



414 Nicollet Mall
Minneapolis, MN 55401

February 15, 2016

—Via U.S. Mail—

Minnesota Senate
75 & 100 Rev. Dr. Martin Luther King Jr. Blvd.
St. Paul, MN 55155

Minnesota House of Representatives
100 Rev. Dr. Martin Luther King Jr. Blvd.
St. Paul, MN 55155

(See attached service list for members served.)

RE: ANNUAL REPORT TO MINNESOTA STATE LEGISLATURE
RENEWABLE DEVELOPMENT FUND

Dear Senators and Representatives:

Pursuant to the Minn. Stat. § 116C.779, enclosed is our Renewable Development Fund Annual Report. This report itemizes actual and projected financial benefit to Xcel Energy's electric ratepayers for each project that has received an RDF project grant administered by Xcel Energy.

If you have any questions regarding this filing please contact me at (612) 215-5367 or amy.s.fredregill@xcelenergy.com

Sincerely,

/s/

AMY S. FREDREGILL
MANAGER RESOURCE PLANNING AND STRATEGY

Enclosures

Xcel Energy Renewable Development Fund (RDF)



Annual Report to the Minnesota State Legislature

February 15, 2016

Introduction and 2015 Highlights

- This report summarizes projects and programs that support progress towards the mission of the Renewable Development Fund (RDF) – to increase renewable energy market penetration, assist renewable energy projects and companies, and support emerging renewable energy technology. Over the past year, RDF activity included the following accomplishments:
 - \$20.6 million was spent on incentives for wind, hydro, biomass, and solar renewable energy generation.
 - Construction activity occurred on seven solar projects totaling 5.4 MW capacity. These solar facilities each have unique features that either showcase renewables - such as the arrays at CHS Field in downtown Saint Paul (see Photo 1) and at Minneapolis St Paul International Airport - or facilities that demonstrate a best use of land with limited development potential - such as solar installations on a closed landfill in the City of Hutchinson (see Photo 2) or adjacent the Blue Lake Wastewater Treatment facility in Shakopee.
 - A new facility on the School Sisters of Notre Dame campus in Mankato was the first large-scale solar facility to utilize a new, higher voltage operating system that can reduce installation and maintenance costs.
 - Projects funded from the RDF resulted in \$13 million in economic activity, involving construction and research, within Minnesota during the past year.



Photo 1: 103.5 kW_{DC} array behind left field at CHS Field in St. Paul

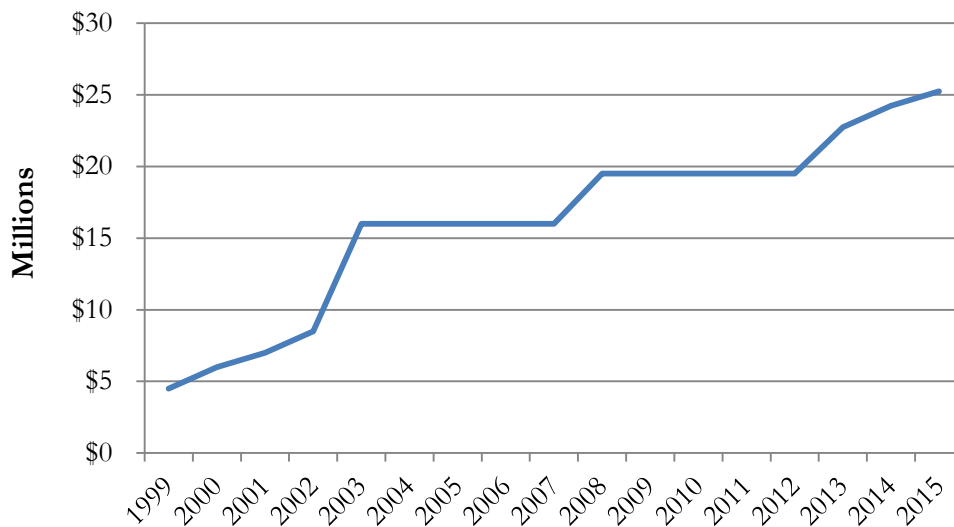


Photo 2: 400 kW_{DC} array on a closed municipal landfill in Hutchinson

Background

The RDF was authorized by the Minnesota Legislature in 1994 as a condition of storing spent nuclear fuel in dry casks at Prairie Island. In 2007, the statute was further amended to add an assessment for dry casks stored at our Monticello nuclear generating plant in Monticello, Minnesota. The initial annual obligation in 1999 to the RDF was \$4.5 million, increasing over the past 17 years to \$25.6 million in 2015. A cumulative total of \$276.1 million has been set-aside in the RDF. Figure 1 below shows the increase in annual funding for the RDF since 1999.

