

BEI Energy News

This update is produced three times weekly by the Brilliant Energy Institute

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Top news

Ontario Tech Energy News

[Ontario Tech University hosts Czech representatives on clean energy – BEI LinkedIn](#)

Ontario Tech University frequently hosts visitors to our campus. Recently, the Centre for Small Modular Reactors, the Brilliant Energy Institute and the University's ACE climatic wind tunnel were pleased to welcome representatives from the Consulate General of the Czech Republic in Toronto and the Faculty of Mining and Geology, VSB-Technical University of Ostrava. Like Canada, the Czech Republic is looking to decarbonize its infrastructure and economy. During the visit, the teams found opportunities to work together on shared clean energy goals.

Clean Energy Policy

[Ontario releases its 2023 budget – Government of Ontario](#)

Ontario's Finance Minister Peter Bethlenfalvy tabled the government's \$204.7 billion budget on Thursday, March 23. The document forecasts that Ontario could run a modest \$200 million surplus in 2024 to 2025, getting back to balance three years earlier than estimated in last year's budget. That surplus could increase to \$4.4 billion by the following year. Some of the budget's highlights include the new Ontario Made Manufacturing Investment Tax Credit, advancing Ontario's Critical Minerals Strategy through an additional \$6 million in funding, attracting over \$16 billion in investments by global automakers and suppliers of EV batteries, and launching a voluntary clean energy credit registry. The budget also assures the government's commitment towards supporting the refurbishments at the Darlington and Bruce Nuclear Generating Stations as well OPG's continued safe operation of the Pickering Nuclear Generating Station.

[U.S. Department of Energy releases new reports titled "Pathways to Commercial Liftoff" – U.S. Department of Energy](#)

The U.S. Department of Energy announced the launch of its Pathways to Commercial Liftoff, a set of reports that represent a new department-wide initiative to strengthen engagement between the public and private sectors to accelerate the commercialization and deployment of key clean energy technologies. The reports provide the private sector and other industry partners a valuable, engagement-driven resource on how and when certain technologies (clean hydrogen, advanced nuclear, and long duration energy storage) can reach full scale deployment. By 2030, the reports concluded that cumulative investments must increase from approximately \$40 billion to \$300 billion across the hydrogen, nuclear, and long duration energy storage sectors, with continued acceleration until 2050 required to stay on track to realize long-term decarbonization targets.

[Bay Area sets NOx emissions standards for gas water heaters & furnaces, effectively ending sales starting in 2027 – Clean Technica](#)

The Bay Area Air Quality Management District (BAAQMD) adopted amendments requiring the elimination of nitrogen oxide (NO_x) emissions from new water heaters by 2027 and new furnaces by 2029. Gas water heaters and furnaces account for 96 per cent of gas burned in homes. The pollution from gas furnaces and water heaters is vented to the outside so it doesn't necessarily affect indoor air quality, but it does create significant outdoor pollution in the form NO_x. The new Bay Area emissions standards will be one of the first in the U.S. to phase out existing gas and fossil fuel water heaters. The new standards will avoid an estimated \$890 million per year in health impacts due to reduced air pollution exposure and prevent an estimated 85 premature deaths.

Technologies

Nuclear

[Canadian, Polish, U.S. companies in 'unprecedented' SMR collaboration – World Nuclear News](#)

GE Hitachi Nuclear Energy (GEH), Tennessee Valley Authority, Ontario Power Generation and Synthos Green Energy have agreed to work together to advance the global deployment of the GEH's BWRX-300 small modular reactor through collaboration on development of a standard design. The CEOs of the companies signed a technical collaboration agreement. The three companies will invest in the development of the BWRX-300 standard design and detailed design for key components, including reactor pressure vessel and internals. Each contributor has agreed to fund a portion of the overall cost of development of a standard design, which GEH anticipates will require a total investment of around \$400 million.

[U.K.-Japanese partnership to develop fusion materials – World Nuclear News](#)

A collaboration agreement has been signed between Japan's Kyoto Fusioneering and the U.K. Atomic Energy Authority to develop fusion related technologies. The first project under the collaboration will be the development of a 'fusion-grade' silicon carbide (SiC/SiC) composite system. As a first step, they intend to develop a SiC/SiC system suitable for use as a structural material inside a fusion machine and to understand its stability under simulated fusion conditions. The use of SiC/SiC composites within the breeder blanket of a fusion machine will increase the efficiency and commercial viability of fusion power stations by providing a material that operates at high temperatures and is resistant to neutron damage.

[Russia and China to co-operate on fast reactors closed fuel cycle – World Nuclear News](#)

A Comprehensive Long-Term Cooperation Programme in fast reactors and nuclear fuel cycle closure has been signed during the state visit of Chinese President Xi Jinping to Russia. The programme covers several strategic areas including expansion of interaction regarding the current projects as well as implementation of new ones related to fast reactors, the production of uranium-plutonium fuel, and management of used fuel. The programme provides for development of a roadmap for its implementation by the end of 2024. Rosatom's Director General, Alexey Likhachev, said the sanctions imposed on Russia had not affected Rosatom's operations in China. He also noted the cooperation between Russia and China over the past year in the Tianwan NPP demonstration of fast-neutron reactor CEFR and Xudabao NPP projects.

Energy Storage

[TotalEnergies' solar-plus-storage project to offset 40% of power demand at Colorado cement plant – Energy Storage](#)

TotalEnergies, the French multi-national energy company, has partnered with the building solutions company, Holcim, to deploy a solar PV and battery storage project at the latter's cement plant in Colorado. A power purchase agreement and energy storage agreement have been signed with minimum 15-year terms for the power plant, pairing a 33 MW DC solar PV array and 38.5 MWh battery energy storage system. TotalEnergies will be responsible for installation, and operations and maintenance, with the system expected to be commissioned in 2025. It is expected to cover around 40 per cent of energy demand at Holcim's Portland Cement plant in the Colorado city of Florence. The plant produces 1.8 million tonnes per year of various grades of cement and opened in 1996.

