Xcel Energy®

414 Nicollet Mall
Minneapolis, MN 55401

February 15, 2013

—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. A copy of our 2011 – 2012 Biennium Report to the Minnesota Public Utility Commission is also enclosed. The Biennium Report provides a comprehensive overview of the RDF program.

If you have any questions regarding this filing please contact me at (612) 330-7529 or paul.lehman@xcelenergy.com.

Sincerely,

/s/

PAUL J LEHMAN
MANAGER, REGULATORY COMPLIANCE AND FILINGS

Enclosures

Rep. Melissa Hortman
377 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd
St. Paul, MN 55155

Rep. Pat Garofalo
247 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd
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Rep. Jean Wagenius
449 State Office Building
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Rep. Denny McNamara
359 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd
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Rep. Joe Atkins
583 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd
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Rep. Joe Hoppe
343 State Office Building
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St. Paul, MN 55155

Sen. John Marty
323 Capitol
75 Rev. Dr. Martin Luther King Jr. Blvd
St. Paul, MN 55155

Sen. David M. Brown
109 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd
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Sen. David J. Tomassoni
317 Capitol
75 Rev. Dr. Martin Luther King Jr. Blvd
St. Paul, MN 55155

Sen. Bill Ingebrigtsen
143 State Office Building
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Xcel Energy
Renewable Development Fund

2013 Annual Report to the Minnesota State Legislature

February 15, 2013

Background

The Renewable Development Fund (RDF) is an NSP-Minnesota administered program mandated by the Minnesota State Legislature with oversight by the Minnesota Public Utilities Commission. The RDF's mission is to increase renewable energy market penetration, assist renewable energy projects and companies, and support emerging renewable energy technology.

This RDF Annual Report for 2012 has been prepared in accordance with Minn. Stat. § 116C.779 (the RDF statute). According to the RDF statute, 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 for the prior year and all previous years. This report, to the extent possible, itemizes the actual and projected financial benefit of each project to the public utility's ratepayers. Attachment A includes a complete list of projects that have received RDF grant awards approved by the Commission and administered by Xcel Energy.

The RDF program was mandated 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 NSP-Minnesota, as the public utility owner of the plant, 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 we must pay 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. Since 2008, $19.5 million has been set-aside annually for the RDF program.

Program Overview

The cost of Commission-approved program expenses allocated to Minnesota is recovered through an adjustable surcharge on our customer bill statements as part of their monthly charges for electricity. In 2013 the RDF charge is $0.000402 per kWh. For a typical residential customer using 750 kWh per month, the RDF cost per month is $0.30.

Since its inception the RDF program has provided $169.2 million for renewable energy initiatives including $70.0 million for REPI payments, $40.7 million for legislatively mandated projects and programs, and $2.0 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 $56.5 million has been awarded over three grant cycles to 62 projects (see Attachment B-Financial Statement). As Table 1 shows below, 52 projects have been completed and 10 remain active.

Table 1 - Summary of Project Status			
Type	**Completed**	**Active as of 12/31/2012**	**Total**
Energy Production	14	4	18
Research	38	6	44
Total	52	10	62

It is anticipated that $20 to $30 million will be available for Cycle 4 which is to begin in 2013. On November 29, 2012, we filed with the Commission a notice of intent to proceed with our fourth cycle of the RDF. The overall goal for the fourth cycle will be to encourage the development of renewable energy projects that are otherwise unable to secure public and private financing sufficient to proceed with development, and to advance new cost-effective technology. In addition, a new RDF research program is being initiated which will provide block grants for Minnesota higher education institutions to utilize for electric research initiatives.

Xcel Energy program staff has responsibility for the practical day-to-day administration of the RDF grant contracts and resources. A seven-member advisory group serves as a voluntary and independent entity to assist 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.

