

The Nuclear Innovation: Clean Energy Future (NICE Future) initiative of the Clean Energy Ministerial (CEM) and New Global Conversations

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IFNEC Global Ministerial Conference: Bringing the World SMRs and Advanced Nuclear
Session 4: “Innovation and Clean Energy Systems” Vision for Accelerating Progress on Innovation and Clean Energy Systems

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NICE Future

Nuclear Innovation: Clean Energy Future

An Initiative of the Clean Energy Ministerial



Initiatives under the CEM are country-led and opt-in. The NICE Future initiative is part of a global partnership of countries and organizations exploring the potential for nuclear power uses, innovations, and greater systems integration, to accelerate progress toward clean energy goal.

Lead Countries



Canada Japan USA

Participant Countries



Argentina Poland Romania
Russia UAE UK



External Partners

- International Energy Agency
- OECD Nuclear Energy Agency
- International Atomic Energy Agency
- International Framework for Nuclear Energy Cooperation
- Generation IV International Forum
- ClearPath
- Third Way
- Energy for Humanity
- Energy Options Network
- Women in Nuclear Global
- International Youth Nuclear Congress
- Nuclear Industry Council
- Nuclear Energy Institute
- World Nuclear Association

The initiative has achieved incredible impact in its first year.



80+

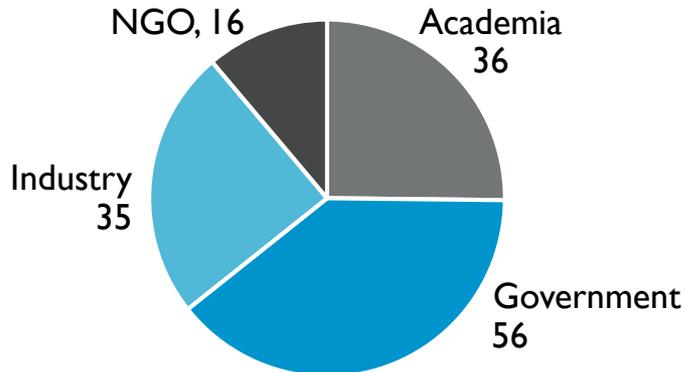
Collaboration or interest from **80+** organizations in **25** countries

2000+

2000+ NICE Future webinar/conference participants in **35** countries

35%

35% of world represented by some level of country engagement with NICE Future



Countries with attendees in blue

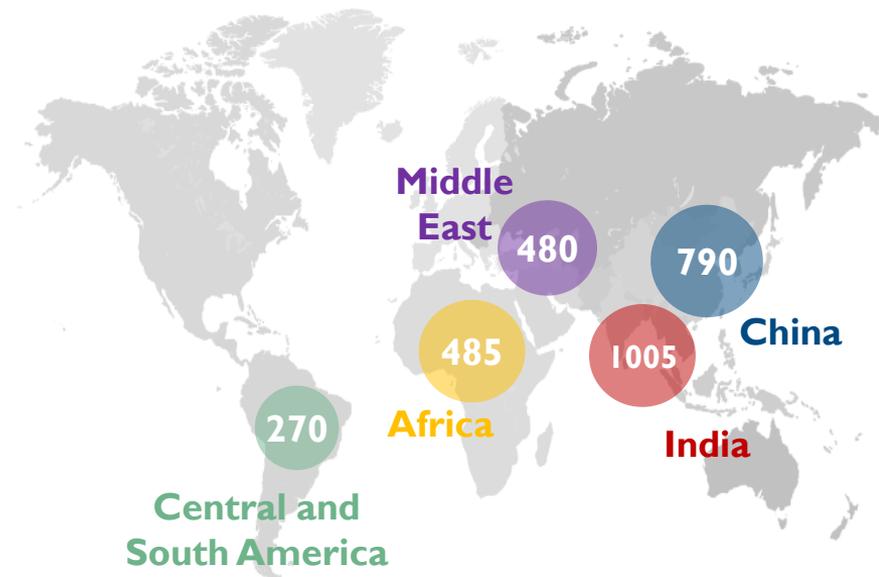


Nuclear energy is non-emitting and provides more than a third of emissions-free electricity (no carbon dioxide, sulfur dioxide, mercury, or particulates that cause smog.)

It is also one of the most reliable sources.

Nuclear runs cleanly **and** 24/7.

