

**CLEANTECH IMPACT**

# Power Forward Challenge



Department for  
Business, Energy  
& Industrial Strategy



**Canada** 

December 11, 2018  
Graham Allen, NRCan



Natural Resources  
Canada

Ressources naturelles  
Canada

**Canada** 

# Why are we doing the challenge?



Natural Resources  
Canada  
Ressources naturelles  
Canada



Department for  
Business, Energy  
& Industrial Strategy



- **Canada-UK Partnership on Clean Growth and Climate Change:** clean innovation partnership to advance clean innovation and clean and renewable energy.
- **Canada-UK Partnership on Innovation:** to accelerate the commercialization of emerging technologies, growth of private enterprises, and the creation of jobs in both countries.
- **Growing need for smart energy systems:** that can integrate renewable energy, support increasing demands at the grid edge, and increase the reliability of our electricity grids.
- **Unique opportunity:** to position Canadian and UK firms to lead the global transition to low carbon economy.



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada

# What are we hoping to achieve?



Natural Resources  
Canada  
Ressources naturelles  
Canada



Department for  
Business, Energy  
& Industrial Strategy

## Key Objectives:

- **Demonstrate innovative technologies** that aggregate and manage increasingly large and complex groups of distributed energy resources to support grid flexibility, stability and reliability;
- **Build on Canadian and United Kingdom (UK) strengths** in smart grid technology and bring together innovators from both countries to design solutions for the grid of the future;
- **Create concrete opportunities for Canadian firms** looking to expand into UK (and European) markets and UK firms looking to expand into Canadian (and North American) markets;
- **Support Canadian and UK leadership and competitiveness in clean technology innovation** and the anticipated market opportunities for smart grid technologies in 2030 and beyond.



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada



# Overview



Natural Resources  
Canada  
Ressources naturelles  
Canada



Department for  
Business, Energy  
& Industrial Strategy

## The Issue

Between now and 2030, millions of new devices, including EVs, renewables, batteries, and smart devices will challenge traditional operating models of energy systems, adding complexity and volatility to grids.

## The Solution

Challenge Canada and UK innovators to design disruptive solutions to harness distributed energy resources for more integrated, cleaner, and flexible power grids ready for 2030 and beyond.

## The Players

**Power aggregators** (Utilities, Distribution System Operators, Third party aggregators)

**Technology companies** (e.g., smart sensors/inverters, batteries)

**Software companies** (e.g., AI/predictive analytics, distributed resource management platforms, blockchain solutions)



## Phase 1 – Consortia Building/Development of Proposals

- Financial support for SME participation - **\$1M total fund**
- Webinars and ongoing engagement
- Market Reports
- Matchmaking supported by Trade Commissioner Service, NRC-IRAP
- Online community tool/platform

### Pitch Event/ Conference

- 10 semi-finalists pitch sessions

## Phase 2 – Demonstration of Finalists Solutions/Selection of Winner

### Finalist Teams Build Pilot-scale demos

### Final Award \$1M

- One winner selected based on evaluation



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada

## Who can apply:



Natural Resources  
Canada  
Ressources naturelles  
Canada



Department for  
Business, Energy  
& Industrial Strategy

- Legal entities duly incorporated and validly existing in Canada or the UK, including:
  - Small and medium-sized enterprises (as defined by the [EU](#) for UK projects and by [Canada](#) for Canadian projects);
  - Other for-profit and not-for-profit organizations such as companies, utilities, industry associations and research associations;
  - Indigenous organizations and groups; and
  - Canadian/UK post-secondary/academic institutions.
- Non-Canadian or non-UK individuals/entities may be part of a partnership or consortium as long as the project lead meets the above criteria and is associated with at least one duly incorporated or registered legal entity in Canada or the UK.



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada

## Project and partnership working requirements

- Projects must take place in either Canada or the UK
  - **For UK-based projects**, a minimum of 20% of the total eligible cost for each project will need to cover work completed by organizations from Canada
  - **For Canada-based projects**, a minimum of 20% of the amount received from NRCan (up to CAN\$3M) must cover work completed by organizations from the UK
- A maximum of 49% of the total project cost for each project can be incurred by organizations from the Challenge partner country;
- Companies from either country which establish a presence in the other country in order to lead a proposed project will be considered to be eligible to address the minimum partnership working threshold (20%), and will be exempt from the upper partnership threshold (49%).
- Only the selected finalists' projects will be able to compete for the prize of \$1 million.



