

# **Nrc energy storage program**





## Overview

---

What role does the NRC play in Canadian energy storage?

The energy PRC concluded that the NRC has a unique role to play in supporting the Canadian energy storage sector because of its expertise in battery materials and electrochemistry, and its ability to support the early and low TRL research needs of the materials industry.

What role does the NRC play in bioenergy research?

The NRC also has a unique role to play in the area of bioenergy as there is limited infrastructure in Canada for research at TRLs four to seven (i.e., laboratory validation through to prototype demonstration in an operational environment). The energy PRC, however, did not see a role for EME energy programs in conducting techno-economic analyses.

What is energy storage for grid security and modernization?

Energy Storage for Grid Security and Modernization (ES), which helps the energy industry overcome obstacles to adopting and using energy storage technologies, including durability, cost and risk associated with the development and implementation of energy storage in Canada.

How will EME support the NRC?

EME will need to continue its efforts to raise awareness of the Research Centre and the NRC within the energy and mining sector as they are not well known. Prior to EME's establishment in 2012, the NRC had not focused on the mining and energy sectors in an organized manner.

Is the NRC a public or not-for-profit organization?

The NRC has some unique facilities and expertise compared to public or not-for-profit organizations working in similar areas. There appears to be some overlap between EME mining and energy programs and Natural Resources Canada (NRCan) CanmetEnergy and CanmetMining programs.



What is a battery energy storage pillar?

The battery energy storage pillar of the National Research Council of Canada's (NRC's) Advanced Clean Energy program works with collaborators to develop next-generation energy storage materials, devices and applications.



## Nrc energy storage program



### Climate change and sustainability research at the NRC

NRC leading climate change research Climate change will drastically increase the severity of many of the world's most pressing environmental issues. Part of the National Research Council of Canada (NRC) strategic plan for 2024-29, we are committed to fighting climate change and addressing environmental challenges facing industry and governments in Canada and around ...

### NRC Research on Extended Storage and Transportation of Spent

Gap Assessment o NRC report: "Identification and Prioritization of the Technical Information Needs Affecting Potential Technical Information Needs Affecting Potential Regulation of Extended Storage and Transportation of Spent Nuclear Fuel" (TIN Report) Draft released for public comment: May 2012



#### OEM service

Hot Colors:



Color can be customized more questions just do not hesitate to contact us

LOGO Position: (Screen printing)



[Public Meeting Schedule . NRC.gov](https://www.nrc.ca/public-meeting-schedule)

NRC One White Flint North 11555 Rockville Pike 1F24 Rockville MD Michelle Honchariik (301) 415-1774 11/13/24 11:00AM - 3:00PM ET Meeting info Staff discussion with stakeholders on realism within the Force-On-Force program. Participation:

### Spent Fuel Storage In Pools And Dry Casks Key Points And

Long term, the NRC requires dry storage system



users to have Aging Management Programs (AMPs) to ensure safety. NUREG-1927 and NUREG-2214 provide more detailed information about aging management activities for dry storage systems.



### Implementation of Aging Management Requirements for Spent Fuel Storage

The U.S. Nuclear Regulatory Commission (NRC) is issuing a new Regulatory Guide (RG) 3.76 (Revision 0), "Implementation of Aging Management Requirements for Spent Fuel Storage Renewals." This new guidance describes an approach that is acceptable to the staff of the NRC to meet the regulatory

### NRC program to strengthen Canada's energy storage value chain

NRC's energy storage program establishes new collaborative and co-investment opportunities for the energy storage value chain, including material and technology developers and suppliers, systems integrators, utilities, independent power producers and other



### A Collective Approach to Safe Used Nuclear Fuel Storage

For the past decade-plus, the Extended Storage Collaboration Program has provided the technical basis for long-term used nuclear fuel storage and transportation By Chris Warren The search for a final storage solution for the nuclear fuel that powers U.S. reactors has been long and convoluted, and it is nowhere near a conclusion.



