

# APPLICANT GUIDE **CHARGING THE FUTURE CHALLENGE**

UNLOCKING CANADA'S ENERGY STORAGE POTENTIAL



# 1. INTRODUCTION

Batteries are a rapidly growing industry worldwide, valued at over \$20 billion. The industry anticipates exponential growth over the next decade to meet expected demand for electric vehicles, as well as to support greater integration of renewable energy and provide opportunities to help manage the electricity grid both technically and economically.

Although batteries have significantly developed over the two centuries since their invention, there continues to be unlocked potential to harness from such technologies. Developing an optimized battery without compromising energy and power densities, weight, safety, range, life, costs, and environmental impacts requires tremendous investment in research and development (R&D) and continued support to scale up and implement in commercial applications. The expected growth of battery demand presents an important opportunity for Canada to develop innovative solutions, strengthen the battery value chain, and create high quality jobs while contributing to clean energy.

Advancements in battery technology that can increase performance and reduce costs will have direct impacts on the uptake and advancement of clean technologies, reduce pollution, and grow the economy.

The *Charging the Future* Challenge will identify top Canadian innovators from across the country who are developing breakthrough technologies to transform Canada's battery ecosystem.

## 2. OBJECTIVES AND OVERVIEW

### 2.1. Challenge Objectives

The objectives of the *Charging the Future* Challenge are to:

1. Mobilize innovators from inside and outside the industry to unlock a major step change in this area, and grow 'solver' communities to enhance Canada's battery innovation ecosystem;
2. Provide a unique platform to highlight promising R&D ideas and help them overcome barriers to prototyping and demonstration;
3. Accelerate the most promising made-in-Canada innovation of battery technologies from the laboratory towards the marketplace; and,
4. Increase the pace of Canadian innovation of battery technologies to strengthen the battery value chain in Canada and the world.

### 2.2. Challenge Overview

The *Charging the Future* Challenge is divided into three phases:

**Phase 1 (July 2019 – January 2020):** The Challenge will accept and evaluate applications from any eligible applicant seeking to develop a novel technology or process approach that would advance the state of battery technology and have an impact on the battery ecosystem in Canada. Proponents must submit an application online to be eligible for subsequent phases of the Challenge.

Based on an evaluation of submitted applications, up to five (5) qualifying Challenge proponents (finalists) will be selected by a Natural Resources Canada (NRCan) Technical Evaluation Committee made up of experts in the field to advance to Phase 2.

**Phase 2 (February 2020 – July 2021):** The selected finalists will have 18 months to produce a functional prototype to demonstrate and validate the results of their technological innovation. Each finalist will be eligible to receive up to \$700,000 in two stages of grant funding (Stage 1 and Stage 2 grants) for the purposes of developing, testing, demonstrating and validating the results of their solution.

**Phase 3 (Summer – Fall 2021):** The finalists will be invited to pitch their technology and forward-looking business plan to a panel of experts. To be considered for the \$1 million Grand Prize, each finalist must submit a detailed tech-to-market plan outlining the intended activities over the following two-year period if selected as the Grand Prize Winner. Each finalist must also comprehensively articulate how their technology, through the execution of their tech-to-market plan, will result in a significant impact on the battery ecosystem in Canada. Proponents must submit a detailed technical report, as per the Verification and Validation Plan (see Section 4.3) submitted with the initial application, which describes how their prototype product or process was tested and how it achieved the results set out at the onset of the Challenge.

Based on the technical report, tech-to-market plan, and finalist presentations, and with input from NRCan's Technical Evaluation Committee, the expert panel will determine the Grand Prize Winner.

## 2.3. Challenge Timeline

- **Charging the Future** Challenge launch: July 2019
- Call for proposals opens: July 2019
- Application deadline: 28 October 2019
- Finalists announced: January 2020
- Stage 1 grants issued: February 2020
- Project work begins: February 2020
- Mid-project achievement reports submitted: Fall 2020
- Stage 2 grants issued: Fall 2020
- Final technical reports and tech-to-market plans submitted: July 2021
- Final pitch event and technology demonstration: Summer 2021
- Grand Prize Winner announced: Fall 2021

Specific dates will be communicated through the Challenge website at: <http://impact.canada.ca>.

