Brilliant Energy Institute

Office of the Vice President Research and Innovation
Ontario Tech University

BEI Energy News

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Happy Halloween from the BEI Energy News team! Let's take a lesson from our energy sector colleagues and remember to put safety first when out walking or driving, tonight.

Ontario Tech News

Earth District academic partners sign MOU with Alstom

https://www.alstom.com/press-releases-news/2023/10/alstom-signs-memorandum-understanding-earth-district-consortium-five-universities-and-colleges-grow-sustainable-rail-mobility-sector-ontario

A new memorandum of understanding (MOU) between Alstom, a global leader in smart and sustainable mobility, and a consortium of colleges and universities, known as the Earth District, will create new learning, research and work opportunities in the mobility sector. In a news release, Oct. 30, Alstom says the MOU will help develop the talent Ontario and Canada need to deliver sustainable mobility solutions critical to tackling the climate crisis, such as the electrification of regional rail systems. Alstom is the leading provider of regional rail systems in Canada and a global leader in producing and maintaining electric trains. The Earth District consortium spans the eastern Greater Toronto Area (GTA) to Peterborough and the Kawarthas as it includes Centennial College, Fleming College, Ontario Tech University, Trent University, and University of Toronto Scarborough.

Energy Policy

Saskatchewan and Alberta premiers say home heating oil carbon tax exemption unfair to rest of country

https://www.cbc.ca/news/canada/calgary/carbon-tax-exemption-alberta-smith-saskatchewan-moe-1.7011011

Saskatchewan and Alberta premiers, Scott Moe and Danielle Smith, criticize the federal government's decision to exempt home heating oil from the carbon tax, arguing it's unfair to their provinces where natural gas is predominantly used for heating. The exemption, announced by Prime Minister Justin Trudeau, aims to aid Atlantic provinces but has stirred discontent in the Prairie regions. Both Moe and Smith call for the tax exemption to be extended to all fuel types, stressing the need for equitable treatment across Canada.

Indigenous and Community Engagement

Community information sessions on potential Bruce C expansion

https://saugeentimes.com/community-information-sessions-on-potential-bruce-c-expansion/

Bruce Power plans community sessions on the potential expansion of Bruce C nuclear generation. The sessions aim to engage with local Indigenous communities and the public, emphasizing openness and transparency. The company has informed the Canadian Nuclear Safety Commission (CNSC) and the Impact Assessment Agency of Canada (IAAC) of its intent to start the Impact Assessment for the Bruce C Project. Public information sessions are scheduled for Nov. 19 and Dec. 10 at the Bruce Power Visitors' Centre, including bus tours. The proposed expansion could add up to 4,800 megawatts of electricity, supporting Ontario's energy needs and carbon emissions goals. An Initial Project Description is expected to be submitted in early 2024. The project's estimated commencement date and funding details were not disclosed.

Electric Vehicles

Dutch Students Build World's First Solar-Powered Off-Road Vehicle

https://cleantechnica.com/2023/10/30/dutch-students-build-worlds-first-solar-powered-off-road-vehicle/

Dutch students from Solar Team Eindhoven have developed the world's first solar-powered off-road vehicle, named Stella Terra. Originally known for solar race cars, the team transitioned to building practical solar-powered vehicles. Stella Terra, equipped

with rooftop solar panels, can operate off-pavement independently of fossil fuels and charging infrastructure, with a top speed of 145 kph (90 MPH), weighing 1200 kilograms (about 2650 lb) and a range of 630 kilometers (almost 400 miles) under good sun. The vehicle, road legal and street legal, underwent challenging off-road testing in Morocco, covering 1,000 km across diverse terrains, including steep climbs and dry riverbeds, proving its durability and viability for real-world use.

Nuclear

SpaceNukes partnership wins contract to develop reactors for space vehicles

https://www.neimagazine.com/news/newsspacenukes-partnership-wins-contract-to-develop-reactors-for-space-vehicles-11242893

US Space Nuclear Power Corporation (SpaceNukes) has partnered with Lockheed Martin and BWX Technologies under the JETSON project to develop nuclear reactors for space vehicles. This initiative, driven by the Air Force Research Laboratory (AFRL), aims to advance nuclear fission technology for reliable on-orbit power. Contracts totaling $60m were awarded to further these developments, with a focus on spacecraft design and technology maturation. The project, extending until December 2025, paves the way for more powerful and efficient space missions beyond geosynchronous Earth orbit. It's a significant step towards harnessing nuclear fission for space power, distinct from nuclear propulsion programs like Demonstration Rocket for Agile Cislunar Operations.

Nuclear energy’s role in the climate change era remains uncertain

https://www.theglobeandmail.com/business/article-nuclear-energys-role-in-the-climate-change-era-remains-uncertain/

The role of nuclear energy in Canada’s race to net zero carbon was up for discussion at an Oct. 20 Globe and Mail event. A panel consisting of nuclear experts and nuclear skeptics discussed the path forward in a time when nuclear could provide both on-gid and off-grid energy needs while cutting out greenhouse-gas emissions. Ontario Power Generation (OPG) is bringing Canada's first SMRs online, aiming to simplify nuclear projects and expand energy access, particularly in the northern regions. However, for some, skepticism persists regarding the unproven nature of SMRs, potential delays in development, and what they view as uncertainties related to the uranium supply chain and radioactive waste management. With new communities considering nuclear, questions will need to be answered on waste accountability, full funding, and disposal expertise.

Solar Energy

Canadian Solar doubles down on U.S. investment with 5 GW cell factory

https://www.renewableenergyworld.com/solar/canadian-solar-doubles-down-on-u-s-investment-with-5-gw-cell-factory/#gref

Canadian Solar announces a significant expansion in the U.S. with a 5 GW solar cell production facility in Indiana, complementing its planned module assembly plant in Texas. This move involves an investment exceeding $800 million and is poised to create around 1,200 jobs. The Jeffersonville plant is scheduled to begin production by late 2025, following the Mesquite plant's start by the end of 2023. This aligns with the company's strategy for a sustainable, local energy supply chain and adheres to the Inflation Reduction Act's requirements.

Hydrogen

Major Asian companies invest up to $2bn in Indian firm aiming to produce one million tonnes of green hydrogen a year by 2030

https://www.hydrogeninsight.com/production/major-asian-companies-invest-up-to-2bn-in-indian-firm-aiming-to-produce-one-million-tonnes-of-green-hydrogen-a-year-by-2030/2-1-1544357

Major Asian companies, including Malaysia's Petronas subsidiary Gentari and Singapore's sovereign wealth fund GIC, invest up to $2 billion in Indian firm AM Green Ammonia. The company, a venture of Greenko founders, aims to produce five million tonnes of NH_3 annually by 2030, requiring one million tonnes of renewable hydrogen. AM Green plans to export ammonia to key markets such as Germany, Japan, South Korea, and Singapore starting late 2025. The project spans multiple Indian states and includes a joint venture with John Cockerill to supply 6.5 GW of in-house electrolysers by 2030. Funding estimates range from U.S$1.5 to $1.75 billion, totaling U.S$2 billion. Operations are expected to begin by 2030.

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)