

215 South Cascade Street
PO Box 496
Fergus Falls, Minnesota 56538-0496
218 739-8200
www.otpc.com (web site)



April 1, 2011

VIA ELECTRONIC FILING

Dr. Burl Haar
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, Minnesota 55101-2147

Mr. William Grant
Director
Minnesota Office of Energy Security
85 7th Place East, Suite 500
St. Paul, Minnesota 55101-2198

**RE: 2010 Demand Side Management Financial Incentive Project
Docket No. E-017/M-11-185**

**Annual Filing to Update the Conservation Improvement Project Rider
Docket No. E-017/M-11-243**

**2010 CIP Status Report
Docket No. E-017/CIP-08-640.02**

Dear Dr. Haar and Director Grant:

Enclosed for filing please find:

1. Otter Tail Power Company's 2010 Demand-Side Management Financial Incentive Project. This filing is made pursuant to the Commission's April 7, 2000 Order Approving Demand Side Management Financial Incentive Plans, Docket Numbers E,G-999-CI/98-1759 and Minnesota Statutes, 216B.16, subdivision 6c.
2. The Annual Filing to Update the Conservation Improvement Project Rider. The original filing was made in compliance with the Commission's December 23, 1994, Order Approving Settlement and Otter Tail Power Company's Proposed CIP Adjustment, Docket No. E-017/M-94-539.
3. Status report of 2010 CIP activities.

Otter Tail Power Company would like to emphasize the following points concerning the 2010 filing:

- The Company achieved 1.58 percent energy savings as a percent of retail energy sales,

exceeding our approved 2010 goal of 1.14 percent.

- The Company has met its energy and demand savings and budget goals for 2010.
- The cost per kWh for *first year* savings is \$0.15 (15 cents) compared to a budgeted cost of \$0.20 (20 cents). Obviously, lifetime costs are substantially less.
- The Company's 2010 Conservation Improvement Program achieved \$29,837,612 in net benefits.
- The Company is requesting approval for \$3,908,628 in performance incentives for 2010 CIP activities. This amount is a small share of the total net benefits from investments in demand-side management.
- Four alternate methodologies are included in this filing, as directed by Commissioner Order in Docket No. E-017/M-10-220, dated November 5, 2010. The CIP rider is reflected as surcharge on customers' bills and is used to recover Minnesota conservation-related expenses. Otter Tail will implement the method directed by the Commission upon the Commission's review and evaluation of the CCRA docket. The Company is requesting the CCRA (Conservation Cost Recovery Adjustment) factor be reflected on customers' bills through the Resource Adjustment starting with bills rendered (dated) on and after July 1, 2011.
- As in prior years, Otter Tail Power Company is requesting a variance to Minnesota Rules 7820.3500 (K) and 7825.2600, which require that the fuel clause adjustment be stated as a separate line item on customer bills. The requested variance would allow the Company to continue to combine the FCA with the Conservation Cost Recovery Adjustment on customer bills.

The new financial incentive mechanism in Minnesota has been effective at motivating the utility to achieve energy savings and to do so at a low cost. Otter Tail has committed resources and developed new, creative approaches in pursuit of higher conservation goals. We are particularly proud of our accomplishments in the Campus and Community Energy Challenges, which achieved record setting energy savings.

Enclosed are a Summary of Filing and a Certificate of Service. Otter Tail Power Company has served a copy of the Petition on all parties listed on the enclosed Service List. If you or Commission Staff have any questions, please contact me at (218) 739-8303.

Very truly yours,

/s/ KIM PEDERSON
Kim Pederson, Manager
Market Planning

Enclosure
By electronic filing
c: Service List

**STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION**

In the Matter of Otter Tail Power
Company's Annual Filing of the
Demand-Side Management
Financial Incentive Project

Docket No. E-017/M-11-185

In the Matter of Otter Tail Power
Company's Annual Filing to
Update the Conservation
Improvement Project Rider

Docket No. E-017/M-11-243

Status Report – 2010 CIP Activities

Docket No. E-017/CIP-08-640.02

SUMMARY OF FILING

On April 1, 2011, Otter Tail Power Company filed with the Minnesota Public Utilities Commission and the Minnesota Office of Energy Security its annual filing of the Demand-Side Management Financial Mechanism. The Company is requesting Commission approval of its shared savings incentive of \$3,908,628 for 2010.

Otter Tail Power Company also filed its annual filing to update the Conservation Improvement Project Rider. The Company has included four alternative methods for calculation and application of the CCRA (Conservation Cost Recovery Adjustment) and requests the adjustment factor determined by the Commission be reflected on customers' bills through the Resource Adjustment starting with bills rendered (dated) on and after July 1, 2011.

Please note that this filing is available through the eDockets system maintained by the Minnesota Office of Energy Security and the Minnesota Public Utilities Commission. Access this document by going to eDockets through the websites of the Office of Energy Security or the Public Utilities Commission or going to the eDockets homepage at:

<https://www.edockets.state.mn.us/EFiling/home.jsp>

Once on the eDockets homepage, this document can be accessed through the Search Documents link and entering in docket numbers: 11-185 or 08-640.02

Please contact Otter Tail Power Company at 800-493-3299 to request a complete copy of this filing.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Otter Tail Power
Company's Annual Filing of the
Demand-Side Management
Financial Incentive Project

Docket No. E-017/M-11-185

In the Matter of Otter Tail Power
Company's Annual Filing to
Update the Conservation
Improvement Project Rider

Docket No. E-017/M-11-243

Status Report – 2010 CIP Activities

Docket No. E-017/CIP-08-640.02

I. BACKGROUND

Financial Incentive Filing

On January 27, 2010, the Minnesota Public Utilities Commission (PUC) approved a new shared savings model for 2010 and beyond.¹ Otter Tail Power Company submitted 2010 proposed numbers to the Minnesota Commission and the Office of Energy Security in two separate filings: first, as part of the January 29, 2010 Financial Incentive Mechanism Compliance Filing, and second, as part of the 2009 Financial Incentive Filing², filed before the Commission on March 31, 2010 where proposed percentages and other corresponding information for 2010 were filed as Tables 5a, 5b, and 5c.

Conservation Improvement Project Rider

On June 15, 1994, Otter Tail Power Company filed a petition for a CIP Adjustment. On October 18, 1994, the Company filed a Motion to File Amended Petition and Accept Settlement Agreement. On December 23, 1994, the Commission issued an Order Approving Settlement and

¹ Docket E,G-999/CI-08-133, approved January 27, 2010

² Docket E-017/M-10-220, filing dated March 31, 2010, approved November 5, 2010

Proposed CIP Adjustment for Otter Tail.³ In this Order, the Commission approved a CIP adjustment mechanism to be applied to customers' bills on or after July 1, 1995, which the Company began implementing on July 1, 1995.

II. REQUEST FOR APPROVAL

Financial Incentive Filing

Otter Tail Power Company respectfully requests that the following financial incentive be recoverable through its CIP Tracker Account for 2010:

Financial Incentive

\$ 3,908,628

Details of the incentive calculation and corresponding evaluations of direct impact projects are included in the attached report under the Section entitled "FINANCIAL INCENTIVE."

Conservation Improvement Project Rider

The Company is providing four alternate methodologies to calculate and collect the CIP rider (this is a surcharge to recover conservation-related expenses). Otter Tail will implement the method for the CCRA determined by the Commission upon their review of the current docket. Details regarding the alternate methodologies are included in the Cost Recovery Adjustment Section of the filing. The Company is requesting the CCRA (Conservation Cost Recovery Adjustment) factor determined by the Commission be reflected on customers' bills through the Resource Adjustment starting with bills rendered (dated) on and after July 1, 2011.

III. LEGAL AUTHORITY

The Petition for approval of Otter Tail's Financial Incentive Filing is submitted in accordance with Minn. Stat. 216B.16, subd. 6c. The Conservation Improvement Project Rider is submitted in accordance with the Miscellaneous Tariff rules.

IV. REQUEST FOR VARIANCE TO MINNESOTA RULES

Otter Tail Power Company requests a variance to Minnesota Rules 7820.3500 (K) and

³ Docket No. E-017/M-94-539

7825.2600, which require that the fuel clause adjustment (FCA) be stated as a separate line item on customers' bills. The requested variance would allow the Company to continue to combine the FCA with the Conservation Improvement Adjustment on customer bills.

Minnesota Rules 7829.3200 authorizes the Commission to grant a variance to its rules when (1) enforcement of the rule would impose an excessive burden on the applicant, (2) the variance would not adversely affect the public interest, and (3) the variance would not conflict with standards imposed by law. Otter Tail Power Company believes the criteria for granting variances are met since the Company has been using the combined Resource Adjustment since July 1995, and customers have become familiar with the single-line item on their bill.

The continuation of the variance would not adversely affect the public interest and may avoid customer confusion if the bill presentment was altered at this time.

And finally, there are no statutory provisions that would prohibit the variance; therefore, the requirement may be varied pursuant to Minnesota rules 7829.3200.

Once approved by the Commission, the Company will be notifying its Minnesota customers of the new CIP surcharge directly on its customers' bills. A surcharge notification will be printed on the back of each bill on the billing date following closest to July 1, 2011. Depending upon the methodology chosen by the Commission, the Company will notify customers accordingly. In general, the notification will state "Beginning July 1, the Resource Adjustment includes a CCRA (Conservation Cost Recovery Adjustment) factor of [insert surcharge information] that has been applied based on [insert methodology]."

V. MISCELLANEOUS FILING REQUIREMENTS

A. All correspondence with respect to this filing should be sent to:

Kim Pederson
Market Planning
Otter Tail Power Company
215 South Cascade Street
P.O. Box 496
Fergus Falls, MN 56538-0496
(218) 739-8303 Phone
(218) 739-8941 FAX

B. The effective date of the Conservation Improvement Project Rider is July 1, 2011. The effective date of the other filings is the date of Commission approval.

C. Otter Tail Power Company agrees that the notice and comment periods set forth in the Miscellaneous Tariff Filing rules control the time frame for processing this type of filing.

D. The reason for the filing and its impacts is explained above and in the attached report.

VI. CONCLUSION

Otter Tail Power Company requests approval of the 2010 DSM Financial Incentive, totaling \$3,908,628. The Company is requesting that the CCRA (Conservation Cost Recovery Adjustment) factor based on the Commission's determination of appropriate calculation methodology be reflected on customers' bills through the Resource Adjustment starting with bills rendered (dated) on and after July 1, 2011. Also, Otter Tail Power Company is requesting a variance to Minnesota Rules to allow the Company to continue to combine the FCA with the Conservation Improvement Adjustment on customer bills.

If there are any questions concerning this filing, please contact Kim Pederson at (218) 739-8303.

Dated: April 1, 2011

Respectfully submitted,

OTTER TAIL POWER COMPANY

By: /s/ KIM PEDERSON

Kim Pederson, Market Planning

Otter Tail Power Company

P.O. Box 496

215 South Cascade Street

Fergus Falls, MN 56538-0496

(218) 739-8303

CERTIFICATE OF SERVICE

RE: In the Matter of Otter Tail Power Company's 2010 CIP Incentive Mechanism, 2010 Status Report, and Annual Filing to Update the CIP Rider

Docket No. E017/M-11-185, E017/CIP-08-640.02 & E017/M-11-243

I, Jana C Emery, hereby certify that I have this day served a copy of the following, or a summary thereof, on Dr. Burl W. Haar and Sharon Ferguson by e-filing, and to all other persons on the attached service list by electronic service or by First Class mail.

**Otter Tail Power Company
Compliance Filing**

Dated this **1st** day of **April, 2011**.

/s/ JANA C EMERY
Jana C Emery, Market Planning
Otter Tail Power Company
PO Box 496
215 South Cascade Street
Fergus Falls MN 56538-0496
(218) 739-8879

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
George	Agriesti		Minnesota Power	30 W Superior St Duluth, MN 55802	Paper Service	No	OFF_SL_10-356_CIP-10-356
Michael	Ahern	ahern.michael@dorsey.com	Dorsey & Whitney, LLP	Suite 1500 50 South Sixth Street Minneapolis, MN 554021498	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Bob	Ambrose	bambrose@GREnergy.com	Great River Energy	12300 Elm Creek Blvd Maple Grove, MN 553694718	Paper Service	No	OFF_SL_10-356_CIP-10-356
Julia	Anderson	Julia.Anderson@state.mn.us	Office of the Attorney General-DOC	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Donald R	Ball	N/A	Great Plains Natural Gas Company	400 N 4th St Bismarck, ND 58501	Paper Service	No	OFF_SL_10-356_CIP-10-356
William A.	Blazar	bblazar@mnychamber.com	Minnesota Chamber Of Commerce	Suite 1500 400 Robert Street North St. Paul, MN 55101	Paper Service	No	OFF_SL_10-356_CIP-10-356
Christina	Brusven	cbrusven@fredlaw.com	Fredrikson & Byron, P.A.	200 S 6th St Ste 4000 Minneapolis, MN 554021425	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Gary	Chesnut	gchesnut@agp.com	AG Processing Inc. a cooperative	12700 West Dodge Road PO Box 2047 Omaha, NE 681032047	Paper Service	No	OFF_SL_10-356_CIP-10-356
Christopher	Clark	christopher.b.clark@xcenergy.com	Xcel Energy	5th Floor 414 Nicollet Mall Minneapolis, MN 554011993	Paper Service	No	OFF_SL_10-356_CIP-10-356
Chris	Cloutier	N/A	D&R International	1684 Selby Ave Saint Paul, MN 55104	Paper Service	No	OFF_SL_10-356_CIP-10-356
Gary	Connett		Great River Energy	12300 Elm Creek Blvd N Maple Grove, MN 553694718	Paper Service	No	OFF_SL_10-356_CIP-10-356

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
S. Mark	Curwin		Enbridge Energy Company, Inc.	1409 Hammond Ave FL 2 Superior, WI 54880	Paper Service	No	OFF_SL_10-356_CIP-10-356
S. Mark	Curwin	N/A	Enbridge Energy Co Inc.	119 N 25th St E Superior, WI 54880	Paper Service	No	OFF_SL_10-356_CIP-10-356
Denis	De Vaan	N/A	MN Community Action Assoc	100 Empire Dr, Suite 202 St Paul, MN 55103-1886	Paper Service	No	OFF_SL_10-356_CIP-10-356
Executive	Director	N/A	Sustainable Resources Center	1081 10th Ave SE Minneapolis, MN 55414	Paper Service	No	OFF_SL_10-356_CIP-10-356
Suzanne	Doyle	suzanne.doyle@xcelenergy.com	Xcel Energy	414 Nicollet Mall Minneapolis, MN 55401	Paper Service	No	OFF_SL_10-356_CIP-10-356
Chris	Duffrin	chrisd@thenec.org	Neighborhood Energy Connection	624 Selby Avenue St. Paul, MN 55104	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Jana	Emery	jemery@otpc.com	Otter Tail Power Company	216 S Cascade St PO Box 496 Fergus Falls, MN 56538	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 500 Saint Paul, MN 551012198	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Ken	Finholdt	N/A	Owatonna Public Utilities	208 S Walnut PO Box 800 Owatonna, MN 55060	Paper Service	No	OFF_SL_10-356_CIP-10-356
Edward	Garvey	garveyed@aol.com		32 Lawton Street St. Paul, MN 55102	Paper Service	No	OFF_SL_10-356_CIP-10-356

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Mark	Glaess		Minnesota Rural Electric Association	11640 73rd Ave N Maple Grove, MN 55369	Paper Service	No	OFF_SL_10-356_CIP-10-356
William	Grant	bgrant@iwla.org	Izaak Walton League, Midwest Office	1619 Dayton Ave Ste 202 St. Paul, MN 551046206	Paper Service	No	OFF_SL_10-356_CIP-10-356
Michael R.	Gravelle	michael.gravelle@avanten ergy.com	Avant Energy Services	Suite 300 200 South Sixth Street Minneapolis, MN 55402	Paper Service	No	OFF_SL_10-356_CIP-10-356
Lara V	Greden	N/A	The Weidt Group	5800 Baker Rd Minnetonka, MN 55345	Paper Service	No	OFF_SL_10-356_CIP-10-356
Stephan	Gunn	sgunn@appliedenergygrou p.com	Applied Energy Group	1941 Pike Ln De Pere, WI 54115	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Burl W.	Haar	burl.haar@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 551012147	Electronic Service	No	OFF_SL_10-356_CIP-10-356
J Drake	Hamilton	hamilton@fresh-energy.org	Fresh Energy	408 St Peter St Saint Paul, MN 55101	Paper Service	No	OFF_SL_10-356_CIP-10-356
Tom	Holt	tholt@eastriver.coop	East River Electric Power Coop., Inc.	PO Box 227 Madison, SD 57042	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Jim	Jarvis	N/A	ReDirect Energy, LLC	44 7th Avenue NE Minneapolis, MN 55413	Paper Service	No	OFF_SL_10-356_CIP-10-356
Paula N.	Johnson		Interstate Power and Light Company	200 First Street SE PO Box 351 Cedar Rapids, IA 524060351	Paper Service	No	OFF_SL_10-356_CIP-10-356

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Larry	Johnston	lw.johnston@smmpa.org	SMMPA	500 1st Ave SW Rochester, MN 55902-3303	Paper Service	No	OFF_SL_10-356_CIP-10-356
Angela M.	Kline	angela.kline@centerpointenergy.com	CenterPoint Energy	800 LaSalle Avenue Minneapolis, MN 55402	Paper Service	No	OFF_SL_10-356_CIP-10-356
Tina	Koecher	tkoecher@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Heidi	Konynenbelt	hkonynenbelt@otpco.com	Otter Tail Power Company	215 S. Cascade Street, PO Box 496 Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	OFF_SL_10-356_CIP-10-356
John	Lindell	agorud.ecf@state.mn.us	Office of the Attorney General-RUD	900 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Nick	Mark	nick.mark@centerpointenergy.com	CenterPoint Energy	800 LaSalle Ave Minneapolis, MN 55402	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Paper Service	No	OFF_SL_10-356_CIP-10-356
Tom	McDougall	N/A	The Weidt Group	5800 Baker Rd Minnetonka, MN 55345	Paper Service	No	OFF_SL_10-356_CIP-10-356
Bridget	McLaughlin	bridget.mclaughlin@xcelenergy.com	Xcel Energy	6th Floor 414 Nicollet Mall Minneapolis, MN 554011993	Paper Service	No	OFF_SL_10-356_CIP-10-356

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Craig	Metz	N/A	EnSave Energy Performance	65 Millet St, Suite 105 Richmond, VT 05477	Paper Service	No	OFF_SL_10-356_CIP-10-356
Andrew	Moratzka	apm@mcmlaw.com	Mackall, Crounse and Moore	1400 AT&T Tower 901 Marquette Ave Minneapolis, MN 55402	Paper Service	No	OFF_SL_10-356_CIP-10-356
K Frank	Morehouse	N/A	Great Plains Natural Gas Company	PO Box 176 Fergus Falls, MN 56537-0176	Paper Service	No	OFF_SL_10-356_CIP-10-356
Carl	Nelson	cnelson@mncee.org	Center for Energy and Environment	212 3rd Ave N Ste 560 Minneapolis, MN 55401	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Paul	Ohlson	N/A	EnSave Energy Performance	57 Millet St, PO Box 909 Richmond, VT 05477	Paper Service	No	OFF_SL_10-356_CIP-10-356
Gary	Olson		Product Recovery, Inc.	2605 E Cliff Rd Burnsville, MN 55337	Paper Service	No	OFF_SL_10-356_CIP-10-356
Larry	Oswald		Honeywell, Inc.	1335 2nd Ave N Ste B Fargo, ND 58103	Paper Service	No	OFF_SL_10-356_CIP-10-356
Kim	Pederson	kpederson@otpc.com	Otter Tail Power Company	215 S Cascade St PO Box 496 Fergus Falls, MN 565380496	Paper Service	No	OFF_SL_10-356_CIP-10-356
Lisa	Pickard	lpickard@minnkota.com	Minnkota Power Cooperative	1822 Mill Rd PO Box 13200 Grand Forks, ND 582083200	Paper Service	No	OFF_SL_10-356_CIP-10-356
Tom	Sagstetter	N/A	Great River Energy	17845 US HWY 10 Elk River, MN 55303	Paper Service	No	OFF_SL_10-356_CIP-10-356