## 3. ELIGIBILITY AND SCOPE

### 3.1. Applicant Eligibility

Eligible applicants to the Challenge include the following:

- Legal entities duly incorporated and validly existing in Canada, including:
  - for-profit and not-for-profit organizations such as companies, industry associations, and research centres;
  - Indigenous organizations and groups; and,
  - Canadian post-secondary institutions.
- Independent innovators, unaffiliated consortia, and individuals who are a Canadian citizen(s) or permanent resident(s) of Canada.

Non-Canadian individuals and entities may be part of a partnership or consortium submitting a proposal as long as the lead proponent meets the above criteria and is associated with a duly incorporated or registered legal entity in Canada.

Ideas and concepts can originate from anywhere globally, but to receive funding from the Challenge, the ultimate solutions presented in the submissions must be developed, tested, piloted, demonstrated, and deployed in Canada.

Only the selected finalists' projects will be able to compete for the \$1 million Grand Prize.

**NOTE: Individual innovators are encouraged to submit an application to the Challenge, but in order to be eligible for the up to \$700,000 in grants at the conclusion of Phase 1 and for the Challenge Grand Prize, all successful proponents will be required to establish a legal entity (company or corporation) duly incorporated and validly existing in Canada. In addition, to be eligible for the Challenge Grand Prize, proponents will be required to demonstrate that their legal entity has established an internal or external corporate governance mechanism to provide confidence that funds will be directed to further advancing their solution toward adoption and future integration into a commercial system in Canada.**

## 3.2. Solution Scope

The Challenge is open to any type of rechargeable (i.e. “secondary”) battery technology, with an emphasis on those that have the greatest potential for reducing greenhouse gas emissions (GHGs). For example, storage for transportation (land, marine, air) or for supporting renewable power integration with the grid will be preferred over batteries with an intended end use in consumer electronics.

The Challenge will accept applications for technological innovations within the battery pack. This could include innovations in the manufacturing process, chemical composition, or physical design of the components, cells, or packs, or a management system within the pack.

In order to be eligible, your technological innovation should:

- Be related to secondary batteries;
- Be related to the **chemistry, design, management, or manufacturing process of battery components, cells or packs;**
- Not be commercially available;
- Be disruptive and visionary (i.e. not incremental in nature);
- Be associated exclusively with Intellectual Property you own or have permission to use; and,
- Have potential to significantly impact the battery ecosystem in Canada.

At the time of application your technology can fall anywhere on the nine-point Technology Readiness Level spectrum (see 0). Your application should clearly indicate the progress you plan to make over the course of the Challenge, and how you plan to achieve at minimum a testable prototype (approximate TRL 5-6) by the end of the project period (July 2021), including verified and validated data that shows that your technology has achieved its performance targets.

**NOTE: Previous work on the technology can include work done in a university or college environment, as well as innovation spun out of settings such as corporate laboratories, innovation hubs, private businesses or personal workshops.**

## 4. PHASE 1 APPLICATION PROCESS

In Phase 1 of the Challenge, applicants will compete for up to five finalist positions. Finalists will receive grants of up to \$700,000 each to compete for the \$1 million Grand Prize. Finalists will be required to produce a prototype and sufficient test data to validate their technology, as well as a credible tech-to-market plan. Applicants are encouraged to develop partnerships or establish consortia with diverse stakeholders to provide a comprehensive approach to strengthening the battery ecosystem in Canada.

The call for proposal opens with the launch of the Challenge on **July 16, 2019** and will close on **October 28, 2019**. Applications are to be submitted through the Impact Canada website <http://impact.canada.ca>, where you can also find challenge details including application instructions and specific dates.

In order to be considered, each applicant must provide the following information in their online application:

- Responses to ALL sections of the online intake form (see Section 4.1);
- Project brief (see Section 4.2);
- Verification and Validation Plan (see Section 4.3);
- Response to evaluation criteria (see Section 4.4);
- Risk mitigation plan (see Section 4.5);
- Project Budget Form (see Section 4.6);
- Financial risk assessment (see Section 4.8);
- Signed statements (see Section 4.8); and,
- Supporting documentation for IP, if applicable.

Each submission must provide sufficient details to enable assessment against the Evaluation Criteria (Section 5).

