



Energy Innovation Forum 2025

In support of Canada's G7 2025 Presidency



Energy technology innovation for development and for securing energy needs

Speaker



**The. Hon. Svitlana
Grynchuk**
Minister of Energy,
Ukraine

Speakers



Andrii Plakhotniuk
Ambassador of Ukraine to
Canada



Madhavi Srinivasan
Professor, Nanyang
Technological University



Diana Maranga
Head of
Commercialisation,
Octavia Carbon



Phillip Johnson
Vice President, Business
Development, Six Nations
of the Grand River
Development Corporation

Moderator



Akshat Rathi
Senior Reporter, Bloomberg News

Speaker



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Energy Technology Innovations: Research & Development

Professor Madhavi Srinivasan

Executive Director, Energy Research Institute at NTU (ERI@N)

President's Chair in Sustainability, Co-Director, Singapore CEA Alliance in Circular economy (SCARCE)



Cities account for:

2%

Earth's Surface

50%

World's Population

70%

2050: World's Population

75%

Energy Consumption

80%

Global CO₂ Emissions

Many of the new cities are forecast to be in Asia and Africa

Taking action in Cities can reduce Emissions by at least 80% by 2050

To reach Net Zero, Investment will need to triple in the next 10 Years

Energy Grand Challenge – Tropical Cities Singapore

Addressing these challenges will require significant Advances in Energy Technology Innovation tailored to different regions