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Tom	Sagstetter		Great River Energy	12300 Elm Creek Boulevard Highway 10 Maple Grove, MN 553694718	Paper Service	No	OFF_SL_10-356_CIP-10-356
Narv	Somdahl	N/A	Citizen	5100 W 102nd St Apt 209 Bloomington, MN 55437-2567	Paper Service	No	OFF_SL_10-356_CIP-10-356
Grey	Staples	gstaples@mendotagroup.net	The Mendota Group, LLC	1830 Fargo Lane Mendota Heights, MN 55118	Paper Service	No	OFF_SL_10-356_CIP-10-356
Leo	Steidel	lsteidel@energyplatforms.com	Energy Platforms	8170 Old Carriage Court N Ste 200 Shakopee, MN 55379	Paper Service	No	OFF_SL_10-356_CIP-10-356
Sheldon	Strom		Center For Energy And Environment	212 3rd Ave N Ste 560 Minneapolis, MN 554011459	Paper Service	No	OFF_SL_10-356_CIP-10-356
Dale	Sullivan	N/A	Ramsey Action Programs	3315 Labore Rd Vadnais Heights, MN 55110	Paper Service	No	OFF_SL_10-356_CIP-10-356
SaGonna	Thompson	Regulatory.Records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	OFF_SL_10-356_CIP-10-356
Alecia	Ward		Midwest Energy Efficiency Alliance	Suite 990 645 N. Michigan Ave. Chicago, IL 606112878	Paper Service	No	OFF_SL_10-356_CIP-10-356
Bob	Zaragoza	N/A	Xcel Energy	414 Nicollet Mall, RS-6 Minneapolis, MN 55401	Paper Service	No	OFF_SL_10-356_CIP-10-356

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Julia	Anderson	Julia.Anderson@state.mn.us	Office of the Attorney General-DOC	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	No	SPL_SL__CIP-DOC-SPECIAL CIP SERVICE LIST
Christina	Brusven	cbrusven@fredlaw.com	Fredrikson & Byron, P.A.	200 S 6th St Ste 4000 Minneapolis, MN 554021425	Electronic Service	No	SPL_SL__CIP-DOC-SPECIAL CIP SERVICE LIST
Jeffrey A.	Daugherty	jeffrey-daugherty@centerpointenergy.com	CenterPoint Energy	800 LaSalle Ave Minneapolis, MN 55402	Paper Service	No	SPL_SL__CIP-DOC-SPECIAL CIP SERVICE LIST
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 500 Saint Paul, MN 551012198	Electronic Service	No	SPL_SL__CIP-DOC-SPECIAL CIP SERVICE LIST
William	Grant	bgrant@iwla.org	Izaak Walton League, Midwest Office	1619 Dayton Ave Ste 202 St. Paul, MN 551046206	Paper Service	No	SPL_SL__CIP-DOC-SPECIAL CIP SERVICE LIST
Stephan	Gunn	sgunn@appliedenergygroup.com	Applied Energy Group	1941 Pike Ln De Pere, WI 54115	Electronic Service	No	SPL_SL__CIP-DOC-SPECIAL CIP SERVICE LIST
Burl W.	Haar	burl.haar@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 551012147	Electronic Service	No	SPL_SL__CIP-DOC-SPECIAL CIP SERVICE LIST
Angela M.	Kline	angela.kline@centerpointenergy.com	CenterPoint Energy	800 LaSalle Avenue Minneapolis, MN 55402	Paper Service	No	SPL_SL__CIP-DOC-SPECIAL CIP SERVICE LIST
Tina	Koecher	tkoecher@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	SPL_SL__CIP-DOC-SPECIAL CIP SERVICE LIST
John	Lindell	agorud.ecf@state.mn.us	Office of the Attorney General-RUD	900 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No	SPL_SL__CIP-DOC-SPECIAL CIP SERVICE LIST
Nick	Mark	nick.mark@centerpointenergy.com	CenterPoint Energy	800 LaSalle Ave Minneapolis, MN 55402	Electronic Service	No	SPL_SL__CIP-DOC-SPECIAL CIP SERVICE LIST

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Kim	Pederson	kpederson@otpc.com	Otter Tail Power Company	215 S Cascade St PO Box 496 Fergus Falls, MN 565380496	Paper Service	No	SPL_SL__CIP-DOC- SPECIAL CIP SERVICE LIST
Sheldon	Strom		Center For Energy And Environment	212 3rd Ave N Ste 560 Minneapolis, MN 554011459	Paper Service	No	SPL_SL__CIP-DOC- SPECIAL CIP SERVICE LIST
SaGonna	Thompson	Regulatory.Records@xcel energy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	SPL_SL__CIP-DOC- SPECIAL CIP SERVICE LIST

Section: FINANCIAL INCENTIVE

Otter Tail Power Company (the Company) hereby submits this Filing in compliance with the Minnesota Public Utilities Commission's (the Commission's) January 27, 2010 Order Approving Demand Side Management Financial Incentive Plans.¹

The filing consists of the following sections.

Section I	Discussion of the 2010 Approved Financial Incentive
Section II	Proposed Figures – 2011 Financial Incentive
Section III	Incentive Plan Statutory Criteria
Section IV	Cost Comparisons / Net Benefits

Tables referenced in this section of the Filing are located in Appendix A and include the following information.

Table 1	Calculation of Carrying Charge – 2010 CIP Tracker
Table 2	2010 Incentive Mechanism – Pre-Year Inputs
Table 2B	2010 Incentive Mechanism – Post-Year Results
Table 3	2010 Project Costs, Savings, and Benefits
Table 4	2010 Benefit Cost Ratios
Table 5-A	2011 Incentive Mechanism – Proposed Percentages
Table 5-B	2011 Proposed Program Costs, Savings, and Benefits
Table 5-C	2011 Proposed Benefit Cost Ratios
Table 6	2010 CIP Program Status Report
Table 7	2010 CIP Program Status Report – Costs per kW & per kWh

¹ Docket Numbers E,G-999/CI-08-133

I. DISCUSSION OF 2010 FINANCIAL INCENTIVE

The new shared-savings financial incentive plan awards Otter Tail Power Company a small share of the net benefits from investments in energy efficiency. The new plan links the incentive to the utilities' performance in achieving cost-effective energy efficiency.

INCENTIVE CALCULATION

On January 27, 2010, the Minnesota Public Utilities Commission (PUC) approved a new shared savings model² for 2010 and beyond. The incentive for Otter Tail Power Company is calculated using the following steps and guidelines.

1. Otter Tail Power Company filed 2010 approved budgets, goals, net benefits, and resulting incentive levels with the Minnesota PUC and the Office of Energy Security showing the incentive level awarded for achieving increasing percentages of goals. Otter Tail Power Company submitted 2010 proposed numbers to the Minnesota Public Utilities Commission and the Office of Energy Security in two separate filings: first, as part of the January 29, 2010 Financial Incentive Proposal Compliance Filing, and second, as part of the 2009 Financial Incentive Filing, filed before the Commission on March 31, 2010 where proposed percentages and other corresponding information for 2010 were filed as Tables 5a, 5b, and 5c.

The Public Utilities Commission approved the 2009 DSM Financial Incentive, including the 2010 proposed numbers, on November 5, 2010.³

The Company was granted an extension to file next year's 2011 proposed incentive figures because a final order on the Company's 2011-2013 CIP Triennial Plan is pending.⁴ However, as part of this filing under Section II, the Company is providing the forward looking incentive for 2011 based on the Company's Triennial Plan as approved by the Director on November 22, 2010, prior to an anticipated final order based on the Company's subsequent compliance filing. These figures are included in Appendix A, Table 5a, 5b, and 5c.

2. The incentive is calculated using the model provided by the Office of Energy Security and detailed in Appendix A, Tables 2a and 2b. The kWh earnings threshold is set at fifty percent of the utility's average energy savings over the years 2004-2008,

² Docket E,G-999/CIP-08-133

³ Docket No. E017/M-10-220, approved November 5, 2010 by the Minnesota Public Utilities Commission.

⁴ Docket No. E017/M-10-356, Minnesota Office of Energy Security Director's *Decision in the Matter of the Implementation of Otter Tail Power Company's 2011-2013 Conservation Improvement Program*, November 22, 2010. Otter Tail Power's *Request for Extension for the Financial Incentive Compliance Filing* followed on January 19, 2011. On February 7, 2011, Otter Tail provided *Otter Tail Power Company's 2011-2013 Minnesota Conservation Improvement Program Compliance Filing* in response to the Director's Order.

removing both the maximum and minimum achievements, or at energy savings equal to 0.4 percent of retail sales, whichever is lower.

The resulting 2010 energy saving model is calibrated at 20,901,840 kWh, which is 1 percent of the Company's average 3-year, weather normalized retail sales. This goal is used in the calculation of the incentive only – Otter Tail's 2010 CIP approved energy goal is still 21,236,338 kWh as shown in Table 6.

3. As outlined in Appendix A, Table 2a, the incentive calibration establishes that the Company will receive a non-linear multiplier of 0.00946 for every 0.1 percent of sales saved above the zero point, which is 4,180,368 kWh savings. Appendix A, Table 2b provides the results of the financial incentive calculation, showing the Company achieved roughly 13.84 steps of "0.1 percent of sales saved" above the zero point. This 13.84 steps times the .00946 multiplier results in a 13.10 percent multiplier of 2010 net benefits.
4. At year-end, the utility calculates the net benefits for the CIP projects based on actual participation and costs. The net benefits are the avoided costs less the total CIP costs, including both direct and indirect projects.

Appendix A, Table 3 lists the 2010 CIP Projects, each as proposed and approved by the Department, and each with actual 2010 results. Also listed are total project costs, resulting benefits, and net benefits for each project and as a total CIP Program. **Actual energy savings was 33,109,206 kWh, or 1.58 percent of historic average retail sales, and total net benefits are calculated to be \$29,837,612.** The 2010 results for energy savings, costs, and net benefits are entered in the post-year financial incentive tool as shown in Appendix A, Table 2b.

5. As additional evaluation information, Appendix A, Table 4 outlines the benefit/cost ratios for each 2010 CIP Project. Figures are listed for each project "as filed" as part of the 2010 CIP Biennial Filing without any budget or energy modifications, and "as actual" using 2010 actual participation and cost results.
6. As detailed in Appendix A, Table 2b and based on the corresponding percentage of net benefits (13.26%), the total incentive amount requested is calculated to be \$3,908,628.

II. FINANCIAL INCENTIVE - 2011

PROPOSAL OF PERCENTAGES - 2011

On January 27, 2010, the Minnesota Public Utilities Commission approved a new shared savings model⁵ for 2010 and beyond. Appendix A, Table 5-A outlines Otter Tail's proposal for the 2011 Financial Incentive. The figures are based on an energy savings proposal of 24,505,704 kWh. This is the original total energy savings proposed by the Company for 2011.

Again, the figures presented in Table 5A and 5B are from Otter Tail Power Company's 2011-2013 Triennial CIP filing, approved by the Department of Commerce (Minnesota Office of Energy Security or MOES) on November 22, 2010.

III. FINANCIAL INCENTIVE - STATUTORY CRITERIA

Minn. Stat. §216B.16, subd. 6c(b), sets forth four statutory criteria with respect to approval by the Minnesota Public Utilities Commission (Commission) of utility financial incentive plans for energy conservation improvements:

In approving incentive plans, the Commission shall consider:

- (1) whether the plan is likely to increase utility investments in cost-effective energy conservation.
- (2) whether the plan is compatible with the interest of utility ratepayers and other interested parties.
- (3) whether the plan links the incentive to the utility's performance in achieving cost-effective conservation.
- (4) whether the plan is in conflict with other provisions of this chapter.

Consistent with the Commission's January 27, 2010 Order Approving Demand Side Management Financial Incentive Plans in Docket No. E,G999/CI-08-133, the following discussion describes precisely how Otter Tail's proposed 2010 Demand Side Management financial incentive in the present docket is consistent with each of these statutory criteria.

Otter Tail's financial incentive mechanism is consistent with the considerations set forth by the Commission as follows.

1. Increase investments: The incentive mechanism encourages increased utility investment in cost-effective conservation, recognizing higher incentives for greater energy savings. The increasing increments of the incentive motivate utilities to

⁵ Docket E,G-999/CIP-08-133

exceed savings achievable at statutory spending levels. The new incentive focuses on energy savings goals, rather than spending.

2. Interest of ratepayers and others: The current mechanism is in the interest of ratepayers because it rewards utilities a small percentage of net benefits achieved. The mechanism does not award the incentives for simply complying with statutory spending, but encourages additional conservation investment, which is in the ratepayer's interest.
3. Links incentive to performance: The current incentive is a shared savings mechanism that awards utilities a share of the total utility benefits from investments in energy efficient conservation. There is a direct link between the amount of the incentive and the utility's performance of achieving cost-effective conservation. As cost-effectiveness increases, net benefits increase, and thus, the incentive increases. Therefore the mechanism is directly linked to cost-effective performance.
4. Conflict with other provisions: Otter Tail does not believe the current incentive conflicts with other provisions of law. It does not result in unjust or unreasonable rates since the mechanism awards for cost effective energy efficiency at a cost less than supply side options.

IV. COST COMPARISONS / NET BENEFITS

In 2010, Otter Tail Power Company's average first year cost per kWh saved was 15 cents, comparable to the five-year average of 14 cents per kWh. As noted in the table below, the average first year costs per kWh range from 9 cents in 2005 to a high of 16 cents in 2007.

The primary influencer of all four segments – the financial incentive amount, annual CIP expenses, kWh savings, and cost per kWh, has historically been the Custom Energy Grant Project. However, in 2010, kWh savings were largely driven by the Company's commercial lighting, commercial adjustable speed drives, and commercial and residential heat pump programs. Adjustable speed drives were previously included in the custom grant program.

	5 Year CIP Historical Review of Costs and Energy Savings						
	2006	2007	2008	2009	2010	Total	Average
Financial Incentive	\$158,363	\$25,066	\$276,142	\$1,101,060	\$3,908,628	\$5,469,259	\$1,093,852
CIP Expenses	\$1,938,812	\$1,862,697	\$2,345,875	\$4,093,050	\$5,030,119	\$15,270,553	\$3,054,111
kWh Saved	13,983,526	11,468,831	15,994,719	35,706,319	33,109,206	\$110,262,601	22,052,520
Average Cost / kWh*	\$0.1400	\$0.1600	\$0.1500	\$0.1100	\$0.15	\$0.14	\$0.14

*Average cost/kWh reflects the first year cost/kWh, not lifetime cost/kWh.

NET BENEFITS

The definition of “net benefits” used by Otter Tail Power Company in the financial incentive calculation is the total utility benefits less the total utility costs for the entire CIP portfolio for a single year.

These figures are derived from a single year (2010) benefit/cost analysis using DSMore software. The utility benefits are aggregated for the lifetime of all CIP energy efficiency measures, discounted back to 2010 dollars using the utility discount rate of 8.00 percent, which was filed and approved in the 2009/2010 CIP filing.

As shown in Table 3 of the Filing, the estimated net benefits for the 2010 Proposed CIP is \$19,416,380. This number is derived by taking the total cost of each proposed program, including indirect impact projects, and subtracting this cost from the program’s total benefits. These 2010 proposed figures were filed earlier with the MNDOC as part of the 2009 Financial Incentive Project as Table 5b.⁶

Additional details of the total costs and the total benefits from the DSMore benefit/cost analysis of the entire 2010 Proposed CIP portfolio include:

Program Costs - Proposed 2010	
Delivery / Implementation / Administration Costs	\$2,539,984.86
Incentives	\$1,632,315.14
Total Costs	\$4,172,300.00
Program Benefits - Proposed 2010*	
Avoided T&D Electric	\$3,695,926
Cost-Based Avoided Electric Production	\$11,530,800
Cost-Based Avoided Electric Capacity	\$8,361,954
Total Benefits	\$23,588,680
Net Benefits – Proposed 2010	\$19,416,380
Benefit / Cost Results – Proposed 2010	5.65

*Benefits are based on lifetime benefits, discounted back to 2010 dollars using 8.0 percent utility discount rate.

As shown in Table 3 of the Filing, the net benefits of \$29,837,612 for the 2010 Actual CIP are significantly higher than the 2010 proposed net benefits. This number is derived by taking the actual total cost of each approved program, including indirect impact projects, and subtracting this cost from the program’s total benefits.

⁶ Filing dated March 31, 2010, Docket E017/M-10-220, approved November 5, 2010.

NGEA assessments were included in this financial incentive calculation since the Company did budget for them as part of our 2009/2010 Proposed CIP.

Additional details of the total costs and the total benefits from the DSMore benefit/cost analysis of the entire 2010 Actual CIP portfolio are provided in the following table.

Program Costs - Actual 2010	
Delivery / Implementation / Administration Costs	\$2,172,288.12
Incentives	\$2,857,830.86
Total Costs	\$5,030,118.98
Program Benefits - Actual 2010*	
Avoided T&D Electric	\$4,269,817
Cost-Based Avoided Electric Production	\$21,294,583
Cost-Based Avoided Electric Capacity	\$9,303,331
Total Benefits	\$34,867,731
Net Benefits – Actual 2010	
	\$29,837,612
Benefit / Cost Results – Actual 2010	
	6.93

* Benefits are based on lifetime benefits, discounted back to 2010 dollars using 8.0 percent utility discount rate.

CIP COST BREAKDOWN - 2010				
	2010 Proposed Costs		2010 Actual Costs	
Delivery	\$2,539,985	61%	\$2,172,288	43%
Incentives	\$1,632,315	39%	\$2,857,830	57%
Total CIP Costs	\$4,172,300		\$5,030,119	

Section: Status Report

Table of Contents

STATUS REPORT - 2010 CIP PROJECTS	1
DIRECT IMPACT – RESIDENTIAL	2
HOTPACK.....	2
RESIDENTIAL DEMAND CONTROL	3
AIR CONDITIONING CONTROL.....	4
AIR SOURCE HEAT PUMPS	6
GEOHERMAL HEAT PUMPS	8
HOME INSULATION – PILOT	10
CHANGE A LIGHT	11
APPLIANCE RECYCLING	13
ADVERTISING & EDUCATION – BILL ANALYZER PROJECT	14
DIRECT IMPACT – COMMERCIAL.....	16
LIGHTING RETROFITS.....	16
COOKING	18
REFRIGERATION	20
MOTORS.....	21
GRANT (CUSTOM PROJECTS)	23
PLAN REVIEW	25
AIR SOURCE HEAT PUMPS	26
GEOHERMAL HEAT PUMPS	28
ADJUSTABLE SPEED DRIVES	30
LIGHTING – NEW CONSTRUCTION	31
REDIRECT™	33
IMPLEMENTATION & TRAINING - BOC.....	34
DIRECT IMPACT – LOW INCOME.....	35
HOUSE THERAPY.....	35
ON FOR CONSERVATION	39

CAMPUS ENERGY CHALLENGE PILOT.....	39
TOWN ENERGY CHALLENGE PILOT.....	50
INDIRECT IMPACT / REGULATORY REQUIREMENTS.....	59
FINANCING – Residential & Commercial	59
IMPLEMENTATION & TRAINING – Residential & Commercial	59
ADVERTISING & EDUCATION – Residential & Commercial.....	60
COMPRESSED AIR AUDITS - Commercial	64
CIP DEVELOPMENT.....	64
PUC ASSESSMENTS / REGULATORY (NGEA) ASSESSMENTS	65
MISCELLANEOUS / INACTIVE PROGRAM COSTS	66
ACCOUNTING ADJUSTMENTS	66
CARRYING COSTS.....	66

STATUS REPORT - 2010 CIP PROJECTS

The 2010 CIP Status Report has been combined with the 2010 Financial Incentive Filing, produced annually on April 1. The Status Report covers all 2010 programs, including direct impact, indirect impact, and miscellaneous programs. Participation, program costs, and energy and demand savings for all programs are outlined in Appendix A, Table 6.