## 4.1. Online Web Form

In order to apply, eligible applicants must fill in the application form available online on the Impact Canada website. The form consists of several parts, all of which must be completed:

### *General*

The first section of this web form requests high-level information about your organization(s) and project – please make sure that you respond to each question.

### *Public/Media Information*

As part of the application process all applicants are asked to submit a **public description of the project** (500 words) that could be used on the Impact Canada and NRCan websites, social media platforms, etc. It should adequately describe the project without disclosing any information that is confidential, commercially sensitive, or may impact Intellectual Property (IP).

Applicants will also be invited to submit individual and/or team photos as well as organization and/or project logos.

The titles of successful and/or “honourable mention” projects, names of organizations, amounts awarded and the description of the project may be published. Images provided (headshots, logos, etc.) may also be used.

### *File uploads*

Applicants will upload each of the following seven documents, as well as any additional information that they deem relevant to their application. Note that additional documents may not be reviewed. Please note that there is an individual file size limit of 30 MB.

## 4.2. Project Brief

Applicants must submit a project brief that provides an overview of the project, details about the organization(s) and individual(s) involved in the project, and the innovative technology being developed and its applications. The project brief should also include a detailed timeline for the project over an 18-month period to commence once the project has been accepted into the Challenge. Applicants are free to use their desired format, and can include supporting figures and tables.

The project brief should include:

- The name(s) and contact information associated with the submission, with the project lead clearly identified;
- An overview of the organization(s) involved in the project;
- Background information on the key individual(s) working on the project, including areas of experience and expertise;
- Details about the technology to be demonstrated;
- Project location;
- Project goals;
- How the project is novel, useful, innovative and disruptive;
- A work plan, including timelines, activities and milestones for the full duration of the project if the project is selected as a finalist and funded;
- General approach used to execute the project tasks (e.g., in-house, contract, partners or vendor);
- Other sources of funding that may be leveraged;
- What the added value of public funding represents for this project and what the outcome would be if no public funding was provided; and,
- If the provision of public funds allows the project to leverage private funds, and if applicable, details on the nature of these funding relationships.

### 4.3. Verification and Validation Plan

Applicants will be responsible for developing a Verification and Validation Plan (VVP) with the intention of demonstrating the functionality and impacts of the proposed technology or process. The VVP will be used as part of the review process for finalist project selection. Additionally, the results and reporting obtained through the execution of the VVP will contribute to determining the ultimate Grand Prize Winner of the Challenge.

Scientific rigour, including attention to maintaining objectivity, are essential to give confidence that the data acquisition, processing, analysis, and reporting will be appropriately carried out such that the results and conclusions are valid. A plan should involve key steps to be performed by one or more independent and qualified third-party experts using appropriate procedures, test facilities and equipment. Furthermore, the reporting should be authenticated by an independent and qualified professional. Details regarding the procedures, experts, and test facilities will need to be provided in the application. The purpose of the VVP is to provide the Challenge with the necessary information required to determine whether or not the innovation being produced can be sufficiently evaluated for success, and how the advantages over a base-case or “business-as-usual” will be quantified.

Testing facilities should be available to meet the timeline of the project and to perform the measurements required and be ISO/IEC 17025 or similarly accredited. It will be the responsibility of the applicant to secure the facilities and resources required so that the results can be reported within the time constraints of the Challenge.

High-quality verification and validation can help to attract investment towards successful commercialization of a breakthrough technology. Applicants are encouraged to develop this plan with scientific rigour as a step towards attracting future investments in their technology.

### 4.4 Response to Evaluation Criteria

Applicants will use the web form provided to respond directly to each of the evaluation criteria outlined in Section 5 below. Please address as many of the questions outlined in this guide as possible, and add any complimentary information where appropriate. Please note the word limit for each section.

## 4.5. Risk Mitigation Plan

Applicants must provide a risk mitigation plan for the full 18-month duration of the project. The plan must outline any project risks, including:

- Technical, regulatory, organizational and environmental risks associated with the project; and,
- Approaches for overcoming or mitigating risk, including prior experience managing similar or comparable risks.

This risk assessment is intended to support the assessment of the viability of the project by the Technical Evaluation Committee and should cover the lead proponent and any anticipated project partners.