Figure 1: Annual Funding Obligation to RDF



According to the RDF statute (Minn. Stat. §116C.779), the RDF is a program administered by Xcel Energy with oversight by the Minnesota Public Utilities Commission. The RDF's mission was established in an October 5, 2006 Commission

Order and was revised to incorporate statutory requirements from the 2012 legislature. The current RDF mission statement directs that the overall purpose of the fund is to:

- *Increase the market penetration of renewable electric energy resources at reasonable costs in the state;*
- *Promote the start-up, expansion and attraction of renewable electric energy projects and companies in the state;*
- *Stimulate renewable electric energy research and development in the state;*
- *Develop demonstration scale renewable electric energy projects of near-commercial renewable electric generation or near-commercial electric infrastructure delivery technology that enhance the delivery of renewable electric energy within the state; and*
- *Provide benefits to Minnesota citizens, businesses and Xcel Energy's electric ratepayers.*

The RDF statute also states that Xcel Energy must submit an annual report to the chair and ranking minority member of the Minnesota legislative committees with jurisdiction over energy policy about projects funded by the RDF account. The report is to itemize the actual and projected financial benefit to Xcel Energy's electric ratepayers of each project. Attachment A includes a complete list of projects that have received RDF grant awards and the associated benefits.

A seven-member advisory group, representing the interests of various stakeholder perspectives, assists Xcel Energy in evaluating and recommending grant project proposals to Xcel Energy and the Commission. Further details on the members of the advisory group can be found in Attachment B.

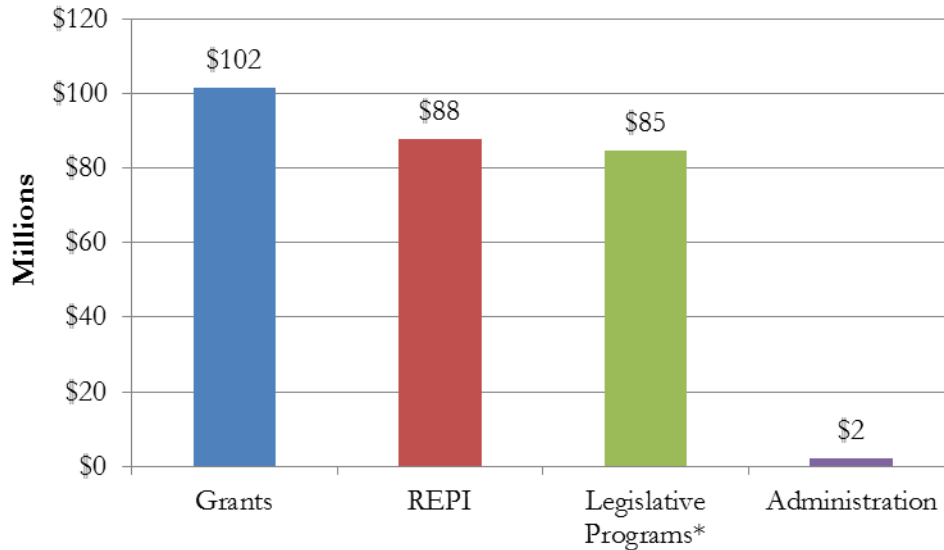
The RDF program expenses allocated to Minnesota are recovered through an adjustable surcharge on our customer bill statements as part of their monthly charges for electricity. In 2016 the RDF charge is \$0.000902 per kWh. For a typical residential customer using 750 kWh per month, the RDF cost per month is \$0.68.

RDF Grant Program Summary

Since its inception, the RDF program has provided \$276.1 million for renewable energy initiatives including \$87.8 million for Renewable Energy Production Incentive (REPI) payments, \$84.5 million for legislatively-mandated projects and programs, and \$2.3 million for general program support. The legislatively-mandated programs included the appropriation of \$25 million to the University of Minnesota for the Initiative for Renewable Energy and Environment (IREE). The balance of \$101.5

million has been awarded over four grant cycles to 90 projects. Attachment C to this report is a Financial Statement which summarizes the RDF cost distribution since 2001. Figure 2 below illustrates the distribution of RDF costs between these programs and grants.

Figure 2: Distribution of RDF Costs



* - Includes IREE

As Table 1 below shows, 62 projects have been completed since the RDF’s inception and seventeen are currently active, including fifteen new Cycle 4 projects. Eleven Cycle 4 grants which were awarded RDF grants have not executed grant contracts and therefore project activity has not begun.

Table 1: Summary of RDF Project Status

Type	Completed	Active as of December 31, 2015	Total
Energy Production	19	10	29
Research	43	7	50
Total	62	17	79

Legislative RDF Program Summary

In 2003, legislation was passed to create the REPI program to provide production incentives for electricity generated by wind, biogas, and hydro. In 2015, \$4.7 million in RDF funds were disbursed for REPI payments.

Legislation in 2010 created the Solar*Rewards program to provide rebates to owners of qualified properties for installing solar photovoltaic modules. In 2015, \$4 million in RDF funds were disbursed for Solar*Rewards rebates.

Two new programs were created as a result of 2013 legislation to receive funds from the RDF. The first program is a "Made in Minnesota" solar energy production incentive account to provide production incentives for residential and commercial installations. In 2015, \$12 million in RDF funds were disbursed to fund this account. The second program created in 2013 is a solar energy incentive program to replace the original Solar*Rewards program and focus on small facilities of up to 20 kW. In 2015, \$40,000 in RDF funds were disbursed to fund the new Solar*Rewards program.

RDF Project Benefits

The many benefits of RDF projects can be seen at both the local and regional level through the purchase of goods and services, as well as the expansion of employment opportunities. Other benefits associated with the RDF include the fostering of new or expanded business opportunities to maintain and support the new facilities or research. In cases where permanent energy production facilities are constructed, RDF investments can also expand the property tax base for a community.

Energy Production:

RDF projects that construct electric generation facilities provide a combination of environmental and economic benefits. As shown in Table 2, the eighteen completed electric production projects that received RDF grants have resulted in the installation of 26.8 MW of renewable energy nameplate capacity and have overall generated a total of 405 GWh of energy over the life of the facilities.

Table 2: RDF Electric Production Projects Summary

Type	Investment	Facilities	Installed Capacity (MW)	2015 Energy Production (MWh)	Total Energy Production (MWh)
Biomass	\$27,887,976	1	0.30	906	1,733
Hydro	\$44,145,119	1	9.18	37,680	151,063
Solar	\$27,075,846	12	7.37	5,866	28,815
Wind	\$13,075,483	4	9.95	20,264	223,478
Total	\$112,184,424	18	26.8	64,716	405,089

For every construction dollar spent from the RDF, there has been an additional \$2.86 spent from outside investors. Therefore, the \$31.7 million investment of RDF funds for energy production has leveraged an additional \$90.8 million. This total investment has resulted in the creation of approximately 1,309¹ construction jobs to design and build facilities in Minnesota.

As shown in Table 3 below, the environmental benefits from these RDF facilities are recognized in marketable Renewable Energy Credits (RECs) from qualifying facilities, an estimated 284² tons in carbon dioxide emissions reduction, avoided costs to build conventional facilities, and avoided replacement costs for electricity generated.

Table 3: Cumulative RDP Project Environmental Benefits

Value of RECs	Value Emission Reductions ³	Avoided Capacity Value	Avoided Energy Value	Total Value
\$312,072	\$1,113	\$5,670,077	\$11,633,323	\$17,616,585

Research and Development:

The RDF has provided a boost in the development of new renewable electric energy concepts and designs through the investment in renewable energy research and development. Research and development projects typically do not have as easily-quantifiable direct benefits or extensive capacity for leveraging benefits that energy production projects do because the funding is predominately applied to personnel rather than construction and material costs.

Nevertheless, economic models estimate that this total investment has resulted in the need for over 500⁴ research- related jobs. Some of these jobs were within the non-profit and commercial industry that received funding for demonstration-style

¹ Source: National Renewable Energy Laboratory Jobs and Economic Development Impact Model

² Carbon emissions reduction assumptions are based on the energy generation from RDF projects (in MWh), multiplied by the Upper Midwest Emissions Rates (in lbs/MWh) reported in our most recent 2014 Corporate Responsibility Report. Our methodology for calculating that rate is based on the U.S. Environmental Protection Agency greenhouse gas emissions reporting protocol, and is verified by The Climate Registry..

³ The value of emissions reductions is based upon current values provided by the Minnesota Public Utilities Commission on the costs of certain types of emissions: SO₂, CO₂, NO_x and Pb, provided in its May 27, 2015 Notice of Updated Environmental Externality Values. The Company used the average of the high and low value for urban customers as a proxy of Xcel Energy’s largely urban Minnesota electric service territory.

