

Key Messages:

- Thank the speakers at the today's workshop for their contribution to making Fusion Energy commercially viable
- I am Klaas Rodenburg, Secretary of the FECC. Unfortunately, **Axel Meisen**, our President is currently in London, England and unable to speak today



Vision & Mission

Vision

Canada is internationally recognized for its contributions to fusion energy production and uses

Mission

To mobilize human, financial, and other resources for the participation of Canadians and Canadian enterprises in first generation fusion energy systems and uses, with the objective of creating economic, environmental and social benefits

Key Messages:

- Technology agnostic

Fusion Energy Council of Canada

History



2011 Alberta Council of Technology – Fusion Technology

2013 ABCTech special project “review status of fusion energy”

STATUS OF FUSION ENERGY: Impact & Opportunity for Alberta

2016 Fusion Energy 2030: Roadmap for Canada

2016 Alberta/Canada Fusion Energy Alliance – registered in AB

2020 Fusion Energy Council of Canada – registered and expanded its Board to 15 members to ensure representation from across Canada

2021 established Advisory Board

Page 3

Key Messages:

- We started a technology of focus with ABCTech in 2011
- In 2013 ABCTech was asked by the Government of Alberta for a report on the status of fusion (Allan Offenberger, Robert Fedosejevs, Klaas Rodenburg visited sites in US, UK, France and Japan) – report posted on website
- Fusion Energy 2030: Roadmap for Canada in 2016
- 2016 Alberta (Canada) Fusion Energy Alliance decoupled from ABCTech and registered in Alberta
- 2020 Fusion Energy Council of Canada registered Canada wide

Fusion Energy Council of Canada

Activities



- Provided input to a draft fusion strategy document *report not yet published under the auspices of CNL*
- *Tritium Focus Group, Chalk River, ON – contributor to Tritium 2025 in Ottawa*
- *Fusion Fuel Cycle Workshop, Charlotte, NC*
- *FusionMatters Canada Newsletter – 12 September 2023*
- *AGM presenters*
- *IAEA Fusion Energy Conference, London, UK*

Page 4

Key Messages:

- FECC provided input to the CNL document (6-month process) Revision 0 for internal review, provided comments on Revision 1 – not yet published (objective to solicit funding and provide an overview of Canada's status)
- There is currently no comprehensive strategy on fusion [US, UK, EU, Germany, Japan, Korea, China have national strategies] adopted by the Government of Canada
- FECC is working hard to change this by collaborating with Canadian Nuclear Laboratories, General Fusion, Type One Energy, and universities like the UofA
- CANtrit 2025 – Canada to Host a Tritium conference on Ottawa in 2025. FECC is a contributor
- Participant in Fusion Fuel Cycle Workshop
- Newsletter – next issue focus on jobs and careers
- AGM presenters – Michael Campbell – Inertial Fusion (NIF) / Dennis Whyte – Magnetic Fusion (MIT, CFE), Antione Cerfon Stellarators (Type One Energy)



Advisory Board



Allan A. Offenberger, PhD

*Past President, Fusion Energy
Council of Canada
Professor Emeritus of Electrical &
Computer Engineering at the
University of Alberta*



Dennis G. Whyte

*Hitachi America Professor of
Engineering;
Director, MIT Plasma Science and
Fusion Center
Professor, Department of Nuclear
Science and Engineering*



Robert Fedosejevs, PhD, P.Eng

*Past Director, Fusion Energy Council of
Canada
Professor of Electrical & Computer
Engineering at the University of Alberta*



E. Michael Campbell

*Director, Laboratory for Laser
Energetics, University of Rochester*

Key Messages:

- Go to <https://fusionenergycanada.ca/> to learn out more

Collaboration Canada

- *Canadian Nuclear Society*
- *Canadian Nuclear Laboratory*
- *General Fusion*
- *University of Alberta*
- *CANTrit 2025*

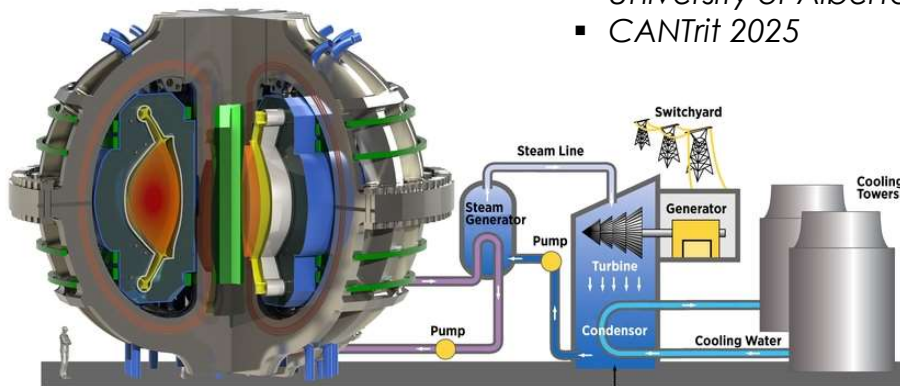


Image downloaded from <https://news.mit.edu/2018/nas-report-right-path-fusion-energy-1221>

Page 6

Key Messages:

- Fusion technology goes beyond plasma physics and experimental reactors
- Scale-up of commercial reactors and ancillary systems
- Scale up is not only larger reactors but multiple reactors connected to the grid
 - This will require new and creative ideas
 - FECC takes a technology agnostic approach (black box)
- Axel is currently in London to further discuss these opportunities

Collaboration International

- *United States*
- *United Kingdom*
- *European Union*
- *Japan*
- *Korea*

Page 7

Key Messages:

- Fusion technology development is not the purview of any one company or country – it's a Global issue
- Canada is well placed to work with US, UK, EU, Japan on research, education, regulatory framework, commercialization,

Creativity & Deployment

“Creativity is intelligence having fun!”

Albert Einstein

- Deuterium-tritium fuel cycle
- Procurement of feedstock for DT fusion critical for start-up
- Supply chain procurement
- Conversion to heat / electricity
- Role of Utilities
- Safety
- Security
- Sustainability
- AI (Canadian Hubs)
- Social economic realities
- Etc.

Page 8

Key Messages:

- Fusion development and deployment will require creative and practical **ideas, commitment AND a sense of urgency**
- This will require people that are educated (HQP), motivated (career) and supported (funded)

Human Resources

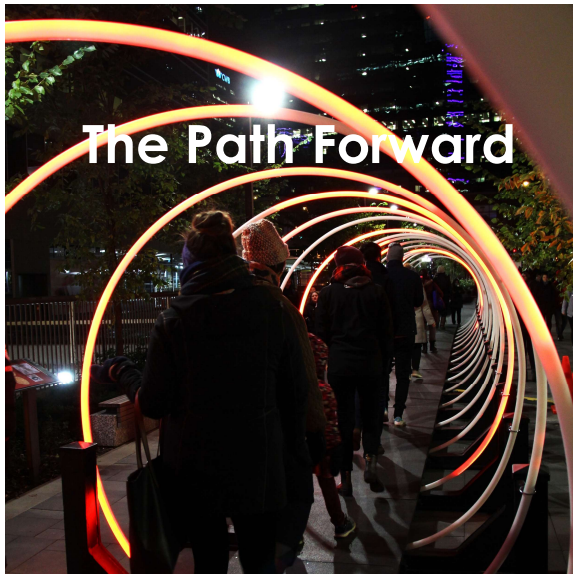


*To be successful the fusion energy **ecosystem** needs researchers, students, government policy makers and funders, entrepreneurs, investors, and a robust supply chain*

Page 9

Key Messages:

- Create a partnership among private sector companies, governments and academia
- Students and Young Researchers Initiative
 - U of A
 - Other institutions
- The search for talent is on!
- Development of human resources (fusion relevant talent)
- Grow capabilities of private sector in partnership with National Laboratories and Universities
- example Japan – EU Fusion school



- *Scale-up fusion processes with emphasis on long term operation*
- *Collaboration at international levels*
- *Developing creative and talented people*
- *Engage with private sector companies globally, Canadian governments at all levels and academia*

Page 10

Key Messages:

- Read the bullet points
- Engage all 3 levels of Government starting with the Federal Government (strategy), Provinces (execution) and municipalities (achieve NetZero) City of Edmonton

If we don't come to
work every day and
think about the future ...

there will be plenty of
time to reminisce
about the past

*We invite private sector
companies, organizations and
individuals to join us*

Fusion Energy
Council of Canada



Conseil canadien
de l'énergie de fusion

fusionenergycanada.ca

Page 11

Key Messages:

- FECC is committed to these tasks and are working on them.
- Volunteer organization is limited in its resources (volunteers)
- We invite you join us in these endeavors
- What's in it for you!
 - Join like minded people and become an active member of the Fusion Energy ecosystem
 - Stay current in the fast-moving science and technology of fusion Globally and the Canadian Context
 - Fusion Matters Canada newsletter
 - Explore career opportunities
 - Start or join an FECC Committee
 - Become involved in the Global fusion, energy and climate action discussions
 - Access to our Advisory Board – Join our Advisory Board