Solar Energy

[BP weighs buying control of solar power Lightsource BP - Reuters](#)

BP is reportedly considering the acquisition of a controlling stake in Lightsource BP (LSBP), a joint venture focused on solar power. LSBP has developed around 9 GW of projects and currently has operations in 19 countries. It plans to develop 25 GW of solar projects by 2025. The current portfolio of LSBP could be valued at approximately \$2 billion in a potential deal. The move would be in line with BP's goal of becoming a major player in renewable energy – BP currently holds a 50 per cent stake in the company. The potential acquisition would allow BP to expand its portfolio of clean energy assets and boost its position in the growing solar market.

Geothermal Power

[Canada's first co-produced geothermal power project is operational – Energy Now](#)

Razor Energy Corp. in conjunction with FutEra Power Corp., a wholly owned subsidiary of Razor, is pleased to announce it has successfully constructed, commissioned, and is operating its co-produced geothermal power project in Swan Hills, Alberta. The project is held within FutEra's wholly owned subsidiary Swan Hills Geothermal Power Corp. The plant combines an Organic Rankine Cycle (ORC) Turbine, which captures geothermal heat from the production fluid, and a Natural Gas Turbine (NGT). The NGT began operations on September 8, 2022, and the ORC began operations on January 29, 2023. The facility's capacity is 21 MW. The final construction cost of the project is estimated to be \$49 million, financed privately by Razor and Arena Investors along with other funding from Natural Resources Canada, Alberta Innovates and Emissions Reductions Alberta.

Hydrogen

[U.S. government says Biden's target to reduce cost of clean hydrogen to \\$1/kg within a decade will not be met – Hydrogen Insight](#)

The new Pathways to Commercial Liftoff report released by the U.S. Department of Energy states that U.S. clean hydrogen producers are unlikely to meet President Biden's ambitious target of cutting costs by 80 per cent to \$1/kg without subsidy by 2031, unless they build in additional research and development into their existing work programmes. Based on current

market trends, producers might be able to achieve levelized clean hydrogen costs of \$1.5/kg to \$2/kg by 2035. The reduction would be significant compared to today's costs of \$3/kg to \$6/kg and would be due to the expected cost declines in renewable electricity and electrolyzers, as well as the expected ramp up of reliable hydrogen storage and distribution infrastructure.

[Hydrogen shipping | First movers into green H2-based fuels 'will get rewarded twice' under new EU rules – Hydrogen Insight](#)

European ship operators that invest in green hydrogen-based fuels will be rewarded twice over for their emissions savings under upcoming European Union (EU) maritime regulations. In addition, the EU is reportedly aiming to use the new regulations, known as FuelEU Maritime, to push the shipping sector to achieve a 1 per cent share of Renewable Fuels of Non-Biological Origin (RFNBOs) which include green hydrogen-based fuels such as green ammonia, green methanol, and e-methane by 2034. Those opting to use fuels classified as RFNBOs would be allowed to count those emissions savings twice for a decade from 2035, to incentivise first movers into hydrogen-based fuels and reflect the extra capital costs and risks involved. The final version of the FuelEU Maritime initiative sets maximum limits on the annual emissions intensity of an individual ship or pool of ships, envisaging a reduction of 2 per cent as soon as 2025, rising to 80 by 2050. Ship operators would need to report their vessel's annual emissions intensity and pay a penalty if they fail to comply with the gradual carbon reductions.

Fossil Fuels

[Enbridge 'disappointed' as environmental review for Line 5 Tunnel extended – Energy Now](#)

The U.S. review of a proposed Great Lakes tunnel, which is a part of Enbridge Inc.'s Line 5 pipeline replacement project, has been delayed by over a year. The U.S. Army Corps of Engineers said they expect to complete the draft environmental impact statement for Enbridge's Line 5 tunnel permit application in spring 2025, rather than late 2023 as earlier indicated. Enbridge says this will further delay the replacement of the dual pipelines in Michigan's Straits of Mackinac and will essentially push the start of construction until at least 2026. Michigan has been in court for years with Enbridge to shut down Line 5, fearing a disaster in the Straits of Mackinac, the ecologically sensitive region where the pipeline crosses the Great Lakes.

[France spends €1 million on waste-to-gas plan in old coal plant – Energy Live](#)

EQTEC, a gasification technology and engineering firm, has been chosen by the French Government to spearhead a €1 million technical and commercial feasibility study for waste-to-renewable natural gas at the Gardanne Power Station site, a decommissioned, coal-fired power station. The feasibility study is fully funded by the national and regional governments as part of the Pact for Ecological and Industrial Transition, expected to be completed in 2023.

Carbon Capture

[U.K. nuclear and carbon capture join forces – Energy Live](#)

Sizewell C and Associated British Ports are teaming up to establish a Direct Air Capture (DAC) facility at the Port of Lowestoft, with the potential to remove carbon dioxide from the atmosphere. Both organizations have signed a Memorandum of Understanding to lease a site at the port and seek planning permission to build the facility. If successful, a full-scale DAC unit could capture up to 1.5 million tonnes of carbon dioxide annually, using heat from Sizewell C

plant. The project received a £3 million grant from the government's Greenhouse Gas Removals competition in 2022, with all construction and testing activities taking place in the U.K.

Thank you.

Regards,
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