## 4.6. Project Budget Form

Applicants must include a completed *Charging the Future* Project Budget Form. The Project Budget Form provides a detailed analysis to support expected costs and must be downloaded, completed, and attached to applicants' full submissions. The Project Budget Form will be available through the Impact Canada website: <http://impact.canada.ca>.

## 4.7. Financial Risk Assessment Report

The following information for the applicant and any major financial contributors to the project (excluding governments & academia) must be included in a report and submitted as part of the application. For further guidance, please contact the Challenge team at [[nrcan.cleantechimpact-impacttechpropres.nrcan@canada.ca](mailto:nrcan.cleantechimpact-impacttechpropres.nrcan@canada.ca)].

### **Only for Independent innovators, unaffiliated consortia, and individuals who are Canadian citizens or permanent residents of Canada:**

1. Organizational description – including but not limited to the following:
  - a. A description of what the Applicant does (i.e. industry, product/service offering);
  - b. Number of employees in the Applicant organization (at time of application); and,
  - c. A scanned copy of a legal proof of address (e.g., driver's licence, property ownership, lease or rental agreement, utility bill, or other identification valid in the local jurisdiction) for the Project Lead as a separate attachment.

Proof demonstrating that a legal entity (company or corporation) duly incorporated and validly existing in Canada has been established to represent the applicant, must be submitted prior to the announcement of the Challenge finalists (January 2020). This is only required if the project has been selected as a Challenge finalist.

### **Only for legal entities duly incorporated and validly existing in Canada:**

1. Organizational description– Including but not limited to the following:
  - a. A description of what the Applicant does (i.e. industry, product/service offering);
  - b. Number of employees in the Applicant organization (as of time of application);
  - c. When the Applicant was incorporated and where is it located;
  - d. Whether the company is privately held or publicly traded;
  - e. Whether the Applicant is a wholly owned subsidiary and provide information on the parent company (e.g. name, industry, location, etc.); and,
  - f. If the Applicant is not a wholly owned subsidiary, indicate who the majority shareholders are (include capitalization table).

2. Financial statements (including balance sheet, income statement, cashflow, notes to the financial statements and if available, management discussion and analysis) for the preceding 2 fiscal years. If available, please include the most recent interim internal financial statements and cash flow projections. If financial statements are publicly available, you may refer to the location on your website where they can be found.
3. Letter of credit or bank reference letter from the relevant financial institution, or parent company showing guarantees relating to the Applicant's or any Project partners' credit (if no public credit ratings are available).
4. Documentation and a corresponding dollar value relating to any of the following (if applicable):
  - a. Any current or potential litigation;
  - b. Any significant commitments and contingencies outside the normal course of business; and,
  - c. Description of any other significant projects under consideration or currently being undertaken by the Applicant.

## 4.8. Signed Statements

Applicants must print, sign, and submit the Consent for Information Sharing form and the Attestation form in order to be considered for the Challenge. These forms can be found at the end of this Applicant Guide, or on the Challenge website at <http://impact.canada.ca>

## 5. Phase 1 Evaluation Criteria

Each application will be evaluated according to the information provided by the Applicant as detailed in this Section. The onus is on the Applicant to provide sufficiently detailed information, data, and analysis for the Natural Resources Canada Technical Evaluation Committee to fully understand and assess the viability of the proposal.

Quality and thoroughness of the online application's contents will be a critical determinant in the success of the application.

Consideration may also be given to factors that would help meet overall Impact Canada program objectives, such as building partnerships, attracting new solvers, supporting high-potential ideas, delivering transformative results, and increasing positive impacts across Canada, such as regional diversity and representation within the program.

Please ensure that your application addresses each of the following categories:

### 5.1. Impact on Battery Performance

Describe how the technological innovations of the project will impact the overall performance of the battery. Applicants are responsible for determining and justifying the baseline technical performance metrics against which they will compare applications of their solution.

- What technical characteristics are being impacted and what are the targets for your project?
  - How does your project improve on the current state-of-the-art or help achieve technical targets for batteries and components? Response could refer to, for example, the [Energy Storage System Goals](#) of the US Advanced Battery Consortium for some well documented targets.
  - Include details of any trade-offs that might be occurring between characteristics. For example, an innovation might enable higher specific energy while reducing battery life in cycles.