Renewables'
Disadvantaged



Land
Constrained



Cooling
Solutions

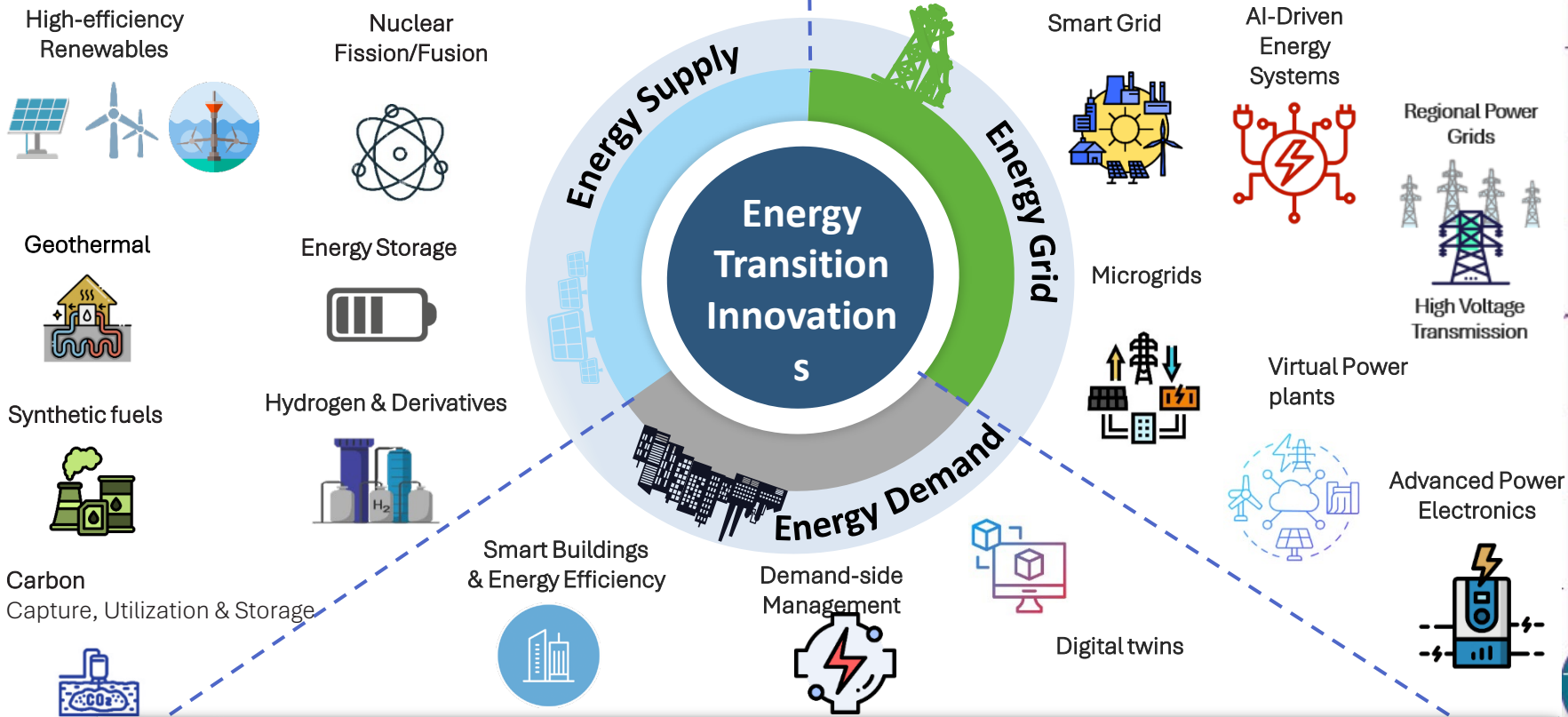


Grid
Infrastructure



Costs,
Security,
Reliability

Energy Technology Innovations : R and D



Around 35% of the emissions reductions needed to enable net-zero CO2 emissions globally still rely on technologies not yet demonstrated at commercial scale

Energy Technology Innovations : R and D

TRIPLE HELIX MODEL

Tripartite partnerships between University, Industry and Public Agency



▶ **Industry**
Contributes product knowledge, funding and experience

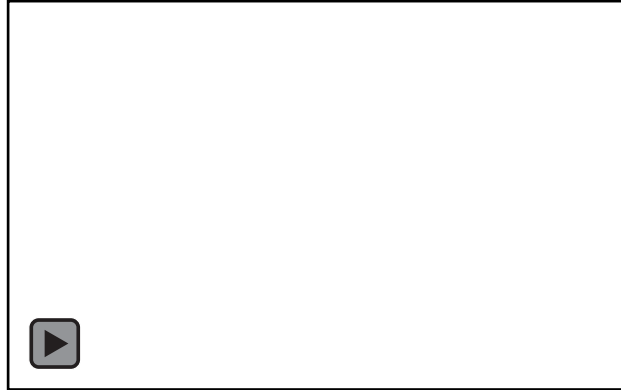
- Funding to accelerate energy R&D and demonstration
- Support access to testing facilities and “living labs”, which can significantly shorten times to market
- Strengthen energy innovation systems in emerging and developing economies through International cooperation

▶ **University**
Contributes specialised researchers, research facilities and technology

▶ **Public Agency**
Contributes capital funding, strategic support, policy and economic context

Energy Technology R and D Projects @ NTU

Lithium ion Batteries Circular economy



“Cool Paint” technology pilots Housing estates, NTU, Mandai Wildlife parks



NTU Living lab



Tapping the oceans for CO2 removal to producing renewable fuel. How innovations are tackling climate change



Ocean CDR technologies





Thank you!

<https://www.ntu.edu.sg/erian>

For further information please contact:

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Six Nations of the Grand River Development Corporation (SNGRDC)

IEA Energy Innovation Forum

www.sndevcorp.ca



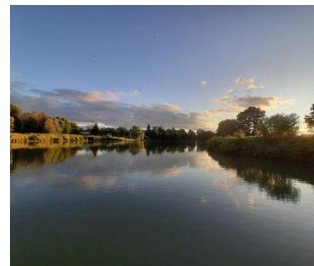


About SNGRDC

Six Nations of the Grand River Development Corporation was founded in 2015 to generate revenue through economic interests (mainly renewable energy).

The goal is to create economic self sufficiency for the Six Nations of the Grand River.

The **largest First Nations reserve in Canada by population**, and the second-largest by size. Located ~90 minutes from downtown Toronto.



Reserve Land

Today, the Six Nations reserve covers 46,500 acres—about **5%** of the 950,000 acres granted under the 1784 Haldimand Treaty.