⁴ Source: National Renewable Energy Laboratory Jobs and Economic Development Impact Model

research, and many other jobs were created for students in the academic world. This serves as an investment in the next generation that will design new renewable electric energy facilities. As can be seen in Table 4, research and development projects contributed to the development of articles, workshops, and patent applications. In addition, research and development RDF grant dollars leveraged \$0.49 for each grant dollar invested.

Table 4: RDF Research and Development Projects Results

Technology	Total Investment	Published Articles	Presentations/ Workshops	Patent Applications
Biomass	\$29,844,964	24	59	3
Solar	\$7,772,240	8	21	0
Wind	\$8,093,471	12	49	2
University Research	\$1,000,000	0	0	0
Total	\$46,710,675	44	129	5

Conclusion

Xcel Energy appreciates this opportunity to provide this report summarizing the projects and programs funded by the RDF through 2015. The RDF program continues to be a source of funding for renewable electric energy research, development, and demonstration projects in Minnesota. Over the past ten years and four grant award cycles, the RDF program has supported projects of state, regional and national significance. We look forward to working with the Minnesota Legislature and the Minnesota Public Utilities Commission to continue to improve the RDF program moving forward. Further, we remain committed to making certain the RDF program provides maximum benefits for those individuals who most directly make it possible—our electric customers.

Rep. Tim Mahoney
345 State Office Building
St. Paul, MN 55155

Sen. John Marty
3233 MN Senate Building
St. Paul, MN 55155

Jess Hopeman
Legislative Reference Library
645 State Office Bldg.
St. Paul, MN 55155

Rep. Pat Garofalo
485 State Office Building
St. Paul, MN 55155

Sen. David Osmek
19 State Office Building
St. Paul, MN 55155

Sen. David J. Tomassoni
3401 MN Senate Building
St. Paul, MN 55155

Sen. Bill Ingebrigtsen
143 State Office Building
St. Paul, MN 55155

RDF advisory group

- Ben Gerber¹, manager energy policy
Minnesota Chamber of Commerce
Representing commercial and industrial customers
- Tami Gunderzik, senior manager product portfolio
NSP-Minnesota
Representing NSP-Minnesota
- Eric Jensen², energy coordinator
Izaak Walton League
Representing the environmental community
- Michelle Rosier³, senior campaign and organizing manager
Sierra Club North Star Chapter
Representing the environmental community
- Kevin Schwain, manager emerging customer program
NSP-Minnesota
Representing NSP-Minnesota
- Joseph Sullivan⁴, manager strategic relations
Center for Energy and Environment
Representing the environmental community
- Lise Trudeau, engineer
Minnesota Division of Energy Resources
Representing residential customers
- Heather Westra
Representing Prairie Island Indian community

RDF Administration

- Amy Fredregill, program manager
- Mark Ritter, grant administrator

¹ Resigned from RDF advisory group as of October 13, 2015. Vacant position on December 31, 2015

² Resigned from RDF advisory group as of November 10, 2015.

³ Appointed by Minnesota Environmental Partnership as of January 13, 2015.

⁴ Appointed by Minnesota Environmental Partnership as of December 8, 2015.

RENEWABLE DEVELOPMENT FUND FINANCIAL STATEMENT
As of December 31, 2015

	2001 - 2014	2015	Since RDF Inception (2001-2015)
Total RDF Credits	\$250,500,000	\$25,600,000	\$276,100,000
Excelsior	\$10,000,000	\$0	\$10,000,000
Energy Production Grants	\$20,675,324	\$1,072,213	\$21,747,537
Research Grants	\$29,692,455	\$1,737,551	\$31,430,006
Total RDF Grant Payments	\$60,367,780	\$2,809,764	\$63,177,544
Administrative Costs	\$2,241,621	\$15,741	\$2,257,362
University of Minnesota	\$25,000,000	\$0	\$25,000,000
REPI	\$83,146,277	\$4,652,960	\$87,799,237
Solar Rebates	\$7,995,985	\$16,031,951	\$24,027,936
Other Legislative Mandates	\$25,451,809	\$0	\$25,451,809
Total RDF Costs	\$204,203,473	\$23,510,416	\$227,713,889

SUMMARY OF RDF PROGRAM FUNDS

Total Amount Credited to RDF	(+)	\$276,100,000
Total RDF Payments	(-)	\$227,713,889
Total Amount of Grant Awards	(-)	\$110,168,352
Total Amount of RDF Grants Paid	(+)	\$63,177,544
Unencumbered Cumulative Balance	(=)	\$1,395,303

