



# **ELECTRIFYING SOCIETY**

**TOWARDS DECARBONIZED RESILIENT COMMUNITIES**

 SUPPORTED BY THE CANADA FIRST RESEARCH EXCELLENCE FUND

CONCORDIA

# Electrification for Resilient and Decarbonized Communities (ERDC)

Concordia and its partners' vision for this CFREF is to build on demonstrated strengths and establish a world-leading ecosystem/initiative for research and innovation in decarbonized resilient communities through electrification.

A key objective of the ERDC is to significantly narrow the gap time in the discovery-to-market value chain. The ERDC's mission is rooted in technological and social innovation and transdisciplinary convergence and integration.

# ERDC Main Calls for Proposals

The ERDC Advisory Board has approved the seed grant call for projects; it will be one of several other calls and initiatives. Currently, future calls for proposals are under discussion and a funding strategy has not yet been approved. However, potentially, the seed call would be one of several calls for projects, currently envisaged as follows.

## **Seed Grant - June 2023**

- Seed funding: selected projects must demonstrate potential for leading to high-impact projects (including but not limited to major projects in 2024)
- Generate early impact/results: positioning for mid-term review.

## **Impact Grant (1) – expected around 2024 (subject to change)**

- Large-impact projects.
- Backbone of the ultimate impact of ERDC and building its legacy.
- Multidisciplinary and interdisciplinary, arrays of partners (public and private), social acceptability and economic viability, to demonstrate real and significant impact.

## **Impact Grant (2) – expected around 2026 (subject to change)**

- Maximize the impact of previously funded research.
- Leverage new opportunities.

# Seed Grant: Call for Projects 2023

- Total budget: \$6.75M (ERDC funding)
  - Funds set aside for each Partner Institution: Concordia (up to \$4.5M), TMU (up to \$0.75M), UCalgary (up to \$0.75M), Dalhousie (up to \$0.75M)
- Maximum \$125K per year, 2 years in duration, for a total of \$250K (ERDC funding) per project
  - 70% of funding must be allocated to HQP
  - Minimum graduate students support: MSc \$22K; PhD \$35K
  - Retroactive funding not allowed
- Approximately 4 projects per theme/platform (approx. 27 projects in total)
- One project per PI
- PI must be from a Partner Institution (Concordia; TMU; UCalgary; Dalhousie)
- Co-PI can be from a Partner Institution (Concordia; TMU; UCalgary; Dalhousie) or a collaborating academic institution (Carleton University, University of Windsor, École de Technologie Supérieure, École Polytechnique de Montréal, and Université de Montréal)
- Minimum 3 researchers (PI + co-PIs)
- Researchers can be co-PIs in a maximum of 3 projects
- Inclusion of ECRs is strongly encouraged
- Participation of non-academic partners is compulsory; cash and/or in-kind is required from partners

Deadline for  
applications:  
September  
6, 2023

Start of  
Projects:  
Fall 2023

# Topics

## **Theme 1: Smart, sustainable, and healthy built environment**

Focuses on the design, development, and operation of the built environment and placemaking, encompassing urban centers as well as rural and remote communities, with the goal of reaching carbon neutrality.

## **Theme 2: Resilient community energy and transportation systems based on renewables**

Focuses on innovative theories, designs and system concepts for electrified, smart, and connected communities in diverse environments.

## **Theme 3: Planning and governance for social equity and citizen engagement**

Focuses on the quality of both processes and outcomes; this theme develops strategies for informed planning and approaches for engaging communities, in order to improve the lived experiences of electrification and decarbonization scenarios and sites.

**Note: Examples are provided in the call under each theme but submissions do not have to be restricted to them. It is also important to note that the ERDC seeks applications from ALL disciplines.**

# Topics

## **Platform A: Electrification**

The electrification platform connects the three themes at the technological level and facilitates integration of technologies. See examples in the call.

## **Platform B: Internet-of-Things (IoT) and Digitalization**

This platform will deliver the required IoT and data modelling framework that cities with electrified building, transportation and energy sectors will require. See examples in the call.

## **Platform C: Living Lab and Knowledge Mobilization**

A number of Living Labs have already been identified. Potential new Living Lab sites will also be considered.

