

REQUEST FOR PROPOSALS
Xcel Energy Renewable Development Fund
MnSCU Block Grant



Award Type	Sponsorship Agreement/Sub-Grant
Posted Date	June 6, 2016 Round 2: January 30, 2017
Due Date for Applications	Cycle 1: July 15, 2016 Cycle 2: March 13, 2017 No late submissions or incomplete applications will be considered for funding.
Application Method	Email Application Materials to: bpeterson@sctcc.edu
Eligible Applicants	Minnesota State Colleges and Universities only
Expected Award Announcement Date	Cycle 1: August 15, 2016 Cycle 2: April 17, 2017
Grant Period	3 years (36 months)
Total Estimated Funding	\$5.5 million
Maximum Award per Project	\$750,000
Minimum Award per Project	N/A
Match Requirement	None
Funding Source	Xcel Energy Renewable Development Fund
Grant Program Website	www.energycareersminnesota.com
Grant Program Contacts	Bruce Peterson – Executive Director Minnesota State Energy Center (320) 308-6639 bpeterson@sctcc.edu

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I. Grant Opportunity Description

A. Opportunity Summary

The Minnesota Energy Center, a Minnesota State Center of Excellence, has received a \$5.5 million grant from the Xcel Energy Renewable Development Fund to stimulate research and development within the state of Minnesota in renewable electric energy technologies. The block grant will be managed by the Minnesota Energy Center (MnEC) through Minnesota West Community and Technical College who serves as the fiscal agent for the program and will disburse funding for sub-grants within the Minnesota State Colleges and Universities (Minnesota State) system.

The goal of the Block Grant program is to solicit and select high-quality research projects that will ensure the growth, development, and delivery of renewable electric energy technologies throughout the state of Minnesota. Research proposals will be solicited from all Minnesota State colleges and universities. Proposals will conform to the Renewable Development Fund Research Program guidelines and be distributed through two funding cycles with the intent of funding up to 14 projects, with the maximum award of \$750,000 per project.

The Block Grant has the opportunity to provide research funds to a large group of researchers with diverse interests. The program focuses on a variety of renewable electrical energy technologies including but not limited to:

- Wind-Based Electric Generation: Proposals aimed at developing technologies which will substantially reduce the cost of wind-generated electricity by improving the efficiency of current wind-generation technologies and/or lowering the cost of establishing small-scale or large-scale wind-generation facilities.
- Hydropower Electric Generation: Proposals aimed at developing new, environmentally-friendly and cost-effective hydropower technologies or developing hydropower technologies which will improve the performance and/or mitigate the environmental impact of current hydropower electric generation.
- Photovoltaic Generation Research: Proposals aimed at developing technologies which will reduce the cost of electricity generated from solar cells.
- Alternative Biofuel Research: Proposals aimed at developing technologies which will enable power generation from biomass and other solid wastes for at least 20 percent of their fuel without increased costs to ratepayers.
- Power Electronics, Power Systems and Transmission Research: Proposals aimed at developing power electronics circuits, power electronics systems, and power systems models and control paradigms that will enable electricity generated from renewable sources to be efficiently integrated into the grid.
- Thermal Electric Generation Research: Proposals aimed at developing technologies which will reduce the cost of electricity generated from thermal sources and be promising new sources of thermal electric generation.

- Energy Storage Research: Proposals aimed at developing technologies which will improve the energy storage capacity of existing technologies, reduce the cost of storing electricity, or result in a new mechanism for storing energy.

B. Funding Cycle

Sub-grants will be awarded for a 3-year (36 month) grant period. Up to 14 projects will be funded through two rounds of funding.

Notification of awards will be made by the following dates:

Cycle 1: August 15, 2016

Cycle 2: April 17, 2017

Grant periods will start and end on or around the following dates:

Cycle 1: September 1, 2016 – April 11, 2019

Cycle 2: May 1, 2017 – April 11, 2019

C. Eligible Applicants

Eligible applicants include all Minnesota State institutions (two-year colleges and universities). MnEC encourages collaboration among Minnesota State institutions, but each proposal can only propose one project and cannot exceed a grant request of \$750,000. A Minnesota State institution may submit more than one proposal for different research projects.