The RDF's mission was established in an October 5, 2006 Commission Order which provided the following operational guideline for the fund:

> *The overall purpose (mission) of the fund is to increase the market penetration of renewable energy resources at reasonable costs in the Xcel Energy service territory, promote the start-up, expansion and attraction of renewable energy projects and companies in the Xcel Energy service territory and stimulate research and development into renewable energy technologies that support this mission.*

Project Benefits

Energy Production: RDF projects that construct electric generation facilities provide a combination of environmental and economic benefits at both the local and regional scale through the purchase of goods and services and the expansion of employment opportunities. The 14 completed electric production projects have resulted in the installation of nearly 21.6 MW of renewable energy nameplate capacity and have overall generated a total of 195,013 MWh of power (see Table 2). The $31.6 million investment of RDF funds for energy production has leveraged an additional $78.9 million. For every RDF dollar spent there has been and additional $2.50 from outside investors. This total investment has resulted in the need for over 1,175 construction jobs to design and build these facilities in Minnesota.

Table 2 – Electric Production Projects

Type	Investment	Facilities	Installed Capacity (MW)	Power Generation (MWh)
Biomass	$25,740,712	0	0	0
Hydro	$45,840,535	1	9.176	27,061
Innovative	$10,365,621	0	0	0
Solar	$17,551,467	7	2.452	13,022
Wind	$10,990,338	4	9.950	154,930
Total	$110,488,673	12	21.578	195,013

The environmental value from this investment is recognized in marketable Renewable Energy Credits from qualifying facilities, value of the emission reductions, avoided costs to build conventional facilities, and the avoided costs to replace the electricity generated (see Table 3).

Table 3 –Environmental Benefits

Value of REC's	Value Emission Reductions	Avoided Capacity Value	Avoided Energy Value	Total Value
$71,681	$532	$1,387,495	$7,031,276	$8,490,984

There can be indirect benefits attributed to the RDF economic stimulus as well with the fostering of 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 through

land improvements. 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 to 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 the extensive leverage capacity as compared to energy production because the funding is predominately applied to personnel rather than construction and material costs (see Table 4). Nevertheless, this total investment has resulted in the need for over 450 research related jobs. Although some of these jobs were within the non-profit and commercial industry that received funding for demonstration-styled research, many of these jobs went to students within academia which is also an investment into the next generation that will design new renewable electric energy facilities. RDF grant dollars leveraged $0.42 for each grant dollar invested.

Table 4 – Research and Development Projects

Technology	Total Investment	Published Articles	Presentations /Workshops	Patent Applications
Biomass	$26,392,154	20	57	3
Solar	$7,782,111	8	21	0
Wind	$7,581,632	12	49	2
Total	$41,755,897	40	127	5

It should be noted that several out-of-state projects used Minnesota contractors or project hosts located in the NSP-Minnesota service area and are included in the Table 4 values. This project association assures the research is relevant to Minnesota and directs RDF funds to businesses and organizations in the state (see Table 5).

Table 5 – Minnesota Hosts Activities			
Grantee	**Host**	**Host Location**	**Host Activity**
Northern Plains Power Technology	Xcel Energy	Minneapolis	Provided data to test model
University of North Dakota	Haubenschild Farms Dairy	Princeton	Pilot demonstration of digester
Coaltec Energy USA	P & K Farms	Northfield	Pilot demonstration of gasifier
University of North Dakota	Natural Resources Research Institute	Duluth	Luiquifaction tests
University of Florida	American Crystal Sugar	Moorhead	Pilot demonstration of digester
Gas Technology Institute	University of Minnesota	Coleraine	Conduct gasification tests

Conclusion

Xcel Energy appreciates this opportunity to provide this report summarizing the projects funded by the RDF account through 2012.