Impacted characteristics should be measurable and included in the Verification and Validation Plan (see Section 4.3).

## 5.2. Impact on Battery Economics

Describe how the technological innovations of the project could impact the overall economics of producing batteries. Applicants are responsible for determining and justifying the baseline economic metrics against which they will compare applications of their solution.

- What is the impact on the overall cost of a battery?
- What scale of production is necessary to achieve this impact?
- Are there other factors or externalities that affect the ability to achieve and maintain this cost impact? For example:
  - Geography
  - Resource limitations
  - Market
  - Codes, standards, regulations

## 5.3. Tech-to-Market Plan

Describe the plan for the eventual commercialization of the technology.

- How will the solution compete in the market?
  - Who are the direct competitors?
- Is there a credible path and timeline to commercialization for the proposed solution?
  - In which market(s)
- How does the project demonstrate the techno-economic viability of the solution?
- What is the IP strategy?
- Has contact been initiated with potential future suppliers or buyers?
- What is the financial plan beyond the end of the project (Fall 2021)?
  - How will this project help to attract follow-on funding or investments?
- To date, where has the capital come from?
- Has a bank been engaged?
- What are the cost structures, and which elements are key to managing costs?
- Is the solution scalable?
- How adoptable is the solution into current systems?
- What barriers exist to commercialization, and what plans are in place to overcome them?

## 5.4. Environmental and Safety Impact

Describe how the technological innovations of the project affect the lifecycle environmental impact and overall safety of the battery.

- What is the impact on lifecycle GHG emissions related to the battery? For example, does your innovation:
  - Reduce the energy footprint of materials used; or,
  - Decrease the emissions or energy requirements of the manufacturing process?

**NOTE: Exclude GHGs offset by the intended application (i.e. mobile emissions offset by EV use, grid emissions reduced through increased renewables in energy mix, etc.).**

- What is the non-GHG environmental impact of the battery? For example, what is the impact on:
  - End-of-life recyclability; or,
  - The chemicals used in the manufacturing processes?
- What is the impact on the safety of the battery? For example, what is the impact on safety with regards to:
  - Production;
  - Transportation;
  - End use; or,
  - End of life?
- Include rationale for exclusion of any factors not included in the Verification and Validation Plan (see Section 4.3)

## 5.5. Feasibility

Describe the feasibility of the project achieving its objectives.

- Does the project team have the capacity and expertise to meet its objectives?
- What are the areas of expertise and roles of key team members?
- What are the key milestones and deliverables for the project and when are they expected to be completed?
- What are the risks associated with the project?
- What mitigation strategies will be used to address the various risks identified?

## 6. Phase 1 Finalist Selection

### 6.1. Selection process

- The Evaluation Criteria (Section 5) identify the information required for assessment.
- A Technical Evaluation Committee made up of experts from within and outside of government will review and evaluate all of the applications. NRCan will take appropriate measures to ensure that there will be no conflict of interest for any Technical Evaluation Committee members, and will exercise Non-Disclosure Agreements to protect proponents' information, where appropriate.
- The applicants who do not meet the eligibility criteria will be informed by the end of December 2019.
- The Technical Evaluation Committee will provide a list with the strongest proposals to NRCan for final decision before the official release of the finalists' names.
- Unsuccessful applicants will have the opportunity to receive feedback on their results.
- NRCan, at its own discretion, may decide to cancel the Challenge, following recommendation from the Technical Evaluation Committee, if significant concerns exist about the quality of the applications or the projects.
- The selected projects will be announced in January 2020. The specific date will be posted at <http://impact.canada.ca>.

### 6.2. Financial Due Diligence

- NRCan will undertake financial due diligence on all finalists. This will include looking at financial statements for the preceding 2 fiscal years, as well as the most recent interim internal financial statements and cash flow projections (if available).
- It will also require a letter of credit or bank reference letter from a relevant financial institution or parent company showing guarantees relating to the Applicant's or any Project partners' credit (if no public credit ratings are available).
- Proponents will be required to submit documentation and a corresponding dollar value relating to any of the following (if applicable):

- Any current or potential litigation;
- Any significant commitments and contingencies outside the normal course of business; and,
- Description of any other significant projects under consideration or currently being undertaken by the Applicant.