Active RDF Projects by Congressional Districts (1/1/2015 - 12/31/2015)

RDF Contract	Grant	Type	Cycle	Renewable Category	Host Site		Project Sponsor		
					District	Location	District	Organization	
District 1									
EP4-5	\$900,000	EP	4	Solar	MN01	SSND, Mankato	MN03	Best Power, Hopkins	
District 2									
RD3-77	\$1,000,000	RD	3	Biomass	MN02	P & J Farms, Northfield	IL	Coaltec Energy USA, Carterville	
EP4-48	\$2,000,000	EP	4	Solar	MN02	BLWWTP, Shakopee	CO	Oak Leaf Energy, Denver	
RD4-2	\$982,408	RD	4	Solar/Wind	MN02	WCROTC, Morris	MN05	U of M, Minneapolis	
District 3									
EP4-5	\$900,000	EP	4	Solar	MN01	SSND, Mankato	MN03	Best Power, Hopkins	
EP4-6	\$172,213	EP	4	Solar	MN06	SJU, Collegeville	MN03	Best Power, Hopkins	
EP4-12	\$2,022,507	EP	4	Solar	MN03	MAC, Bloomington	MN03	MAC, Bloomington	
District 4									
RD3-1	\$992,989	RD	3	Biomass	MN02	Rahr Malting	MN04	U of M, St. Paul	
EP4-11	\$1,850,000	EP	4	Solar	MN04	EIC, St. Paul	MN05	IPS, Minneapolis	
EP4-20	\$583,513	EP	4	Solar	MN04	Midway Superstore, St. Paul	MN05	Target, Minneapolis	
EP4-34	\$555,750	EP	4	Solar	MN04	CHS Field, St. Paul	MN04	City of St. Paul	
HE4-2	\$2,157,215	HE	4	All	MN06	Winhaven, Chisago City	MN04	UST, St. Paul	
HE4-3	\$3,000,000	HE	4	All	MN04	U of M, St. Paul	MN05	U of M, Minneapolis	
District 5									
AH-01	\$5,100,000	EP	1	Hydro	MN05	Crown Hydro, Minneapolis	MN05	Crown Hydro, Minneapolis	
EP4-11	\$1,850,000	EP	4	Solar	MN04	EIC, St. Paul	MN05	IPS, Minneapolis	
EP4-15	\$2,661,320	EP	4	Solar	TBD	TBD	MN05	MRES, Minneapolis	
EP4-20	\$583,513	EP	4	Solar	MN04	Midway Superstore, St. Paul	MN05	Target, Minneapolis	
EP4-22	\$969,741	EP	4	Solar	MN05	MPRB, Minneapolis	MN05	MPRB, Minneapolis	
RD4-2	\$982,408	RD	4	Solar/Wind	MN02	WCROTC, Morris	MN05	U of M, Minneapolis	
RD4-12	\$625,102	RD	4	Wind	MN05	U of M, Minneapolis	MN05	U of M, Minneapolis	
RD4-13	\$1,391,684	RD	4	Wind	MN05	U of M, Minneapolis	MN05	U of M, Minneapolis	
HE4-3	\$3,000,000	HE	4	All	MN04	U of M, St. Paul	MN05	U of M, Minneapolis	
District 6									
EP4-6	\$172,213	EP	4	Solar	MN06	SJU, Collegeville	MN03	Best Power, Hopkins	
EP4-24	\$1,106,600	EP	4	Wind	MN06	Stearns, Sherburne, Meeker	OK	Bergey Windpower, Norman	
HE4-2	\$2,157,215	HE	4	All	MN06	Winhaven, Chisago City	MN04	UST, St. Paul	
District 7									
RD3-69	\$1,000,000	RD	3	Biomass	MN07	MnVAP, Priam	MN07	MnVAP, Raymond	
RD3-41	\$958,369	EP	4	Solar	MN07	City of Hutchinson	MN07	City of Hutchinson	
District 8									
RD4-11	\$1,899,449	RD	4	Biomass	MN08	NRRI, Coleraine	MN05	U of M, Minneapolis	

CERTIFICATE OF SERVICE

I, Jim Erickson, hereby certify that I have this day served copies of the foregoing document on the attached list of persons.

xx by depositing a true and correct copy thereof, properly enveloped with postage paid in the United States mail at Minneapolis, Minnesota

xx electronic filing

DOCKET No. E002/M-12-1278

Dated this 16th day of January 2016

/s/

Jim Erickson
Regulatory Administrator

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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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