Direct Impact Projects

Residential

- **HotPack**
- Air Conditioning Control
- Geothermal Heat Pumps
- Appliance Recycling
- Home Insulation
- Residential Demand Control
- Air Source Heat Pumps
- Change a Light, Change the World
- Advertising & Education – Bill Analyzer

Commercial

- Lighting – Retrofits
- Refrigeration
- Energy Grants
- Air Source Heat Pumps
- ReDirectTM
- Lighting – New Construction
- Cooking
- Motors
- Plan Review
- Geothermal Heat Pumps
- Adjustable Speed Drives
- Implementation & Training – BOC

Low-Income

- House Therapy

ON For Conservation

- Campus Energy Challenge
- Town Energy Challenge

Indirect Impact Projects / Regulatory Requirements

- Financing
- Advertising & Education
- Program Development
- Implementation & Training
- Compressed Air Audits
- PUC / NGEA Assessments

Miscellaneous / Inactive Programs

- Inactive Programs
- Accounting Adjustments

Carrying Costs

DIRECT IMPACT – RESIDENTIAL

HOTPACK

The **HotPack** Program provides residential customers with a free packet of energy saving-devices for installing new or replacement electric water heaters.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
HOTPACKS	2010 Actual	2010 Proposed	% of Goal
Participation	182	400	46%
Budget \$	\$11,286	\$30,000	38%

Evaluation Methodology

The Company incorporated the Minnesota Deemed Savings Database to determine energy and demand savings estimates for each of the major components of the **HotPack** kit – faucet aeration, pipe wrap, and low-flow showerheads.

Energy Savings & Adjustments

Using deemed savings for each of the **HotPack** components; the Company has calculated an aggregate figure of 760 kilowatt-hours for each **HotPack** kit provided.

The Company has also adjusted the savings by an additional 5 percent for non-installations.

ENERGY AND DEMAND RESULTS – 2010		
HOTPACKS	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	131,404	141,259
Demand Savings – kW	20.92	26.34

Bill inserts promoting **HotPacks** were included in February and July. Because customers can install new electric water heaters without the Company being informed of it, reaching qualified customers with the **HotPacks** offer is difficult.

OES staff suggested Otter Tail Power Company directly install **HotPacks** items, however, doing so would make the program non-cost effective. **HotPacks** are not included in the 2011-2013 CIP Triennial Plan.

RESIDENTIAL DEMAND CONTROL

The Residential Demand Control (RDC) Program is primarily a load-management program that provides rebates for residential customers to purchase in-home load-control devices. Otter Tail Power Company directly controls the energy from appliances customers have chosen to connect to their RDC such as water heaters, clothes dryers, and electric space heating systems. This close-to-real-time load management system causes reduction in energy use by sending a signal during a control period triggering the RDC to drop connected load to reach the preset demand goal. If the house energy load remains above the selected demand level, a signal will notify them to take action to shut off other non-connected loads. Customers receive a lower energy rate for allowing the Company to control their load. Further through the CIP program, customers receive a free RDC unit and wiring allowance to incent them to move to the program.

Participation goals were not met in 2010 despite heavy promotion of the RDC Program including:

- *Guide to programs and services* sent to contractors.
- Contractor training during workshop events.
- Bill messages on monthly service statements.
- Bill insert sent to all residential customers during 2010.
- Program, rate, and rebates described within the Company's web site at www.otpc.com.
- Return envelope sent with all bills during a two month period.
- 30 DVDs sent out to explain how RDC works at their request.
- Brochures available in customer service center lobbies and by request.
- Literature included in the mailing of *75 New construction resource* packets by request.

Actual participation achieved in Minnesota was 8 RDC installations, 9 percent of goal.

Factors affecting participation include:

- Benefits are greatest to customers with high electricity use such as those with electric heating systems willing to alter their lifestyle to reduce energy costs.
- Otter Tail Power had 2,426 RDC participants in Minnesota at the beginning of 2010 and dropped to a total of 2,419 at the end of the year indicating that the market potential for this rate has leveled and making the next level of penetration difficult to obtain.
- RDC customers saw unprecedented hours of control a number of years ago, as did all controlled service customers. The additional control has resulted in some program participants choosing to move from the rate and obtaining new participants increasingly difficult.
- Advertising of a higher incentive has still not had the desired effect necessary to increase participation in this program. Repeat messaging will be needed and used to grow customer awareness of the benefits of this program.
- Employee training on program operation, incentives, and benefits has been provided and will be increased to help grow participation.

This Program has been included for continuation in the 2011 CIP at a greatly reduced goal. Although we estimate attainment of the goal will be very difficult we believe the program goals are worth continued pursuit.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
RES D DEMAND CONTROLLER	2010 Actual	2010 Proposed	% of Goal
Participation	8	85	9%
Budget \$	\$16,105	\$97,800	16%

Evaluation Methodology

The Company has claimed a small amount of energy savings for each RDC unit installed, based on prior-year process evaluations and metering of accounts. For many years these savings have been a part of the CIP energy and demand goals established by the Department and Otter Tail. Deemed savings figures are currently not available for the RDC unit.

Energy Savings & Adjustments

This load management project results in approximately 7 kW of at-the-meter demand savings per residential installation, and energy savings of 556 kWh.

ENERGY AND DEMAND RESULTS – 2010		
RES D DEMAND CONTROLLER	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	4,449	4,782
Demand Savings – kW	58.10	62.46

AIR CONDITIONING CONTROL

The Cool Savings air conditioning control program was promoted with a bill insert in April 2010. Customers are encouraged to enroll in the summer season program in which they would receive a \$7/month credit for each of the 4 summer months. We also promoted the program heavily in our On for Conservation town of Rothsay. It was also promoted at our workshops and at our House Therapy training.

Going forward we will continue to promote this program with bill stuffers and online marketing. We have developed a testimonial feature story for our March 2011

newsletter. Customers will be targeted using home energy report mailings sent to residential customers through the OPOWER program set to launch in May 2011. The CoolSavings air conditioning control program has also been featured in presentations to Service Reps during annual and monthly training schedules.

In 2010, Otter Tail Power Company controlled air conditioning 8 days totaling 20 hours and 38 minutes. This control time is within the 300-hour control limit approved for the air conditioning rider.

Otter Tail modified the method of analyzing the program and does not include the participant incentive, the \$7/month bill credit, consistent with Xcel's Saver's Switch Program. In addition, our analysis will include only the current year new participants. The 755 proposed cumulative participants below represents all current participants, while 84 represents participants new to the program during 2010. Actual goal for 2010 was 100 participants of which 84 were achieved.

This Program has been approved for continuation in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010					
AIR CONDITIONING CONTROL	2010 Actual	2010 Proposed Incremental	2010 Actual Cumulative	2010 Proposed Cumulative	% of Goal
Participation	84	100	689	755	84%
Budget \$	\$63,601	\$83,000	\$63,601	\$83,000	77%

Evaluation Methodology

In prior years, a process evaluation was performed for the Air Conditioning Control Project. Customers were surveyed about any affects in their homes from cycling the air conditioning units, the reasons behind their participation in the project, and the installation process itself.

Energy Savings & Adjustments

Deemed savings figures are currently not available for air conditioning cycling. Based on prior-year process evaluations and metering, the Company recognizes air conditioning control energy savings of approximately 45.4 kWh per participant. The project also affects summer demand – each household reducing demand by nearly 1 kW per unit.

ENERGY AND DEMAND RESULTS – 2010		
AIR CONDITIONING CONTROL	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	3,814	4,100
Demand Savings – kW	75.60	81.27

AIR SOURCE HEAT PUMPS

(Residential)

The Air Source Heat Pump Program targets residential customers currently using or considering the installation of less efficient resistance electric heating and cooling systems by offering rebates for high-efficiency air source heat pumps. For 2010, Otter Tail relied on Energy Star qualifications as the minimum equipment efficiency requirement for this program. These efficiency requirements were 8.2 or greater HSPF, 14.5 or greater SEER, and 12.0 EER for split system installations. Package terminal heat pump installations need efficiency ratings of an 11.0 or greater EER and 8.0 or greater HSPF.

Otter Tail Power Company promotes energy efficient heat pumps using various resources listed below.

- *Taking care of business* commercial CIP brochure
- *Guide to programs and services* sent to contractors
- Brochures available in customer service center lobbies and by request
- *New construction resource* packets (a component of the Advertising & Education Project)
- Print advertisement and educational articles to regional home owners in *Lake & Home Magazine* including information about the available tax credits
- Presentations and literature distribution at Builder, Electrical and Electric Technologies Workshops for contractors
- Bill messages included on all customer statements
- Bill inserts about heat pump efficiency, tax credits, financing, and rebates
- Training material covered with service representatives in annual and monthly training
- Program, rate, and rebates described within the Company's web site at www.otpc.com

The emphasis again this year on energy efficiency coupled with federal and state incentives has helped drive participation in air source heat pump installations.

This Program is included for continuation in the 2011 CIP with efficiency requirement continuing to match the minimum Energy Star requirements.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
AIR SOURCE HEAT PUMPS (R)	2010 Actual	2010 Proposed	% of Goal
Participation	187	175	107%
Budget \$	\$139,879	\$137,000	102%

Evaluation Methodology

Engineering estimates are used to determine energy savings from each air source heat pump system installed. The Deemed Savings Database lists air source heat pumps with cooling efficiencies only, whereas Otter Tail claims cooling savings and heating savings with the air source systems. Deemed savings values for cooling savings range from 25 to 366 kWh per ton for air source units.

Energy Savings & Adjustments

For 2010, Otter Tail recognizes 2,310 kilowatt-hours of energy savings, based on an average size residential air source unit of almost three tons, including both summer cooling and winter shoulder-heating savings. Demand savings are approximately 0.36 kW for demand savings per unit at-the-meter.

Increased energy savings per unit was approved in our 2011-13 Triennial Filing. Prior to 2011 the Company submitted conservative energy savings for summer cooling and winter heating. Upon further engineering analysis of heat pump specifications, it is clear that additional energy savings is warranted during the heating season. The OES has approved savings of 282.5 kWh for summer and 7,517.5 kWh for winter with a total kWh savings of 7,800 kWh, based on a 2.5 ton average size heat pump.

In compliance with the November 5, 2010 Final Decision on the Triennial filing¹, customers may not have natural gas as their primary heat source in order to qualify for an air source heat pump CIP rebate beginning in 2011. The Final Decision came late in 2010, without enough time to modify marketing materials for 2011. The Company considers that the addition of an air source heat pump increases system efficiency and has determined to provide rebates financed through non-CIP resources in 2011 for customers who have natural gas as their primary heat source. At the State's recommendation, the savings for these particular rebates will not be counted under CIP and the dollars will not be taken from CIP budgets.

¹ Otter Tail Power Company's 2011-13 Triennial CIP Filing, Docket No. E017/CIP-10-356

ENERGY AND DEMAND RESULTS – 2010		
AIR SOURCE HEAT PUMPS (R)	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	431,970	464,368
Demand Savings – kW	66.76	86.58

GEOHERMAL HEAT PUMPS

(Residential)

The Geothermal Heat Pump Program capitalizes on a renewable technology and targets residential customers currently using or considering the installation of less efficient resistance electric heating and cooling systems by offering rebates for high-efficiency geothermal heat pumps. During 2010 units were required to meet an Energy Star qualification of 3.3 COP or greater. Beginning in 2011, to keep the program in line with Energy Star requirements, units must meet the minimum qualifications below.

Type	COP	
	Open	Closed
Water to air	3.8	3.5
Water to water	3.4	3.0
Direct exchange	3.6	

Otter Tail Power Company promotes energy efficient heat pumps using the following promotional resources.

- *Taking care of business* commercial CIP brochure
- *Guide to programs and services* available to contractors
- Brochures available in customer service center lobbies and by request
- *New construction resource* packet (a component of the Advertising & Education Project)
- Presentations and literature distribution at Builder, Electrical and Electric Technologies Workshops
- Print advertisement and educational articles to regional home owners in *Lake & Home Magazine* including information about the available tax credits
- Bill messages included on all customer statements
- Bill inserts about heat pump efficiency, tax credits, financing, and rebates
- Training material covered with service representatives in annual and monthly training
- Program, rate, and rebates described within the Company's web site at www.otpc.com

The emphasis on energy efficiency coupled with federal and state incentives has helped drive participation in geothermal heat pump installations.

This Program is included for continuation in the 2011 CIP with efficiency requirements raised to match the minimum Energy Star requirements.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
GEOHERMAL HEAT PUMPS (R)	2010 Actual	2010 Proposed	% of Goal
Participation	56	30	187%
Budget \$	\$147,770	\$77,000	192%

Evaluation Methodology

Engineering estimates are used to determine energy savings from each geothermal heat pump system installed. Deemed savings figures are currently not available for geothermal heat pump systems.

Energy Savings & Adjustments

Otter Tail recognizes 11,200 kilowatt-hours of energy savings, based on an average size residential geothermal heat pump unit of almost 4 tons, including both summer cooling and winter heating savings. Demand savings are approximately 8 kW for peak savings per unit at-the-meter.

ENERGY AND DEMAND RESULTS – 2010		
GEOHERMAL HEAT PUMPS (R)	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	627,200	674,240
Demand Savings – kW	448.00	481.60

In compliance with the November 5, 2010 Final Decision on the Triennial Filing, customers may not have natural gas as their primary heat source in order to qualify for a geothermal heat pump CIP rebate beginning in 2011. The Final Decision came late in 2010, without enough time to modify marketing materials for 2011. The Company considers that the addition of a geothermal heat pump increases system efficiency and has determined to provide rebates financed through non-CIP resources for customers in 2011 who have natural gas as their primary heat source. At the State's recommendation,

the savings will not be counted under CIP for these particular rebates and the dollars will not be taken from CIP budgets.

HOME INSULATION – PILOT

The Home Insulation Program, a new pilot in 2010, targets residential customers with primary electric heat for contractor installation of weatherization and insulation measures by offering rebates to offset the project cost.

Otter Tail Power Company promoted the Insulation Program using various resources.

- Two cycles of promotional bill inserts were sent to all residential customers
- Table top displays and promotions were used at the Energy Fair held in September in Rothsay, MN
- Program information was included as part of the Company's web site at www.otpc.com
- Rebate materials and program information was shared at the Company's annual Electric Technologies workshop for contractors in addition to literature distribution at the Builder and Electrical workshops
- Training material was presented to employees

This Program is included for continuation in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
HOME INSULATION (R)	2010 Actual	2010 Proposed	% of Goal
Participation	9	225	4%
Budget \$	\$11,055	\$127,500	9%

This market is proving difficult to reach. Participation was very low compared to our goal. More robust promotions are planned for 2011. This includes a special workshop for insulation contractors, and establishing a contractor network to keep them informed about the insulation program and other related programs. Promotion of the Program through home energy reports mailed to customers participating in the OPOWER program are also planned, as well as online promotion on the company website homepage. An article in a regional home magazine is also being scheduled in addition to reference being made in the guide to programs and services available to contractors.

Evaluation Methodology

Otter Tail collected information on the measures completed by the customers, including weatherization, attic and sealing insulation, and/or wall insulation. The Company also collected the size and age of the home. The State of Minnesota Home Energy Guides indicate that 1/3 of heat loss in a typical home comes from outside air infiltration

through floors, walls, ceilings, and other locations. Further, the www.energystar.gov website indicates that a homeowner can save 10 to 20 percent on heating and cooling costs by sealing and insulating. E-Source provides a useful and easy-to-use savings calculator, available on the Chuck Wright Consulting website. This resource was used to calculate an estimated kWh savings per participant. This methodology will be refined for the 2011-2013 CIP based on the anticipated Final Order for the Triennial CIP.²

Energy Savings & Adjustments

Otter Tail recognizes 4,000 kilowatt-hours of energy savings per participant, based on an average home energy savings including both summer cooling and winter heating savings. Demand savings are approximately 0.7 kW for peak savings per unit.

ENERGY AND DEMAND RESULTS – 2010		
HOME INSULATION (R)	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	36,000	38,700
Demand Savings – kW	6.12	7.22

CHANGE A LIGHT

The Change a Light, Change the World program aims to increase the market share for ENERGY STAR qualified compact fluorescent lamps (CFLs) while educating both consumers and retailers about the benefits of CFLs. These benefits include:

- Energy savings—CFL bulbs use approximately one-third as much energy as incandescent light bulbs while producing equivalent light output.
- Lamp life—one CFL bulb can last as long as 10 standard incandescent bulbs, saving consumers as much as \$35 over the life a single CFL bulb.
- Fire safety—All ENERGY STAR labeled lighting follows National Fire Protection Association (NFPA) guidelines for fire safety. CFL bulbs generate 90 percent less heat than incandescent bulbs while remaining cool to the touch.

Through the services of Wisconsin Energy Conservation Corporation (WECC), Otter Tail Power Company offers the Change a Light, Change the World campaign with the following objectives.

- Leverage manufacturer dollars for instant consumer rebate incentives up to \$2 per CFL and retailer dollars for advertising
- Highlight Otter Tail’s sponsorship of the promotion through press releases, in store

² Because of recommendations made in the MN CIP Triennial 2011-2013 Final Order, the Company was required to submit alternative methods for evaluating insulation measures. The “final” Final Order was not received as of the preparation for this filing.

- displays, and special public relations events and CFL bulb sales, and;
- Implement the program with seamless coordination with other Change a Light promotions throughout Minnesota and the Midwest.

Twenty retailers in our service territory participated in the 2010 campaign, contributing to sales of 15,513 bulbs. Otter Tail Power Company promotes the Change a Light Program using the various resources listed below.

- A bill insert
- Coverage on the Company web site home page
- Newspaper ads
- Live, on-site radio remotes at the location of three participating retailers

2010 Change a Light Detailed Participation	
15 watt replacing 60 watt	7,040
20 watt replacing 75 watt	3,660
26 watt replacing 100 watt	5,577
LED Christmas lighting	52
Total	16,329

Otter Tail continues to evaluate retailer recruitment and pricing strategies to enhance retailer participation in an effort to maintain or increase customer participation.

The program has begun to see customer interest in Light Emitting Diodes (LED) Christmas lighting rebates. This is an area that is expected to grow over the next few years as customer familiarity with LED lighting increases. The Company will emphasize LED lighting in the 2011 campaign as well as the special campaigns to promote other specialty bulbs including a dimmable bulb, 3-way bulb, and possibly colored bulbs.

This Program has been approved for continuation in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
CHANGE A LIGHT	2010 Actual	2010 Proposed	% of Goal
Participation	16,329	20,300	80%
Budget \$	\$73,897	\$127,700	58%

Evaluation Methodology

The Company uses deemed savings figures for the installation of compact fluorescents. Savings have been adjusted by an additional 5 percent for non-installations.

Energy Savings & Adjustments

Savings for each CFL were determined by the bulb size purchased, and 1,095 hours of usage per year per the Deemed Savings Database as follows.

- 20 watt replacing 75 watt = 60.23 kWh savings
- 15 watt replacing 60 watt = 49.28 kWh savings
- 26 watt replacing 100 watt = 81.03 kWh savings

LED Holiday String lighting savings were equal to 56.33 kWh and occurred only in the months of November, December, and January for a total of 155 hours of annual usage.

ENERGY AND DEMAND RESULTS – 2010		
CHANGE A LIGHT	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	971,096	1,043,928
Demand Savings – kW	902.21	195.89

APPLIANCE RECYCLING

The Appliance Recycling Program offers residential customers an incentive to recycle inefficient, but operating refrigerators and freezers. In 2010 program promotion began on March 1st to run in conjunction with the State's appliance rebate program, and ended in October.

Otter Tail Power Company promotes appliance recycling using various promotional resources.

- Bill inserts targeted at residential customers
- Press releases through local news media sources
- Radio campaign on local stations
- Print advertising in local news media sources
- Program information and links to enrollment and appliance pickup scheduling on Otter Tail's website at www.otpc.com

Otter Tail provides customers a \$50/unit incentive to recycle their old, operating refrigerators and freezers, at no cost to the customer.

Appliance Type	Units Recycled
Refrigerators	281
Freezers	87
Total Units Recycled	368

This Program is included in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
APPLIANCE RECYCLING	2010 Actual	2010 Proposed	% of Goal
Participation	368	450	82%
Budget \$	\$74,657	\$95,500	78%

Evaluation Methodology

The Company uses deemed savings figures for the removal and recycling of second household refrigerators and freezers.

Energy Savings & Adjustments

Savings for each unit recycled were determined by the appliance type.

Appliance Type	kWh Savings
Refrigerators	844
Freezers	479

ENERGY AND DEMAND RESULTS – 2010		
APPLIANCE RECYCLING	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	278,837	299,750
Demand Savings – kW	31.76	55.88

ADVERTISING & EDUCATION – BILL ANALYZER PROJECT

Please see the Indirect Programs section, Advertising & Education, for detailed information about the indirect-impact results of this project.