# Evaluation Criteria



Natural Resources  
Canada  
Ressources naturelles  
Canada



Department for  
Business, Energy  
& Industrial Strategy

**Each submission must  
provide sufficient details  
to enable assessment**



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada

## Technical Criteria – the “end-to-end test”



Natural Resources  
Canada  
Ressources naturelles  
Canada



Department for  
Business, Energy  
& Industrial Strategy

- Flexibility Services
- Situational Awareness
- Data-enabled value creation
- Cyber Security

“If proponents are not able to cover any of the criteria outlined in this section, **it does not mean that their project is rendered ineligible**. This test is meant to establish a sense of the end to end capacity of each team's solution.” *(From the Challenge Applicants Guide)*



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada



# Key Phase 1 Dates



Natural Resources  
Canada  
Ressources naturelles  
Canada



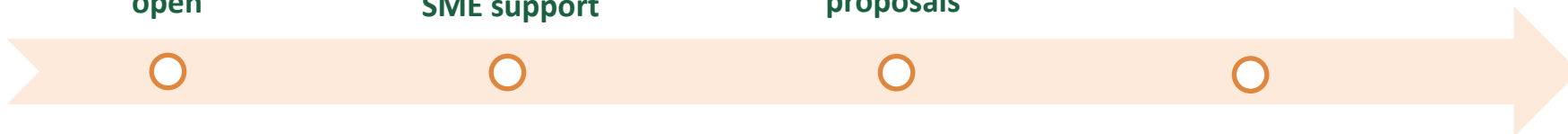
Department for  
Business, Energy  
& Industrial Strategy

**October 16, 2018:**  
Call for proposals is  
open

**December 17, 2018:**  
Deadline to submit for  
SME support

**March 15, 2019:**  
Deadline to submit  
proposals

**August 2019:**  
Finalists announced



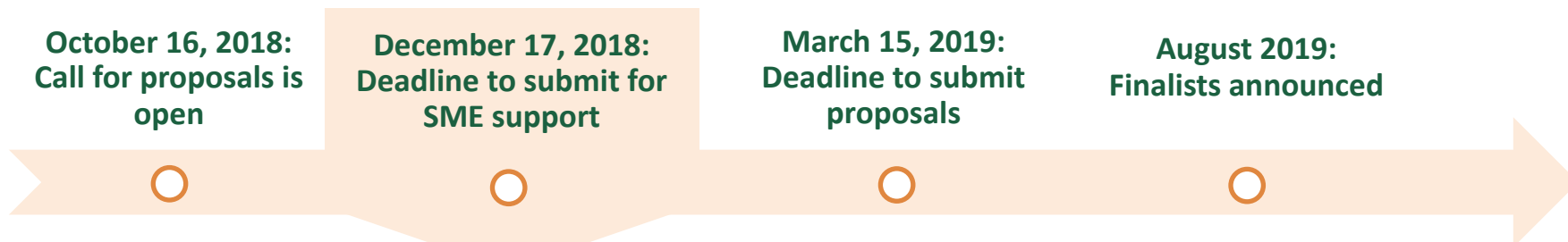
Natural Resources  
Canada

Ressources naturelles  
Canada

Canada

# Power Forward Challenge – SME Participation Support

SMEs or groups of SMEs (with an identified lead) can apply for financial support of up to CAN\$100,000 / £60,000 in their respective countries. **This application stage is *optional*.**