Summary of RDF Projects - All Cycles

Project Name	Contract	Project Site: City	Project Site: Zone	Project End Date	Status	Type	Cycle	Resource	Project Description	Funding: RDF Award	Funding: Grant Funds Disbursed	Funding: Leverage Funds	Funding: Total Costs	Funding: Deobligated Funds	Jobs	Power Development: Capacity (kW)	Power Development: Generation (MWh)	REC's	Externalities: Enviro	Externalities: Avoided Capacity	Externalities: Avoided Energy	Intelectual Property: Articles	Intelectual Property: Presentations	Intelectual Property: Patent Apps
NORTHEAST REGION																								
University of North Dakota	RD3 - 66	Marcel	Northeast	4/2012	complete	RD	3	Biomass	Designed and demonstrated a mobile wet biomass liquefaction system that can utilir high moisture wood waste.	$999,065	$998,697	$995,800	$1,994,497	$368	22								1	
CMEC	EP-44	Little Falls	Northeast	3/2011	complete	EP	2	Biomass	Designed 959 kW gasification plant to utilize dried distillers grains and local biomass. Refractory issues prevented completion of facility.	$2,000,000	$400,000	$16,462,472	$16,862,472	$1,600,000	183										
Mesaba/Excelsior Energy	EP-43	Taconite	Northeast	6/2010	complete	EP	2	Innovative	To design the basis of a base load Integrated Gasificaiton Combine-Cycle (IGCC) power generation facility	$10,000,000	$10,000,000	$365,621	$10,365,621	$0	113										
West Central Telephone Assoc.	RD3 - 58	Menahaga	Northeast	5/2010	complete	RD	3	Wind/Solar	Designed and tested configurations and specifications of five different small wind and solar hybrid back-up power systems that can be used as distributed power for remote locations.	$137,000	$137,000	$96,926	$233,926	$0	3										
University of Florida	RD-34	Moorhead	Northeast	5/2009	complete	RD	2	Biomass	Demonstrated two-stage, batch hybrid anaerobid digestion at American Crystal Sugar to generate methane for conversion to electricity.	$999,995	$996,875	$0	$996,875	$3,120	9								3	1	1
Gas Technology Institute	RD-38	Coleraine	Northeast	10/2007	complete	RD	2	Biomass	Developed a method to extract hydrogen from biomass gasification using membrane separation technologies.	$861,860	$861,860	$3,121	$864,981	$0	9									1	
									Economic Benefits for Northeast Region	**$14,997,920**	**$13,394,432**	**$17,923,940**	**$31,318,372**	**$1,603,488**	**339**	**0**	**0**	**$0**	**$0**	**$0**	**$0**	**3**	**3**	**1**
STATEWIDE																								
MN DNR	EP3 - 13	Nerstrand, Afton, st/ Ft. Snellling, Lake Shetek	Southwest/ Twi	3/2013	current	EP	3	Solar	Will install over 110 kW of solar photovoltaic generation at various state park and develop a renewable solar energy strategy to be used for future renovated DNR facilities.	$894,000	$760,557	$29,230	$789,787	$0	9	103	262	$12	$1	$6,255	$7,663			
									Economic Benefits for Statewide Projects	**$894,000**	**$760,557**	**$29,230**	**$789,787**	**$0**	**9**	**103**	**262**	**$12**	**$1**	**$6,255**	**$7,663**	**0**	**0**	**0**
SOUTHEAST REGION																								
Coaltec Energy USA	RD3 - 77	Northfield	Southeast	4/2014*	current	RD	3	Biomass	Demonstrated the feasibility of biomass gasification on a commercial turke farm to generate electricity and heat	$1,000,000	$850,000	$274,511	$1,124,511	$0	12										