As a part of the Advertising and Education Program, Otter Tail has promoted the Aclara Bill Prism project, referred to by the Company as Bill Analyzer, to provide customized, regular feedback to residential users through an online interface.

Participants who log into Bill Analyzer receive an updated report that includes factors that likely caused changes in their billing, energy use comparisons to the previous year, and access to 25 months of bill history. Customers that complete basic home profile questions are presented with a performance benchmark comparing their energy use to similar homes, as well as a pie chart display of how their monthly energy use breaks down by end use. Full energy reports that include low cost, moderate, and higher priced targeted energy saving tips are provided along with the savings potential of each step. Behind the tool is a library of energy related information, tips, and technologies and numerous calculator tools. The tool permits customers to dig deeper into billing highlights and alerts them to provided analytics to explain the billing differences. Bill Analyzer was launched during the last quarter of 2009.

Otter Tail's Bill Analyzer is an opt-in tool that is available to those that wish to take advantage of it. This means that the total user participation in Bill Analyzer is lower than the participation for other energy use comparison tools, but consists of a more highly motivated group of customers.

Participation in the Bill Analyzer Project is based on the number of Minnesota residential accounts/customers that logged in to use the Bill Analyzer tools. During 2010 there were 2,204 project participants, which is 147 percent of the project goal.

PARTICIPATION AND BUDGET – 2010			
BILL ANALYZER	2010 Actual	2010 Proposed	% of Goal
Participation	2,204	1,500	147%
Budget \$	Part of A&E Budget		

Evaluation Methodology

In 2010 Otter Tail contracted with Integral Analytics to perform an evaluation of this project. The evaluation, provided in Appendix B, indicated that overall savings averaged 296 kWh per year per participant. The analysis relied upon a statistical analysis of the actual billed electricity consumption before and after participation in the Bill Analyzer project. While the evaluation found that savings varied depending on which components of the Bill Analyzer the customer used, Integral Analytics determined the most reliable measure of total project impact was the average overall savings calculation. That calculation was a savings of 296 kWh per year per participant.

In addition to analysis of post-participation usage compared to the customer's own pre-participation usage, Integral Analytics completed an analysis of the participant group against a randomly selected control group. That analysis found that customers in the randomly assigned control group have a significantly lower consumption than the self-selected participants. Savings results with the control group analysis were consistent with the 296 kWh per year per participant.

Otter Tail Power intends to continue to monitor the participant's energy savings annually to determine persistence of the savings.

Energy Savings & Adjustments

Otter Tail estimated approximately one percent of savings from Bill Analyzer, or 118.57 kWh per household. Actual savings based on the third party evaluation were 1.71 percent, or 296 kWh per household.

ENERGY AND DEMAND RESULTS – 2010		
BILL ANALYZER	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	654,588	703,682
Demand Savings – kW	236.42	254.15

DIRECT IMPACT – COMMERCIAL

LIGHTING RETROFITS

The Commercial Lighting Retrofits Program provides cash incentives to commercial and industrial customers for the purchase of energy-efficient lighting technologies such as high efficiency fluorescent fixtures and lamps, compact fluorescent fixtures and lamps, efficient High-Intensity Discharge lamp (HID) lighting, induction lighting systems, electronic ballasts, occupancy sensors, and LED fixtures.

Otter Tail actively promotes the Lighting Program through a variety of promotional resources.

- *Taking care of business* commercial CIP brochure
- Presentations and literature distribution at Builder, Electrical and Electric Technologies Workshops for contractors
- *Guide to programs and services* sent to contractors.
- Program, rate, and rebates described within the Company's web site at www.otpc.com

Otter Tail has accounted for and included lamp disposal and recycling costs for all energy efficiency measures evaluated in the Lighting Program.

This Program is continued in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
LIGHTING	2010 Actual	2010 Proposed	% of Goal
Participation	431	96	449%
Budget \$	\$1,077,509	\$285,000	378%

Otter Tail's increased rebates provided a significant incentive for customers to participate in the Lighting Program. The increased rebate incentive enhances return on investment and encourages participation from market segments that have opted not to participate in the past.

Additional market forces in 2010 were significant factors in actual participation exceeding goal as seen in the above figures. For example, fewer construction projects in both the commercial and residential sectors resulted in electrical contractors turning to revenue from lighting and other end-use efficiency retrofit projects to meet their business revenue targets.

The year of 2010 offered customers a tremendous opportunity to accelerate change-out of their old, inefficient lighting systems. National Lighting Bureau Vice Chair Susan Bloom (*Philips Lighting and Philips Lighting Electronics*) commented, "T12 fluorescent technology is 70 years old and is generally considered outdated when compared to the far more efficient T8 and T5 fluorescent technologies currently available. Nonetheless, industry sales data reveal that less-efficient T12s still account for three out of every ten four-foot fluorescent lamps sold in the U.S." This means that T12 fluorescent lighting systems are still in stock, and millions of sockets will have to be upgraded sooner rather than later. Lack of replacement ballasts will make T12 lighting harder to maintain.

Managers of facilities whose lighting fixtures incorporate T12 lamps and magnetic ballasts can select from several upgrade alternatives. These include replacing existing magnetic ballasts with electronic ballasts; modifying fixtures to accept T8 lamps and electronic ballasts; and replacing existing fixtures altogether, relying on contemporary T8 or T5 units with electronic ballasts, or possibly a different technology altogether.

As evidenced by our recent DSM Potential Study, a large percentage of Otter Tail's commercial customers have T12s in place and Otter Tail is encouraging customers to convert to more efficient lighting systems.

Otter Tail was able to ensure funding to meet customer demand. And while the increase in budget is significant, cost-effectiveness was greatly improved.

	Proposed 1st Year cost per kWh	Actual 1st year cost per kWh
Commercial Lighting	\$.14	\$.09

	2010 Benefit Cost Ratio				
	Utility	Ratepayer	Participant	Total Resource	Society
Proposed	6.66%	1.22%	1.23%	1.79	1.91
Actual	10.52%	1.34%	1.24%	2.00	2.13

Availability of incentive funding was an important benefit in assuring healthy demand for electrical contractor services through a period of overall recessed economic growth.

Evaluation Methodology

Engineering estimates, survey data, and the Deemed Savings Database are being used to calculate impact savings for the Lighting Retrofit Program. Although many of the measures retrofitted are currently listed in the Deemed Savings Database, the Company has documented all existing lighting wattage that is removed at each site, and compared that to the actual energy efficient lighting wattage being installed to determine very accurate energy savings from this program. Hours of operation are determined by the Deemed Savings Database according to customer type.

Energy Savings & Adjustments

For retrofit lighting, measures being installed are compared with measures being removed to determine kilowatt-hour savings. The Deemed Savings Database provided hours of operations.

In accordance with the deemed savings protocols, energy savings adjustments of 11 percent were allocated to those businesses having electric mechanical cooling.

ENERGY AND DEMAND RESULTS – 2010		
LIGHTING	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	10,560,287	11,352,309
Demand Savings – kW	2,807.93	1,714.70

COOKING

The Cooking Program encourages commercial customers to purchase higher efficiency

new or replacement electric cooking equipment. The Electric Food Service Council data is used to research new and more efficient electric cooking options.

Otter Tail Power Company continues to support and promote the energy-efficient Cooking Program using various promotional resources.

- *Taking care of business* commercial CIP brochure
- *Guide to programs and services* available to contractors
- Presentation and literature distribution at the Builder, Electrical and Electric Technologies workshop for contractors
- Program, rate and rebates described within the Company's web site at www.otpc.com

The Cooking Program is not included in our 2011-2013 Triennial Plan; however, approved energy efficient cooking technologies will be included as part of our Custom Grant Program. This will reduce advertising and promotional costs while still offering an energy-efficient option.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
COOKING	2010 Actual	2010 Proposed	% of Goal
Participation	12	17	71%
Budget \$	\$35,716	\$51,800	69%

Evaluation Methodology

Otter Tail Power Company used the Deemed Savings Database values to estimate energy savings.

Energy Savings

The Company has used the Deemed Savings Database to determine energy and demand savings.

ENERGY AND DEMAND RESULTS – 2010		
COOKING	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	99,854	107,343
Demand Savings – kW	48.02	16.21

REFRIGERATION

Electricity use for refrigeration is significant among Otter Tail Power Company's commercial customers. The National Action Plan for Energy Efficiency Sector Collaborative on Energy Efficiency Supermarket Energy Use Profile featured on the EPA website indicates that energy consumption for refrigeration in grocery stores accounts for 50 to 60 percent of that segment's total electricity consumption. The Refrigeration Program is designed to promote high-efficiency refrigeration technologies, including measures to upgrade compressor, condenser, and display case efficiency.

Otter Tail is currently working jointly with Center for Energy and the Environment (CEE) and refrigeration contractors to reach the commercial market for refrigeration efficiency upgrades and the installation of high efficiency refrigeration systems in new construction applications.

Otter Tail Power Company promotes the Refrigeration Program using various promotional resources.

- *Taking care of business* commercial CIP brochure
- *Guide to programs and services* available to contractors
- Program, rate and rebates described within the Company's web site at www.otpc.com
- Special break-out sessions were offered at the Company's annual Electric Technologies workshop for contractors
- Specialized contractor information kits provided for refrigeration contractors
- Follow-up with personal contacts

Because actual participation was short of goal, the Company will evaluate strategies to educate customers and increase market penetration of energy efficient refrigeration technologies. For 2011-2013, plans include development of incentives for commercial and industrial refrigeration recommissioning and retrocommissioning studies that will be available through the Grants Program.

This Program is included for continuation in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
REFRIGERATION	2010 Actual	2010 Proposed	% of Goal
Participation	41	114	36%
Budget \$	\$75,832	\$169,200	45%

Evaluation Methodology

Otter Tail Power Company used the State's Deemed Savings Database. The Company also used additional research from American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE) and E-Source to determine energy savings from the refrigeration clean-and-tune measures.

Energy Savings & Adjustments

The Company has used the Deemed Savings Database and engineering estimates for each of the different refrigeration components. Savings for each refrigeration measure rebated is adjusted according to the standard size and its associated savings.

ENERGY AND DEMAND RESULTS – 2010		
REFRIGERATION	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	636,214	683,930
Demand Savings – kW	102.33	103.30

MOTORS

The Energy-Efficient Motor Rebate Program is designed to reduce system peak demand and energy use by offering customers incentives to purchase NEMA Premium® efficiency motors. The Motor Rebate Program covers motor sizes from one horsepower up to 500 horsepower in size.

For 2010 the Company continued with modified NEMA Premium® efficiency levels for certain open drip-proof motors to match the NEMA Premium® efficiency levels of NEMA Premium® totally enclosed fan-cooled motors. This strategy has helped eliminate confusion among customers regarding motor size (horsepower rating), motor type (open drip-proof and totally enclosed fan-cooled), and efficiency level.

Otter Tail promoted higher incentives for new motor applications and inventoried motors with bill inserts targeting commercial and industrial customers. For motors replaced with a qualifying NEMA Premium® efficiency motor prior to failure, Otter Tail proposed even higher rebate incentives to encourage customers to retrofit inefficient motors with NEMA Premium® efficiency motors.

Additionally, the 2010 program included incentives for customers upgrading to high-efficiency motors operating with special purpose enclosures (i.e. explosion-proof). The Company developed minimum efficiency levels needed to qualify for rebate incentives based on the following criteria from MotorMaster software.

- Motor horsepower
- NEMA Premium® efficiency levels
- Energy Policy Act 1992 efficiency levels
- Motor Revolutions per Minute (RPM)
- Motor costs

Otter Tail Power Company promotes the Motors Program through a variety of promotional resources.

- *Taking care of business* commercial CIP brochure
- *Guide to programs and services* available to contractors
- Through bill inserts targeting commercial and industrial customers
- Presentations and literature distribution at the Company's annual Builder, Electrical and Electric Technologies workshops for contractors
- in the *Make It Electric* newsletter for commercial and industrial customers
- Program, rate and rebates described within the Company's web site at www.otpc.com

This program is continued in the 2011 CIP with no changes. For 2012-2013, Otter Tail will revise the Motors Program to reflect NEMA Premium® as the baseline efficiency in new and replaced-on-failure applications. Otter Tail will also develop new rebate qualifying tables with efficiency levels exceeding present NEMA Premium® efficiency ratings.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
MOTORS	2010 Actual	2010 Proposed	% of Goal
Participation	472	285	166%
Budget \$	\$245,254	\$184,000	133%

Motor Types Rebated	
New / replace non-working	428
Replace working	39
Specialty	5
Total Motors Rebated	472

Evaluation Methodology

Otter Tail Power Company used the State's deemed savings data when available, and

engineering estimates and MotorMaster software to determine energy savings for specialty motors, currently not in the Deemed Savings Database.

Energy Savings & Adjustments

Impacts for the Motors Program are based on deemed savings calculations and engineering estimates. In accordance with the Database, a standard 78 percent loading factor was used in the calculation for kilowatt-hour savings.

NEMA efficiency rating, horsepower, motor speed, run-time hours, and quantity are taken from the customer's application form.

ENERGY AND DEMAND RESULTS – 2010		
MOTORS	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	693,085	745,066
Demand Savings – kW	115.43	91.84

GRANT (CUSTOM PROJECTS)

The Grant Program offers customized incentives to commercial and industrial customers for conservation and efficiency improvements.

In 2010, Otter Tail Power Company analyzed a variety of customer-submitted grant projects and 24 of these projects were approved for incentives.

Grant Custom Projects Type of System Installation	Quantity
Automation	4
Building Envelope	8
Chiller System	1
Compressed Air System	1
Heating System	1
Process Improvements	2
Pump Replacement	1
Ventilation System	2
Welding	4
Total	24

The Company believes that both its hospital/government building segmentation strategy and a focus on building envelope helped participation in the Grant Program. Specific to building envelope upgrades, the Company analyzed these grants on a 15-year basis or

longer. Typically building envelope upgrades are difficult for customers to cost-justify, and this focus improved the participation of customers making building envelope upgrades.

Otter Tail Power Company promotes the Grant Program through a variety of promotional resources.

- *Taking care of business* commercial CIP brochure
- *Guide to programs and services* available to contractors
- Presentations and literature distribution at the Company's annual Builder, Electrical and Electric Technologies workshops for contractors
- Program, rate and rebates described within the Company's web site at www.otpc.com
- *Make It Electric* newsletter for commercial and industrial customers

This Program is continued in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
GRANTS	2010 Actual	2010 Proposed	% of Goal
Participation	24	30	80%
Budget \$	\$358,087	\$440,000	81%

Evaluation Methodology

Impact savings estimates from grants initially come directly from the customer who submits detailed information documenting demand and energy savings for each proposed measure. The Company then verifies the feasibility of the proposed savings, and if necessary, makes modifications to the submitted figures. Otter Tail Power Company offers assistance to our commercial and industrial customers to help them determine the energy and demand savings necessary in developing a grant proposal.

End-use metering is also an option for verifying impact savings. In addition, the customer often works with internal or third-party engineers to determine and verify savings. Each grant project proposal is analyzed to see if the existing metering arrangement is appropriate for the proposed measure, or if additional equipment should be employed.

The Large Custom Grant Measurement and Verification (M & V) protocols affect any large project, including any custom project within the Grants Program with savings over one million kilowatts hours. The protocols include several options for metering and verification of large grant projects that meet the protocol criteria. Starting in 2008, Otter

Tail used the new M&V criteria and standards developed by the Office of Energy Security for custom projects. In 2010, no projects qualified for the new M&V process.

Energy Savings & Adjustments

Energy savings are based on customer figures and verification by Otter Tail Power Company engineering staff.

ENERGY AND DEMAND RESULTS – 2010		
GRANTS	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	2,494,739	2,681,844
Demand Savings – kW	520.61	559.66

PLAN REVIEW

The Plan Review Program (currently promoted as SmartPlan) encourages building owners, architects, and design engineers to incorporate energy efficient design features into new commercial and industrial building construction. Through the Plan Review Program, eligible customers receive a free review of proposed building plans and specifications during the preliminary design process. The Plan Review Program offers incentives to customers that incorporate systems exceeding the State of Minnesota Energy Code in the following design areas.

- Heating, Ventilation, and Air Conditioning (HVAC) systems
- Controls
- Building envelopes
- Lighting systems

Otter Tail increased the incentive for customers adopting measures proposed during the plan review process that go above measures already incorporated in the customers' construction documents. To maintain acceptable cost effectiveness levels, participation is limited to projects sized at 15,000 square feet or greater. Economic conditions often have a significant impact on the market for projects of this size.

Otter Tail Power Company promotes the Plan Review Program through a variety of promotional resources.

- *Taking care of business* commercial CIP brochure
- *Guide to programs and services* available to contractors
- Presentation and literature distribution at the Company's Builder, Electrical and Electric Technologies workshop for contractors
- Personal communications between Company representatives and targeted customers
- Program, rate and rebates described within the Company's web site at www.otpc.com

This Program is continued in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
PLAN REVIEW	2010 Actual	2010 Proposed	% of Goal
Participation	9	11	82%
Budget \$	\$159,029	\$76,000	209%

Evaluation Methodology

Each system is individually evaluated for energy and demand savings using engineering estimates with comparisons to the State of Minnesota Energy Code as the baseline efficiency. A third-party engineering firm is involved in determining and quantifying savings from new building construction projects – those projects taking advantage of incorporating energy efficient systems and controls during new building design.

Energy Savings

Energy savings are based on comparison of customer calculations for planned and proposed building components to the State of Minnesota Energy Code by a third-party engineering firm and Otter Tail Power Company engineering staff.

ENERGY AND DEMAND RESULTS – 2010		
PLAN REVIEW	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	2,837,978	3,050,826
Demand Savings – kW	684.28	460.81

AIR SOURCE HEAT PUMPS

(Commercial)

The Air Source Heat Pump Program targets commercial customers currently using or considering the installation of less efficient resistance electric heating and cooling systems by offering rebates for high-efficiency air source heat pumps. For 2010, Otter Tail relied on Energy Star qualifications as the minimum equipment efficiency requirement for this program, which were 8.2 HSPF or greater, 14.5 SEER or greater, and 12.0 EER for split system installations. Package terminal heat pump installations need efficiency ratings of an 11.0 or greater EER and 8.0 or greater HSPF.

Otter Tail Power Company promotes energy efficient heat pumps using various promotional resources.

- *Taking Care of Business* commercial CIP brochure
- *Guide to programs and services* available to contractors
- Brochures available in customer service center lobbies
- Presentations and literature distribution at the Builder, Electrical and Electric Technologies workshops for contractors
- Bill messages included on all customer statements
- Bill inserts about heat pump efficiency, tax credits, financing, and rebates
- Program, rate, and rebates described within the Company's web site at www.otpc.com

Rising and volatile energy costs, federal incentives, and the emphasis on energy efficiency helped drive participation in air source heat pump installations.

This Program is continued in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
AIR SOURCE HEAT PUMPS (C)	2010 Actual	2010 Proposed	% of Goal
Participation	84	55	153%
Budget \$	\$52,642	\$68,000	77%

Evaluation Methodology

Engineering estimates are used to determine energy savings from each air source heat pump system installed. The current Deemed Savings Database lists air source heat pumps with cooling efficiencies only, whereas Otter Tail claims both cooling and heating savings with the air source systems. Deemed savings values for cooling savings range from 25 to 366 kWh per ton for air source units.

Energy Savings & Adjustments

Otter Tail recognizes 2,573 kilowatt-hours of energy savings, based on an average size commercial air source unit of approximately 4.25 tons, including both summer cooling and winter shoulder-heating savings. Demand savings are approximately 0.52 kW at-the-meter for peak savings per unit.

ENERGY AND DEMAND RESULTS – 2010		
AIR SOURCE HEAT PUMPS (C)	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	216,132	232,342
Demand Savings – kW	44.10	35.09

Changes to energy savings per unit were approved in our 2011-13 Triennial Filing. Prior to 2011 the Company submitted conservative energy savings for summer and winter. Upon further engineering analysis of heat pump specifications, it is clear that additional energy savings is warranted for heat pumps during the heating season. The OES has approved savings of 480.25 kWh for summer and 12,779.75 kWh for winter with a total kWh savings of 13,260 kWh, based on a 4.25 ton average size heat pump.

