Xcel Energy

Renewable Development Fund (RDF)

Annual Report to the Minnesota State Legislature

February 13, 2015

Background

The Renewable Development Fund (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 program was authorized by the Minnesota Legislature in 1994 in conjunction with legislation regarding the Prairie Island nuclear generating plant in Red Wing, Minnesota. As a condition of storing spent nuclear fuel in dry casks at Prairie Island, the RDF statute initially required Xcel Energy to transfer $500,000 for each dry cask containing spent fuel to a renewable energy fund which amounted to $9 million annually. In 2003, this statute was amended to extend the life of the nuclear-waste storage at our Prairie Island plant and increased the amount to be transferred into the RDF to $16 million annually. In 2007, the statute was further amended to add an additional assessment for dry casks stored at our Monticello nuclear generating plant in Monticello, Minnesota. From 2008 to 2012 $19.5 million was set aside annually for the RDF program. In 2013 the annual set-aside increased to $22.75 million and in 2014 the annual set-aside increased to $24.6 million. A cumulative total of $250.85 million has been set-aside in the RDF since inception.

According to the RDF statute (Minn. Stat. §116C.779), Xcel Energy must submit an annual report to the chair and ranking minority member of the legislative committees with jurisdiction over energy policy about projects funded by the RDF account. This 2014 annual report is organized into the following sections:

- RDF Program Summary;
- Current Cycle Overview;
- RDF Projects' Benefits; and
- Conclusion.

Attachment A includes a complete list of projects for all years that have received RDF grant awards.

The costs of 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 2015 the RDF charge is $0.000563 per kWh. For a typical residential customer using 750 kWh per month, the RDF cost per month is $0.42.

RDF Grant Program Summary

Since its inception, the RDF program has provided over $250 million for renewable energy initiatives including $83 million for Renewable Energy Production Incentive (REPI) payments, $67.8 million for legislatively-mandated projects and programs, and $2.2 million for general program support. These 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 $100.2 million has been awarded over four grant cycles to 90 projects (see Attachment B - Financial Statement). As Table 1 below shows, 57 projects have been completed and eight are active, including four new Cycle 4 projects. Twenty-two Cycle 4 projects and three Cycle 4 programs that have been awarded RDF grants have not executed grant contracts and therefore project activity has not begun.

Table 1: Summary of Project Status

Type	Completed	Active as of 12/31/2014	Total
Energy Production	17	5	22
Research	40	3	43
Total	57	8	65

Xcel Energy has responsibility for the day-to-day administration of the RDF. A seven-member advisory group, representing the interests of various stakeholder groups, assists Xcel Energy in evaluating and selecting grant project proposals for recommendation to Xcel Energy and the Commission. Further details on the members of the advisory group can be found in Attachment C.

Legislative RDF Program Summary

Legislation in 2003 created the Renewable Energy Production Incentive (REPI) program to provide production incentives for electricity generated by wind, biogas, and hydro. In 2014 $5.5 million in RDF funds were disbursed for REPI payments.

The Solar*Rewards program was created in 2010 legislation to provide rebates to an owner of a qualified property for installing solar photovoltaic modules. Three million dollars in RDF funds were disbursed in 2014 for Solar*Rewards rebates.

In 2013 legislation created two new programs 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 that were manufactured in the state. In 2014, $12.0 million in RDF funds were disbursed to fund this account. The second program is a solar energy incentive program to replace the existing Solar*Rewards program, which focuses on small facilities of up to 20 kW. In 2014, $0.05 million in RDF funds were disbursed to fund the new Solar*Rewards program.

RDF Projects' Benefits

Energy Production: RDF projects that construct electric generation facilities provide a combination of environmental and economic benefits. These benefits 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. As shown in Table 2, the 17 completed electric production projects that received RDF grants have resulted in the installation of nearly 24.1 MW of renewable energy nameplate capacity and have overall generated a total of 323,971 MWh of energy over the life of the facilities.

Table 2: Electric Production Projects

Type	Investment	Facilities	Installed Capacity (MW)	Energy Production (MWh)
Biomass	$26,623,141	1	0.3	589
Hydro	$43,817,717	1	9.176	101,707
Solar	$18,537,334	11	4.645	22,588
Wind	$10,990,338	4	9.950	199,088
Total	$110,334,151	17	24.071	323,971

For every dollar spent from the RDF there has been an additional $1.59 spent from outside investors. Therefore, the $30.7 million investment of RDF funds for energy production has leveraged an additional $81.5 million. This total investment has resulted in the creation of 1,216 construction jobs to design and build facilities in Minnesota.

As shown in Table 3 below, the environmental benefits from these investments are recognized in marketable Renewable Energy Credits (RECs) from qualifying facilities, emission reductions, avoided costs to build conventional facilities, and avoided costs to replace the electricity generated.

Table 3: Environmental Benefits

Value of REC's	Value of Emissions Reductions	Avoided Capacity Value	Avoided Energy Value	Total Value
$231,733	$901	$1,903,269	$10,250,545	$12,154,715

In addition, there are indirect benefits associated with the RDF. These benefits include fostering new or expanded business opportunities to maintain and support the new facilities. In cases where permanent energy production facilities are constructed, RDF investments can also expand the property tax base for a community. Organizations such as the National Renewable Energy Laboratory, the U.S. Department of Energy, and the American Council for an Energy Efficient Economy have developed job calculator models to evaluate the impact of dollars spent on renewable energy and energy efficiency projects. On average, these tools indicate that 10 to 11 jobs are created and/or retained (permanent and temporary) for each $1 million invested.

Research and Development: The RDF has provided a boost in the development of new renewable electric energy concepts and designs through investment in renewable energy research and development. Research and development projects typically do not have the extensive leverage capacity that the energy production projects do because the funding is predominately applied to personnel rather than construction and material costs. Nevertheless, this total investment has resulted in the need for over 495 research-related jobs. Although some of these jobs were within the non-profit and commercial industry that received funding for demonstration-style research, many of these jobs went to students within the academic world which is an investment in the next generation that will design new renewable electric energy facilities. As shown in Table 4, research and development projects contributed to the development of

articles, workshops, and even patent applications. In addition, research and development RDF grant dollars leveraged $0.50 for each grant dollar invested.

Table 4: Research and Development Projects

Technology	Total Investment	Published Articles	Presentations/ Workshops	Patent Applications
Biomass	$29,525,478	24	59	3
Solar	$7,782,111	8	21	0
Wind	$81,01,356	12	49	2
Total	$45,408,945	44	129	5

It should be noted that an out-of-state project used a Minnesota project host located in the NSP-Minnesota service area and are not included in the previous numbers. As shown in Table 5, this project association keeps the research relevant to Minnesota and directs additional RDF funds to businesses and organizations in the state.

Table 5: Minnesota Hosts Activities

Grantee	**Minnesota Host**	**Host Location**	**Host Activity**
Coaltec Energy USA	P & K Farms	Northfield, Minnesota	Pilot demonstration of gasifier

Conclusion

Xcel Energy appreciates this opportunity to provide this report summarizing the projects funded by the RDF account through 2014.