**Note: Examples are provided in the call under each platform but submissions do not have to be restricted to them. It is also important to note that the ERDC seeks applications from ALL disciplines.**

# Eligible Expenses

This call allows for the funding of:

- Undergraduate and graduate students;
- Postdoctoral fellows;
- Professionals;
- Travel expenses;
- Dissemination expenses;
- Intellectual Property expenses
- Small equipment (laptops/desktops), software, databases, access to computing resources
- Materials & supplies

**Research ethics:** For projects requiring ethics approval, funds will not be released until approval is granted.

**Transfer of funds:** The funds will be transferred to the research office of the principal investigator's home university. Tri-Agency rules prohibit subsequent transfer of funds by institutions that receive transfers from Concordia University (i.e. double-transfer).

# Evaluation Criteria

## 1. Alignment with the scope of the call (Pass/Fail)

- a. Fit with ERDC themes or platforms?
- b. Potential to lead to large, multi-disciplinary, multi-partner strategic projects (e.g. for the Impact (1) call [2024]), and to demonstrate real and significant impact

## 2. EDI strategy / action plan (Pass/Fail)

Plans to increase the inclusion and advancement of underrepresented groups in their fields, as one means to enhance excellence in research and training.

- a. Identification of field-specific equity challenges, where existent. This is not expected to be exhaustive, and should focus on elements that the proposal is capable of addressing to a degree.
- b. Avenues of equitable recruitment identified for HQP and, as necessary, faculty and community recruitment for research team (e.g. commitment to advertising all job postings on under-represented group-specific student groups or centres' websites).



# Evaluation Criteria

## 2. EDI strategy / action plan (continued)

- c. Prominent inclusion of ECRs concretely provided for.
- d. Commitment to evaluate job and team candidates accounting for leaves (official and otherwise), interruptions, slow-downs, disability-related progress differentials, and non-traditional career paths. This commitment should be prominently advertised in all recruitment efforts.
- e. Equitable mentorship plan for HQP and (where applicable) ECRs clearly delineated.
- f. Gender-based Analysis+ (equity, diversity and inclusion in the research *design*) elaborated in proposal, where applicable.

# Evaluation Criteria

## 2. EDI strategy / action plan (continued)

### Important to note:

1. Applicants to future calls will be expected to report on fulfillment of commitments made in 2023 Seed Grant proposals.
2. Though this is not required for Seed Grants, research teams should begin planning equitable outreach activities as soon as possible.
3. The first milestone of the CFREF in terms of reporting, is the EDI action plan (deadline: July 5, 2024).

# Evaluation Criteria

## **3. Scientific quality of the proposed project**

- a. Objectives of the project toward decarbonized resilient societies must be clearly stated & feasible within timeframe
- b. State-of-the art must be clearly described
- c. Proposed solution must be clearly explained, innovative & multidisciplinary
- d. Key technical performance targets must be defined, quantitatively, to achieve decarbonized resilient societies

## **4. Quality of the team and partnerships**

- a. Project must involve partners, private and institutional, to achieve impact
- b. The contribution of non-academic partners (cash and/or in-kind) and the nature and extent of their involvement must be clearly explained and synergized toward achieving impact
- c. All key participants involved have the required expertise & experience
- d. Must have an effective mechanism to ensure interaction among participants

# Evaluation Criteria

## 5. Impact

- a. Improvement toward decarbonized resilient communities must be clearly described
- b. A way forward for eventual implementation or removal of barriers must be clearly described
- c. Project must significantly contribute to training students or personnel
- d. Project must contribute to developing an ERDC ecosystem across Canada
- e. Must have a plan to disseminate the results for the benefit of ERDC partners, contributors, and communities involved in the research
- f. A variety of outputs is sought. Foreground IP (patents, know-how, trade secrets, etc.) are expected to be developed, other issues such as building codes and standards identified (whenever applicable), and/or impact on public policy.