Membership

Six Nations has over **29,000 registered members**, with nearly 13,000 registered members living on-reserve.

The Innovative Idea

Unlock the full potential of wind and solar assets through energy storage.

Battery storage began as an idea between foundational partners NRStor Inc and Six Nations of the Grand River Development Corporation.

Store energy to maximize the return on investment for renewables. Energy storage was needed.

Multiple partners were needed.

- SNGRDC
- NRStor Inc
- Northland Power
- AECON /A6N
- Mississaugas of the Credit
- Government of Canada
- Province of Ontario/IESO



Six Nations – Energy Portfolio

154 Wind Turbines
397 MW of Generation

646,000 Solar Panels
145 MW of Generation

1 Electrical Transmission Line
Niagara Reinforcement Line
76 kilometre, 230 kilovolt of energy

The Result



Oneida Energy Storage Project

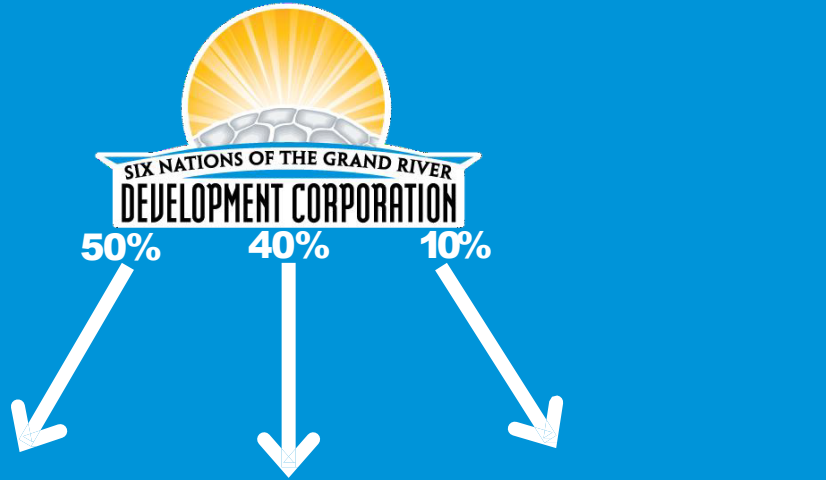
- Located in Haldimand, County, Jarvis, ON – Jarvis TS
- 250 MW/1,000 MWh – capable of 4 hr discharge – enough energy to power a city with approx. 400,000 people for an hour.
- Operational May 2025
- 278 lithium-ion mega battery packs
- Largest battery energy storage facility in operation in Canada.
- Fourth largest in the world.
- 20-year fixed price contract with IESO
- Constructed for \$700 million – \$100 million under budget – ahead of schedule

Benefits

- A template for future energy projects, with Indigenous participation
- Will reduce costs for ratepayers
- Expected to reduce emissions by 1.2 to 4.1 million tonnes (40,000 cars off the road)
- Created jobs and capacity

In 2024, SNGRDC became the largest Indigenous holder of battery storage in North America with 1.1 GW of storage capacity in our portfolio. SNGRDC is also an equity partner in the Hagersville Energy Storage Park.

Under our 15-year funding agreement with the Six Nations Elected Council and the Six Nations Economic Development Trust (EDT), SNGRDC allocates:



50% of its surplus free cash to reinvest in new business ventures and future economic opportunities.



40% or a minimum of \$1.4 million annually, whichever is greater, is transferred to the Elected Council to support community priorities and essential services.



10% to the EDT, which provides grants to grassroots projects and community initiatives outside of Council operations.

Conclusion

Oneida Battery Storage was an innovative idea with Indigenous participation.

50% of surplus revenue will be distributed to our community through a structured model designed to benefit the entire community while supporting long-term growth.

THANK YOU!



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Questions for discussion

Which technology needs are most pressing?

Are there success stories that offer inspiration to investors and policy makers?

How is the energy technology challenge in emerging economies different from that for G7 countries?

What actions can be taken to have the highest impact, such as policy, finance and international cooperation?



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