II. Program Information

A. Program Background

The Renewable Development Fund (RDF) is a statutorily mandated program instituted for the advancement of, among other things, the research and development within Minnesota of renewable electric energy technologies. Minn. Stat. § 116C.779, subd. 1(d). The RDF is funded by the customers of Xcel Energy and managed by Xcel Energy with the advice of an advisory group. The RDF's statutory authority permits Xcel Energy to issue an RFP to higher education institutions located in Minnesota for multiple projects to stimulate research and development within Minnesota into renewable electric energy technologies. Consistent with this statutory mandate, Xcel Energy has issued this RFP to solicit proposals from Minnesota State institutions of higher education for programs that will accept, disburse and administer RDF grant funds to multiple projects for such research.

In mid-2014, Xcel Energy developed a contract to be used for the higher education block grant awards. The higher education block grant contract focuses on funding a program consisting of research-type activities. Incorporated into the contract were lessons learned from prior RDF research and development contracts, input from the applicants' proposals, comments from the 2010 Evaluation Report from the Office of Legislative Auditor, Commission Orders, and Statutory requirements. A draft of the block grant contract was provided to all three institutes of higher education in the summer 2014.

During 2014 and the early part of 2015, Xcel Energy actively negotiated higher education block grant contracts with the University of Minnesota and University of St. Thomas. Negotiated contracts with these two institutions of higher education were filed with the Commission for approval in April 2015. In August 2015, the Commission approved these two higher education block grant contracts provided certain revisions were made through amendments to the grant contracts. Xcel Energy took the lessons learned from these two negotiations and the Commission's approval and incorporated these lessons learned into the grant contract with Minnesota State. In April, 2016, the \$5.5 million contract was finalized between Xcel Energy and Minnesota State.

B. Program Requirements

Eligible institutions will be required to propose projects that perform research on the following:

- Renewable technologies such as wind, hydro, electrical generation from biomass, electrical generation from biofuel, solar photovoltaics, and electrical generation from solar-electric.
- Alternative renewable energy technologies not identified above but that meet the statutory definition as a renewable energy technology or fuel type.

Ineligible program activities include:

- Any research activity that has received or is currently receiving RDF funding awarded through prior RDF funding cycles will not be eligible for additional funding to support program activities
- Research that proposes to displace electricity use through energy conservation or demand-side management programs
- Solar thermal research with the primary purpose of producing heat, for example solar thermal water heat

The proposed research and methodology approach must include:

- An active approach to distribute findings
- A rigorous quality control program to assure reliability and reproducibility
- An objective review process to assure compliance
- A process to evaluate and validate initiatives and findings
- A timely and efficient process for reporting activities and findings

C. Eligible Expenses

Eligible expenses may include:

- Personnel Salary and Benefits
- Project Supplies
- Equipment Purchases
- Travel: Travel is limited under this grant. Research teams or representatives will be required to participate in presentations to workshops, meetings or conferences as determined by the MnEC Grant Leadership Team. Other travel will be limited and will require prior approval of the MnEC Grant Leadership team in writing prior to the requested travel.
- Contractual Fees
- Indirect (Cannot exceed 15% for the applicant institution. The remaining 15% allowed in this grant is reserved for Minnesota West CTC/MnEC grants management and related staffing.)

All project expenses must be fully justified and necessary for project development and implementation.

III. Application and Grant Award Information

A. Application Requirements

In order to be reviewed and considered for award, applications must include the following documents:

- Cover Sheet
- Project Narrative
- Project Work Plan
- Staffing Plan including resumes/CVs for key personnel
- Budget Form
- Budget Narrative

i. Cover Sheet

The cover sheet will provide MnEC with a snapshot of your proposal and pertinent applicant information. You can find the cover sheet on the website (www.energycareersminnesota.com) and included as an attachment to this RFP. The cover sheet must include an original signature from an organizational representative authorized to approve and submit the application on behalf of the institution.

ii. Project Narrative

The project narrative cannot exceed 10 pages and must be single-spaced with 12-point font and 1-inch margins. The Project Narrative must include the following sections and details:

- I. Executive Summary – In one page or less, please describe the scope of the proposed project including:

- Capture and define program activities, methodology, and deliverables to complete the program goals and objectives
 - Clearly summarize the key aspects of the proposal
 - Summarize the technology areas to be researched
 - List the program goals and objectives
 - Include the requested amount
 - Highlight any unique features of your project
- II. Program Goals – clearly describe each program goal and the value of each goal. Explain how each goal is tied to the RDF mission
- III. Project Objectives – clearly describe the objectives necessary to achieve each goal and how the proposed research project will achieve each objective. Generally, outline specific, tangible products and deliverables of the project. Each objective should be SMART (specific, measurable, achievable, realistic, and time-specific)
- IV. Program Description – Describe project activities and research initiatives including the following:
- Describe your process for identifying priority areas for research
 - Describe any partnerships or ways you will network with other institutions
 - Provide a complete description of the research proposed including energy area, strategies, timeline, and specific activities to be completed
- V. Project Outcomes – Provide a detailed description of anticipated benefits to be achieved from program activities and research initiatives including:
- Economic
 - Environmental
 - Intellectual property
 - Benefits to Xcel Energy Electric Ratepayers
 - Benefits to research in the state of Minnesota
 - Other benefits as applicable

iii. Project Work Plan

A work plan is required that includes core activities, time frame, persons responsible, and outcome measures. This should be developed in a table format similar to the format below. Any chosen format should include all of the information below.

Example Work Plan format (a copy of this form is available for download at www.energycareersminnesota.edu):

Project Goal(s):				
<i>Project Activities</i>	<i>Person Responsible</i>	<i>Time Frame</i>	<i>Measurable Short-term Outcomes</i>	<i>Measurable Long-term Outcomes</i>

iv. Staffing Plan

As an attachment, please provide a staffing plan that includes bios and summaries for each key personnel. The staffing plan should not exceed 2 pages and must be single spaced with 12-point Arial font and 1 inch margins. Each project must name a Project Director/Principal Investigator that will commit a designated portion (i.e. 10%) of their time to the research project. In addition to the staffing plan, please include resumes or CVs for each key personnel.

The staffing plan must also include a description of how students will be engaged in the research project. Projects can engage students through projects found in specified courses or could be student workers assigned to specific tasks. In all cases, student involvement must be clearly defined.

v. Budget

Each application must include a budget form and budget narrative. The budget form is available as an attachment to this RFP or for download on the website www.energycareersminnesota.com.

To support your budget, please include a budget narrative that provides more detail to support each expense in your budget. The budget narrative should include a thorough discussion on the appropriateness of the amount of funds requested; the type, amount and source of any matching funds (in-kind); the entire financing requirement/needs of the project; and an itemization of total project costs. The budget narrative should not exceed 5 pages and must be single-spaced with 12-point Arial font and 1-inch margins using the template provided.

B. Review Criteria

In general, all proposals must meet the following criteria:

- Clearly stated goals and objectives that include the renewable product or process being researched, the focus of the research work, and anticipated electrical

production results. Projects must be sufficiently discrete as to produce known and measurable results prior to Contract End Date.

- Anticipated government approvals required/anticipated and if those approvals are in place/in discussion/or not yet addressed.
- Expertise of campus personnel, facilities to be used, equipment available or needed, internal (college) funding to be used in the project, co-funding resources proposed or committed, and other resource needs anticipated.
- Plan for student engagement in research work. Included in this description should be anticipated curricular impact and program involvement.
- Potential needs for additional contracts, orders, leases and/or related documents to complete work.
- Local College/University administrative approval to include President, all appropriate Vice Presidents, Facilities Supervisor, Dean of Academic Area involved. Engineering needs identified and approved by College/University VP of Administration (or equivalent position).
- Identification of local code compliance requirements, approval or pending. Where appropriate, Minnesota State Facilities approval must be included. Approval sign-off by campus facilities director/staff will be required.
- Overall safety plan for research project. If any facility changes are required through the implementation of this project, your proposal must include documentation of required safety considerations. Safety plans will be reviewed by Minnesota State facilities staff and require approval sign-off of campus facilities director/staff.
- Institution Insurance Certificate of Coverage naming Xcel Energy on policy. These will require annual updates for all awarded sub-grantees.
- List of all services, facilities, equipment, supplies and laboratory or production facilities required for project implementation. College/University Facilities approval required.
- Project work plan will be submitted with each project proposal to outline project critical milestones and time projections for completion of milestones and overall project.
- A description of all intellectual property anticipated through the project along with planned ownership and/or license developed through the project.
- Each proposal team must agree to comply with all reporting requirements and participate in project showcase events to share results and knowledge gained.
- Anticipated involvement of industry partners through the project.