Diamond K	EP-51	Altura, MN	Southeast	11/2013*	current	EP	2	Biomass	Will install 261 kW of biomass generation capacity at the Diamond K Dairy in Winona County, Minnesota	$936,530	$0	$1,478,240	$1,478,240	$0	16										
AnAerobics, Inc	AB-07	Montgomery	Southeast	6/2003	complete	EP	1	Biomass	Was to install a 1.7 MW genset and study removal of hydrogen sulfide created during anaerobic digestion but had site control issues.	$1,300,000	$1,100,000	$6,300,000	$7,400,000	$200,000	80										
									Economic Benefits for Southeast Region	**$3,236,530**	**$1,950,000**	**$8,052,751**	**$10,002,751**	**$200,000**	**108**	**0**	**0**	**$0**	**$0**	**$0**	**$0**	**0**	**0**	**0**
SOUTHWEST REGION																								
Outland Renewable Energy	EP3 - 10	Slayton	Southwest	3/2013	current	EP	3	Solar	Will install a 2 MW photovoltaic facility to demonstrate the benefits of utility scale use of photovoltaics in Minnesota	$2,000,000	$0	$4,115,229	$4,115,229	$0	45										
Xcel Energy	RD3 - 12	Beaver Creek	Southwest	12/2011	complete	RD	3	Wind	Installed a 1.0 MW sodium sulfur battery storage system adjacent a wind farm to validate the value of wind energy storage in supporting greater win energy penetration	$1,000,000	$1,000,000	$3,247,181	$4,247,181	$0	46									31	
Rural Advantage	RD-27	Luverne	Southwest	4/2009	complete	RD	2	Biomass	Demonstrated the commercial production of Miscanthus as a biomass fuel for electric generation.	$318,800	$318,800	$348,887	$667,687	$0	3										1
Hilltop	EP-26	Edgerton	Southwest	3/2009	complete	EP	2	Wind	Installed a 1.5 MW General Electric wind turbine in Lyon County with 100 percent of the electricity sold to Xcel Energy.	$1,200,000	$1,200,000	$2,670,126	$3,870,126	$0	42	2,000	18,034	$9,150	$26	$39,312	$236,674			
Ag. Utilization Research Institute	RD-69	Beaver Creek	Southwest	9/2008	complete	RD	2	Biomass	Conducted a feasibility study to couple bio-diesel and wind generation systems to "firm" wind power	$760,000	$760,000	$8,829	$768,829	$0	8										
St. Olaf	EP-39	Northfield	Southeast	4/2007	complete	EP	2	Wind	Installed a 1.65 MW Micon wind turbine on campus	$1,500,000	$1,500,000	$1,063,377	$2,563,377	$0	28	1,650	20,510	$3,225	$16	$32,432	$143,668			
Project Resource Corp	AW-03	Chandler	Southwest	5/2006	complete	EP	1	Wind	Installed 5.4 MW of wind energy with a new landowner investment model that limits development risk of community shareholders.	$900,000	$900,000	$2,700,000	$3,600,000	$0	39	5,400	100,217	$38,655	$112	$106,142	$1,012,680			
Pipestone Jasper School	AW-10	Pipestone	Southwest	12/2004	complete	EP	1	Wind	Installed a 900 kW wind turbine adjacent to the Pipestone-Jasper Public High School.	$752,835	$752,835	$204,000	$956,835	$0	10	900	16,169	$0	$13	$17,690	$118,858			
									Economic Benefits for Southwest Region	**$8,431,635**	**$6,431,635**	**$14,357,629**	**$20,789,264**	**$0**	**221**	**9,950**	**154,930**	**$51,030**	**$167**	**$195,576**	**$1,511,880**	**0**	**31**	**1**
METRO REGION																								
Crown Hydro	AH-01	Minneapolis	Twin Cities	1/2015*	current	EP	1	Hydro	Will install 3.2 MW of hydroelectric capacity on the Mississippi River in downtown Minneapolis.	$5,100,000	$1,538,591	$2,285,245	$3,823,836	$0	63										
University of Minnesota	RD3 - 1	Shakopee	Twin Cities	10/2013	current	RD	3	Biomass	Development of a production, pre-processing and delivery system for biomass feedstocks from prairie and grasslands.	$992,989	$605,855	$0	$605,855	$0	7								1	2	