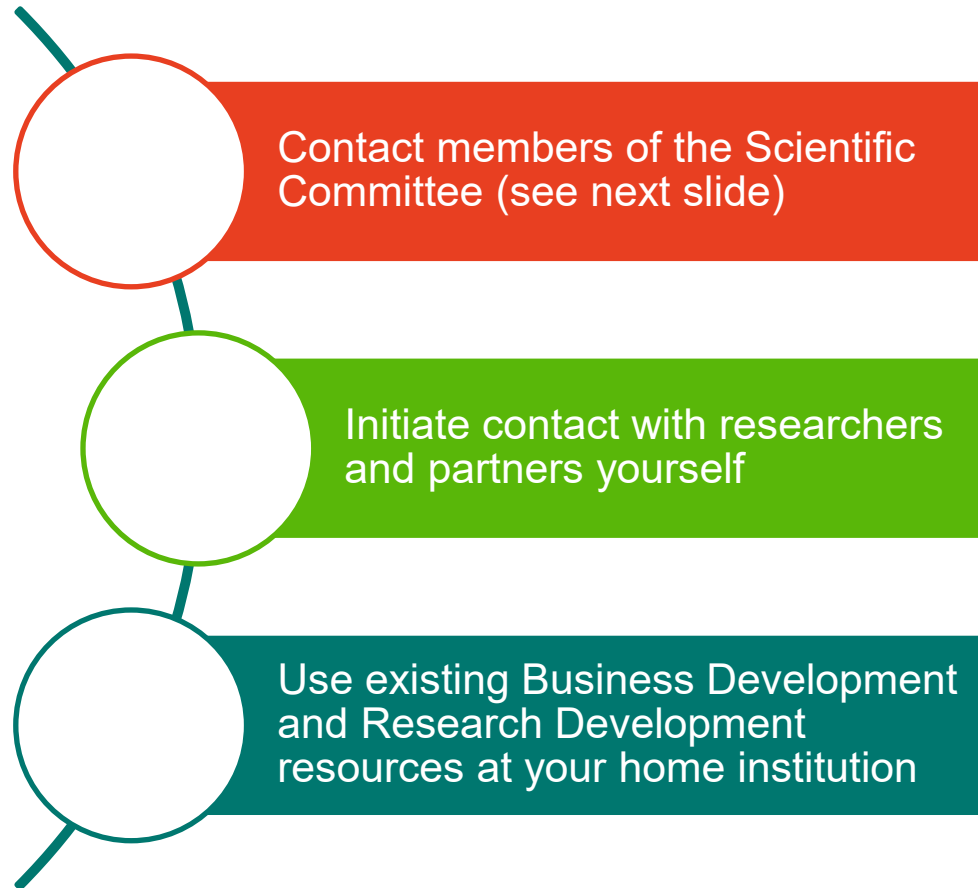
# Evaluation Process



# Timeline



# To network with other researchers & partners



# Also look out for...

Formal launch of the CFREF initiative in Fall 2023

Networking event(s) in Fall 2023

# Members of the Scientific Committee

## **Andreas Athienitis (Chair)**

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**Building, solar energy and controls**

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**Electrical machinery, renewable energy**

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**Cybersecurity, IoT**

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**Smart Cities**

## **Chris Henderson**

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**Clean energy**



# Required documents

- **Application form**, duly completed  
Includes: Summary, theme(s)/platform(s), keywords, breakdown of expenditures and contributions by institution/partner, research team and contributions to project, partnerships, EDI strategy, proposal, project plan, expenditures (budget & budget justification), impacts/benefits, suggested reviewers (4)
- **Annex 1:** References
- **Annex 2:** CVs of key personnel
  - PI and co-PIs: NSERC Form 100A and CCV attached (preferred);  
OR SSHRC online/web CV and research contributions attachment (similar to SSHRC Insight Grants)
  - Collaborators: 2-page summary CV
- **Annex 3:** Letters of support from industry partners, community partners, and other funding agencies. Letters must detail the nature of involvement, and indicate cash and/or in-kind contributions.

# Submission Process

An online submission platform is under development.

Until further notice, submissions to be made by email to [erdc@concordia.ca](mailto:erdc@concordia.ca) using the application template (available in Word format). All submitted documents must be in PDF format (including the application template).

**Questions about the seed grant call for projects 2023 can be directed to:**

[erdc@concordia.ca](mailto:erdc@concordia.ca)

# Q&A

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