

# Brilliant Energy Institute

Office of the Vice President Research and Innovation  
Ontario Tech University

## BEI Energy News

This update is produced twice weekly by the Brilliant Energy Institute

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### Top news

#### Brilliant Energy Institute News

##### **BEI Executive Director interviews KHNP EVP at the Global Energy Show – BEI LinkedIn**

<https://www.linkedin.com/feed/update/urn:li:activity:7076598632531038208>

Brilliant Energy Institute (BEI) Executive Director Jacquie Hoornweg interviewed Seung-Chul Lee, Executive Vice-President (EVP) Quality Assurance and Technical Innovation at Korea Hydro & Nuclear Power (KHNP), during the Global Energy Show in Calgary, Alta. They discussed the role of nuclear in combatting climate change, globally and Korea's efforts to move to 100 per cent carbon-free with support of nuclear within their energy systems. Canada and Korea have a long-standing collaborative relationship through the CANDU Owners Group because the Korean reactor fleet includes CANDU reactors, a made-in-Canada technology.

#### Ontario Tech News

##### **Ontario Tech University secures key federal research grants to advance small modular reactor technologies – BEI LinkedIn**

<https://www.linkedin.com/feed/update/urn:li:activity:7076912671089979395>

Ontario Tech University and researchers Dr. Akira Tokuhira, Dr. Glenn Harvel and Dr. Hossam Gaber are recipients of a new grant from the Natural Sciences and Engineering Research Council of Canada (NSERC) and the Canadian Nuclear Safety Commission (CNSC). Valued at \$938,400 over three years, the NSERC-CNSC Small Modular Reactors (SMR) Research Grant will advance discovery in an expanding area of clean energy development that is poised to be a crucial component of Canada's future energy supply.

#### Energy Policy

##### **EU countries approve renewables target hike and cement eased permitting - Recharge News**

<https://www.rechargenews.com/energy-transition/eu-countries-approve-renewables-target-hike-and-cement-eased-permitting/2-1-1469882>

European Union (EU) member states have agreed to a comprehensive reform of the Renewable Energy Directive, raising the binding 2030 target to 42.5 per cent of gross energy consumption, up from 32 per cent. The goal is to install 100 GW of new wind and solar capacity annually, accelerating the expansion of renewable energies. The agreement includes extended planning and permitting procedures for renewable projects, prioritizing green energy in "overriding public interest" areas. The directive also establishes binding national targets for heating, transport, and industry, with a 49 per cent renewable heating target for buildings and a 29 per cent target for transport. Industry aims for 42 per cent of hydrogen from renewable sources by 2030. The deal now awaits approval from EU government leaders and parliament.

### **Clean power to electrify B.C.'s future - BC Gov News**

<https://news.gov.bc.ca/releases/2023EMLI0036-000941>

BC Hydro is set to launch a call for new sources of renewable electricity in spring 2024, supporting British Columbia's clean economy and job creation. The province will contribute CAD\$140 million to the BC Indigenous Clean Energy Initiative, promoting Indigenous-led power projects and economic opportunities. To meet increasing electricity demand, BC Hydro is moving ahead with a competitive process for acquiring clean energy. The call for power, the first in 15 years, will focus on larger utility-scale projects and prioritize 100 per cent clean and renewable sources like wind and solar. BC Hydro aims to procure new electricity sources by 2028 to meet climate targets and fuel the province's growing economy.

### **Canada's energy regulator ups pipeline abandonment cost estimate to CAD\$18.6 billion - Energy Now**

<https://energynow.ca/2023/06/canadas-energy-regulator-ups-pipeline-abandonment-cost-estimate-to-c18-6-billion-2/>

The Canada Energy Regulator (CER) has increased the estimated cost of abandoning regulated pipelines by 79 per cent to CAD\$18.6 billion. This review takes inflation, infrastructure changes, and updated abandonment assumptions into account. The CER regulates pipelines crossing provincial boundaries and the U.S.- Canada border, impacting major operators like Enbridge and TC Energy. Companies will face higher abandonment costs, with the final amount to be confirmed after the review process. Funds must be accumulated in a trust or through financial guarantees by 2054 to cover abandonment expenses. The CER aims to ensure safe pipeline abandonment while protecting the environment and communities.

## **Resource Development**

### **Government of Canada tables the Canadian Sustainable Jobs Act - Natural Resources Canada**

<https://www.canada.ca/en/natural-resources-canada/news/2023/06/government-of-canada-tables-the-canadian-sustainable-jobs-act-to-enable-the-creation-of-good-middle-class-jobs-across-canada.html>

The Government of Canada has introduced the Canadian Sustainable Jobs Act to support job creation and economic growth in a net-zero economy. The Act includes the establishment of a Sustainable Jobs Partnership Council, providing independent advice for job creation and support. It also requires the publication of a Sustainable Jobs Action Plan every five years, investing in the net-zero emissions economy and future skills. The Act emphasizes accountability, transparency, and engagement, guided by principles of equity and inclusion. This legislation builds on federal investments and consultations with provinces, Indigenous Peoples, workers, and organizations.

