

**Environment and Natural Resources Trust Fund  
2020 Request for Proposals (RFP)**

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**Project Title:**

**ENRTF ID: 172-E**

Partnerships with Municipal and Cooperative Utilities

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**Category:** E. Air Quality, Climate Change, and Renewable Energy

**Sub-Category:**

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**Total Project Budget: \$** 448,991

**Proposed Project Time Period for the Funding Requested:** June 30, 2023 (3 yrs)

**Summary:**

We propose to develop a three-year research engagement platform for university and non-profit experts to partner with diverse cohorts of municipal and cooperative utilities to develop targeted clean energy solutions.

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**Name:** Gabriel Chan

**Sponsoring Organization:** U of MN

**Job Title:** Professor

**Department:** Humphrey School of Public Affairs

**Address:** 301 19th Ave S  
Minneapolis MN 55455

**Telephone Number:** (612) 626-3292

**Email** qabechan@umn.edu

**Web Address:** <https://chan-lab.umn.edu>

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**Location:**

**Region:** Statewide

**County Name:** Statewide

**City / Township:**

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**Alternate Text for Visual:**

Organizational model for a research engagement platform

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity	_____ Readiness	_____ Leverage	_____ TOTAL _____%



## Environment and Natural Resources Trust Fund (ENRTF) 2020 Main Proposal Template

**PROJECT TITLE: Partnerships with municipal and cooperative utilities**

### **I. PROJECT STATEMENT**

We propose to develop a three-year **research engagement platform** for university and non-profit experts to partner with diverse cohorts of municipal and cooperative utilities (“munis” and “co-ops”). The purpose of the project will be to build the internal capacity of Minnesota munis and co-ops and help them drive the modernization of our electric system. With cohorts of three to four munis and co-ops selected once per year for three years, we will work with utilities to develop targeted clean energy solutions that will help Minnesota meet its environmental goals.

Utilizing a system of “participatory action research,” where utilities co-create research questions and action strategies, experts will lead targeted studies in collaboration with the utility cohorts, leveraging existing expertise across our organizations and training student researchers through coursework and research assistantships. The combined expertise of the University of Minnesota, project partners, and utility participants will put us in an ideal position to generate new objective insights that are likely to be seen as credible and actionable. We also plan to host annual regional workshops with munis and co-ops to build and strengthen networks among the utilities, sharing our action-oriented findings to a broader audience.

This proposal is grounded in current necessity. The electricity sector is undergoing profound changes, including increasing pressure to reduce environmental impacts while offering consumers choices and keeping costs low. Minnesota’s 169 munis and co-ops provide electricity service to over 40% of Minnesotans and already lead some aspects of the energy system’s changes, but there is a substantial need for translation, amplification, and new research to reach all munis and co-ops in their particular local needs. Therefore, a broad perspective of the whole state is needed to address these challenges to allow utilities to develop sustainable business models to respond to these challenges.

This project works with municipal and cooperative utilities in their current regulatory framework to address those challenges. This is important because munis and co-ops do not see the same state or federal regulations as investor-owned utilities. For example, the state’s renewable energy standard set different targets for munis and co-ops. But as the state looks to reduce its electricity-sector carbon emissions and to electrify the transportation and thermal sectors to meet environmental goals, munis and co-ops will need to be equipped to respond to external and internal pressures with sustainable solutions.

Each year’s cohort of utilities will address distinct questions to build a portfolio of solutions applicable to a wide range of Minnesota munis and co-ops. Research questions will focus on the organizational management and program design challenges of utilities but will leverage complementary engineering and other expertise as needed. Example research questions could focus on, (1) financial models to expand clean energy choices while keeping costs reasonable, (2) opportunities for beneficial electrification and the integration of new electricity demand, such as electric vehicles, (3) alternative rate designs that vary prices by time of day and season to use existing resources as efficiently as possible, (4) opportunities for on-bill financing to make residential energy efficiency more affordable, (5) analysis of power supply contracts to enable procurement of more supply and demand strategies that lower emissions, and (6) potential to integrate storage and load management technologies to increase renewable adoption and mitigate expensive peak power.