### 6.3. Notification and Information Sharing

- Applicants will be informed by email whether their application has been successful, subject to compliance with the terms and conditions of the Grant Agreement.
- NRCan may wish to publicize the results of the Challenge which may involve engagement with the media. At the end of the application and assessment process, NRCan may issue a press release or publish a notice on its website. These public documents may, for example, outline the overall results of competitions and describe some of the projects to be funded.
- NRCan may share information from applications with other Canadian Government agencies or departments.
- Some organizations may want their activities to remain confidential and will be given a chance to opt out of any involvement in media relations activity and further case study coverage of projects should they see this as being absolutely necessary. However, the public description of the project you provide in your application (see Section 4.1) will be made available in the public domain if your application is successful; Applicants cannot opt out of the project description being published under these circumstances.

## 7. Phase 2: Project Execution

### 7.1. Terms of Funding

Based on the recommendation of the Technical Evaluation Committee, Natural Resources Canada will fund grants worth up to \$700,000 each for up to five (5) finalists. The finalist grants will be awarded in two stages.

A Stage 1 finalist grant of up to \$350,000 will be issued to each finalist in winter 2020. A Stage 2 finalist grant of up to \$350,000 will be issued to each finalist in fall 2020, subject to the submission and evaluation of the mid-project achievement report.

- Up to five (5) projects will be eligible for up to \$700,000 each through two consecutive grants (Stage 1 and Stage 2) which will be negotiated between Natural Resources Canada and the finalists in Phase 2.
- Natural Resources Canada does not guarantee the signing of Stage 2 grants. The Stage 2 grants will be negotiated and signed contingent upon the receipt and evaluation of the mid-project achievement report, which is a requirement of the Stage 1 grant.

### 7.2. Eligible Expenditures

Eligible expenditures must be directly related to, and necessary for, the implementation and conduct of a project and could include, but are not limited to:

- Salaries and benefits for personnel
- Professional, scientific, technical and contracting services
- Travel expenditures, including meals and accommodation, based on National Joint Council Rates
- Rent, leasing, maintenance costs and utilities
- Capital expenditures such as the purchase, installation, testing and commissioning of qualifying equipment, materials and products, including diagnostic and testing tools and instruments
- Other expenses including:
  - Laboratory and field supplies, and materials
  - Printing services and translation

- Data collection services, including processing, analysis and management
- Administration and support services for the delivery of challenges
- Facility costs for seminars, conference room rentals, etc.
- Licence fees and permits
- Field testing services
- Training
- Overhead expenditures, up to 15% of the project costs, provided they are directly related to the conduct of the project and can be attributed to it, could include:
  - Administrative support provided directly to the project by the recipient's employee(s), valued on the same basis as professional staff time
  - Rent, routine building, laboratory and field equipment maintenance
  - Utilities such as heat, hydro, and office operating costs (e.g., faxes, telephone)
  - GST, PST or HST, net of any tax rebate to which the recipient is entitled

Exclusion: Federal contribution funds will not be used for the purchase of land.

### 7.3. Project monitoring and evaluation

- Finalists will be required to submit a mid-project achievement report post-Stage 1 grant in order to unlock a Stage 2 grant. This reporting will be in confidence to NRCan and its technical advisors and will not be published. Any changes to project plans and/or timelines will need to be discussed with NRCan.
- Successful applicants will be expected to participate in an assessment of the project during and after final grant payments, to assess the impact of the scheme including value for money. This will include the requirement to participate in a third-party review of the project.

## 8. Phase 3: Competing for the Grand Prize

### 8.1. Final Submission

All **Phase 2** finalists will be required to build their proposed solution concept into a testable prototype, and produce verified evidence of their solution's characteristics according to the Verification and Validation Plan (see Section 4.3) submitted in Phase 1. The evidence must clearly demonstrate the functionality and impacts of the solution. All evidence of the project's technical and environmental results will need to be assessed and validated by a qualified independent third party.

Each finalist will have an 18-month project development window with the goal of developing a testable prototype product or process (approximate TRL 5-6) – further development of advanced demonstration models is encouraged but not required.