In compliance with the November 5, 2010 Final Decision on the Triennial Filing, customers may not have natural gas as their primary heat source to qualify for an air source heat pump CIP rebate beginning in 2011. The Final Decision came late in 2010, without enough time to modify marketing materials for 2011. The Company considers that the addition of an air source heat pump increases system efficiency and has determined to provide rebates financed through non-CIP resources for customers in 2011 who have natural gas as their primary heat source. At the State's recommendation the savings will not be counted under CIP for these particular rebates and the dollars will not be taken from CIP budgets.

GEOHERMAL HEAT PUMPS

(Commercial)

The Geothermal Heat Pump Program capitalizes on a renewable technology and targets commercial customers currently using or considering the installation of less efficient resistance electric heating and cooling systems by offering rebates for high-efficiency geothermal heat pumps. During 2010 units were required to meet an Energy Star qualification of 3.3 COP or greater. Beginning in 2011 to keep the program in line with Energy Star requirements units must meet the minimum qualifications below.

Type	COP	
	Open	Closed
Water to air	3.8	3.5
Water to water	3.4	3.0
Direct exchange	3.6	

Otter Tail Power Company promotes energy efficient heat pumps using various

promotional resources.

- *Taking care of business* commercial CIP brochure
- *Guide to programs and services* available to contractors
- Brochures available in customer service center lobbies
- Presentations and literature distribution at Builder, Electrical, and Electric Technologies Workshops for contractors
- Bill messages included on all customer statements
- Bill inserts about heat pump efficiency, tax credits, financing, and rebates
- Training material covered with service representatives in annual and monthly training
- Program, rate, and rebates described within the Company's web site at www.otpc.com

This Program will continue in 2011 CIP with efficiency requirements raised to match the minimum Energy Star requirements.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
GEOHERMAL HEAT PUMPS (C)	2010 Actual	2010 Proposed	% of Goal
Participation	210	25	840%
Budget \$	\$418,342	\$76,000	550%

Evaluation Methodology

Engineering estimates are used to determine energy savings from each geothermal heat pump system installed. Deemed savings figures are currently not available for geothermal heat pump systems.

Energy Savings & Adjustments

Otter Tail recognizes 13,050 kilowatt-hours of energy savings, based on an average size commercial geothermal heat pump unit of almost 4 tons, including both summer cooling and winter heating savings. Demand savings are approximately 8.7 kW for peak non-coincident savings per unit at-the-meter.

ENERGY AND DEMAND RESULTS – 2010		
GEOTHERMAL HEAT PUMPS (C)	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	1,969,413	2,117,119
Demand Savings – kW	1,834.14	319.78

In compliance with the November 5, 2010 Final Decision on the Triennial Filing, customers may not have natural gas as their primary heat source to qualify for a geothermal heat pump CIP rebate beginning in 2011. The Final Decision came late in 2010, without enough time to modify marketing materials for 2011. The Company considers that the addition of a geothermal heat pump increases system efficiency and has determined to provide rebates financed through non-CIP resources in 2011 for customers who have natural gas as their primary heat source. At the State's recommendation, the savings will not be counted under CIP for these particular rebates and the dollars will not be taken from CIP budgets.

ADJUSTABLE SPEED DRIVES

Induction motors are the workhorses of industry, used widely and often exclusively in virtually every manufacturing plant and office building. However, the single most potent source of energy savings in induction motor systems lies not in the motor, but rather in the controls that govern the motor's operation. Adjustable speed drives (ASDs) are one method of modifying or controlling motor behavior that is a proven option for improving performance and efficiency in drive systems.

Prior to 2009, Otter Tail Power Company offered incentives for ASD installations through its customized Grant Program. In 2009 Otter Tail developed a prescriptive rebate for customers, hoping to make applying for an incentive more transparent for the customer. In recent years, Otter Tail experienced participation of eight to ten ASD projects annually through its Grant Program. The Company hoped that developing a prescriptive rebate for adjustable speed drives would streamline the participation process for customers, help in enhancing customer awareness, and increase market penetration for ASD systems. We believe that modification has resulted in greater participation and the resulting energy savings.

Otter Tail Power Company promotes adjustable speed drives using various promotional resources.

- *Taking care of business* commercial CIP brochure
- *Guide to programs and services* available to contractors
- The *New construction resource* packet (a component of the Advertising & Education Project)
- Promotions and technical discussions at Builder, Electrical and Electric Technologies Workshops for contractors

- Program, rate and rebates described within the Company's web site at www.otpc.com

The Company is pleased with participation in the Adjustable Speed Drive Program. We believe the increase is primarily a result of the prescriptive rebate modification. This Program is included in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
ADJUSTABLE SPEED DRIVES	2010 Actual	2010 Proposed	% of Goal
Participation	209	21	995%
Budget \$	\$449,395	\$153,000	294%

Evaluation Methodology

Engineering estimates are used to determine energy savings from each adjustable speed drive system installed. Deemed savings figures are currently not available for adjustable speed drives.

Energy Savings & Adjustments

The Company utilizes engineering calculations that are based on calculations developed by the Electric Power Research Institute (EPRI) for fan-based and pump-based adjustable speed drive systems. Hours of operation and associated loading factors are provided by the customer as inputs for the energy and demand savings calculations.

ENERGY AND DEMAND RESULTS – 2010		
ADJUSTABLE SPEED DRIVES	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	4,905,369	5,273,272
Demand Savings – kW	1,329.45	650.03

LIGHTING – NEW CONSTRUCTION

Opportunities exist for customers to implement the lighting technologies that are more efficient than widely-accepted, standard lighting systems during the planning and new construction phases. There are several examples of these technologies and systems.

- High Intensity Fluorescent
- High Performance T8 Lamps & Ballasts/Reduced Wattage T8's
- High Efficiency Ceramic Metal Halide
- High Efficiency Exit Lighting
- Induction lighting

Otter Tail has included these systems as a retrofit option under its Commercial Lighting Retrofit Program in past CIP portfolios. In 2009 these incentives were approved for limited new construction applications as well.

Otter Tail Power Company promotes Lighting New Construction using various promotional resources.

- *Taking Care of Business* commercial CIP brochure
- *Guide to programs and services* available to contractors
- *New construction resource packet* (a component of the Advertising & Education Project)
- Promotions and technical discussions at Builder, Electrical, and Electric Technologies Workshops for contractors
- Program, rate and rebates described within the Company's web site at www.otpc.com

This Program is continued in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
LIGHTING – NEW CONSTRUCTION	2010 Actual	2010 Proposed	% of Goal
Participation	39	29	134%
Budget \$	\$33,678	\$87,500	38%

Evaluation Methodology

Engineering estimates and the Deemed Savings Database are used to calculate impact savings for the Lighting New Construction Program. Hours of operation are determined by the Deemed Savings Database according to customer type.

Energy Savings & Adjustments

For new lighting, installed measures are compared to baseline measures to determine kilowatt-hour savings. The Deemed Savings Database provided savings and hours of operations and adjustment for participants with electric mechanical cooling.

ENERGY AND DEMAND RESULTS – 2010		
LIGHTING – NEW CONSTRUCTION	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	645,788	694,223
Demand Savings – kW	158.09	104.86

REDIRECTTM

The ReDirectTM Energy Conservation Program was implemented as a pilot program in 2008. The project ‘redirects’ savings from energy savings projects back to facility managers and tenants. We believe the concept has merit, but has a number of challenges as well.

The Program is not included in our MN CIP 2011-2013 Triennial.

Participation & Budget

For 2010 Otter Tail implemented pilot ReDirectTM projects in both the Campus Energy Challenge and Community Energy Challenge projects. Outside of these two broader-based projects, Otter Tail did not implement any stand-alone ReDirectTM projects.

PARTICIPATION AND BUDGET – 2010			
REDIRECTTM	2010 Actual	2010 Proposed	% of Goal
Participation	0	10	0%
Budget \$	\$1,718	\$73,000	2%

Evaluation Methodology

Energy savings are often termed “indirect savings” as opposed to direct savings from equipment efficiency upgrades, for example. Savings from behavioral and operational change projects can be used to meet energy savings goals, as long as documentation of energy savings can be measured. Measurement and verification of energy savings from the ReDirectTM Program are determined using energy use data, engineering calculations and the Energy Star benchmarking system.

Energy Savings & Adjustments

The ReDirectTM program contractors will use Energy Star benchmarking to verify the energy and demand savings from implementing the various measures.

ENERGY AND DEMAND RESULTS – 2010		
REDIRECT™	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	0	0
Demand Savings – kW	0	0

IMPLEMENTATION & TRAINING - BOC

Please see the Indirect Programs section, Implementation & Training for information about the indirect-impact results of this project. The Building Operator Certification (BOC) project instructs building operators on how to better operate their facilities to achieve greater energy savings.

Participation & Budget

Of the 267 commercial participants in the Implementation & Training (I&T) Program, 12 people participated in the BOC Project, with classes held in the fall 2009 at Otter Tail Power Company and participation continuing through 2010. Five of these participants were Otter Tail Power Company employees with a variety of responsibilities and levels of interest in the training. These employees were consolidated as one participant for the company in 2010.

This Project is continued in the 2011 CIP.

PARTICIPATION AND BUDGET – 2010			
BOC	2010 Actual	2010 Proposed	% of Goal
Participation	8	20	40%
Budget \$	Part of I&T Budget		

Evaluation Methodology

Since the participants' completion of classes, the following steps have been taken to evaluate the project:

- Participant data from class attendance has been collected.
- Project information for each participant at their business location is being defined.
- Surveys were conducted in the summer of 2010 to help determine energy impacts and any behavior modifications for each business.
- From the survey data, engineering estimates were applied where applicable.

However, the sample size of the participants who responded to the survey was fairly small and sometimes conflicted between supervisor and participant.

- Heating systems and facility types of the participants varied and the design of the survey was limited in capturing many nuances due to these differences.

In 2010 Navigant Consulting performed an independent evaluation of the BOC project for the Midwest Energy Efficiency Alliance (MEEA) which is currently under review by the MEEA at the time of this writing. The Company collaborated with Navigant during their analysis. Otter Tail believes the Navigant analysis will provide more reliable savings estimates than Otter Tail could obtain from our small sample of participants. In the future, the Company will defer to the Navigant energy savings results for BOC energy savings. Otter Tail has used the proposed average savings figures as filed in the 2009-2010 CIP Biennial (based on data from Northeast Energy Efficiency Partnerships) in our analysis of energy and demand savings for the 2010 BOC program. For this reason, Otter Tail's current estimate of savings from the BOC program is, therefore, unchanged from last year and from the approved biennial CIP plan. Going forward, the Company intends to base energy savings for BOC participants on the results from the Navigant evaluation.

Energy Savings & Adjustments

An average energy savings of 19,390 kWh and demand savings of 3.148 kW were used in the calculations of energy impacts for this project.

ENERGY AND DEMAND RESULTS – 2010		
BUILDER OPERATOR CERTIFICATION	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	155,120	166,754
Demand Savings – kW	23.43	25.19

DIRECT IMPACT – LOW INCOME

HOUSE THERAPY

The House Therapy Program's primary focus is audit and weatherization services for low-income residential customers.

The following table provides details on measures installed and whether the participants were owners or renters.

House Therapy Owner / Renter Detail 2010			
Installed measures	Owners	Renters	Total
Audit	215	36	251
Compact Fluorescent Lamp	1100	207	1307
Engine Heater Timer	206	36	242
Faucet Aerator	309	27	336
Freezer	37	0	37
Low-flow Showerhead	148	14	162
Pipe Insulation	31	1	32
Refrigeration	58	5	63
Water Heater	30	0	30
Water Heater - Reduce Temperature	108	14	122
Water Heater--Controlled Ser. Rate	11	0	11
Weatherization	7	0	7

House Therapy Owner / Renter Detail - 2010				
	CAP Spending	Percent	Participation	Percent
Owners	\$126,046	95%	215	86%
Renters	\$6,827	5%	36	14%
Total	\$132,872	100%	251	100%

The Company meets yearly with the local Community Action Program (CAP) Agencies to implement this low-income program as cost-effectively as possible. Participation was over goal by 25 percent and budget was relatively on target. Otter Tail Power Company commends the agencies that are committed to the program and to their budget allocation, especially in this year of high, sometimes competing, federal funding.

Otter Tail Power Company promotes House Therapy using various promotional resources.

- A residential bill insert
- Part of the environment disclosure insert distributed to all customers twice a year
- Part of our company's website listing the program and each of the agencies that implement the program at www.otpc.com

Actual participation was 251 participants receiving audits, 126 percent of goal. This Program has been approved for continuation in the 2011 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
HOUSE THERAPY	2010 Actual	2010 Proposed	% of Goal
Participation	251	200	126%
Budget \$	\$173,425	\$170,500	102%

Evaluation Methodology

An impact evaluation of the House Therapy Program was performed in prior years for Otter Tail Power Company by Resource Alternatives to determine weatherization savings for single family and multi-family homes.

In 2010, for non-weatherization measures, the Company also used the Deemed Savings Database for many of the additional House Therapy components. Where deemed savings were not available, engineering estimates were used.

Energy Savings & Adjustments

Using PRISM software, a nationally recognized tool for weather normalization of energy use data, average savings of 1,325 kilowatt-hours for single family and 649 kilowatt-hours for multi-family are used.

The Deemed Savings Database and engineering estimates were used for the additional House Therapy measures installed, including CFLs, energy efficient refrigerators, freezers, and water heaters, and **HotPack** kits.

Deemed Savings Measures – House Therapy, kWh	
CFL installation	81
Engine Block Timer	242
HotPack (aerator, showerhead, pipe-wrap)	651
Water Heater Temp Set-Back	723
Refrigerator Remove & Replace	927
Freezer Remove & Replace	521
Water Heater Replace	409

ENERGY AND DEMAND RESULTS – 2010		
HOUSE THERAPY	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	502,454	540,138
Demand Savings – kW	181.24	124.76

ON FOR CONSERVATION

CAMPUS ENERGY CHALLENGE PILOT

The Campus Energy Challenge Pilot Program launched in 2009 as a partnership between Otter Tail Power Company and University of Minnesota-Crookston (UMC). Through 2010 the program made significant progress focusing on the following energy efficiency achievements at the Crookston Campus.

- Identification and implementation of end-use efficiency improvements
- Energy reductions achieved through behavioral changes
- Identification, development, and implementation of operations and maintenance strategies to reduce energy use
- Education of campus stakeholders on the environmental, social, and economic benefits of an energy efficient campus

The Campus Energy Challenge Pilot achieved significant energy savings, surpassing ambitious goals.

	2010 Goal	2010 Actual
Energy Savings (kWh)	1,098,454*	1,334,809
% savings	15%	17%

*The energy goal filed for the project was 1,468,758 kWh, but was based on 10 percent savings for a larger campus. UMC was selected after the goal was filed, and 15 energy savings from UMC is estimated at 1,098,454 kWh. This energy savings goal will be used for public relations only; the original program goal remains.

Because of the significant savings achieved, the Company is filing a relatively detailed account and evaluation. Clearly, a focused campaign that brings multiple resources to bear can achieve record-breaking and significant savings. The delivery of the project and its multiple pieces make it difficult to achieve scale, but we have learned a lot from this effort. We are very proud of this program and all the people who made it happen.

Background

Specific activities undertaken to support the objectives of the Campus Energy Challenge are summarized below.

Task/event	Date
Development of Campus Energy Challenge application	5/1/2009
Selection of winning application	6/15/2009
Notification of selected applicant	7/16/2009
Development of news release announcing selected applicant	7/15/ 2009
Planning meetings with UMC students, administration, staff, and faculty regarding strategies to meet three key program objectives (end-use efficiency improvements, behavioral & operational changes, and education)	7/15/2009(ongoing)
Presentation at UMC's annual Fall Student Convocation	10/1/2009

Campus Energy Challenge celebration (coincided with dedication of LEED approved residence hall). OES Director Glahn in attendance	10/2/2009
Focus groups held with student organizations and faculty groups	10/15/2009
Planning meeting with faculty and student advisors	10/22/2009
Planning meetings with UMC Green Team	Ongoing
Assigned UMC student to lead efforts on campus & communication lead	11/1/2009
Launched communication and energy quizzes with new Facebook page & "UMC Today" website link	11/1/2009
Identification of operational strategies	11/1/2009
Signs developed & displayed across campus for behavior changes	1/1/2010 (ongoing)
Presentation of project to the Integrated Resource Management class	1/26/2010
Campus Energy Challenge student kick-off (Energy Game Show)	1/26/2010
Student led video of 'Greenwalking' -"man on the street" about energy	1/26/2010
Develop a Campus Energy Challenge microsite to serve as the central source for project information and energy savings communications	1/4/2010
Installation of updated electric metering and data recorders with Power Profiler capabilities	3/1/2010
Energy Pledges for faculty, staff and students to educate and commit to behavior changes	March 2010 (ongoing)
Presentation for College Advisory Council	4/20/2010
Development for Green Team strategies meeting	5/19/2010
Designed educational Monthly Planner book for faculty/staff and distributed at the fall welcome back luncheon	07/2010
Presence at monthly campus-wide "Thursday Commons" educational events	08/2010 ongoing
Implementation of operational changes in facilities management work order system	8/2010
Program kick-off for new school year at Faculty/staff welcome back luncheon	8/16/2010
Provide program education at Freshmen orientation	8/20/2010
Booth presentation at Crookston Chamber picnic held on campus	8/26/2010
First lighting retrofits completed	7/10 to 10/10
Variable speed drive and controls installations completed	11/10 to 12/10
Refrigeration maintenance and cleaning completed	8/2010
Presentation at UMC's student Watt's on Wednesday Green Bingo night	11/3/10
Secondary lighting retrofit completed	10/2010-12/2010
Campus wide wrap-up survey gathering post-project knowledge	12/10/10
Measurement and verification	11/2010-2/2011

Objectives

Progress through 2010 focused on three primary objectives.

1) Enhance energy efficiency through installation of traditional end-use energy efficiency technologies.

Preliminary discussions started with the engineering firm McKinstry with the goal of identifying cost-effective opportunities for investments in end-use energy efficiency improvements across the campus. Throughout 2009 and into 2010,

Otter Tail maintained regular contact with facilities management and staff at University of MN, Crookston regarding strategies for end-use efficiency improvements.

In March of 2010, the focus at UMC shifted from implementing campus-wide efficiency upgrades to a focus on one building to be completed in 2011. It was determined to focus on one building by demonstrating comfort enhancements, user friendliness, and end-use efficiency improvements in the areas of HVAC controls, building automation, lighting, motors, and adjustable speed drives could better drive long-term change across the campus.

The strategic shift to focusing on a smaller footprint of the campus created some challenges, with the most significant being the reduction in budgeted funding available for campus-wide energy efficiency upgrades in 2010. Capital requirements needed to complete more costly improvements in one building in 2011 resulted in significantly lower funds available for campus-wide energy efficiency upgrades in 2010. Significant budgets which had been available for harvesting campus-wide energy savings were reallocated from 2010 and set aside for future improvements.

The strategy also required University of Minnesota-Crookston to allocate budgets for third party engineering services toward the narrowed, single building approach and consequently left less funding for engineering services to identify the low-hanging fruit in broader, campus-wide efficiency improvement opportunities.

Even with significant strategic changes and resulting budget impacts, UMC's facilities management and administrative teams remained focused in 2010 on broad-based, energy efficient improvements in the campus infrastructure. Specifically, facilities management leadership relied on technical expertise from Otter Tail Power Company, engineers at E.A. Scales and Associates, and specialized outside vendors to assist in identifying the most obvious cost-effective opportunities for energy efficient improvements in lighting, HVAC and refrigeration systems across the campus.

The Campus Energy Challenge clearly demonstrated that cost-effective and financially feasible opportunities for energy efficiency retrofits and upgrades are abundant on a typical campus. Specific retrofits and upgrades completed at the Crookston Campus consisted of lighting retrofits, ADSs, air handler controls and refrigeration.

Lighting Retrofits

University of Minnesota-Crookston targeted key areas for retrofits to energy efficient lighting, as shown on the following table.