**Environment and Natural Resources Trust Fund (ENRTF)**  
**2020 Main Proposal Template**

**II. PROJECT ACTIVITIES AND OUTCOMES**

**Activity 1: Participatory Action Research Teams**

*Annually in June of each year, a diverse cohort of 3 to 4 municipal and cooperative utilities will be selected as partner utilities. Research teams composed of graduate students, faculty, and staff from interdisciplinary backgrounds will work with utilities to co-develop a targeted problem-driven research question. Research teams will perform principal research activities in July to May each year, pulling in additional expertise and resources from across the University of Minnesota and the research team's broader network of state and national experts. The main outcomes of the project will be delivery of targeted research products (reports, briefings, and presentations) for the partner utilities each year. Products will be delivered by May of the project year. Research results will be made publicly available on a dedicated website.*

**ENRTF BUDGET: \$448,991 (divided approximately equally across three years)**

Outcome	Completion Date
1. Targeted research outcomes (report, briefing, and presentation) for three to four muni and co-op partners in each of three years	Annually on May of each year
2. Website to disseminate research outcomes	May, 2021

**Activity 2: Annual Regional Workshops**

*Annual regional workshops will highlight the research outcomes of the previous year with a broader set of muni and co-op partners. Cited in or near the communities where the work takes places, workshops will help convey the key research findings developed with the previous year's cohort, holding up these muni and co-op leaders with their peers, and drawing connections to the challenges and opportunities faced by other munis and co-ops in the state.*

**ENRTF BUDGET: \$7,500 (divided equally across three years)**

Outcome	Completion Date
1. Annual workshops in each of three years	Annually by June of each year

**III. PROJECT PARTNERS AND COLLABORATORS:**

The University of Minnesota Humphrey School will be the lead partner in this effort. Within the University, the Clean Energy Resource Teams (UMN Extension) and the Energy Transition Lab (Institute on the Environment) will join as partners in this project. Outside of the university, the Great Plains Institute will provide additional expertise and facilitation. We will engage a broader network of experts to provide additional (unpaid) input.

Already there is experience and appetite for this proposal. Over the past two years, the Humphrey School has led an effort to interview over 50 senior decision makers in Minnesota munis and co-ops. We recently released a report summarizing this work (<https://chan-lab.umn.edu/municoop>), which will serve as background research for our current proposal for direct engagement with munis and co-ops. Following the release of the report, we convened 35 executives from Minnesota munis and co-ops to solicit input for this project proposal. From this input, we developed this proposal's core concept of developing a participatory engagement platform that places munis and co-ops as project partners with our team at each step of the program, from question formation through research execution, and even as the co-messengers of research findings to their peer utilities.

**IV. LONG-TERM IMPLEMENTATION AND FUNDING:**

As the costs of clean energy continue to decline and policies and research and development continue to lower the cost of energy technologies, munis and co-ops in Minnesota can create new opportunities to meet the state's and nation's environmental targets while maintaining their community focus. The results of this work will directly engage three to four utilities per year but will develop insights that are more broadly applicable to utilities across the state and region through publicly accessible research reports and briefings and an annual workshop open to all munis and co-ops.

## 2020 Proposal Budget Spreadsheet

Project Title:

### IV. TOTAL ENRTF REQUEST BUDGET: 3 years

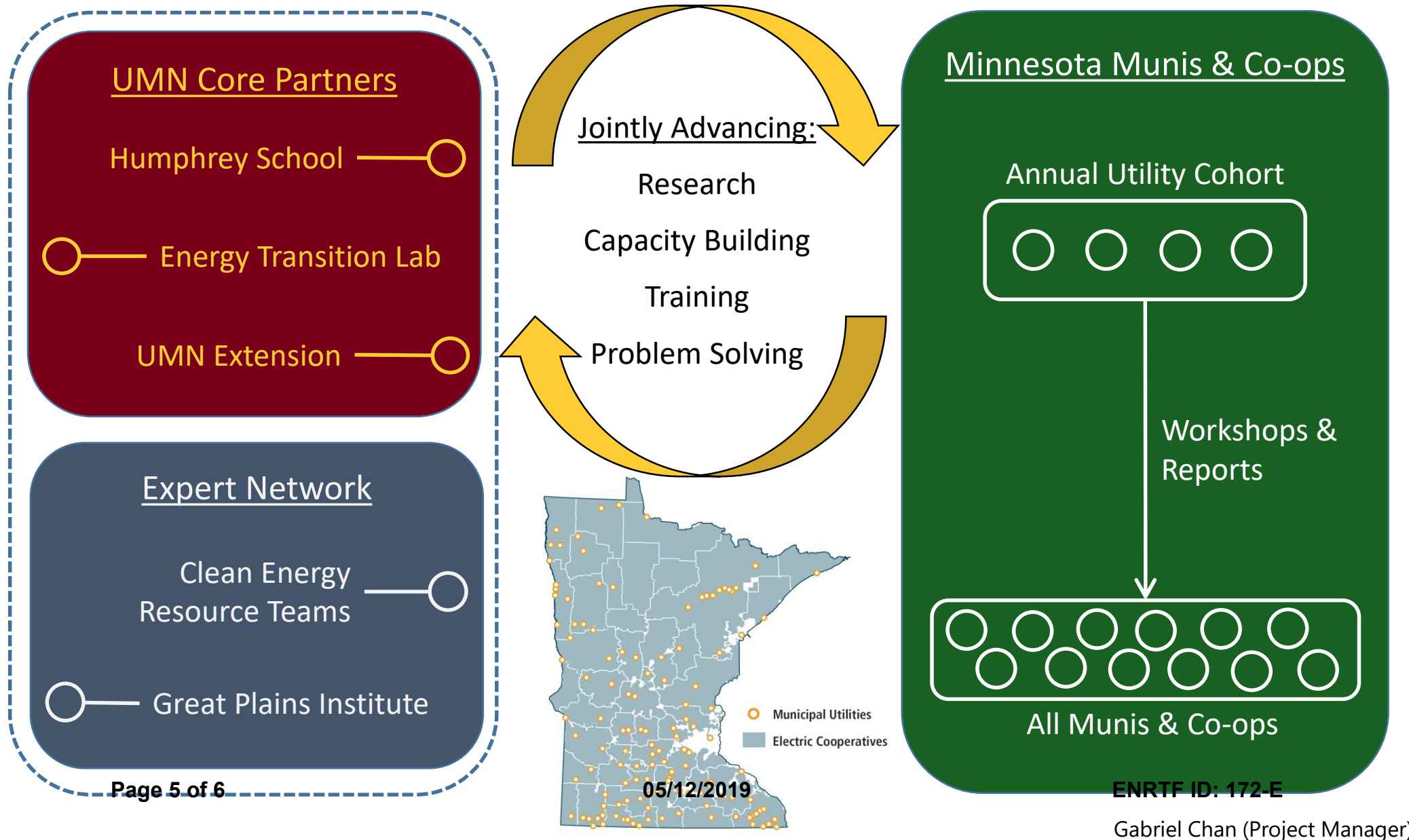
BUDGET ITEM (See "Guidance on Allowable Expenses")	AMOUNT
<b>Personnel:</b>	<b>\$ 406,491</b>
Gabriel Chan, Principal Investigator, 4% FTE years in 1, 2, 3, salary \$31,750, fringe (rate 36%) \$11,430	\$ 43,180
Ellen Anderson, Co-PI, 4% FTE in years 1, 2, 3, salary \$26,241, fringe (rate 36%) \$9,447	\$ 35,688
Lissa Pawlisch, Investigator, 9% FTE in year 1,2,3, salary \$23,628, fringe (rate 36%) \$8,506	\$ 32,134
TBN, (1) Grad RA, PhD Level, 50% time during years 1, 2, 3, during academic year, salary \$53,679, fringe health (rate 16.1%) \$8,642, fringe tuition \$50,409	\$ 112,730
TBN, (1) Grad RA, PhD Level, 50% time years 1, 2, 3, during summer session, salary \$17,893, fringe health (rate 16.1%) \$2,881	\$ 20,774
TBN, (2) Grad RA, Master Level, 25% years 1, 2, 3, during academic year, salary \$48,933, fringe health (rate 16.1%) \$7,878, fringe tuition \$50,409	\$ 107,220
TBN, Support Staff, 12.5% time during years 1, 2, 3, salary \$42,290, fringe (rate 29.5%) \$12,476	\$ 54,765
<b>Professional/Technical/Service Contracts:</b>	<b>\$ -</b>
<b>Equipment/Tools/Supplies: NONE</b>	<b>\$ -</b>
<b>Acquisition (Fee Title or Permanent Easements): NONE</b>	<b>\$ -</b>
<b>Travel:</b>	<b>\$ 3,000</b>
In-state travel to offices of munis and co-ops throught the state for pilot implementation and direct engagement, conference travel, convening external experts; \$1,000 in years 1, 2, 3	\$ 3,000
<b>Additional Budget Items:</b>	<b>\$ 39,500</b>
Workshop costs to convene munis and co-ops, their generation partners, and external experts to disseminate results and receive feedback on tools, \$2,500 in years 1, 2, 3	\$ 7,500
Subcontract to Great Plains Institute: staff support for expertise, consulting, project direction: \$10,000 in years 1, 2, 3	\$ 30,000
Publication costs, \$250 in years 1, 2, \$1,500 in year 3 for summary publications	\$ 2,000
<b>TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =</b>	<b>\$ 448,991</b>

