Brilliant Energy Institute

Office of the Vice President Research and Innovation
Ontario Tech University

BEI Energy News

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Ontario Tech News

Ontario Tech holds a hydrogen-from-nuclear event on the margins of the IAEA conference

https://www.linkedin.com/posts/brilliant-energy-institute_iaea-nuclear-atoms4climate-activity-7122302265968754688-JTN3?utm_source=share&utm_medium=member_desktop

At Ontario Tech University, many of our researchers and leadership team are working with partners across Canada and around the globe to advance clean energy solutions. Ontario Tech organized a side event to the recent International Atomic Energy Agency conference on Climate Change and the Role of Nuclear Power to explore hydrogen production through the use of nuclear energy. Ontario Tech hosts the IAEA Collaborating Centre in Canada.

Indigenous and Community Engagement

Indigenous clean energy project receives over $3.6 million to harness the power of geothermal energy

https://www.canada.ca/en/pacific-economic-development/news/2023/10/indigenous-clean-energy-project-receives-over-36-million-to-harness-the-power-of-geothermal-energy.html

The Government of Canada is making a $3.6-million investment in British Columbia geothermal through the Pacific Economic Development Agency of

Canada (Pacifican). Funding will support geothermal energy for commercial use. The project is led by the Kitselas First Nation, which is the majority project owner and the geothermal is located within their territory. Kitselas Geothermal is decarbonizing local industry to provide social, environmental and economic benefits to Kitselas First Nation and the region. PacifiCan funding is intended to support projects that build prosperity in communities across the province. The province sits along the Pacific Ocean “Ring of Fire,” an area with significant geothermal energy potential because of volcanoes. The project is expected to generate over 170 new jobs, including for Indigenous workers.

Nuclear

Bruce Power to start impact assessment process for Bruce C

https://www.world-nuclear-news.org/Articles/Bruce-Power-to-start-impact-assessment-process-for

Bruce Power has officially signaled the initiation of an Impact Assessment (IA) for potential new nuclear generation at its existing site, following the announcement of an Expression of Interest for up to 4800 MWe of new nuclear capacity. The approach, involves early engagement with Indigenous communities and the public. Termed Bruce C, the expansion aligns with Ontario's long-term energy framework, Powering Ontario’s Growth, and is positioned as a crucial step in addressing climate change challenges. The project's timeline and funding specifics are pending disclosure.

SMRs would provide economic boost to Ontario, says report

https://www.world-nuclear-news.org/Articles/SMRs-would-provide-economic-boost-to-Ontario,-says

Ontario Power Generation's plan to construct four small modular reactors (SMRs) at the Darlington site is anticipated to inject $15.3 billion into Canada's GDP, with $13.7 billion benefitting Ontario, according to the Conference Board of Canada. The SMRs are projected to generate 2,000 jobs annually over 65 years, with each unit contributing nearly $3.8 billion to GDP and 500 jobs per year. Pending regulatory approval, construction of a GE Hitachi Nuclear Energy BWRX-300 at Darlington is set for completion by late 2028, positioning Ontario as a pioneering

force in nuclear technology. The project is seen as a catalyst for economic growth and a global leader in advancing the SMR market.

Investment opportunities in nuclear highlighted by Canadian government, finance, and industry leaders

https://cna.ca/2022/10/23/investment-opportunities-in-nuclear-highlighted-by-canadian-government-finance-and-industry-leaders/

At a recent summit in Ottawa, the Canadian Nuclear Association underscored the significance of nuclear energy in achieving Canada's net-zero emissions goal by 2050. Prominent figures like Mark Carney and Minister Wilkinson attended and discussed the potential of small modular reactors (SMRs). The event highlighted the essential roles of government support and Indigenous community partnerships. However, participants also pointed to regulatory challenges and stressed the importance of consistent policies. Industry projections suggest that the global nuclear market might be worth up to $150 billion annually by 2040.

Solar Energy

135 MW pollinator-friendly solar farm finishes construction in Arkansas

https://www.renewableenergyworld.com/solar/utility-scale/135-mw-pollinator-friendly-solar-farm-finishes-construction-in-arkansas/#gref

Lightsource bp and Conway Corp have completed a 135 MW solar farm in White County, Arkansas. The project, named Conway Solar at Happy, is a significant step for solar energy, worth US$125 million. It promises to supply power to 21,000 homes in the region. A unique feature is its five-acre garden, designed to aid at-risk pollinators like monarch butterflies. This garden houses 46 varieties of native plants, emphasizing ecological responsibility. The solar farm will use 295,000 modules from Arizona-based First Solar. Additionally, smart solar trackers from New Mexico will be incorporated. Operations are set to start soon, supported by a robust US$460 million funding package.

Hydrogen

‘World first’ | Ship with hydrogen-powered two-stroke engine gets technical green light

https://www.hydrogeninsight.com/transport/-world-first-ship-with-hydrogen-powered-two-stroke-engine-gets-technical-green-light/2-1-1538892

A consortium of Japanese firms, including Mitsui-owned shipping companies, Kawasaki Heavy Industries, and Japan Engine Corporation, has received technical approval for the design of a ship featuring a two-stroke liquefied hydrogen-fueled engine. ClassNK, the Japanese classification society, granted approval in principle for the project, marking a milestone as the world's first certification for a ship with a large low-speed two-stroke hydrogen-fueled engine as the main propulsion. The consortium plans a two-year demonstration starting in 2027, funded in part by the Japanese government's Green Innovation Fund. The use of hydrogen in shipping is gaining attention, although alternatives like ammonia and methanol are seen as more likely long-term low-carbon fuels due to the challenges associated with handling and storing liquid hydrogen.

Fossil Fuels

Oil giant Chevron agrees to buy rival Hess for $53B

https://www.cbc.ca/news/business/chevron-hess-merger-1.7005047

Chevron has agreed to acquire rival oil company Hess for US$53 billion, marking the second major acquisition in the U.S. oil industry this month. The deal comes amid surging oil prices, driven by factors such as the Russia-Ukraine conflict and geopolitical tensions in the Middle East. Chevron's purchase of Hess includes a major oil field in Guyana and shale properties in North Dakota's Bakken Formation. The move is part of Chevron's strategy to increase returns, lower carbon impact, and extend its growth profile. The deal, valued at US$60 billion including debt, involves Chevron paying with stock, and is expected to close in the first half of the next year. The acquisition aims to enhance Chevron's production and free cash flow growth rates, supporting dividend growth and share repurchases.

Do you have any milestones, events, or news updates to share with the energy community? Email your submission to BrilliantEnergy@ontariotechu.ca for consideration in an upcoming edition.

Thank you.

The Brilliant Energy Institute news team
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(With a little help from ChatGPT)