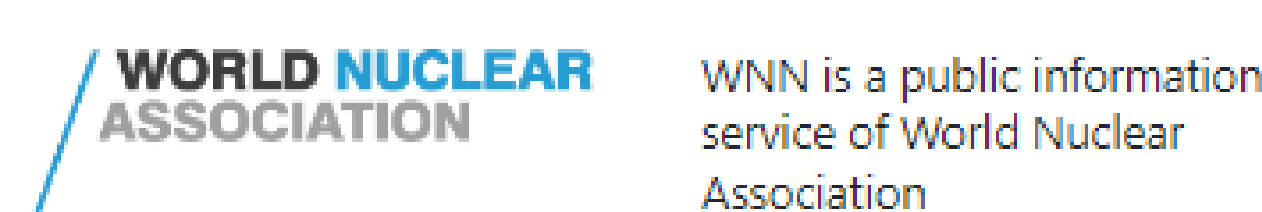
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