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 extends leadership role in nuclear engineering community – OTU News

https://news.ontariotechu.ca/archives/2023/10/ontario-tech-extends-leadership-role-in-nuclear-engineering-community.php#:~:text=On%20August%2023%2C%20UNENE%20announced,%2C%E2%80%9D%20says%20Dr.%20Jacobs

Dr. Les Jacobs, Vice-President of Research and Innovation, has joined the Board of Directors of the University Network of Excellence in Nuclear Engineering (UNENE). UNENE is a collaborative initiative involving various Canadian and international universities, along with industry and government partners, with a focus on advancing nuclear knowledge and technology. As global energy demand continues to rise, Ontario Tech University is helping to address this demand through education and research. The university's research capabilities include shaping future energy sources including CANDU and small modular reactors.

Energy Policy

Federal government and FCM invest in innovative energy-saving solutions in the City of Hamilton - NRCAN

https://www.canada.ca/en/natural-resources-canada/news/2023/10/federal-government-and-fcm-invest-in-innovative-energy-saving-solutions-in-the-city-of-hamilton.html

In collaboration with the Federation of Canadian Municipalities (FCM), the Government of Canada is investing $335,000 through the Green Municipal Fund in two pivotal projects for Hamilton. With $175,000, the first project explores the feasibility of a district

energy system fueled by locally available industrial residual heat, potentially reducing Hamilton's carbon footprint by 70 per cent. The second project, funded with $160,000, aims to develop a home retrofit financing program to incentivize energy-efficient improvements by homeowners. These initiatives align with Canada's net-zero emissions commitment by 2050 and highlight Hamilton's role in fostering sustainability and addressing climate change.

Ontario, Quebec to swap energy in new deal to help with electricity demands - CTV

https://beta-ctvnews-ca.cdn.ampproject.org/c/s/beta.ctvnews.ca/local/toronto/2023/8/30/1_6541573.amp.html

Ontario and Quebec have reached a 10-year energy exchange deal, with each province agreeing to trade up to 600 megawatts of energy annually. The swap aims to assist both provinces during peak electricity demands. Ontario’s spikes occur in the summer due to air conditioning, while Quebec's needs peak in the winter due to electric heating. The agreement is a direct swap with no monetary payments involved, and Ontario can bank unused energy for future use. This strategic collaboration takes advantage of Ontario's nuclear energy and Quebec's hydroelectric power, ensuring cleaner and more efficient energy management. Operations are expected to begin as early as this winter, addressing the growing electricity demands fueled by industry growth and the rise of electric vehicles.

Nuclear

Six companies through to next stage of nuclear technology competition - GOV

https://www.gov.uk/government/news/six-companies-through-to-next-stage-of-nuclear-technology-competition

Six companies, including EDF, GE-Hitachi Nuclear Energy International LLC, Holtec Britain Limited, NuScale Power, Rolls Royce SMR, and Westinghouse Electric Company UK Limited, have been selected to advance in a government competition aimed at developing the next generation of Small Modular Reactors (SMRs) in the UK. The competition aligns with the government's plan to strengthen nuclear power, aiming for more than 25 per cent of UK electricity to come from nuclear sources by 2050. Unlike traditional reactors, SMRs are smaller, factory-made, and promise faster construction of power stations with lower upfront costs. These designs are considered

the most likely to deliver operational SMRs by the mid-2030s, with government contracts expected to be awarded by Summer 2024.

Advisers to nuclear regulator bolster industry position on deteriorating pressure tubes - Globe and Mail (Pay Wall)

https://www.theglobeandmail.com/business/article-advisers-to-nuclear-regulator-bolster-industry-position-on/

External experts investigating the unexpected deterioration of pressure tubes in Canadian nuclear power reactors have concluded that the plants can still operate safely, although the root cause remains unclear. The conclusion by an External Advisory Committee on Pressure Tubes, formed in 2021, validated industry and commission staff findings. Pressure tubes, crucial to Canada's nuclear reactors, degrade with age due to deuterium buildup. In 2021, there was a discovery of unexpectedly high levels of deuterium (an isotope of hydrogen) in pressure tubes at the Bruce Nuclear Generating Station. As a result, the station has been operating with a lower hydrogen equivalent concentration (HEQ) limit placed upon its operating license by the regulator, the Canadian Nuclear Safety Commission (CNSC). The company has now asked for the lower limit to be removed and the CNSC has said it expects to have a decision in the next several weeks. The findings at Bruce could be relevant for some other Canadian reactors that have not yet been refurbished. The root cause investigation continues.

Hydrogen

Bruce Power joins Canadian Hydrogen Association as an executive member – CHFCA

https://www.chfca.ca/2023/10/04/chfca-is-pleased-to-welcome-bruce-power-as-a-new-executive-member/

Bruce Power has joined the Canadian Hydrogen and Fuel Cell Association (CHFCA) as an Executive Member, aiming to become the first North American nuclear plant to achieve net zero greenhouse gas (GHG) emissions by 2027. Bruce Power currently generates 30 per cent of Ontario's electricity, preventing about 19 million tonnes of GHGs annually. The company's subsidiary, Bruce Power Net Zero Inc., is focused on achieving net zero emissions from the Bruce Power site by 2027, with a key emphasis on hydrogen production. Bruce Power's efforts, including Project 2030, aim to advance the hydrogen economy in Ontario, supported by the CHFCA and Hydrogen Ontario.

Indigenous and Community Engagement

Canadian tribal council secures stake in SMR companies - Nuclear Engineering International

https://www.neimagazine.com/news/newscanadian-tribal-communities-secure-stake-in-smr-companies-11189112

Canada's North Shore Mi'kmaq Tribal Council (NSMTC) and its First Nation communities have inked equity deals with Moltex Energy Canada and ARC Clean Technology Canada, embracing small modular reactor (SMR) technology. NSMTC and its communities will invest in Moltex and ARC, receiving $2 million in Moltex shares and $1 million in ARC shares, subject to future valuations. These agreements emphasize Indigenous engagement and align with Earth-centric Indigenous principles. The companies are committed to Indigenous advancement through training, employment, procurement, and business development. An Indigenous-led energy symposium in October will further collaboration in New Brunswick's energy sector, supported by ARC and Moltex.

Electric Vehicles

Hyundai, Genesis, and Kia to adopt Tesla's EV-charging technology in Canada, U.S. - The Globe and Mail (Pay Wall)

https://www.theglobeandmail.com/drive/article-hyundai-kia-to-adopt-teslas-ev-charging-technology-in-us-beginning-in/

Hyundai, Genesis, and Kia will adopt Tesla's electric vehicle (EV) charging technology in the U.S. and Canada, joining automakers like Ford and General Motors. This decision will expand Tesla's North American Charging Standard (NACS), potentially challenging the rival Combined Charging System (CCS). Starting in Q4 2024 in the U.S., Hyundai, Genesis, and Kia will introduce EVs with NACS ports. In Canada, Hyundai and Genesis models with NACS ports will arrive in H1 2025, while Kia's will be available by the end of 2024. This step allows their EVs to access more than 12,000 Tesla Superchargers. Additionally, they plan to offer adapters for existing and future CCS-equipped EVs to access Tesla's Supercharging Network by Q1, 2025. This move highlights the increasing significance of Tesla's NACS, which now represents approximately 60 per cent of fast chargers in the U.S. Discussions between Tesla and German automakers about NACS adoption have also occurred.

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)