Area	Existing technology	Retrofit technology
Gymnasium & weight room	Metal halide	Hi-bay T8
Green houses	Metal halide	Hi-bay T5
Stairwells	Incandescent	LED
Offices	T12 fluorescent	T8 fluorescent
Classrooms	T12 fluorescent	T8 fluorescent
Residence halls	T12 fluorescent	T8 fluorescent
Outreach Center	Metal halide	Hi-bay T8
Garages	T12 HO fluorescent	T8 fluorescent

Adjustable Speed Drives and Air Handler Controls

Together with various energy management controls and ASD vendors, Otter Tail Power Company staff and leaders from the facilities management area at the Crookston Campus identified the installation of ASDs to control fan motors on several large air handling units in Sahlstrom Student Center and Lysaker Gymnasium. Upgraded building automation systems have allowed more refined operation hours for several air handlers, exhaust fans, and air supply fans. Adding these controls has reduced unnecessary operating hours, reducing motor energy and related space heating or cooling requirements.

Area	Variable Frequency Drive horsepower
Gymnasium	3 fans @ 7.5 hp each
Residence hall	1 fan @ 15 hp
Outreach center	1 fan @ 7.5 hp
Student center	1 fan @ 60 hp; 1 fan @ 15 hp

Refrigeration

No actual commercial refrigeration system retrofits took place throughout 2010, but facilities staff did contract for cleaning and preventive maintenance work on various pieces of refrigeration equipment qualifying for Otter Tail's Commercial Refrigeration Preventive Maintenance measure.

2) Reduce energy consumption through behavioral and operational changes.

Operational Changes

University of Minnesota-Crookston contracted with E.A. Scales and Associates (E.A. Scales) to implement the ReDirect™ for Schools program in 2009. E.A. Scales, Otter Tail Power Company, and UMC launched the operational changes effort in November 2009 by meeting with facilities management staff and identifying existing operations strategies and recommended operational changes to optimize energy savings in four key buildings.

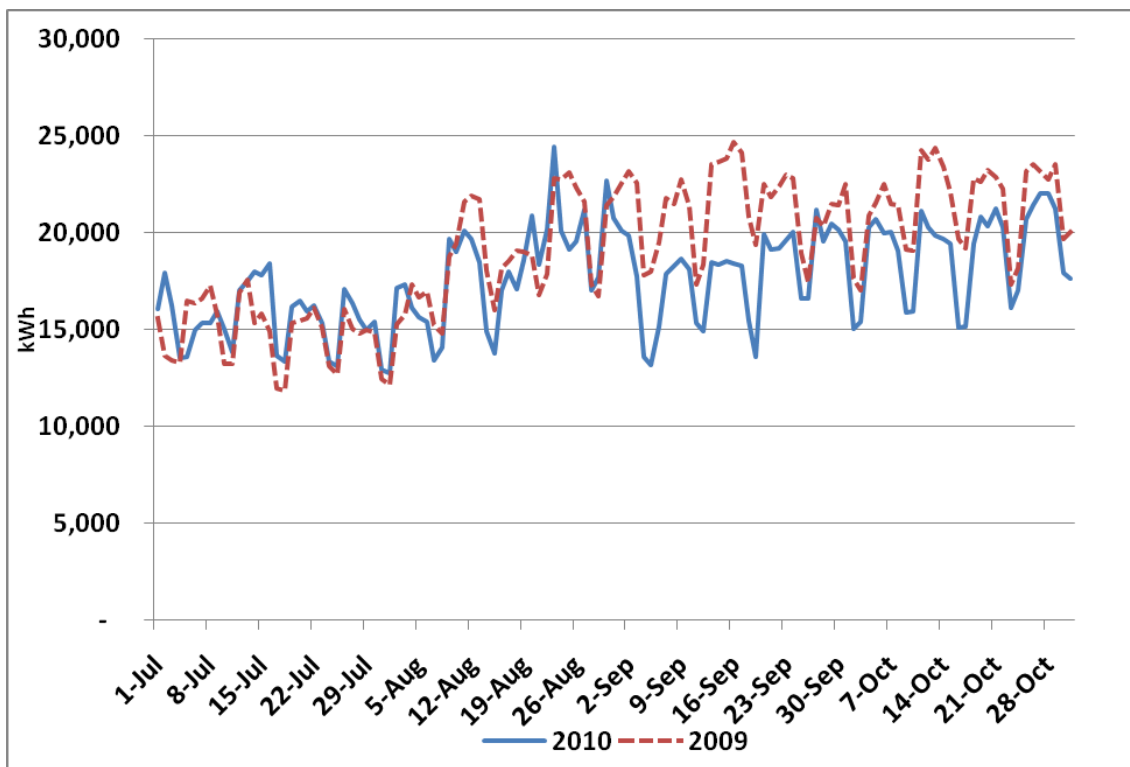
Following identification of targeted buildings and operational strategies, Otter Tail Power Company worked jointly with University of MN, Crookston to install

updated electric metering in selected buildings to gather baseline energy use data for future reporting. In addition to baseline energy use, building-to-building metering is connected to Otter Tail Power Company's web-based Power Profiler service with daily updated access to the following information in graphical and tabular forms.

- 24-hour profile
- Peak day
- Daily peaks
- Minimum/maximum/average demand and energy consumption
- Daily kWh totals
- Power factor
- Energy use comparisons over various time periods

From late July to early August of 2010, facilities management incorporated a number of the proposed operational changes into the department's work order system used to delegate tasks to custodial and maintenance employees. The chart below illustrates comparative total daily campus electricity use from July through October for both 2009 and 2010 and reflects in part the energy reductions experienced as a result of implementing the operations changes through the facilities management work order system during the July/August timeframe in 2010.

Figure 1: Daily Energy Usage (kWh) by University of Minnesota Crookston



Specific strategies identified to initiate operational changes included the following efforts by operations and custodial staff.

Evening operations/custodial staff

- Turn off all office lighting
- Set thermostats to 63 or 65 degrees
- Close shades during winter months
- Turn off personal office appliances
- Turn off mini split air conditioners
- Turn off appropriate office equipment
- Turn off restroom exhaust fans (if switch/breaker is accessible)

Morning operations/custodial staff

- Turn lighting on in areas being cleaned; turn back off when task is completed
- Set thermostats to daytime setpoint
- Turn on restroom exhaust fans

Behavioral Changes

For 2010, the Crookston Campus Green Team continued to emphasize energy-reducing behavior changes across the campus with the, “Flip it off, save your energy for later” campaign. Since launching the Campus Energy Challenge Program in 2009, Otter Tail has observed significant synergies between the behavioral change aspects of the ReDirectTM objective and the separate educational objective.

Specific strategies to initiate behavior change in 2010 included:

- Initiated a pre-program survey, conducted by a campus class on Market Research, to gather information about student’s understanding of energy issues, usage patterns, etc.
- Emphasis on Campus Energy Challenge goals and concepts at various functions for faculty returning in August, 2010 for the 2010-2011 academic year.
- Introduction to energy efficiency concepts at freshman orientation for new residential life students.
- Educational energy efficiency messages and usage charts displayed on new flat screens in 3 locations on campus.
- Regular updates on challenge events, including the Residence Life energy challenge, through the campus weekly student newspaper, *Eagle’s Eye*.
- Green team effort to post “Flip it off” reminders at light switches in offices, classrooms, restrooms, and other common areas across the campus.
- Residential Life energy challenge launched in October of 2010 encouraging students living in campus housing to take more drastic measures to reduce electricity use.

- Initiated a post-program survey with faculty, staff, and students to gauge participation in energy-reducing behaviors as well as general energy awareness.

3) Implement educational strategies to communicate the environmental, social, and economic benefits of an energy efficient campus.

Specific educational efforts took place to promote this objective through faculty, students, and campus activities as described below.

Faculty

Specific efforts were directed toward reaching the campus faculty, which included an open forum with Otter Tail staff and UMC faculty in March of 2010. Attendance was limited; however, a concurrent discussion with the Operations staff greatly assisted the planning process for the year.

A meeting to develop a strategic Green Team was held in May. This team included multiple faculty members and student organization leaders.

Finally, Otter Tail and Green Team representatives reached out to faculty with a presentation at the All College Advisory Council meeting in April of 2010. The development of a daily planner calendar book for faculty was developed for faculty returning in the fall of 2010 to serve as a Campus Energy Challenge guide. The planner was filled with information on the key components of the challenge, an appliance energy-use chart, contact information, energy facts, a guide to energy savings, an energy pledge, useful web links, and an academic calendar.

This information was covered in detail at a luncheon in the fall to welcome back faculty and staff held by the Chancellor in August, 2010.

Student orientation

Orientation for new students was held August 16-20, 2010. Attendance was mandatory for new students and daily orientation agendas were filled with fun events, including student leaders providing entertaining skits about the energy challenge, a booth with details on the challenge, training sessions for Residential Advisor's encouraging energy saving behaviors, posters displayed throughout the Residential Life living areas, and free energy-related gadgets for incoming students, such as power strips, clothes dryer balls and CFL light bulbs.

September 1st, 2010 What's on Wednesday (WOW)

What's on Wednesday, known on campus as WOW, is a series of on-campus entertainment events targeting students. For the September 1st WOW event,

Otter Tail and the Crookston Campus Green Team scheduled Bill LeBlanc. Mr. LeBlanc's career spans that of an energy consultant with E Source (as well as a part-time standup comedian.) Features of the show included a light-hearted look at energy, audience interaction, and an energy quiz show contest between selected University of Minnesota-Crookston football and volleyball players. Attendance at the September 1st WOW event was higher than average.

September 2nd Office of the Chancellor Thursday Commons

Following the September 1st, WOW event, Otter Tail contracted for Bill LeBlanc to deliver a more academically-targeted presentation on energy efficiency and social media at the September 2nd Thursday Commons scheduled by the University President. Schedules for faculty and staff across the campus are kept clear to ensure the opportunity to attend every Thursday Commons held throughout the academic year. The Thursday Commons served as another opportunity to encourage energy saving behavior changes among University of Minnesota-Crookston faculty.

Residential Life energy challenge

The objective of the Residential Life energy challenge was to determine high-impact, short term energy savings attributable to behavioral changes among students residing in on-campus housing. For the 2010 Residential Life energy challenge, Otter Tail and University administration challenged students to reduce energy use by 10 percent from September 2010 to October 2010

Students living in four residence halls comprising the residential community on the Crookston Campus made up the participants for the Challenge. Residence halls featured in the Residential Life Energy Challenge included Evergreen Hall, Skyberg Hall, Centennial Hall, and McCall Hall. The central coal and natural gas-fired heating plant provides space heating for McCall Hall and Skyberg Hall. A system of packaged air source heat pumps with internal electric resistance heating elements provides space heating for Evergreen Hall, while electric resistance heating provides the entire heating load for Centennial Hall.

Throughout October of 2010 Otter Tail tracked daily energy use with building-to-building energy use data available on Power Profiler. During the second half of the October energy challenge, temperatures dropped to below average levels. In an effort to maintain fairness for students living in electrically-heated residence halls, Otter Tail staff adjusted energy use figures to account for additional energy needed for October space heating needs that would not have been needed in the previous month of September.

Based on input from the University of Minnesota-Crookston Green Team, Otter Tail developed special displays to post in all four Residential Life

buildings during the Residence Hall energy challenge. Student leaders updated the cumulative results on the displays weekly to educate residents on the status of the 10 percent energy savings goal.

Results from the October 2010 Residential Life energy challenge were as follows.

Residence hall building	Actual Results	Adjusted results (adjusted for space heating needs)
McCall	2.9% increase	2.9% increase
Centennial South	11.6% increase	1.3% increase
Centennial North	7.5% increase	1.8% increase
Evergreen	7.6% increase	.5% increase
Skyberg	10.8% decrease	10.8% decrease

The Residential Life energy challenge includes a number of interesting dynamics. First, the results indicate how difficult behavior change can be to achieve in a campus setting. Students balancing their work toward educational goals with part time jobs don't always think about shutting off lights and exploring options to reduce energy use by 10 or 15 percent in their daily lives. Faculty and staff often express intentions of making a difference in energy consumption, but balk at the suggestion of forgoing minor inconveniences like personal appliances and space heaters.

At the same time, the project demonstrated how a group of students on board with a common goal can make a difference. Anecdotal stories of student behavior changes in Skyberg Hall included shutting off lights in common areas (sometimes to the angst of campus security officers) and in individual rooms during unoccupied hours, are clearly demonstrated in the 10.8 percent decrease in electricity use from September to October.

Building-to-building energy use reporting

Throughout 2010 Otter Tail continued to post weekly building-to-building electricity use data on its www.energychallengeison.com web site. The site also features weekly total campus electricity consumption as a comparison from 2010 to 2009.

Campus energy awareness survey

Otter Tail worked with market research students and faculty to conduct a survey on campus energy awareness in January of 2010 and again in December of 2010. The survey captured student awareness of energy management fundamentals and energy-using systems on the campus. Students scored higher on the post-challenge survey in both areas.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
CAMPUS ENERGY CHALLENGE	2010 Actual	2010 Proposed	% of Goal
Participation	4	123	3%
Budget \$	\$169,821	\$269,600	63%

Actual participation varies from proposed participation due to the more narrow focus of the program and the way the data was summarized. As the project progressed and the college chose to narrow the scope from implementing campus-wide efficiency upgrades to a focus on one building, participation consolidated as well. For example, we had originally budgeted 91 participants in a variety of smaller lighting projects, ranging from outdoor and exit lighting replacements to T8 retrofits. Actual participation was due to a significant lighting project of T8s, but it was only one project and counted as one participant.

Evaluation Methodology

Engineering calculations and evaluation services for the ReDirect™ behavioral and operational change effort completed by E.A. Scales and Associates was the key component of Otter Tail's evaluation for the Campus Energy Challenge. Specifically, the following three steps were completed in the evaluation.

1) Tracking of monthly electrical billing data for a base year and a program year

For evaluation purposes, E.A. Scales and Associates selected the period of August 2009 to July 2010 as the program's base year. The program year covers August 2010 to July 2011. Otter Tail supports these time periods for a base year and program year for the following reasons:

- The August to July cycle better coincides with academic years at the Crookston Campus.
- The methodology removes any evaluation complications resulting from the demolition of a smaller residence hall and subsequent construction of the much larger and electrically heated Evergreen Hall. Specifically, the E.A. Scales & Associates evaluation includes metered data for 12 consecutive months with Evergreen Hall prior to implementation of energy efficiency strategies and retrofits and 12 months of baseline data with Evergreen Hall prior to launching energy efficiency strategies and retrofits. Using different time periods for the base year and program year would have resulted in analysis over the base year with the presence of a significantly smaller residence hall without electric heat and analysis of a test year with a newly constructed and significantly larger residence hall with electric packaged terminal heat pumps and internal, electric-resistance heating coils.

- The methodology allows for one full year of analysis with operational energy efficiency strategies implemented in the UMC facilities management work order system. Facilities Management did not implement these changes until August of 2010. The evaluation time periods allow for 12 months of baseline data without the operational changes programmed into the UMC facilities management work order system followed by 12 months of program data with these changes.

2) The program year accounts for end use efficiency improvements for lighting, refrigeration, variable speed drive, and control system upgrades

Otter Tail staff worked closely with E.A. Scales and Associates, facilities management staff at University of Minnesota-Crookston, and various lighting, variable speed drives, and controls equipment vendors to develop engineering estimates for campus wide end-use energy efficiency improvements and retrofits. Energy and demand savings for all end-use improvements are based on engineering calculations consistent with the existing CIP programs.

3) Removal of energy savings for end-use improvements to account for operational and behavior change impacts and eliminate any chance for double-counting of energy savings

E.A. Scales and Associates developed alternate engineering calculations with nearly identical results for lighting and HVAC and controls estimates. The gross difference in actual electricity consumption from August through December for the program year compared to the same time period for the base year produced an overall electricity reduction for the campus. E.A. Scales and Associates then subtracted actual (not annualized) calculated energy savings for end use efficiency improvements for the same time period. The evaluation methodology attributes the difference in gross electricity savings and actual (not annualized) end-use retrofit savings to electricity savings achieved through behavior and operational changes.

The following table summarizes the evaluation results.

Measure	kWh savings (at-the-meter)	kW savings (at-the-meter)
Lighting retrofit	210,009	77.90
Refrigeration preventive maintenance	7,742	1.63
Grant (Adjustable speed drive & control installations)	459,005	59.15
ReDirect (operations and behavior)	564,926	64.49
Total	1,241,682	203

In addition to project evaluation work completed in 2010, Otter Tail proposes continued evaluation over a 5-year period (2010-2014) to evaluate and monitor the sustainability of

behavioral changes that impact energy use.

Energy Savings & Adjustments

As described in the previous section, energy and demand savings were calculated for the individual projects to comprise the total Campus Energy Challenge savings.

ENERGY AND DEMAND RESULTS – 2010		
CAMPUS ENERGY CHALLENGE	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	1,241,682	1,334,809
Demand Savings – kW	203.17	164.54

Summary

The Campus Energy Challenge was extremely successful at achieving significant energy savings. Many factors contributed to that success. Timing, resources, information, behavior change, existing resources and knowledge base, incentives and financing, geographic location, new technologies, real time information, peer pressure, focus, audits, student involvement, attention, enthusiasm, spirit, economic synergies, and campus and operational leadership all played major roles.

We appreciate the opportunity to learn from this pilot as we work to achieve Minnesota's energy savings goals.

TOWN ENERGY CHALLENGE PILOT

For the first time in Minnesota's history an entire town served by Otter Tail Power Company and every single residence in that community was chosen to be "On for Conservation!" Because of Otter Tail Power Company's relatively rural service territory spread across a wide geographic area, bringing efficiency programs to our small communities has been a big challenge since the Company first began actively promoting conservation and efficiency in the late 1980s and early 1990s.

Otter Tail Power Company set out to determine if a highly-focused implementation plan, higher incentives, and community enthusiasm could generate significant energy savings and if so, at what cost. Rothsay, Minnesota was selected as our Community Energy Challenger partner. As part of this effort, residents, students, and town leaders worked together with Otter Tail Power Company to make the entire town more energy efficient.

Otter Tail Power Company offered larger incentives, performed residential and commercial energy audits, conducted education and training, and increased our advertising and visibility in Rothsay. Reduced interest financing, in addition to the incentives, was also available. Additionally, two homes received Energy Makeovers valued at a combined total of \$13,690 from the Company.

The Company is pleased to report that the Community Energy Challenge program has been successful. Our project team had an aggressive timetable for development and implementation of the program, which involved significant collaboration with the Rothsay City Council, school administration, faculty, students, and the entire community as detailed in the following table.

Major Milestones and Events	Date
Application and selection process	Late 2008-1/09
Community wide kickoff at Rothsay School – Governor Pawlenty and Director Glahn in attendance	4/9/09
Rothsay School Re-Direct™ program introduced	9/3/09
Announcement of Rothsay Student Leadership Team	10/5/09
Monthly meetings with student leadership team (ongoing 2010)	11/4/2009
Distribute 1st round of Energy Pledges	10/21/09
Host energy efficiency workshop and Community Energy Challenge informational session	12/7/2010
City filed letter of intent for EECSBG grant to improve energy efficiency of City infrastructure	1/15/2010
Home Energy Makeover process	1/1/10-12/31/2010
Develop Community Energy Challenge microsite to serve as central source for project information	01/04/2010 in progress
Participate on Senator Klobuchar’s Fargo/Moorhead panel about energy efficiency and economic development	1/12/2010
Held motivational pep fest for ReDirect™ program with school tenants	1/28/2010
Leadership team education tour of OTP facilities	2/3/2010
Mail all Rothsay residents a postcard to feature the state appliance rebate program and reminder on program deadlines	2/5/2010
Train school students and community residents on use of the Bill Analyzer tool	3/1/2010-9/15/2010
Host a reinforcement ReDirect™ presentation at the school	3/5/2010
City received notice from State of MN OES of making Short List for EECSBG funding	3/2010
City received notice of award for EECSBG funding	4/1/2010
Field trip with leadership team to State Capitol and present at the Senate Energy Committee meeting	4/6/2010
Develop and post on YouTube an Earth Day video- Make the Change	4/19/2010
Participate in the Rothsay School Pride Night- present awards to students and staff	5/24/2010
Host an Energy Fair- surveys, pledges, rebates, training	9/15/2010
Deliver 2nd Round of Energy Pledges	10/13/2010
City developed Request for Proposals for energy efficiency improvements through EECSBG	10/2010
Hire 3rd party firm to conduct measurement and verification	09/2010

The Town Energy Challenge Pilot achieved significant energy savings, surpassing ambitious goals. Because of the significant savings achieved, the Company is filing a relatively detailed account and evaluation. Clearly, a focused campaign that brings

multiple resources to bear can achieve record-breaking and significant savings. The delivery of the program and its multiple pieces make it difficult to achieve scale, but we have learned a lot from this effort. We are very proud of this project and all the people who made it happen.