[Advanced Clean Energy program](#)

The Advanced Clean Energy program will accelerate the development of clean, renewable fuels, and energy storage materials and devices that will facilitate the transition to low- and ...



**Guidance for Operations**

Nuclear Energy Institute, 1201 F Street N. W., Suite 1100, Washington D.C. 20004 (202.739.8000) ACKNOWLEDGEMENTS NEI 14-03 was developed by the NEI Dry Cask Storage License and CoC Renewal Issue Team. We also recognize the direct

**CCUS RD& D Storage and Transportation Focus Area Applicant's ...**

To that end, under the Energy Innovation Program (EIP), NRCan launched the CCUS Front-End Engineering and Design (FEED) studies call and selected projects for funding in April 2022, and launched an RD& D call in July 2022.



[NRC Approves Hermes Construction Permit](#)

Kairos Power will build the Hermes molten salt-cooled demonstration reactor at the Heritage Center Industrial Park in Oak Ridge, Tennessee. It is the first non-water cooled reactor to be approved for ...



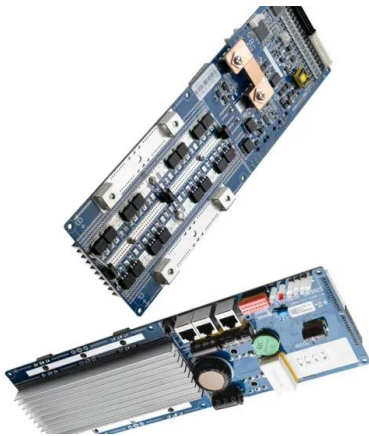
[Conferences & Symposia , NRC.gov](#)

The table contains information about all annual or planned U.S. Nuclear Regulatory Commission (NRC) conferences, symposia, and workshops and links to more detailed information. This page includes links to files in non-HTML format. See Plugins, Viewers, and Other Tools for more information.



**Evaluation of NRC's Energy, Mining and Environment Research ...**

There are currently four programs within the EME Research Centre: Bioenergy Systems for Viable Stationary Applications (BE), Energy Storage for Grid Security and Modernization (ES), High ...



**Nuclear Material Safety And Safeguards , NRC.gov**

Conducts safety inspections of transport package and spent fuel storage system vendors. Reviews, approves, and inspects quality assurance programs for fabrication of transportation packaging and dry storage systems. Provides technical support to the Office



[ENERGY STORAGE MODEL DEVELOPMENT](#)

Energy Conservation and Energy Storage Technical Collaboration Programme, the NRC works with other stakeholders to make significant contributions to the IEA's Annex 32 by delivering ...





## [TerraPower Natrium, Advanced Nuclear Energy](#)

The Plant The Natrium® reactor and energy storage system redefines what nuclear technology can be: emissions-free, competitive and flexible. Built for the 21st century grid, TerraPower's Natrium technology is one of the fastest and lowest-cost paths to advanced



## **Canadian Energy Storage report: 2019 case study for the Ontario ...**

It is within this context that the National Research Council, through its Energy Storage for Grid Security and Modernization Program, has undertaken the development of a Canadian Energy Storage Study, with support from Natural Resources Canada, strategic

## **Energy Innovation Program**

It is anticipated that 95% of all captured CO<sub>2</sub> will need to be permanently stored to achieve net-zero emissions. To ensure the permanent removal of CO<sub>2</sub> from the carbon cycle, CO<sub>2</sub> needs to be sequestered and stored. As part of the Energy Innovation Program - Carbon capture, utilization and storage RD& D Call, the Storage & Transportation focus area aims to ...



## [ADVANCE Act of 2024, NRC.gov](#)

The ADVANCE Act of 2024 was passed with bipartisan support and signed by President Biden in July 2024. It requires the NRC to take a number of actions, particularly in the areas of licensing of new reactors and fuels, while maintaining the NRC's core mission to



### Energy Innovation Program, Carbon Capture, Utilization and Storage ...

Integro Program List page, with the Energy Innovation Program option highlighted by a green box to indicate the correct program. The folder icon corresponding to the Energy Innovation program is highlighted by a green circle, indicating where to click to access submissions to the Energy Innovation Program.