At the end of the 18-month project development window (July 2021), proponents must submit a detailed technical report which demonstrates how their prototype product or process was tested and how it achieved the results identified in their application. The detailed technical report must clearly outline the testing methods applied and results achieved in accordance with the accepted Verification and Validation Plan.

Finalists that are unable to produce a testable prototype solution will be excluded from consideration for the Grand Prize.

At the end of the 18-month project development window (July 2021), proponents must also submit a detailed tech-to-market plan, outlining the intended activities over the following two-year period if selected as the Grand Prize Winner.

NRCan reserves the right to provide additional requirements for the final evaluation prior to the start of Phase 2 of the Challenge. Additional details on the final evaluation will be made available on the Impact Canada website: <http://impact.canada.ca>.

## 8.2. Final Evaluation

At the end of the 18-month project development window, the expert panel, with input from the Natural Resources Canada Technical Evaluation Committee, will evaluate the submitted detailed technical reports and supporting documentation.

The expert panel will recommend the finalist whose project exhibits the highest likely impact on Canada's battery ecosystem, based on the evaluation criteria set out in Section 5 of this guide.

Based on the expert panel's final selection and recommendation, Natural Resources Canada will award a single (1) \$1 million Grand Prize.

In addition, NRCan will support the finalists via various mechanisms, such as opportunities to pitch to investors at showcase events.

## 9. General Terms and Conditions

Applicants to the Challenge agree to the following when submitting their application:

- Applicants agree to comply with all applicable laws;
- Applicants must be able to demonstrate ownership of or permission to use any intellectual property (IP) used in the Challenge; and,
- The Minister of Natural Resources Canada has the sole discretion to cancel this Challenge or any part thereof at any time.

## 10. Privacy

The use and distribution of data collected under this program will comply with both the Privacy Act and the Access to Information Act. Pursuant to the Privacy Act, the program will keep confidential any personal information it may collect and will not disclose or transmit said information without the applicant's written consent.

Pursuant to the Access to Information Act, the program will protect from disclosure any information of a financial, commercial, scientific or technical nature it collects from applicants so long as the applicants treat said information as confidential in their own establishments. If the applicant chooses to send the proposal or other confidential information to Natural Resources Canada by e-mail, Natural Resources Canada will respond to the proposal by e-mail. Similarly, if the applicant's correspondence is through regular mail, Natural Resources Canada's response will be in like manner. However, in all cases, Natural Resources Canada will use e-mail correspondence to the applicants for all non-confidential matters.

Applicants to the Challenge have the option of allowing Natural Resources Canada to share submitted information for the purposes of the Challenge with other organizations who provide funding and support for innovation, such as other Government of Canada departments and initiatives (e.g., the Government of Canada Clean Growth Hub); provincial, territorial or municipal governments; and not-for-profit organizations (e.g., Sustainable Development Technology Canada).

See ANNEX A for the letter of consent, which must be completed and submitted with all other required application documentation in order for information to be shared.

## CONTACT

For any questions or clarifications regarding the ***Charging the Future*** Challenge, please contact the Natural Resources Canada ***Charging the Future*** team:

[nrcan.cleantechimpact-impacttechpropres.nrcan@canada.ca](mailto:nrcan.cleantechimpact-impacttechpropres.nrcan@canada.ca)

Updates will be provided on the Challenge website at <http://impact.canada.ca>, where applicants can review the FAQs as well as find out the latest news.

Applicants are encouraged to follow us on social media for the latest developments:



**Twitter:** @NRCan <https://twitter.com/NRCan?lang=en>



**Facebook:** Environment and Natural Resources in Canada [https://www.facebook.com/EnvironmentandNaturalResourcesinCanada/?ref=br\\_rs](https://www.facebook.com/EnvironmentandNaturalResourcesinCanada/?ref=br_rs)



**LinkedIn:** Natural Resources Canada <https://www.linkedin.com/company/natural-resources-canada>



**Instagram:** naturalresourcescanada <https://www.instagram.com/naturalresourcescanada/>

## ANNEX A. Consent for information sharing

By submitting a proposal, you agree to the information provided in your application, including personal data, being used as described in the Privacy Section of the **Charging the Future** Challenge Applicant Guide, and as indicated in this Form.