Objectives

Progress through 2010 focused on the Program's four primary objectives.

1. Generate enthusiasm for energy efficiency and conservation by uniting one community behind a common goal.
2. Heighten energy efficiency awareness among residents and business owners.
3. Demonstrate the energy savings impact associated with higher incentives and on-site assistance and guidance.
4. Demonstrate if a highly-focused implementation plan, higher incentives, and community enthusiasm generates significant energy savings and if so, at what cost.

Specifically, the Company integrated three components into the Challenge. First, the Company encouraged installation of newer end-use technologies to replace less efficient lighting, heating, cooling, ventilation, and refrigeration technologies in commercial and residential sectors throughout the Community. We used a variety of incentives, such as audits, rebates, grants, and low-interest financing, to encourage these kinds of investments. Second, the Company also promoted redirection of cost savings resulting from changed personal behaviors and building operations to the people directly responsible for those changes in the Rothsay School. Third, the Company emphasized education. Company representatives and community members promoted and communicated the value of saving energy as well as the "how-to" to save energy.

To help us achieve these Program objectives, efforts by multiple parties were key in achieving targeted savings and generating momentum in the community effort. Support and involvement from the Rothsay School students and staff, the community residents, Rothsay commercial customers, and the City Council were vital.

Rothsay School

The school in Rothsay is a cornerstone in the community for activity and communications. An engaged student body and effective school leadership were fundamental to spread the word, enlist support, and lead by example. The students and faculty of Rothsay School are to be commended for their enthusiasm and commitment to this project. They more than stepped up to the leadership role we envisioned for this project. The student leadership team went door-to-door asking residents to sign energy pledges. They made posters, collected data, developed spreadsheets, created signs, and wrote letters to President Obama inviting him to their community kickoff.

Students hosted an Energy Fair for the entire community at the School and helped facilitate training for Otter Tail Power Company's online Bill Analyzer tool. In April, the Students for Community Energy Challenge leadership team appeared before the Minnesota Senate Energy, Utilities, Technology, and Communications Committee in St

Paul to inform committee members about the energy-conservation work taking place in Rothsay. Also that month, the students celebrated Earth Day on April 22, 2010 by producing a video titled *Make the change*, inviting viewers to make a big difference by each doing their part to make the change to save energy. The video is available at the following link.

<http://www.energychallengeison.com/rothsay/albums/C38/>

Students also lead by example by changing their energy use habits. Students turned off lights and unplugged gadgets not in use. They closed blinds during hot days to help keep classrooms cool and opened blinds during cold days to allow sunshine to help keep classrooms warm. Students shut down computers at the end of the day, kept material from blocking heating sources, and took quick showers after exercise activities. Early elementary students insisted on turning lights off in the gymnasium even when using the space for recess periods during inclement weather. Teachers have encouraged the vision to reduce usage, remained committed to the objectives, and embraced operational changes. These commitments at school were continued at home and helped to influence community residents.

The Rothsay School installed a thermal-storage heating system on one of Otter Tail's off-peak rates served only from 10:00 at night to 6:00 in the morning to replace an inefficient fuel oil boiler. While this did not generate energy savings or use CIP funds, it will save the school significant money on their energy bills. The School participated in the ReDirect™ program, making operational behavior changes, such as turning off exhaust fans during unoccupied hours. The School installed high-efficient lighting in the gymnasium, replacing metal halides with T8 fluorescent high-bay fixtures and replacing spectator incandescent lamps with compact fluorescent lamps. In addition, the School utilized a building envelope grant rebate to offset the cost to retrofit a 22-year-old roof.

Rothsay Residents

Home audits were provided to 79 Rothsay residents during the Community Energy Challenge Program. Each audit provided the home owner or renter recommended actions they could take to save energy and money. Rothsay residents participated in energy savings through direct impact measures such as installations of air source heat pumps, insulation, and appliance rebates and recycling. Residents also changed their energy use habits, mirroring at home the behavior changes implemented at school. Two Rothsay residents were awarded home makeovers, which provided energy efficient appliances, improvements to insulation and ventilation, efficient lighting, and efficient off-peak heating and cooling equipment.

After reviewing applications from Rothsay homeowners, and inspecting multiple homes for suitability, the Community Energy Challenge partnered with one home owner and Rural Renewable Energy Alliance (RREAL) to measure the electricity savings associated with solar air heat. Photovoltaic solar panels are about 18 percent efficient, meaning that they convert about 18 percent of available energy to heat. But solar air heat, such as can be obtained through RREAL's solar-powered furnaces, can be 60

percent efficient. After conclusion of the 2010-2011 heating season, the Company aims to determine what this technology could mean to Rothsay homeowners in terms of potential energy savings. Savings from this project are not included in the 2010 results.

Rothsay Commercial Customers and City Leadership

During the Community Energy Challenge Program, GDS Associates, Inc. conducted 14 commercial audits for customers, and some customers had multiple buildings. Each audit provided the Rothsay business owner recommended actions they could take to save energy and money. Some Rothsay commercial customers took advantage of incentives and installed efficient lighting in their facilities in 2010. Due to timing of installation and rebates being paid, some commercial energy saving measures will be counted in 2011, including commercial participation in Plan Review, installing air source heat pumps, installation of energy efficient lighting, and upgrades in municipal buildings and water system infrastructure. Rothsay commercial customers also made significant impacts in reducing their energy use in 2010 through behavioral and operational changes.

The Community Energy Challenge succeeded at demonstrating savings impacts with higher incentives and on-site assistance through energy efficiency improvements implemented by the City of Rothsay elected leadership. Perhaps the major catalysts for change at the municipal leadership level was Otter Tail's offer for commercial energy audits at significantly discounted pricing (\$100 per facility) and availability of funding through the Energy Efficiency and Conservation Block Grant (EECBG). Through this special Community Energy Challenge offering, the City Council ordered energy audits for a number of its facilities in November of 2009.

Specific action items to reduce energy usage that were recommended in the audits included the following.

- Installation of adjustable speed drives at the water treatment plant, lift station and aerator building
- Upgraded central air conditioner at the community center
- Installation of vending machine controllers
- Air sealing and envelope insulation at nearly all facilities
- Lighting retrofits
- Refrigerator/freezer replacements
- Installation of programmable thermostats

Through EECBG funding and rebates from Otter Tail, the City completed installations of the measures listed above. However, due to difficulties experienced in locating a variety of specialty contractors required to complete the efficiency measures, the City did not complete most installations until early 2011, and the City is still working on completion of central air conditioner upgrades and programmable thermostats. Consequently, energy and demand savings resulting from these measures are not reflected in the 2010 Community Energy Challenge energy savings results. These measures, however, did amount to additional 164,712 kWh and nearly 42 kW (non-coincident, at the meter) in energy and demand savings through projects qualifying for

Otter Tail rebate incentives. These savings and their corresponding incentives will be claimed in 2011.

Participation & Budget

PARTICIPATION AND BUDGET – 2010			
TOWN ENERGY CHALLENGE	2010 Actual	2010 Proposed	% of Goal
Participation	767	1,666	46%
Budget \$	\$228,234	\$282,000	81%

Evaluation Methodology

Otter Tail utilized independent third party analysis, Deemed Savings Database values, and engineering estimates for calculating the demand and energy savings for the Town Energy Challenge. The following list describes the methodology used to evaluate savings associated with installed measures, behavioral change, and the Rothsay School ReDirect™ project.

- Installed measures – Otter Tail utilized the Deemed Savings Database and engineering calculations for all measures installed in the community consistent with existing and approved rebate programs. Care was taken to ensure Rothsay participants were not counted in both the Town Challenge and an existing rebate program. Any rebate activity by a Rothsay customer was included in the evaluation of the Town Challenge only and not in another program.

Otter Tail utilized the Deemed Savings Database for savings associated with measures in the home makeovers that were not part of any existing rebate program under the Company's current CIP. For example, savings measurements were taken from the Deemed Savings Database for home makeover activities that replaced an air conditioner, installed a new front load washer, and provided a dehumidifier. For certain measures completed under the audits, such as installation of in-home energy cost monitors, engine block timers, and water heater setbacks, the company did not claim specific savings, but rather relied on the behavioral change component of the analysis to capture any savings associated with the use and application of those activities.

Impact savings estimates from grants initially come directly from the customer who submits detailed information documenting demand and energy savings for each proposed measure. The Company then verifies the feasibility of the proposed savings, and if necessary, makes modifications to the submitted figures. Otter Tail Power Company offers assistance to our commercial and industrial customers to help them determine the energy and demand savings necessary in developing a grant proposal.

- Behavioral change – Integral Analytics, an independent third party, performed detailed modeling and analysis of the billing data of Otter Tail's Rothsay customers to determine energy savings associated with behavioral changes by both commercial and residential customers. The analysis for both residential and commercial customer segments is provided in Appendix C and D, respectively.

Integral Analytics modeled historical billing data from January 1, 2008 through October 30, 2010 and controlled for factors such as weather, rebate participation, home makeover participation, and any other relevant activity participation to determine changes in energy usage associated with behavior only. Only energy savings that were statistically significant were counted and savings that were not statistically significant were not counted, ensuring a conservative measurement of savings. Those Rothsay customers who also participated in the Bill Analyzer Program were not included under the Rothsay behavioral change, but rather under Bill Analyzer.

- Rothsay Public School ReDirect™ program – E.A. Scales and Associates evaluated the behavioral change savings associated with the Rothsay School based on billing data and removal of energy savings for known end-use improvements. In addition, E.A. Scales and Associates accounted for changes in usage by the school due to installation of an efficient thermal storage heating system in place of a less efficient fuel oil boiler. The savings associated with operational and behavioral changes were isolated and double-counting of energy savings was avoided.

In addition to project evaluation work completed in 2010, Otter Tail proposes continued evaluation over a 5-year period (2010-2014) to evaluate and monitor the sustainability of behavioral changes that impact energy use.

Energy Savings & Adjustments

Energy savings for this program were determined through Deemed Savings Database values for programs participated in by customers plus the savings associated with behavioral changes as calculated by a third party, Integral Analytics and E.A. Scales and Associates.

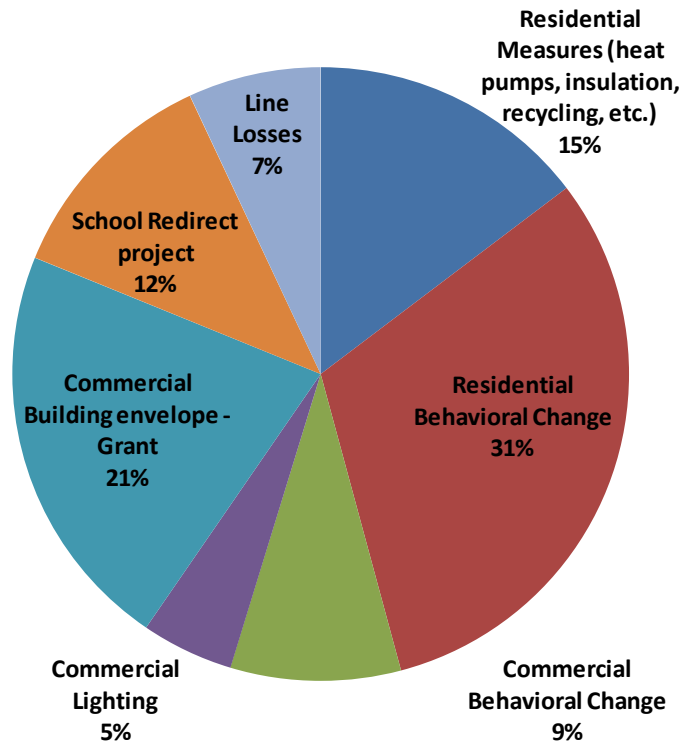
ENERGY AND DEMAND RESULTS – 2010		
TOWN ENERGY CHALLENGE	At-the-Meter (Non-Coincident Peak kW)	At the Generator (DSMore Coincident Peak kW)
Energy Savings – kWh	701,787	754,421
Demand Savings – kW	226.15	223.16

Participation in the various measures and the associated kWh savings for each measure is shown in the following table. A pie chart follows, showing the contributions to the

savings by various categories.

Sector	Technology	Participation	kWh/participant	Total kWh at-the-meter
Residential	Air Conditioning Control	2	45.40	90.80
Residential	Air source heat pump	3	2,310.00	6,930.00
Residential	HotPack	65	760.00	49,400.00
Residential	Home Insulation	1	4,000.00	4,000.00
Residential	Freezer Recycle & Replace	4	521.00	2,084.00
Residential	Refrigerator Recycle & Replace	18	927.00	16,686.00
Residential	Residential CFL installation	346	81.03	28,036.38
Residential	Refrigerator Rebate	2	83.00	166.00
Residential	Freezer Rebate	1	42.00	42.00
Residential	Water Heater Replacement, part of home makeover	1	409.00	409.00
Residential	Dehumidifier, part of home makeover	1	88.00	88.00
Residential	Front Load Washer, part of home makeover	1	158.00	158.00
Residential	Replace Air Conditioner, part of home makeover	1	324.04	324.04
Residential	ASHP, part of home makeover	1	2,310.00	2,310.00
Residential	Residential Audits	77	-	-
Residential	Residential Behavioral Change	205	1,145.00	234,725.00
Commercial	Commercial Behavioral Change	9	7,500.00	67,500.00
Commercial	Commercial Lighting	3	12,191.65	36,574.95
Commercial	Commercial Building envelope - Grant	1	162,768.00	162,768.00
Commercial	School ReDirect TM project	1	89,495.11	89,495.11
Total		743		701,787.28

Figure 2: 2010 Rothsay Town Challenge Energy savings in kWh by category as a percent of total = 754,421 kWh



Summary

The Community Energy Challenge was extremely successful at achieving significant energy savings. Many factors contributed to that success. Timing, resources, information, behavior change, incentives and financing, geographic location, new technologies, real time information, peer pressure, focus, audits, student involvement, attention, enthusiasm, community spirit, economic synergies, and community leadership all played major roles. We appreciate the opportunity to learn from this pilot as we work to achieve Minnesota's energy savings goals.

INDIRECT IMPACT / REGULATORY REQUIREMENTS

FINANCING – Residential & Commercial

The Customer Financing Program is designed to provide low-interest loans for energy-efficiency improvement projects currently included in the Company's CIP. These improvements include, but are not limited to lighting, motors, variable speed drives, and heat pumps.

The difference between the interest expense at the Company's after-tax cost of capital and the expense at the customer's interest rate is the cost charged to the CIP Tracker Account. The interest rate was 1.9 percent for 2010. Customers are given a choice between rebates and financing.

Otter Tail Power Company heavily promotes the low-interest Financing Program in various promotional resources.

- *Taking Care of Business* commercial CIP booklet
- *Guide to programs and services* available to contractors
- *New construction resource* packet (a component of the Advertising & Education Project)
- A bill message on monthly service statements
- Program brochures included with materials requests to customers
- Part of the Company's web site at www.otpc.com
- Lobby signs in local Customer Service Centers

2010 Financing Details by Customer Class			
	Residential	Commercial	Total
Participation Goal	7	5	12
Participation Actual	2	1	3
% of Goal	29%	20%	25%
Budget Goal	\$12,200	\$32,000	\$44,200
Budget Actual	\$12,508	\$12,508	\$25,016
% of Goal	103%	39%	57%

Actual participation achieved was two residential loans at 29 percent of goal and one commercial loan for 20 percent of goal. This Program has been approved for continuation in the 2011 CIP.

IMPLEMENTATION & TRAINING – Residential & Commercial

The Implementation and Training Program provides training about energy-efficient technologies and DSM for the Company's design, implementation, and sales staff. This program also provides training offered to customers, electricians, realtors, and other contractors. Several energy-efficiency workshops are held at various times through the year in various locations in and around the service territory. Otter Tail Power Company

co-sponsored several of these events. We promote these workshops on our website, in newsletters, and through direct mail pieces.

2010 Implementation & Training Details by Customer Class			
	Residential	Commercial	Total
Participation Goal	175	270	445
Participation Actual	153	267	420
% of Goal	87%	99%	94%
Budget Goal	\$40,000	\$98,000	\$138,000
Budget Actual	\$70,621	\$94,805	\$165,426
% of Goal	177%	97%	120%

Actual participation in the overall Implementation and Training Program was 420 participants, 94 percent of goal. We currently partner with Minnkota Electric Cooperative on contractor training efforts.

This Program has been approved for continuation in the 2011 CIP.

Builder Operation Certification (BOC)

See DIRECT IMPACT PROJECTS - COMMERCIAL for detailed information about the BOC Project under Implementation & Training.

ADVERTISING & EDUCATION – Residential & Commercial

Advertising & Education – Residential

The Advertising & Education Program for 2010 targeted Minnesota residential customers and children with a reinforcing message to make conserving energy a lifestyle. Three approaches were used:

- *Advertising* that increases awareness, educates about technologies and options and personal energy usage, and motivates individuals to take action to conserve energy.
- *Internet-based resources* including Youtube.com videos, ConservingElectricity.com web content, and the Bill Analyzer home energy center tools to reveal personal energy usage. These are discussed under the Direct Impact residential program segment of this report.
- *Classroom based presentations* targeting 4th to 6th graders with educational messages about energy production, energy use, and conservation education across all economic groups.

Advertising

- *One small habit:* A media campaign that included television and radio was completed to educate customers to reduce energy waste that results from leaving on

lights in unused rooms. The key message of the campaign was to establish “one small habit” of shutting off lighting when not needed and to recognize the combined impact of one person’s habit when joined with family members, neighborhoods, and community members.

- *Setback the thermostat:* A newly developed radio campaign that consists of two messages—one aimed at driving energy savings during winter heating season and one aimed at driving energy savings during the summer cooling season. Both messages educate customers about the energy savings that results from raising cooling settings by one degree and reducing heating settings by one degree.
- *Power Down:* A media campaign that included television and radio was completed to educate customers on how to reduce consumption by televisions and associated plug-load equipment such as DVDs, VCRs, TiVo, cable and satellite receivers, and game sets. The key messages of the campaign were to 1) power systems off when not in use and 2) recognize the impact of, and to avoid setting up, multiple home TV and peripheral systems.

Internet-based resources

- Resources to support the messaging from the campaigns conducted through this program as well as other programs in the CIP portfolio are made available and promoted to customers on the www.conservingelectricity.com website. These materials and links included in-depth information on energy efficient construction, Energy Star appliances, programmable thermostats, television and peripherals, energy tax credits, energy saving tips, and energy efficient home sealing.
- The website www.conservingelectricity.com had 2,416 unique visitors in 2010. Pages most visited were electric space heater use, TV energy cost primer, and programmable thermostat pages. Based on the percentage of the Company customer’s located in Minnesota, 45 percent of all visitors are estimated to be Minnesota residential customers. This would indicate 1,087 Minnesota participants in Advertising and Education through www.conservingelectricity.com.
- 2010 represented the first full year the Aclara energy prism tool--Bill Analyzer--was available. Participation and results are discussed in the direct impact, residential portion of this report.
- New in 2010 is the offering of Youtube.com videos. The first series of three videos focused on selecting energy efficient gifts during the holidays. Topics included use of a smart strip to save energy that peripheral TV, game, and computer systems use; selecting an energy efficient television set; and choosing a digital picture frame with power saving features. To coordinate with this set of videos, a list of energy efficient gift items was added to the website. During December 338 visitors watched these videos of which 152 are estimated to be Minnesota-based customers.

Classroom presentations

- The Science Museum of Minnesota conducted an interactive lyceum program in 20 schools during 2010. The presentation targets 4th through 6th graders in small community schools that will be visited at most once every three years. In larger school systems 6th graders are targeted and those schools may be visited annually to

ensure that all students in the Otter Tail Power Company service territory may be reached over time. Actual participation is dependent on school administrators requesting the program. The total number of students reached during the 2010 tour reached 2,057. The program remains popular with the school districts and program material is in line with the Minnesota school curriculum standards.