As energy demand around the world grows, nuclear energy, and its exciting innovations, will play a key role within clean and integrated energy systems of the future.



Change in primary energy demand, 2016-40 (Mtoe)
International Energy Agency [World Energy Outlook 2017](#)



Part of our mission is to “make nuclear cool again”

We support an all-of-the-above energy strategy in current and future energy systems

Secretary Perry has strongly supported the inclusion of reliable, resilient, and emissions-free nuclear energy in clean energy dialogues.



“If you really care about this environment that we live in... then you need to be a supporter of this [nuclear energy] amazingly clean, resilient, safe, reliable source of energy.”

Secretary Rick Perry at 10 May 2018 press conference



CEM8, June 17, Beijing, China. U.S. Secretary of Energy Rick Perry proposed a nuclear initiative under CEM.
CEM9, May 2018, Copenhagen, Denmark. Less than one year later, the initiative was launched with strong support by nine countries and key organizations.

“Nuclear energy’s vitally important but under-recognized contributions to clean air are made even greater by constant innovation. The NICE Future initiative highlights these contributions by reimagining nuclear’s advanced uses and applications.

Nuclear provides a cleaner, safer, more reliable and more resilient energy supply for our world.”

U.S. Secretary of Energy Rick Perry, 24 May 2018

“We don't see a sustainable energy future in the absence of nuclear.”

IEA Executive Director Fatih Birol, 24 May 2018



Secretary Perry and Director Birol at July 2017 meeting (Source: Twitter [@SecretaryPerry](https://twitter.com/SecretaryPerry))



The NICE Future initiative was officially launched at the 9th annual Clean Energy Ministerial (CEM9) in May 2018 and had strong presence (nuclear mention at multiple events, industry delegations, etc.) at CEM 10 in May 2019.

The CEM is an international forum for ministers to share policies and programs that advance clean energy technology.

Participants at 9th Clean Energy Ministerial

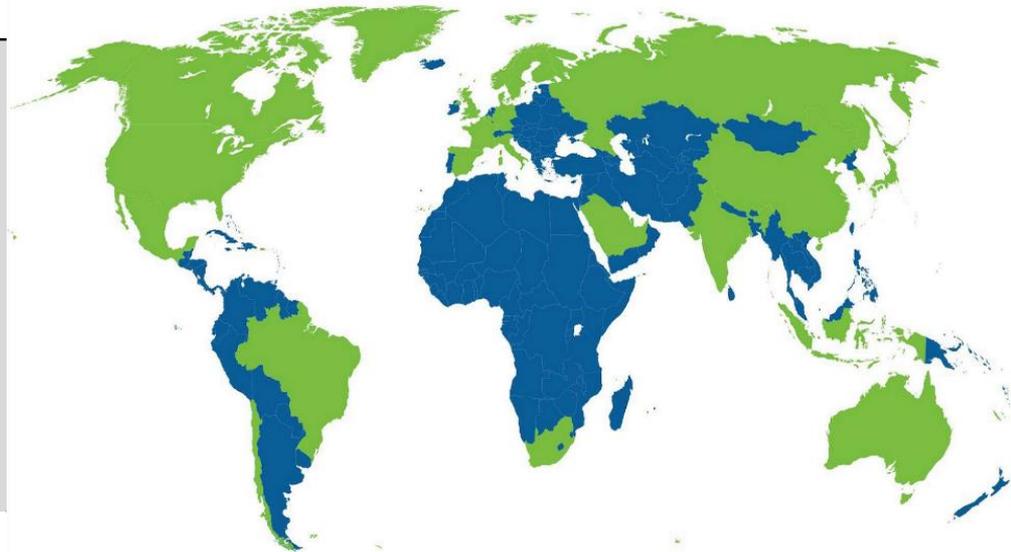
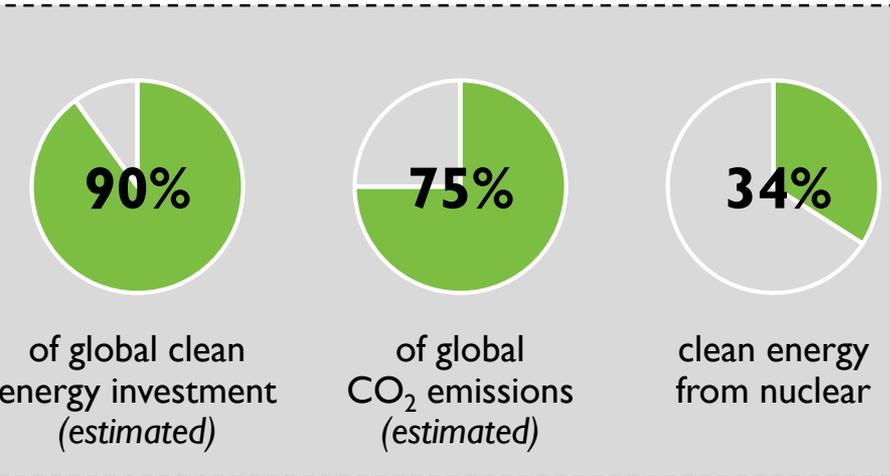


NICE Future panel





The Clean Energy Ministerial (CEM) includes 26 countries and the European Commission.



CEM countries in green



The initiative focuses its work into action areas that include research and outreach to help countries understand how nuclear can enable their clean energy systems and reimagine the roles of nuclear.



Suzie Jaworowski holding Breakthroughs



University students speaking at IFNEC-Millennial Nuclear Caucus event in Tokyo



This Nuclear Innovation: Clean Energy (NICE) Future initiative of the Clean Energy Ministerial envisions a world in which nuclear energy innovations and uses advance clean energy goals. The initiative recognizes there is no one-size-fits-all solution to energy and fosters collaboration among clean energy supporters in exploring diverse solutions, including nuclear energy technology solutions, both electric and non-electric, for clean, integrated, and reliable systems of the future.

Researching innovative solutions
(photo of research lab)



1. Exploring innovative applications for advanced nuclear systems both electric and non-electric.

2. Engaging policy makers and stakeholders regarding energy choices for the future.

Focus Areas



Leveraging diversity of talent:
photo of scientist

3. Pooling experience on economics, including valuation, markets structure, and ability to finance.

4. Communicating nuclear energy's role in clean integrated energy systems and developing the nuclear workforce of the future.



Talking with diverse audiences
(photo: stakeholder discussion)



Sharing the vision with future generations
(photo: student tour of lab)



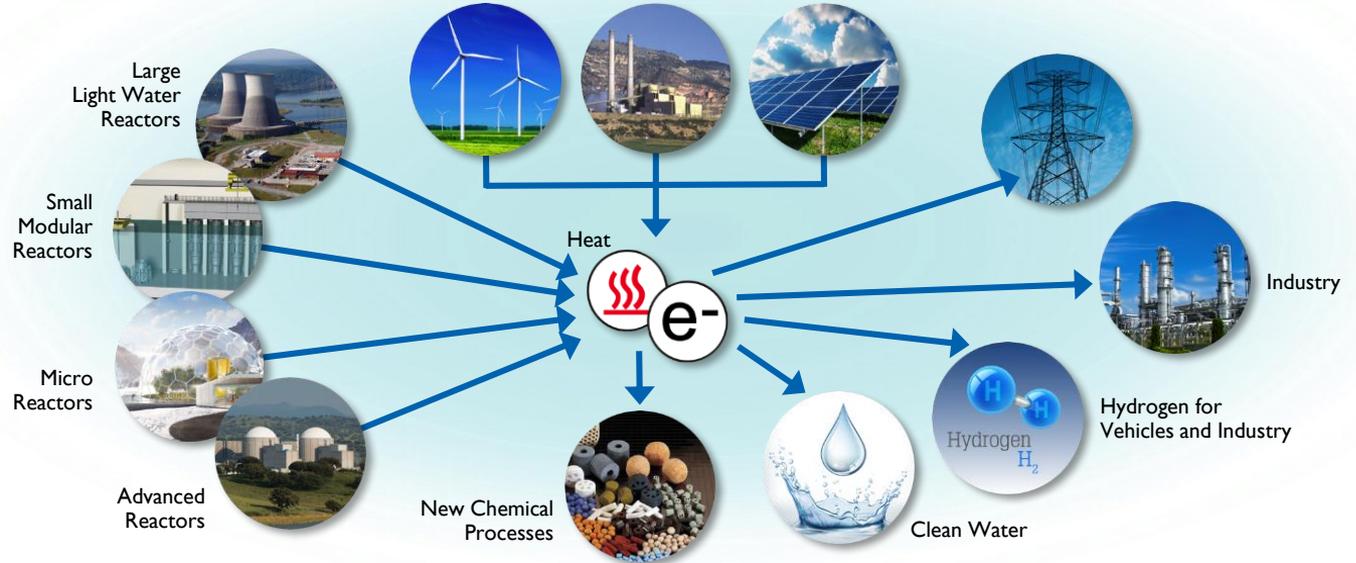
The NICE Future initiative will challenge traditional thinking, to spur new ways to go beyond our current conceptions of nuclear energy and how it could be better integrated and leveraged into future energy mixes.

Today Electricity-only focus



Potential Future Energy System

Integrated grid system that leverages contributions from nuclear fission beyond electricity sector



The future of nuclear?



Images courtesy of GAIN and ThirdWay, inspired by the *Nuclear Energy Reimagined* concept led by INL. Learn more about these and other energy park concepts at thirdway.org/blog/nuclear-reimagined



An international cooperative effort led by Energy Options Network, ClearPath Foundation, and Energy for Humanity to analyze the value of flexible nuclear systems globally

Focus Areas:

1. **Modeling revenue opportunities** for flexible nuclear energy systems, working in tandem with renewable energy in various parts of the world and
2. **Communicating cost and technical performance requirements** back to government stakeholders and advanced reactor design teams.

Deliverables:

- **Briefing materials** (reports, summaries) aimed at decision makers and other stakeholders
- **Seminars and workshops** that directly engage various facets of the energy community.

CEM and non-CEM member countries are invited to join!



Key deliverable for NICE Future at CEM10, led by Canada and U.S.

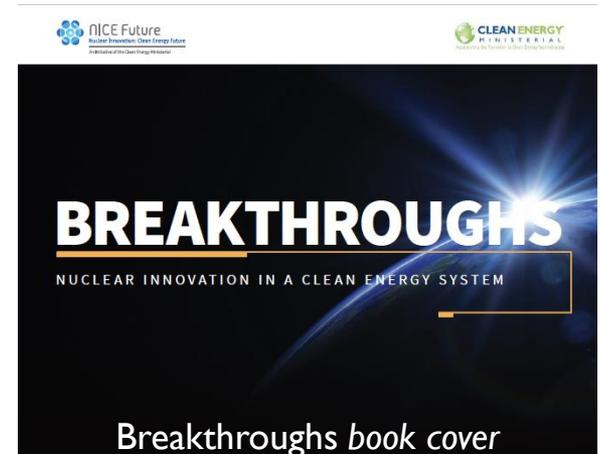
Objective: To spark imagination, challenge pre-conceptions of nuclear energy's role in clean energy systems.

Approach: Not a typical policy report, a compilation of ~20 short, compelling stories to engage a non-nuclear audience.

Select topics: Advanced nuclear, small modular reactors, nuclear-renewable systems, energy parks, hydrogen, etc.

Find *Breakthroughs* here!

nice-future.org/publications/breakthroughs



Breakthroughs *book cover*



Coming in December: COP25 in Madrid, Spain

Previous Events:

- IAEA General Conference
- World Energy Congress 24
- U.N. Climate Change Conference (COP) 24
- International Framework for Nuclear Energy Cooperation (IFNEC) 2018 Conference
- The Generation IV International Forum 2018 Conference
- The Global American Business Institutes
- The 9th/10th Annual Clean Energy Ministerials and multiple side events
- Screening and discussion with “New Fire” film director and NGOs at CEM10
- IFNEC Session at Africa Nuclear Business Platform Conference
- IFNEC Ministerial Conference “Bringing the World SMRs and Advanced Nuclear Technology”



Previous Webinar Topics

- Nigerian Young Generation in Nuclear (NYGN)
- Generation IV Reactor Systems and Renewable Energy
- The World Energy Outlook Report and Nuclear Energy
- Micro-Reactors
- Integration of Renewables and Nuclear
- Nuclear Reimagined

Visit nice-future.org/webinars for previous and upcoming webinars.

Coming in October!

- IFNEC-NICE Future Clean Energy Planning in Latin America, *in Spanish, led by Facundo Deluchi*

Proposed:

- Water Nexus
- International Energy Agency Report
- Expert panel on low-carbon technologies
- United Arab Emirates

Ideas for other topics welcome!

Thank you for your attention!



Join us.

Online: www.nice-future.org

E-mail: info@nice-future.org



Nuclear and renewable systems power a clean transit hub as part of Third Way's "Nuclear Reimagined" series, thirdway.org/blog/nuclear-reimagined