University of Minnesota	RD3 - 42	Minneapolis	Twin Cities	8/2013	current	RD	3	Wind	Development of a Virtual Wind Simulator to provide accurate wind turbulence predictions.	$999,999	$834,432	$0	$834,432	$0	11								10	13	
University of Minnesota	RD3 - 28	St. Paul	Twin Cities	6/2013	current	RD	3	Biomass	To develop accurate guidelines for management of biomass removal and maintenance of soil quality.	$979,082	$703,196	$0	$703,196	$0	8								1	7	
Lower St. Anthony Falls	EP-34	Minneapolis	Twin Cities	1/2012	complete	EP	2	Hydro	Restored 9.176 MW hydroelectric generating capacity at the Lower St. Anthony Falls by using run-of-river technogy.	$2,000,000	$2,000,000	$37,993,881	$39,993,881	$0	434	9,176	27,061	$19,426	$77	$203,410	$693,303			
University of Minnesota	RD3 - 25	Minneapolis	Twin Cities	12/2011	complete	RD	3	Solar	Developed techniques for controlling microstructures of hydrogenated silicon and improving the grain size of microcrystalline silicon PV films.	$732,032	$732,032	$0	$732,032	$0	8								3	8	
SarTec Corporation	RD3 - 2	Anoka	Twin Cities	7/2011	complete	RD	3	Biofuel	Researched the growth of algae fed on CO_2 from flue gas and then extracted the oils from the algae for conversion into a marketable biodiesel product.	$350,000	$350,000	$0	$350,000	$0	4										
Bepex International	RD3 - 4	Minneapolis	Twin Cities	7/2011	complete	RD	3	Biomass	Demonstrated torrefaction and densification as processes to reduce transportation and storage costs associated with biomass feedstocks.	$924,671	$924,671	$0	$924,671	$0	10										
City of Minneapolis	EP3 - 11	Minneapolis	Twin Cities	5/2011	complete	EP	3	Solar	Installed a 600 kW photovoltaic facility on the Minneapolis Convention Center.	$2,000,000	$2,000,000	$1,096,756	$3,096,756	$0	34	600	1,607	$74	$4	$54,432	$45,852			
freEner-g	EP3 - 12	Metro Area	Twin Cities	2/2011	complete	EP	3	Solar	Installed 280 kW photovoltaic capacity thorugh a leasing and service package for residential and small businesses	$1,488,922	$1,488,922	$777,170	$2,266,092	$0	25	280	405	$294	$1	$25,402	$9,169	1		
Merrick	EP3 - 2	Vadnais Heights	Twin Cities	12/2008	complete	EP	3	Solar	Installed a roof-mounted 100 kW solar photovoltaic facility on a non-profit adult day training and habilitation center.	$735,000	$735,000	$52,000	$787,000	$0	9	100	544	$20	$1	$9,072	$7,573			
Windlogics	RD-57	St. Paul	Twin Cities	11/2008	complete	RD	2	Wind	Defined, designed, built and demonstrated a complete wind power forecasting system.	$997,000	$997,000	$141,437	$1,138,437	$0	12									1	
MN Dept. of Commerce	AS-05	St. Paul	Twin Cities	9/2008	complete	EP	1	Solar	Provided rebates of up to $8,000 for small photovoltaic installations that are wired into the electrical grid	$1,150,000	$1,150,000	$0	$1,150,000	$0	12	960	8,345	$0	$6	$87,091	$59,323			
University of Minnesota	RD-29	Minneapolis	Twin Cities	9/2008	complete	RD	2	Biomass	Researched operation of turbo-generators using biomass-derived oils.	$299,284	$299,284	$0	$299,284	$0	11										
Center for Energy Environment	RD-94	Minneapolis	Twin Cities	10/2007	complete	RD	2	Biomass	Developed two web-based programs for planning and development of biomass resources in Minnesota	$397,500	$397,500	$42,115	$439,615	$0	5										