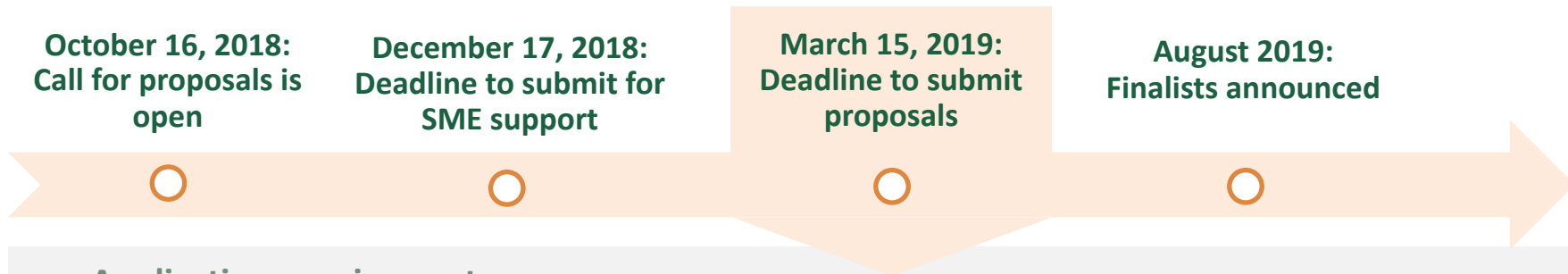
## Application requirements:

- Different requirements for Canadian and UK SMEs
- For Canadian SMEs – fill out form available on the Challenge [website](#). Information required includes:
  - Project Lead, team members, and contact information
  - Description of the “vision” for the project, consortium, and technologies
  - Description of innovative elements (i.e. composition, grid flexibility services, situational awareness, data-enabled value creation, cyber security, etc.)
  - Description of business model and consumer engagement plan
  - Current status of project team and proposal
- Applicants may submit max *two* attached files to their application (e.g., letters of intent from partners; grid connection agreements, etc.)



# Power Forward Challenge – Submission of Full Proposal

Consortium teams that meet the eligibility criteria outlined in the Applicants Guide can apply to compete for CAN\$3M/£1.8M. Finalists will be selected based on an evaluation of their performance against the Challenge criteria.



## Application requirements:

- Different requirements for Canadian and UK based projects
- For projects taking place in Canada – fill out the form on the Challenge [website](#). Information required includes:
  - Project Lead, team members, and contact information
  - Description of the project, consortium, and technologies, other sources of funding
- Applicants will submit a broader Application Package that includes a **financial form (available on the website)**, as well as **up to 5 attachments**. One of these 5 attachments should address the full range of criteria outlined in the Applicants Guide and should be structured around the format of Sections 2.1 to 2.10 in the Applicants Guide, responding to each of the criteria areas. In addition to this, Applicants may use the remaining attachments to highlight the strength of their proposed project and partnerships. They must also demonstrate that they have secured support from a grid operator to host their demonstration (this will factor into the evaluation of the feasibility of the project).

# Resources for Matchmaking



Natural Resources  
Canada  
Ressources naturelles  
Canada



Department for  
Business, Energy  
& Industrial Strategy

## Online Meeting Platform

<http://smart-energy-systems.meeting-mojo.com/>

## Market Intelligence Reports

<https://www.gov.uk/guidance/funding-for-innovative-smart-energy-systems#power-forward-challenge-funding-for-uk--canada-joint-challenge-on-smart-energy-systems-innovation>

## Find your local Trade Commissioner (Global Affairs Canada Trade Commissioner Service):

<https://www.trade commissioner.gc.ca/trade-commissioner-delegue-commercial/search-recherche.aspx?lang=eng>

## Innovation Advisors (National Research Council – Industrial Research Assistance Program):

[http://www.ic.gc.ca/eic/site/080.nsf/eng/h\\_00010.html](http://www.ic.gc.ca/eic/site/080.nsf/eng/h_00010.html)

## MaRS Discovery District Matchmaking Support:

[powerforwardmatch@marsdd.com](mailto:powerforwardmatch@marsdd.com)



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada

# Online Resources



Natural Resources  
Canada  
Ressources naturelles  
Canada



Department for  
Business, Energy  
& Industrial Strategy

**Website (Applicant Guide, FAQs, to apply...) :**  
<https://impact.canada.ca/en/challenges/power-forward>

**Send us your questions at:** [nrcan.cleantechimpact-  
impacttechpropres.rncan@canada.ca](mailto:nrcan.cleantechimpact-impacttechpropres.rncan@canada.ca)  
[smart.innovation@beis.gov.uk](mailto:smart.innovation@beis.gov.uk)

**Join the conversation using #CleantechImpact and  
#PowerForward**

**Questions?**



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada