

# Polar Knowledge Canada



## Bringing Technology to the North and the Case for Collaboration



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# Introduction

- Polar Knowledge Canada
- Science and Technology Priorities
- Drivers for A&R
- POLAR has to offer
- Challenges
- Overcoming the Challenges

# What is Polar Knowledge Canada?

- New and innovative Government of Canada agency
  - Based in the north
  - Minister of Indigenous and Northern Affairs
- Established on June 1<sup>st</sup>, 2015
  - Canadian Polar Commission
  - Canadian High Arctic Research Station's pan-northern S&T
- Small and nimble organization
  - Respond quickly and capitalize on opportunities to **advance polar knowledge**
- POLAR supports **evidence-based decision making**
  - Ensuring current polar knowledge is available and useable to address concerns of Northern communities



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# POLAR

- Knowledge Management and Engagement function
- Pan-northern Science and Technology program
- The Canadian High Arctic Research Station (CHARS) under construction in Cambridge Bay, Nunavut



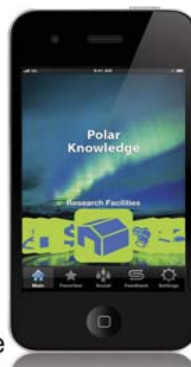
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# Knowledge Mobilization

- Inspired by the model of International Polar Year – collaborative information exchange for the transformation of *knowledge to action*
- POLAR has a unique role to advance our collective understanding of polar environments by mobilizing current knowledge to address local and global concerns such as **climate change and adaptation**
- Leverage domestic and international research to **assess gaps and strategically invest** to stimulate new knowledge in key areas



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# CHARS- the Station

- A world-class research station will be fully operational by 2018, and will enhance international multidisciplinary exchange of leading-edge science
- The Community of Cambridge Bay has been engaged and supportive from the beginning of the initiative
- POLAR's interim office in Cambridge Bay facilitates on-going work in the community and supports program delivery



# Pan-Northern S&T Program

## Priority Areas for 2014-2019:

### ➤ Alternative and renewable energy for the North

- Reduce the dependency on high-cost imported energy
- Explore feasibility of local sources
- Enhance northern application of alternative technologies



### ➤ Baseline information to prepare for northern sustainability

- Improve decision support for sustainable communities and responsible development in Canada's North



### ➤ Predicting the impacts of changing ice, permafrost, and snow on shipping, infrastructure and communities

- Increase knowledge of terrestrial and marine cryosphere to support adaptation and improve climate models



### ➤ Catalysing improved design, construction and maintenance of northern built infrastructure

- Application of innovative designs, materials and techniques to increase energy efficiency, quality, and reduce life-cycle costs



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# Drivers for A&R Priority

- Reduce Dependence on Diesel for Energy Generation
  - Economic and Environmental Benefits
  - Clean Technology
  - Enhance northern application of alternative technologies
  - Explore feasibility of local sources
- Create Economic Opportunities
- Build Capacity



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# POLAR Region



- 0.3 % Canada's Population and Energy Use
- Population 100,000 over 3.5 million km<sup>2</sup>
- Per capita Energy use Twice Canadian Av
- Energy Costs = Major Contributor to HCL
- 150+ Diesel Communities
- Nunavut 100% Diesel



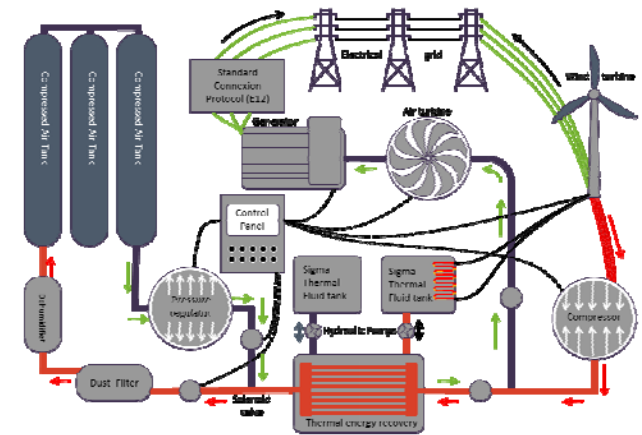
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# What Does POLAR Have to Offer

- Help Northernise Technologies
- Demonstrate Technologies
  - In the North
  - Assuming Risk
- Personnel on the Ground
  - Engineers, Technicians, Researchers
  - Host Visiting Researchers
  - Working with Communities
- Networks Across the North and Across Government
- International Relationships
- Collaboration Essential
- CHARS



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# Challenges

- Remoteness
  - Timelines
  - Support Logistics
- Lifestyles and Culture
- Limited Human Resources/Skill Sets
  - Operability and Maintainability
  - Develop Projects
- Community Energy Champions
- Capacity Building
  - Stimulate Interest and Knowledge
  - Clean Tech Project
  - Investment



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**20/20**  
**CATALYSTS**  
PROGRAM

# 20/20 Catalysts Program Curriculum



The 20/20 Catalysts Program Curriculum will be focused on **5 Energy Skills Categories.**



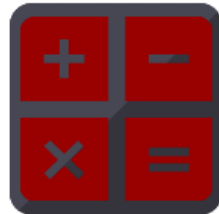
COMMUNITY  
ENGAGEMENT &  
COMMUNICATIONS



ECONOMIC  
DEVELOPMENT &  
BUSINESS PLANNING



EMPLOYMENT  
CREATION & SKILLS  
ENHANCEMENT



PROJECT FINANCING &  
EQUITY CAPITAL



'SMART'  
REINVESTMENT &  
COMMUNITY LEGACY

# Arctic Renewable Energy Network Academy (ARENA)

- Grow Capacity
- Show Case Best Practice
- Develop Collaborative Relationships
  - Pan Arctic/Global
- Benefit our Remote Communities



ARCTIC COUNCIL



Sustainable Development  
Working Group

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## Questions



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