Project Name	Contract	Project Site: City	Project Site: Zone	Project End Date	Status	Type	Cycle	Resource	Project Description	Funding: RDF Award	Funding: Grant Funds Disbursed	Funding: Leverage Funds	Funding: Total Costs	Funding: Deobligated Funds	Jobs	Power Development: Capacity (kW)	Power Development: Generation (MWh)	REC's	Externalities: Enviro	Externalities: Avoided Capacity	Externalities: Avoided Energy	Intelectual Property: Articles	Intelectual Property: Presentations	Intelectual Property: Patent Apps
University of Minnesota	CW-06	Minneapolis	Twin Cities	12/2006	complete	RD	1	Wind	Designed a flywheel battery system to enhance the ability to dispatch wind energy with inertial storage.	$654,309	$654,309	$0	$654,309	$0	7									1
University of Minnesota	RD-56	St. Paul	Twin Cities	4/2008	complete	RD	2	Biomass	Studied value-added process to capture energy production capabilities available in existing ethanol plants by evaluating options for combustion and electricity generation	$858,363	$803,246	$0	$803,246	$55,117	9								7	7	
Science Museum	AS-06	St. Paul	Twin Cities	12/2003	complete	EP	1	Solar	Installed a 9 kW solar roof to demonstrate a Zero Energy Building for the Minnesota Science Museum.	$100,000	$100,000	$63,300	$163,300	$0	2	9	124	$0	$0	$816	$794			
Sebesta Blomberg	BB-03	Roseville	Twin Cities	9/2003	complete	RD	1	Biomass	Examined the feasibility of a gasification system using the byproducts of an ethanol facility to provide heat and power.	$738,654	$738,645	$184,663	$923,308	$9	10										
Energy Performance Systems	BB-06	Rogers	Twin Cities	12/2002	complete	RD	1	Biomass	Conversion design of the NSP Granite Falls coal-fired facility to a biomass system capable of utilizing whole trees.	$266,508	$257,247	$85,056	$342,303	$9,261	4										
									Economic Benefits for Metro Region	**$21,764,313**	**$17,309,930**	**$42,721,623**	**$60,031,553**	**$64,387**	**685**	**11,125**	**38,086**	**$19,814**	**$89**	**$380,223**	**$816,014**	**23**	**38**	**1**
WEST CENTRAL REGION																								
Minnesota Valley Alfalfa Producers	RD3 - 69	Priam	West Central	8/2014	current	RD	3	Biomass	Researching application of kinetic disintegration technology to produce biomass pellets from feedstocks with varying levels of moisture.	$1,000,000	$162,568	$141,555	$304,123		3										
Energy Performance Systems	RD-50	Graceville	West Central	1/2013	current	RD	2	Biomass	Built and demonstrated equipment for an integrated system to supply farm grown trees as a biomass feestock to a powerplant.	$957,929	$926,310	$1,371,619	$2,297,929	$0	25									1	
University of North Dakota	RD3 - 68	Princeton	West Central	4/2012	complete	RD	3	Biomass	Field demonstration of a hydrogen sulfidereduction process at the anaerobic digester on the 1,000-acre Haubenschild Dairy Farm	$970,558	$970,479	$0	$970,479	$79	11									1	
University of Minnesota	RD3 - 23	Morris	West Central	8/2011	complete	RD	3	Biomass	Whole system evaluation over multiple To further evaluate and address	$819,159	$729,717	$0	$729,717	$89,442	8								6	28	
Best Power International	EP3 - 3	Collegeville	West Central	5/2010	complete	EP	3	Solar	Installed a 400 kW photovoltaic facility at St. Johns's University to demonstrate commercial viability of solar power in Minnesota.	$1,994,480	$1,994,480	$1,188,823	$3,183,303	$0	35	400	1,736	$826	$3	$36,288	$33,094			
Blattner and Sons	BW-06	Avon	West Central	6/2002	complete	RD	1	Wind	Developed a platform that would climb the tower to eliminate that need for crane to construct very tall wind turbines.	$68,470	$62,346	$0	$62,346	$6,124	1										
									Economic Benefits for West Central Region	**$5,810,596**	**$4,845,900**	**$2,701,997**	**$7,547,897**	**$95,645**	**83**	**400**	**1,736**	**$826**	**$3**	**$36,288**	**$33,094**	**6**	**30**	**0**
OUT OF STATE																								
Northern Plains Power Tech.	RD3 - 21	Brookings, SD	Out of State	11/2012	complete	RD	3	Solar	To develop loss-of-mains detection based on harmonic signature and synchrophasor data which will enable distributed generators to assume more of a grid-system support role.	$493,608	$493,608	$240,665	$734,273	$0	8									4	1
Interphases Solar	RD3 - 53	Moorpark, CA	Out of State	7/2012	complete	RD	3	Solar	Demonstrated a manufacturing process to produce lightweight, thin-film solar cells.	$1,000,000	$1,000,000	$666,021	$1,666,021	$0	18								1	5	