## Energy Systems

### **Making yogurt with batteries, a vision of Ontario's net zero future - Toronto Star**

<https://www.thestar.com/news/canada/2023/06/19/making-yogurt-with-batteries-a-vision-of-ontarios-net-zero-future.html>

Lactalis, a dairy company in Etobicoke, Ont., is using batteries to power its plant during micro-outages and peak demand, saving costs and reducing carbon emissions. The batteries, provided by Peak Power and financed by Switch Power, ensure uninterrupted pasteurization and prevents yogurt spoilage. The initiative demonstrates the potential of battery technology in Canada's net-zero economy. By avoiding peak-rate electricity costs and waste, Lactalis achieves substantial annual savings. The federal government aims to establish a net-zero grid by 2035, with batteries playing a crucial role in optimizing power usage and reducing reliance on carbon-intensive sources.

### **Coal giant plans 'Europe's largest green hub' at 14 GW with wind, solar, hydrogen and new battery tech – Recharge News**

<https://www.rechargenews.com/energy-transition/coal-giant-plans-europes-largest-green-hub-at-14gw-with-wind-solar-hydrogen-and-new-battery-tech/2-1-1467742>

LEAG, one of Germany's major energy groups, plans to replace lignite power stations in Eastern Germany with renewable energy sources, creating Europe's largest green power hub. The initiative aims to deploy seven to 14 GW of wind and solar, two to three GWh of storage, and two GW of green hydrogen production, supplying up to seven per cent of Germany's power needs. With the goal of phasing out coal and lignite by 2038, LEAG will utilize long-duration energy storage technology, including iron flow batteries, lithium-ion batteries, and hydrogen storage, to ensure grid stability. The Boxberg battery, to be commissioned in 2027, represents one of the largest deployments of this technology, globally. The project's cost is estimated to be several billion euros, with potential subsidies from the German government and the European Union's Just Transition Fund. The Energy Resilience Leadership Group, led by Breakthrough Energy and Siemens Energy, supports the initiative.

## Technologies

### **Nuclear**

### **Rolls-Royce and Sumitomo Corporation study SMRs and hydrogen- NEI Magazine**

<https://www.neimagazine.com/news/newsrolls-royce-and-sumitomo-corporation-study-smrs-and-hydrogen-10943624>

Rolls-Royce SMR and Sumitomo Corporation have completed a joint feasibility study revealing the potential advantage of Rolls-Royce small modular reactors (SMRs) for low-carbon hydrogen production. The study found that Rolls-Royce SMRs offer the greatest overall advantage in terms of cost, availability, and carbon emissions when used to power electrolyzers for hydrogen generation. With their compact and modular design, Rolls-Royce SMRs can be conveniently located near energy-intensive industrial processes, including hydrogen production. Sumitomo Corporation will employ the study findings to assess site suitability and explore integrating Rolls-Royce SMRs with clean hydrogen production facilities in the UK.

### **Tractebel increases cooperation in Nuward SMR project - World Nuclear News**

<https://www.world-nuclear-news.org/Articles/Tractebel-increases-cooperation-in-Nuward-SMR-proj>

Belgian engineering firm Tractebel has signed a framework cooperation agreement with Nuward and Électricité de France (EDF) to enhance their collaboration in the development of the Nuward small modular reactor (SMR) technology. Tractebel, a subsidiary of Engie, has been working with EDF on the Nuward SMR project since 2021, conducting conceptual design studies for various components. Under the agreement, Tractebel will allocate more resources to nuclear engineering and expand its team of engineers working on the Nuward SMR project. The collaboration aims to position Nuward SMR as the European benchmark for small modular reactors, supporting Europe's goal of carbon neutrality by 2050. The basic design phase is expected to be completed by 2025, with construction of the first unit in France planned for 2030.

## Renewable Diesel

### **Renewable Diesel Refinery is first in Canada, completed in B.C.- Energy Now**

<https://energynow.ca/2023/06/renewable-diesel-refinery-is-first-in-canada-completed-in-b-c/>

Canada's first stand-alone renewable diesel refinery in Prince George, BC, worth CAD\$380 million, has been constructed. The facility, operated by Tidewater Renewables, will produce renewable diesel by blending feedstocks like canola and tallow with transportation fuels to reduce carbon intensity. The facility aims to achieve 80 to 90 per cent reductions in carbon emissions compared to fossil fuel diesel. The project received over 40 per cent of its funding from the province's low-carbon fuel credits. The facility is expected to produce more than 3,000 barrels of low-carbon fuel per day, along with renewable hydrogen, upon operation.

## Fossil Fuel

### **At the heart of Canada's rush towards liquified natural gas, Kitimat, B.C., is poised to boom - CBC News**

<https://www.cbc.ca/news/canada/british-columbia/kitimat-lng-coastal-gaslink-economic-impacts-1.6880885>

Kitimat, BC, is set to thrive as a hub for liquified natural gas (LNG) with the completion of the controversial Coastal GasLink pipeline. The LNG Canada plant in Kitimat will use gas from the pipeline, attracting investments of more than CAD\$17 billion from major corporations. The project has already created thousands of jobs and is expected to employ nearly 300 people when operational in 2025. Kitimat's economy, which heavily relies on the natural resources sector, has experienced ups and downs, but the LNG Canada project is bringing renewed prosperity to the community. Collaboration with the Haisla First Nation has been crucial, ensuring shared profits and well-paying jobs. Concerns about environmental impact and carbon emissions remain. Kitimat's full transformation and the impact of LNG operations will be observed in the coming years.

Thank you.

The Brilliant Energy Institute news team

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*(With a little help from ChatGPT)*