### V. OTHER FUNDS *(This entire section must be filled out. Do not delete rows. Indicate "N/A" if row is not applicable.)*

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ To Be Applied To Project During Project Period: NA	\$ -	
Other State \$ To Be Applied To Project During Project Period: NA	\$ -	
In-kind Services To Be Applied To Project During Project Period: NA	\$ -	
Past and Current ENRTF Appropriation: NA	\$ -	
Other Funding History:	\$ -	

# Partnerships with Municipal and Cooperative Utilities

Minnesota's 45 **electric cooperatives** and 124 **municipal utilities** serve over 40% of Minnesota electricity customers. We propose a **research engagement platform** to build partnerships between utilities and external experts to develop targeted clean energy solutions that will help Minnesota meet its environmental goals.



### **Gabriel Chan, Project Manager**

Gabriel Chan is an Assistant Professor at the **Humphrey School of Public Affairs** and Affiliate Faculty at the **Law School** at the University of Minnesota-Twin Cities. has experience researching energy and climate policy for over 10 years. Professor Chan's recent research has focused on state and national renewable energy policies, community solar, energy innovation, and international climate and sustainable development policy. His writing has appeared in publications such as *The Electricity Journal*, *Nature*, *The Proceedings of the National Academies of Science*, and *The Energy Journal*.

Professor Chan is a faculty member of the **Center for Science, Technology, and Environmental Policy (CSTEP)** at the University of Minnesota and is the Principal Investigator of the **Chan Lab**. CSTEP is a nationally recognized academic research center on public issues arising at the intersection of science, technology, environment, and society that shape economic development, environmental sustainability, human health, and well-being. By integrating science with public policy, community action, and multi-sector governance, the center advances the common good in a complex and diverse world. Chan is also a Faculty Associate at **the Institute on the Environment (Ione)** at the University of Minnesota. Ione enables a future where people and planet prosper together through interdisciplinary scholarship and engagement with society outside the academy.

Chan has a PhD in Public Policy from Harvard University and a B.S. in Political Science and in Earth, Atmospheric, and Planetary Science from M.I.T.

### **Ellen Anderson, Project Partner**

Ellen Anderson is Executive Director of the **Energy Transition Lab (ETL)** and Adjunct Associate Professor at the University of Minnesota Law School and Sustainability Studies program. Anderson is an expert on Minnesota energy laws and policies and served many years in the public sector crafting them.

ETL is supported by the University of Minnesota's Institute on the Environment and the Law School. It leverages University expertise in law, policy, and many other disciplines, in partnership with the public, private, community, and nonprofit sectors, to help solve our biggest energy challenges for the future. ETL conducts research and analysis relating to renewable energy and has numerous collaborations with Minnesota energy stakeholders, including utilities.

Anderson served in the Minnesota Senate from 1993 to 2011 and was re-elected five times, representing several neighborhoods of St. Paul and the city of Falcon Heights. She chaired the Jobs, Energy and Community Development Committee; the Commerce Committee; the Energy and Telecommunications Committee; and the Environment, Energy and Natural Resources Finance Committee. From 2012 to 2014, Anderson was Senior Advisor on Energy and Environment to Governor Mark Dayton and assisted the state Environmental Quality Board (EQB). From 2011 to 2012 she was Chair of the Minnesota Public Utilities Commission.

Anderson has a J.D. *cum laude* from the University of Minnesota and a B.A. from Carleton College.

### **Lissa Pawlisch, Project Partner**

Lissa Pawlisch is the **Clean Energy Resource Teams (CERTs)** Director for the University of Minnesota Extension's Regional Sustainable Development Partnerships. Over the past fifteen years she has guided CERTs—a unique program partnership designed to connect individuals and communities to the resources they need to identify and implement community scale clean energy projects. After an environmental consulting stint, she got her Masters in Science, Technology and Environmental Policy. Lissa is passionate about working directly with communities to help them understand their energy options, the values that drive their projects, how technologies and practices can be deployed, and how to harness community capacity to affect change. Her current focus areas include assisting local jurisdictions with clean energy, advancing collaborations with utilities, and community solar gardens.

Pawlisch has a M.S. in Science, Technology, and Environmental Policy from the University of Minnesota and a B.A. from Macalester College.