University of North Dakota	RD3 - 71	Grand Forks, ND	Out of State	3/2012	complete	RD	3	Biomass	Demonstrated a thermally integrated biomass gasification systems with a 3 kW low-Btu gas turbine.	$999,728	$999,438	$0	$999,438	$290	11								1	1	
Production Specialties	RD-72	Oklahoma City, OK	Out of State	11/2009	complete	RD	2	Biomass	Investigated a technology to selectively remove hydrogen sulfide (H_2S) from biogas without generating a waste stream	$228,735	$228,735	$263,767	$492,502	$0	5									1	
Global Energy Concepts	RD-87	Lowell, MA	Out of State	5/2009	complete	RD	2	Wind	Analyzed and developed advanced methods for reducing uncertainty in wir power estimates.	$370,000	$370,000	$28,236	$398,236	$0	4										
NREL-Low Band Gap-Solar	RD-107	Golden, CO	Out of State	12/2008	complete	RD	2	Solar	Overcome limitations in organic-based solar cells by developing low band gap (red light absorbing) materials.	$1,000,000	$944,452	$0	$944,452	$55,548	10								6	2	
Interphases Research	RD-78	Moorpark, CA	Out of State	11/2008	complete	RD	2	Solar	Developed a concept to manufacture flexible photovoltaic modules in a continuous roll-to-roll electro-deposition process.	$1,000,000	$1,000,000	$821,700	$1,821,700	$0	20									6	
NREL - Inkjet Solar Cells	RD-93	Golden, CO	Out of State	11/2008	complete	RD	2	Solar	Designed and developed a thin-film solar cell that will use a direct-write inkjet printing process.	$1,000,000	$949,005	$0	$949,005	$50,995	10										
Colorado School of Mines	CB-07	Golden, CO	Out of State	12/2007	complete	RD	1	Biomass	Developed a fuel cell prototype for use in ambient or high temperatures.	$1,116,742	$1,116,742	$0	$1,116,742	$0	12										
Univ. of ND - SOFC	CB-08	Grand Forks, ND	Out of State	10/2007	complete	RD	1	Biomass	Incorporated solid oxide fuel cells (SOFCs) with a gasification systems int one integrated system to produce electricity.	$1,250,142	$1,250,056	$885,928	$2,135,984	$86	23										1
Energy Conversion Devices	RD-22	Rochester Hills, MI	Out of State	10/2007	complete	RD	2	Biomass	Researched processes to reform bio-ethanol and bio-methanol into hydrogen for use in a fuel cell or gas turbine to generate electricity.	$900,000	$900,000	$1,390,015	$2,290,015	$0	25									6	
NREL	CS-05	Golden, CO	Out of State	7/2007	complete	RD	1	Solar	Design and develop of solutions and techniques to use an inkjet printing process for the manuafacturing of thin-film solar cells.	$934,628	$924,757	$0	$924,757	$9,871	10										
Iowa State University	RD-110	Ames, IA	Out of State	7/2007	complete	RD	2	Biomass	Performance testing of a particulate filtration clean-up system for the producer gas from a biomass gasifier.	$405,000	$98,343	$0	$98,343	$306,657	4										
Coaltec	RD-26	Carterville, IL	Out of State	1/2007	complete	RD	2	Biomass	Study of handling, performance and emissions to assess feasibility of poultry waste as a sustainable feedstock for a fixed-bed gasifier.	$450,000	$450,000	$378,500	$828,500	$0	9										
Univ of ND - SCR Performance	BB-12	Grand Forks, ND	Out of State	6/2006	complete	RD	1	Biomass	Examined the rates and mechanisms of catalyst deactivation within the emissions from a biomass co-fired utility boiler.	$60,000	$59,973	$340,000	$399,973	$27	4										
University of ND - Cofiring	BB-09	Grand Forks, ND	Out of State	3/2005	complete	RD	1	Biomass	Measured operational and component impacts of co-firing biomass with coal in an indirect fired combined-cycle pulverized-coal furnace.	$444,478	$444,443	$296,219	$740,662	$35	8										
Community Power Corp.	BB-10	Littleton, CO	Out of State	3/2005	complete	RD	1	Biomass	Designed, developed, and tested a centrifugal filter capable of removing su micron particles and aerosols from a hot producer bio-gas stream.	$638,635	$548,692	$133,054	$681,746	$89,943	8										
Global Energy Concepts	CW-02	Lowell, MA	Out of State	10/2003	complete	RD	1	Wind	Translated the effects of a turbine's rotating flexible blades into a linear model allowing the incorporation of controls in modeling software used for wind turbine design.	$75,000	$73,239	$0	$73,239	$1,761	1										
									Economic Benefits for Out of State Area	**$12,366,696**	**$11,851,483**	**$5,444,105**	**$17,295,588**	**$515,213**	**190**	**0**	**0**	**$0**	**$0**	**$0**	**$0**	**8**	**25**	**2**
									TOTAL ALL PROJECTS	**$67,501,690**	**$56,543,937**	**$91,231,276**	**$147,775,213**	**$2,478,732**	**1,635**	**21,578**	**195,014**	**$71,682**	**$260**	**$618,342**	**$2,368,651**	**40**	**127**	**5**