Do you agree that Natural Resources Canada may access the information included in this document [required for consideration in the Challenge]:

YES \_\_\_\_

Do you agree that Natural Resources Canada (NRCan) may share any information provided for the purposes of the **Charging the Future** Challenge with other funding entities of the:

- Government of Canada
- Provincial, Territorial, or Municipal Governments
- Not-for-Profit sector (e.g., Sustainable Development Technology Canada, the Green Municipal Fund).

YES \_\_\_\_

Do you agree that NRCan may share any information provided for the purposes of the **Charging the Future** Challenge with the Government of Canada's Clean Growth Hub? The Clean Growth Hub is a whole-of-government focal point for clean technology focused on supporting companies and projects.

YES \_\_\_\_

If your project is selected as a finalist or "honourable mention" at the end of Phase 1, do you agree that NRCan may publish the name of your organization, the title of your project, the public description of your project provided for this purpose, and the logo and/or images provided?

YES \_\_\_\_

Full Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

*Please complete and attach this form to your submission in order for information to be shared.*

## ANNEX B. Attestation

As the authorized person to sign for the Applicant, I declare that:

- The information in the application is true, accurate and complete;
- I have all the necessary authorities to undertake the proposed project, or will obtain these authorities prior to the approval of the project;
- If selected as a Challenge finalist, I will become a legal entity (company or corporation) duly incorporated and validly existing in Canada in order to adhere to eligibility requirements;
- I and any person lobbying on my behalf to obtain funding are in compliance with the Lobbying Act and that no actual or potential, direct or indirect, contingency fee arrangement exists;
- No public servant or holder of public office, past or present, will derive a direct benefit from the approved funding in breach of the Values and Ethics Code for the Public Service or the Conflict of Interest Act; and,
- I will act in compliance with applicable statutes, regulations, orders, standards and guidelines governing the program from which funding is being sought.

I acknowledge that the submission of this Application does not constitute a commitment on the part of the Minister of Natural Resources to award funding. The payment of monies by Canada is subject to there being an appropriation by Parliament for the Fiscal Year in which the payment of monies is to be made.

I authorize the Minister of Natural Resources to disclose any information submitted in this Application within the Government of Canada or to outside entities, subject to applicable restrictions associated with privacy, confidentiality and security for the following purposes:

- To reach a decision on the application;
- To support transparency, accountability and citizen engagement; and,
- To respond to requests made under the [Access to Information Act](#) and the [Privacy Act](#).

Signature:

Date:

## ANNEX C. Technology Readiness Levels (TRL)

Technology readiness levels are an indication of the maturity stage of development of particular technology on its way to being developed for a particular application or product. The table below provides a definition of Technology Readiness Levels 1 to 9 (<https://www.ic.gc.ca/eic/site/080.nsf/eng/00002.html>).

TRL 1 – Basic Research	Scientific research begins to be translated into applied research and development.
TRL 2 – Applied Research	Basic physical principles are observed, practical applications of those characteristics can be ‘invented’ or identified. At this level, the application is still speculative: there is not experimental proof or detailed analysis to support the conjecture.
<b>Applied research and development</b>	
TRL 3 – Critical Function or Proof of Concept Established	Active research and development is initiated. This includes analytical studies and laboratory studies to physically validate analytical predictions of separate elements of the technology. Examples include components that are not yet integrated or representative.
TRL 4 – Laboratory Testing/Validation of Component(s)/ Process(es)	Basic technological components are integrated - Basic technological components are integrated to establish that the pieces will work together.
TRL 5 – Laboratory Testing of Integrated/Semi-Integrated System	The basic technological components are integrated with reasonably realistic supporting elements so it can be tested in a simulated environment.
<b>Demonstration</b>	
TRL 6 – Prototype System Verified	Representative model or prototype system, is tested in a relevant environment.
TRL 7 – Integrated Pilot System Demonstrated	Prototype near or at planned operational system, requiring demonstration of an actual system prototype in an operational environment.
<b>Pre-commercial deployment</b>	
TRL 8 – System Incorporated in Commercial Design	Technology is proven to work - Actual technology completed and qualified through test and demonstration.
TRL 9 – System Proven and Ready for Full Commercial Deployment	Actual application of technology is in its final form - Technology proven through successful operations.