As stated previously, proposals must also meet the criteria associated with their area(s) of research:

- Wind-Based Electric Generation: Proposals aimed at developing technologies which will substantially reduce the cost of wind-generated electricity by improving the efficiency of current wind-generation technologies and/or lowering the cost of establishing small-scale or large-scale wind-generation facilities.
- Hydropower Electric Generation: Proposals aimed at developing new, environmentally-friendly and cost-effective hydropower technologies or developing hydropower technologies which will improve the performance and/or mitigate the environmental impact of current hydropower electric generation.
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- Power Electronics, Power Systems and Transmission Research: Proposals aimed at developing power electronics circuits, power electronics systems, and power systems models and control paradigms that will enable electricity generated from renewable sources to be efficiently integrated into the grid.
- Thermal Electric Generation Research: Proposals aimed at developing technologies which will reduce the cost of electricity generated from thermal sources and be promising new sources of thermal electric generation.
- Energy Storage Research: Proposals aimed at developing technologies which will improve the energy storage capacity of existing technologies, reduce the cost of storing electricity, or result in a new mechanism for storing energy.

C. Submitting an Application

All application materials for round 2 must be emailed as PDF documents by 5:00 PM Central Standard Time on **March 13, 2017**. Each document can be sent as a separate PDF or applicants may combine all documents together in one PDF file. Application materials must be emailed to Bruce Peterson at bpeterson@sctcc.edu. Applications received after the deadline or in any other format will be deemed unresponsive and will not be reviewed.

D. Review Process

The review process will include an initial review by a peer review committee, followed by a merit review process and final review and project selection. The review process will take approximately 30 days from the cycle deadline.

IV. Award Administration Information

A. Anticipated Award Dates

It is anticipated that notification will be made to awardees on or before the following dates:

Cycle 1: August 15, 2016

Cycle 2: April 17, 2017

Each applicant will receive a response whether awarded or declined.

B. Grant Award Information

Grants of up to \$750,000 will be awarded to up to 14 research projects at Minnesota State institutions.

C. Grant Period

The grant period (also referred to as the project period) starts when the grant agreement is executed, meaning all required signatures have been obtained. The grant period for the Block Grant is 3 years (36 months). The grant period is anticipated to be the following time frames:

Cycle 1: September 1, 2016 and end on April 11, 2019

Cycle 2: May 1, 2017 – April 11, 2019

D. Changes to the Application, Work Plan or Grant Agreement

Any changes to the approved application must be submitted to and approved by the MnEC/RDF Grant Management team before the grant agreement is signed and work begins.

The application is called the "Work Plan" after the project is funded, and is incorporated into the grant agreement. Changes to the approved work plan will require MnEc Grant Management Team written approval. These changes may include, but are not limited to: 1) modifications that are significant enough to alter the Work Plan beyond scope of the originally approved application; 2) minor changes to the Work Plan, such as dropping or adding project sites, and 3) modifying the timeline.

- Change requests must be made in writing and require written approval from the MnEC/RDF Program Manager prior to enacting change.
- Major changes may need a formal amendment to include work plan, timeline and budget modifications.
- Contact MnEC/RDF Grant Management staff as soon as possible when changes are expected, and prior to doing any work.
- Any amendment(s) to the original grant agreement must be in writing and will not be effective until the amendment has been signed and approved by the same parties who executed and approved the original agreement, or their successors in office.

V. Sub-Grantee Responsibilities

A. Project Manager and Fiscal Contact

Project Manager Responsibilities:

- There can only be one Project (Grant) Manager at a time for each grant.
- The Project Manager receives all correspondence from MnEC staff
- The Project Manager must be actively involved and available to provide information during the grant application review period and through the life of the grant.
- The Project Manager must be affiliated with the grant recipient's organization and must be knowledgeable about the research, partnership, and administrative aspects of the proposal.
- The Project Manager is responsible for ensuring that all work is done according to grant and program requirements.
- Assure compliance of all local participants with IP form completion.

Fiscal Contact Responsibilities:

- There can only be one Fiscal Contact for each grant at a time. This may be the same person as the Project Manager.
- The Fiscal Contact works cooperatively with the Project Manager, but focuses on the fiscal side of the grant. Specific duties are determined by the grantee's organization, but generally include grant and match fund management, bill paying, submitting payment requests, etc.
- The Fiscal Contact will frequently be included on emails and other communications between MnEC Staff and grantees.