RENEWABLE DEVELOPMENT FUND FINANCIAL STATEMENT

As of December 31, 2012

	Prior to Biennium		Since RDF Inception
	2003-2011	**2012**	**2003-2012**
Total RDF Credits	**$184,000,000**	**$19,500,000**	**$203,500,000**
Excelsior	$10,000,000	$0	$10,000,000
Energy Production Grants	$17,144,009	$476,376	$17,620,385
Research Grants	$27,497,098	$1,426,461	$28,923,559
Total RDF Grant Payments	**$54,641,107**	**$1,902,837**	**$56,543,944**
Administrative Costs	**$1,936,863**	**$101,533**	**$2,038,395**
University of Minnesota	**$22,500,000**	**$2,500,000**	**$25,000,000**
REPI	**$61,018,553**	**$9,017,890**	**$70,036,442**
Solar Rebates	**$382,541**	**$1,808,050**	**$2,190,591**
Other Legislative Mandates	**$13,375,011**	**$0**	**$13,375,011**
Total RDF Costs	**$153,854,075**	**$15,330,310**	**$169,184,385**

SUMMARY OF RDF PROGRAM FUNDS

Total Amount Credited to RDF	**(+)**	**$203,500,000**
Total RDF Payments	**(-)**	**$169,184,385**
Total Amount of Grant Awards	**(-)**	**$67,501,690**
Total Amount of RDF Grants Paid	**(+)**	**$56,543,944**
Unencumbered Cumulative Balanc	**(=)**	**$23,357,870**

RDF Advisory Group

- Eric Jensen, energy coordinator
  Izaak Walton League
  Representing the environmental community

- Linda Taylor
  Fresh Energy
  Representing the environmental community

- Lise Trudeau, engineer
  Minnesota Division of Energy Resources
  Representing residential customers

- Ben Gerber, manager energy policy
  Minnesota Chamber of Commerce
  Representing commercial and industrial customers

- Heather Westra
  Representing Prairie Island Indian community

- Kevin Schwain, manager emerging customer program
  NSP-Minnesota
  Representing NSP-Minnesota

- Mike Bull, manager public policy and strategy
  NSP-Minnesota
  Representing NSP-Minnesota

RDF Administration

- Paul Lehman, program manager
  NSP-Minnesota

- Mark Ritter, grant administrator
  NSP-Minnesota