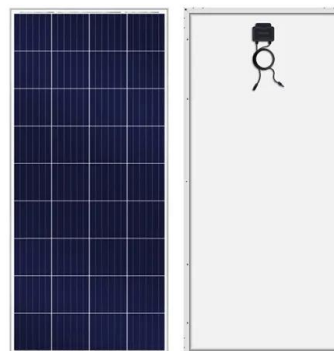
### Fusion Machine , NRC.gov

Fusion machines harness the energy released in a controlled thermonuclear fusion reaction in which two nuclei combine to form a new nucleus. This process occurs in our Sun and other stars. Creating and sustaining the high temperature and pressure conditions for



### NRC'S FULL SCALE ENERGY STORAGE EVALUATION ...

NRC'S FULL SCALE ENERGY STORAGE EVALUATION RESEARCH FACILITY. For all your cell and system level testing requirements. Battery-based energy storage is a rapidly ...



### Strengthening the grid

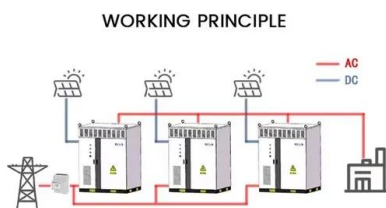
Collaborate with us NRC is engaging in critical research aimed at modernizing and strengthening the electricity grid. We are looking for key industry partners to collaborate and co-invest with us to develop and de-risk energy storage solutions. Contact us for more





### Clean Energy: NRC Fuel Cell Programs

One strategic effort, the NRC National Fuel Cell Program, with its annual budget totaling \$4.9 million--approximately \$3.5 million of which is funded by the program and \$1.4 million of which comes from partner contributions--has enabled the development of 12



### ENERGY STORAGE MODEL DEVELOPMENT

Energy Conservation and Energy Storage Technical Collaboration Programme, the NRC works with other stakeholders to make significant contributions to the IEA's Annex 32 by delivering key components of the work plan developed by the international group of

### Funding, Grants and Incentives

Cyber Security and Critical Energy Infrastructure Program (CCEIP) The Cyber Security and Critical Energy Infrastructure Program (CCEIP) supports activities that enhance the cyber security and resilience of domestic and cross-border energy infrastructure by strengthening the capability of the energy sector to prevent, prepare, respond to and recover from cyber threats.



### **NRC Staff Review of Nuclear Energy Institute 03-12 'Template for**

Title NRC Staff Review of Nuclear Energy Institute 03-12 "Template for Security Plan, Training and Qualification, Safeguards Contingency Plan, [and Independent Spent Fuel Storage Installation Security Program]" (Revision 6). Author ORPUser Created Date 4/10



## Energy Innovation Program

Energy Innovation Program - Carbon capture, utilization and storage RD& D Call - Capture focus area Carbon capture technologies that have been deployed and demonstrated at large scale at various sites in Canada account for a significant portion of the cost of deploying CCUS, and most of the current conventional capture technologies are suited for ...



## The value of long-duration energy storage under various grid

4 ???· Long-duration energy storage (LDES) is a key resource in enabling zero-emissions electricity grids but its role within different types of grids is not well understood. Using the ...

## [Integrated Aerial Mobility program](#)

The program leverages the skills of researchers from a number of NRC Research Centres, which include expertise in aerospace, machine learning, sensors, cyber security, energy storage and digital technologies.



## [Regulations \(NRC, 10 CFR\) , NRC.gov](#)

Nondiscrimination in Federally assisted programs or activities receiving Federal financial assistance from the Commission Part 5 Licensing requirements for the independent storage of spent nuclear fuel and high-level radioactive waste, and reactor-related



## Contact Us

---

For catalog requests, pricing, or partnerships, please visit:  
<https://vdbconstruction.co.za>