Intellectual Property:

In order to fulfill its obligations to XCEL under the terms of the grant, Minnesota State must own all intellectual property originating from any grant-funded projects including, but not limited to:

- 1) Copyrightable material first produced;
- 2) Software developed;
- 3) Inventions or discoveries conceived or reduced to practice, including all patentable subject matter;
- 4) Data processing programs, models, or systems developed or substantially modified; or
- 5) Other data collected, collated, deduced, read out, postulated, or recorded (including but not limited to: manufacturing techniques and methods, devices such as tools, machinery, engineering drawings and associated lists, technical reports, process sheets, specifications).

Applicants applying for sub-grant funds understand that such application is conditioned on the fact that all intellectual property originating from this grant shall be owned and/or assigned to Minnesota State Colleges and Universities, pursuant to Board Policy 3.26.

Individuals participating in any grant-funded project must certify that they will not infringe and or misappropriate any intellectual property right of a third party, and they will conduct a reasonable investigation of the IP rights of third parties to avoid any infringement.

All participants in any grant funded project must complete the appropriate IP form (student or Faculty/Staff) prior to beginning on the project. It is the responsibility of the local grant manager to assure compliance with these forms and submit copies to the MnEC/RDF Grant Management team.

B. Grant Reporting Requirements

Each project will submit monthly progress reports. Quarterly activity reports including Quarterly Financial reports will be required 30 days after the end of the previous quarter.

Reporting requirements will ensure progress and transparency of projects and expenditures. Reporting and dissemination of information will be shared by the sub-grantee and grant staff.

Upon receipt of grant award, awardees will be required to submit a goal document with measurable outcomes, estimated expenditures, expected timelines, and a dissemination plan.

All reports, including reprints, shall include the following legend:

LEGAL NOTICE

THIS REPORT WAS PREPARED AS A RESULT OF WORK SPONSORED BY THE RENEWABLE DEVELOPMENT FUND AS MANAGED BY XCEL ENERGY. IT DOES NOT NECESSARILY REPRESENT THE VIEWS OF XCEL ENERGY, ITS EMPLOYEES, OR THE RENEWABLE DEVELOPMENT FUND ADVISORY GROUP. XCEL ENERGY, ITS EMPLOYEES, CONTRACTORS, AND SUBCONTRACTORS MAKE NO WARRANTY, EXPRESS OR IMPLIED, AND ASSUME NO LEGAL LIABILITY FOR THE INFORMATION IN THIS REPORT; NOR DOES XCEL ENERGY, ITS EMPLOYEES OR THE RENEWABLE DEVELOPMENT FUND ADVISORY GROUP REPRESENT THAT THE USE OF THIS INFORMATION WILL NOT INFRINGE UPON PRIVATELY OWNED RIGHTS. THIS REPORT HAS NOT BEEN APPROVED OR DISAPPROVED BY XCEL ENERGY NOR HAS XCEL ENERGY PASSED UPON THE ACCURACY OR ADEQUACY OF THE INFORMATION IN THIS REPORT.

All Program and Project reports, posters, presentation handouts, publications and public documents are to include the following credit text: "***Project funding provided by Customers of Xcel Energy through a grant from the Renewable Development Fund.***"

C. Grant Payment Information

i. Method of Payment

Grantees will be paid on a reimbursement basis unless a services rendered basis is specified and approved in a grantee's application and grant agreement.

- Services rendered basis: proof of work, service, or purchase of goods must be submitted to MnEC Grant Management Staff as an invoice along with a request for payment. Staff will pay the grantee based on the approved invoices. Proof that the vendor has been paid (report for ISRS showing PV transactions) is required before any additional payments will be made to the grantee.
- Reimbursement basis: the same as above, except that proof of payment to vendors is included with the payment request. No reimbursement will be made without documentation of payment.

ii. Requesting Grant Payments

All payment requests must be on the Payment Request Form provided on the Grantee Information webpage of the MnEC website. All documentation must be included, and any other requirements met and approved before payment will be made.

iii. Payment Timeline

If all required documentation is submitted with the payment request, MnEC Grant Management Staff can generally review and approve requests for payment within a week of receiving the request. If questions arise or documents are missing, payment approval may take longer. Once payments are approved, they are sent to the business office for payment. The payment process may take up to 30 days from receipt of complete payment.

VI. Program Contacts

For additional information about the grant program, please contact:

Bruce Peterson – Program Manager

Executive Director - Minnesota State Energy Center

(320) 308-6639

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