Additional activities

- Minnesota customers were invited to request the *New construction resource* packet that included many energy efficiency guides, conservation tip booklets, and other pieces related to energy efficiency. Portions of *New construction resource* packet materials were provided through the Advertising and Education program budget. There were 75 *New construction resource* packets sent to Minnesota Customers.
- Conservation articles were included in the Company's bimonthly newsletter including one issue specially designed for kids.
- A booklet of conservation tips is available. There were 12 booklets sent to Minnesota customers during 2010 with many more handed out during workshop and local events. The same tip information is available through the company website.

This Program has been approved for continuation in the 2011 CIP.

2010 A&E Detailed Participation	
Science Museum School Tour	2,057
Bill Analyzer	2,204
New construction packets - MN	75
Energy conservation booklet - MN	12
YouTube videos	152
Web visits to ConservingElectricity.com	1,087
Total	5,587

PARTICIPATION AND BUDGET – 2010			
ADVERTISING & EDUCATION	2010 Actual	2010 Proposed	% of Goal
Participation	5,587	4,950*	113%
Budget \$	\$260,683	\$224,000	116%

*2010 proposed participation was incorrectly recorded in final budget tables, 1500 reflects the proposed participation in the Bill Analyzer direct impact portion of the Advertising and Education program. Proposed participation is 4950 for the direct and indirect impact portions of the Advertising and Education program as filed.

Advertising & Education – Bill Analyzer

See DIRECT IMPACT PROJECTS – RESIDENTIAL for detailed information about the Bill Analyzer Program under Advertising & Education.

Advertising & Education – Commercial

Energy Star for Healthcare and Government, Market Segmentation

Otter Tail proposed to target Health Care and Government customer segments in its 2009-2010 CIP Biennial Filing. The Company set a goal of personally visiting 50 customers in each segment in 2010. To prepare for these focused customer visits, Otter Tail completed training sessions for industrial service representatives and energy management representatives featuring outside experts in the following green and energy efficient building rating systems.

- LEED
- Green Globes
- Energy Star Benchmarking

The market segmentation strategy included acquisition of outside expertise in researching LEED, Green Globes, and Energy Star benchmarking and developing an information kit covering these green buildings concepts. Implementation of the segmentation strategy included personal visits from energy management representatives to share the green buildings kits as well as any pertinent information on Otter Tail Power Company efficiency programs that might be beneficial in obtaining LEED, Green Globes, or Energy Star building certification.

The goal of the green buildings market segmentation strategy was to enhance market penetration of Otter Tail's efficiency programs and to assist in achieving the State of Minnesota Office of Energy Security goal of certifying 1,000 commercial buildings as Energy Star-labeled, and 100 commercial buildings as LEED-certified or Green Globes-certified by December 2010.

Otter Tail was encouraged with the results of the 2010 effort, and the Company believes this segmentation strategy continued to help drive participation in the Company's *Taking care of business* portfolio and subsequent significant energy savings. Specifically, research from LEED, Green Globes, and Energy Star websites indicates that as of March 2011 one additional facility in Otter Tail Power Company's service territory was added as Energy Star Certified. Approximately eight facilities served by Otter Tail were registered with the USGBC LEED certification process, indicating a growth in customer interest in LEED certification. No customers qualified or registered for Green Globes certification, likely still indicating the relatively recent entrance of Green Globes into the U.S. market. Otter Tail intends to continue the segmentation strategy into 2011 with an added focus on customers with large commercial refrigeration loads and medium to large tier data centers.

Participation in the project resulted in 109 government and healthcare segment visits.

2010 A&E – Commercial Customer Visits			
	Goal	Actual	% of Goal
Government	50	88	176%
Health Care	50	21	42%
Total	100	109	109%

COMPRESSED AIR AUDITS - Commercial

The Compressed Air Audits project portion of the program pays up to 80 percent of compressed audit costs, with a maximum of \$10,000 per participant. The project relies on industry consultants to provide professional audit services with an unbiased report on saving energy with compressed air system improvements. One compressed air audit was performed in 2010.

This Project has been approved for continuation in the 2011 CIP.

PARTICIPATION AND BUDGET – 2010			
COMPRESSED AIR AUDITS	2010 Actual	2010 Proposed	% of Goal
Participation	1	4	25%
Budget \$	\$9,853	\$20,000	49%

CIP DEVELOPMENT

The CIP Development Program includes CIP strategic market planning analysis, CIP-related resource planning work, and CIP-related regulatory coordination. It also includes program development time for research and studying new energy-efficient technologies and DSM. In 2010, CIP Development funded appropriate development research and information from internal and external sources, such as Chartwell, E-Source, and Navigant Consulting. Navigant was hired to conduct a DSM Potential Study. The results of that study have been filed with the Minnesota Office of Energy Security. This Program has been approved for continuation in the 2011 CIP.

PARTICIPATION AND BUDGET – 2010			
CIP DEVELOPMENT	2010 Actual	2010 Proposed	% of Goal
Participation	N/A	N/A	N/A
Budget \$	\$458,048	\$500,000	92%

PUC ASSESSMENTS / REGULATORY (NGEA) ASSESSMENTS

ASSESSMENTS	
NGEA Assessment – technical assistance	\$8,702
NGEA Assessment – R&D grant	\$69,622
NGEA Assessment – facilities efficiency	\$9,670
Total NGEA Assessments	\$87,994
Direct PUC Assessments	\$3,610
Total	\$91,604

PUC ASSESSMENTS / REGULATORY (NGEA) ASSESSMENTS			
	2010 Actual	2010 Proposed	% of Goal
PUC Assessments	\$3,610	\$75,000	5%
Regulatory Assessments (NGEA)	\$87,994	\$0	NA

This Program has been approved for continuation in the 2011 CIP.

MISCELLANEOUS / INACTIVE PROGRAM COSTS

These are inactive and miscellaneous programs. The associated costs, including closing costs for these programs, were charged to the 2010 CIP tracker account. Each is detailed separately below.

ACCOUNTING ADJUSTMENTS

Four accounting adjustments were required in 2010, totaling \$13,208.90.

The first was to record a true-up to the 2009 year end estimated billing from Wisconsin Energy Corporation for the Change a Light program of (\$12,983.37). The second adjustment was for \$24,009.77 to reflect a prior year research cost associated with EUIC projects. While no specific projects materialized, the Company did investigate a number of opportunities. The third was for a \$2,137.50 voided rebate check for an adjustable speed drive. It was determined in 2011 that the amount was entered incorrectly in 2010. The amount is voided, so no savings or rebates are included for 2010 and instead the correct amount and associated energy savings will be counted in 2011. The fourth adjustment was for a \$45 SD motor rebate that was incorrectly allocated to the MN CIP program in December, 2010. A correcting entry was recorded in January, 2011 to transfer the rebate charged from the MN CIP tracker to the appropriate SD program.

Since 1993, Otter Tail Power Company has implemented an internal process to handle moving incorrect charges between project work orders. A line item has been added to the CIP Tracker Account to reflect those charges that are in transition, and the Company believes this method allows us to report current year program costs more accurately.

CARRYING COSTS

Charges totaled \$172,878.50 for carrying costs on the balance of the CIP Tracker, as shown in Appendix A, Table 1.

The Commission and Otter Tail Power Company have agreed that allowing carrying charges to be added to the CIP Tracker Account will compensate the Company for the time value of the money invested in CIP programs.

As set in the Commission's Order, the monthly carrying charge is equivalent to the Company's currently approved rate of return, and with Commission approval, will be applied to the CIP Tracker Account Balance adjusted for related accumulated deferred income taxes.

Otter Tail Power Company does not count the carrying costs charges toward the spending requirement (see Appendix A, Table 6 Status Report Recap), but does include the charges in the CIP Tracker for recovery.

Section: CONSERVATION COST RECOVERY ADJUSTMENT (CCRA)

Background

This filing constitutes the 17th Annual Filing to Update the CIP Rider (“Annual Filing”) that Otter Tail has made with the Minnesota Public Utilities Commission (“Commission”) to update the CIP Rider adjustment, more commonly referred to as the CCRA (“Conservation Cost Recovery Adjustment”).

The CCRA may be adjusted annually by approval of the Commission. The Recoverable CIP Tracker Balance is determined as described below, starting with the Commission accepted CIP Tracker Account balance as of the end of the prior year. The following adjustments are made from this starting point:

1. Add financial incentives awarded by the Commission not reflected in the prior year-end CIP Tracker balance;
2. Add current year CIP approved spending levels;
3. Subtract current year CIP cost recovery through base rates as estimated based on Otter Tail's projected retail sales.

All costs appropriately charged to the CIP Tracker Account are eligible for recovery through this Rider and all revenues received from the application of the CCRA shall be credited to the CIP Tracker Account.

Table 1 is provided to show the history of the CCRA charge since 1995.

Table 1

Year (July 1 - June 30)	CIP Surcharge / CCRA Factor	Previous Year Ending Tracker Balance
1995 / 1996	0.503%	\$2,503,100
1996 / 1997	1.25%	\$582,920
1997 / 1998	1.75%	\$805,804
1998 / 1999	2.75%	\$925,213
1999 / 2000	1.50%	\$903,925
2000 / 2001	0.75%	\$1,117,853
2001 / 2002	0.65%	\$739,796
2002 / 2003	0.65%	\$1,059,412
2003 / 2004	0.50%	\$843,909
2004 / 2005	0.50%	\$881,730
2005 / 2006	0.75%	\$1,203,180
2006 / 2007	0.75%	\$1,063,660
2007 / 2008	0.75%	\$1,035,608
2008 / 2009	0.50%	\$490,714
2009 / 2010	1.75%	\$265,057
2010 / 2011	3.00%	\$1,927,314
2011 / 2012	To Be Determined	\$3,721,665

On March 31, 2010, Otter Tail submitted its Annual Filing (Docket No. E-017/M-10-220). As part of its Annual Filing, Otter Tail requested the Commission approve a change in the way that Otter Tail's conservation costs are recovered, switching from a percent-of-bill method to a per-kWh method.

On April 30, 2010, Otter Tail modified its Annual Filing, asking for a minimum of a one-year delay for changing the method that the CIP costs collected through its CCRA.

On August 13, 2010, both the Minnesota Chamber of Commerce ("Chamber") and the Minnesota Office of Energy Security ("OES") submitted written comments on Otter Tail's Annual Filing.

On November 5, 2010, the Commission approved Otter Tail's 2009 DSM financial incentive, tracker, and CCRA of 3% of billed revenue, effective with the first billing cycle of the next full month after Commission approval. In addition, in paragraph 5 of the Order the Commission:

Required OTP in its next filing to provide a comparative analysis of the four methods for allocating conservation costs to customer classes as discussed in the record of this case, including: (1) the per-kWh energy-only method; (2) the percent-of-bill method, (3) the 50/50-split method, and (4) the percent-of-net benefits method. Required OTP to show the percent-of-net-benefits method based on a weighted average of the actual benefits achieved in OTP's 2007, 2008, and 2010 CIP. Required OTP, as part of its comparative analysis, to present a large General Service (LGS) rate design (intra-class allocation) that is consistent with each of the preceding methods.

The four methods are presented in Exhibit 1, pages 2 and 3, and are explained in more detail below.

Otter Tail has performed a comparative analysis and presents a Large General Service ("LGS") rate design (intra-class allocation) that is consistent with each of the preceding methods. The comparative analysis for the LGS rate class is shown in Exhibit 3. This example provides the intra-class allocation by showing impacts to LGS customers with different load factors.

In Ordering paragraph 6 of the November 5, 2010, Order the Commission "[d]id not specify a cost allocation method under which OTP should file its next CCRA and **allowed the Company** to make its own recommendation (emphasis added)." While any of the four methods could be used, Otter Tail is not including a recommendation in the initial filing prior to all stakeholders' examination of the comparative analyses.

However it should be noted, at its March 25, 2011, deliberations and oral decision in Otter Tail's pending rate case (Docket E-017/GR-10-239), the Commission rejected the use of the E8760 allocator for the Conservation Cost Recovery Charge ("CCRC"), which is the amount of CIP expenses in base rates. By doing so the Commission left the allocator for the CCRC unchanged from Otter Tail's original filing in the rate case. In its original filing, Otter Tail used the E2 allocator, which is essentially kWh sales, to allocate CIP expenses. The CCRC and the CCRA are two parts of the same expense, the first being in base rates and the second collected in an annual adjustment.

Calculation of CCRA and CCRC

During the 18-month period from the end of year 2010 through the end of June 2012, Otter Tail plans to reduce the CIP Tracker balance of \$3,721,665 to an estimated \$1,922,863. Otter Tail is aggressively trying to reduce the CIP Tracker balance, but is also being mindful of customer bill impacts. In addition to the CIP Tracker balance of \$3,721,665, Otter Tail expects to have an additional \$9,736,573 of expenses from carrying charges, CIP Incentive charges, and CIP Program expenses over this 18-month period. Otter Tail plans to collect \$4,278,875 from the CCRC (the amount in base rates) during the 18-month period. Otter Tail is also proposing to collect a total of \$7,256,501 during the 18-month period through the CCRA, of which \$5,179,552 will be collected during the 12 months from July 2011 – June 2012. Table 2 below illustrates the amounts discussed above.

Table 2

	Jan. 2011 - June 2011	July 2011 - June 2012
Beginning Balance	\$3,721,665	\$2,385,514
Carrying Charges	\$127,025	\$360,581
CIP Program Expenses	\$1,538,511	\$3,801,828
CIP Incentive Proposed	0	\$3,908,628
CCRC through Base Rates	-\$924,738	-\$3,354,137
CCRA - CIP Rider	-\$2,076,949	-\$5,179,552
Ending Balance	\$2,385,514	\$1,922,863

The CCRA amount of \$5,179,552 has been identified by Otter Tail as the revenue requirement that needs to be approved in this filing to reduce the CIP Tracker balance down to \$1,922,863. Otter Tail designed each of the four recovery methods to recover this revenue requirement.

As shown in Exhibit 1, page 1, for the months of January through June 2011, Otter Tail has calculated the CCRA using the previously approved percent of revenue of 3.00%. Also shown in Exhibit 1 on pages 2 and 3, for the period July 2011 through June 2012, is the application of each of the four methods calculated to achieve the same June 2012 ending balance (Line 8).

All four methods collect the same revenue requirement, but each recovers the revenue separately, which creates different impacts on each customer class. Exhibit 2 displays the monthly customer impacts of the four methods for each of Otter Tail's 10 Rate Classes.

The amounts on lines 4 and 5 of Exhibit 1 reflect the projected expenditures and financial incentives for 2011 and through June 2012. Line 6 removes from the CIP Tracker the portion of CIP costs that are included in base rates. The current base rate amount from January 2011 through August 2011 is calculated each month as retail sales multiplied by the CCRC of \$0.000838 / kWh. This rate was set in Otter Tail's last general rate case (Docket E-017/GR-07-1178).

In these comparisons, Otter Tail assumes that final rates in its pending rate case (Docket No. E-017/GR-10-239) will become effective on September 1, 2011. Therefore, beginning September 2011, Otter Tail has increased the CCRC to \$0.001714 / kWh. This increase is based on the CCRC increasing from \$1,783,371 to \$3,670,200, as approved by the Commission at its March 25, 2011, agenda meeting. The increase in the CCRC is reflected in Exhibit 1 on line 6 of pages 2 and 3. A bonus incentive mechanism tied to CIP performance (line 5) is anticipated to be in place for 2011.

Calculation of the four CCRA Methods

1. The percent-of-bill method

Otter Tail calculated this method by taking the revenue requirement of \$5,179,552 and dividing it by the forecasted base revenue, for all classes, for the period of July 2011 through June 2012. This calculation is simply $\$5,179,552 / \$129,488,798 = 4.00\%$. Line 7 on the top half of page 2, Exhibit 1, shows this proposed CCRA calculation by month for this period.

2. Per-kWh energy-only method

Otter Tail calculated this method by taking the revenue requirement of \$5,179,552 and dividing it by forecasted kWh sales, for all classes, for the period of July 2011 through June 2012. This calculation is simply $\$5,179,552 / 2,120,223,344 \text{ kWh} = \$0.00244/\text{kWh}$. Line 7 on the bottom half of page 2, Exhibit 1, shows this proposed CCRA calculation by month for this period.

3. The 50/50-split method

A step-by-step calculation of the 50/50-split method is shown on page 1 of Exhibit 4. Otter Tail calculated this method by taking the revenue requirement of \$5,179,552 and multiplying it by 50% to reflect half of the costs to be allocated by demand factors and the other half by energy factors (step 1). Otter Tail next allocated one half of the revenue requirement to each of its ten classes by the demand ("D1") allocator (steps 2 and 3). The other half of the revenue requirement was allocated to the ten classes by the energy ("E2") allocator (steps 2 and 3). This process identified the energy revenue responsibility of the LGS class and also the revenue responsibility of all other classes (step 4). Next the LGS revenue was split by demand (79.5%), and energy (20.5%), based on Otter Tail's revenue collection during the 2009 test year (step 5). Lastly Otter Tail divided these revenues by the associated forecasted energy and demand sales to come up with energy

and demand rates for the LGS class and one energy rate for all other classes (step 6). Line 7 on the top half of page 3, Exhibit 1, shows this proposed CCRA calculation by month for the 50/50-split method.

4. The percent-of-net-benefits method

A step-by-step calculation of the percent-of-net-benefits method is shown on page 2 of Exhibit 4. Otter Tail calculated this method the same way as method 3 above but instead of using 50% demand and 50% energy Otter Tail used total benefits of avoided energy and demand based on a weighted average from 2007, 2008, and 2010 CIP Programs results. Based on these results, Otter Tail calculated that 44.5% of avoided costs were demand costs and the other 55.5% were avoided energy costs (steps 1 and 2). Otter Tail next allocated these percentages of the revenue requirement to each of its ten classes by the D1 allocator (steps 3 and 4). The other half of the revenue requirement was allocated to the ten classes by the E2 energy allocator (steps 3 and 4). This process identified the energy revenue responsibility of the LGS class and also the revenue responsibility of all other classes (step 5). Next the LGS revenue was split by demand (79.5%), and energy (20.5%), based on Otter Tail's revenue collection during the 2009 test year (step 6). Lastly Otter Tail divided these revenues by the associated forecasted energy and demand to calculate energy and demand rates for the LGS class and one energy rate for all other classes (step 7). Line 7 on the bottom half of page 3, Exhibit 1, shows this proposed CCRA calculation by month for the percent-of-net-benefits method.

Implementation

The proposed 2011 CCRA is calculated assuming revenue recovery approved to be effective July 1, 2011. If implementation of the 2011 CCRA occurs after July 1, 2011, Otter Tail proposes that the CCRA be adjusted to recover the approved revenue requirements over the remaining months of the period, through June 2012. This approach would ensure the cost recovery and the approved eligible costs match. If it is necessary to adjust the 2011 CCRA, Otter Tail proposes to calculate the final 2011 CCRA and include it with the corresponding rate schedule pages in a compliance filing in this docket.

As previously mentioned, Otter Tail is not making a specific cost allocation recommendation. Therefore, Otter Tail has not enclosed both a red-line and updated CIP tariff sheets. Once the 2011/2012 CCRA is approved, or as requested by the OES or Commission Staff, Otter Tail will file the relevant tariff sheets that comply with the Commission's Order in this docket.

Customer Notice

In the Order in Otter Tail's last annual CIP filing, the Commission "[r]equired OTP to notify its customers on an annual basis of the change in the CIP adjustment factor through a message on customers' bills. Required OTP to include a draft of the proposed bill language in its filing next year."

Otter Tail proposes that the following message appear on customers' bills in the month that the updated CCRA becomes effective:

Change to the Conservation Improvement Program Adjustment

Effective with this electric service statement, the Resource Adjustment line item includes a charge of \$0.00244 per kWh (or just over 2/10 of one cent) for the cost of approved conservation improvement programs.

Previously these costs were billed based on 3 percent of your monthly bill.

Otter Tail will work with the Commission's Consumer Affairs Office to develop the final language for this bill language.

Exhibit 1

Page 1

[illegible]

Otter Tail Power Company															Exhibit 1
															Page 2
1. CIP TRACKER BY % of Revenue Method															
		July 2011	August 2011	September 2011	October 2011	November 2011	December 2011	January 2012	February 2012	March 2012	April 2012	May 2012	June 2012	Total	
1	Beginning of Period Balance	\$2,385,514	\$6,093,716	\$5,825,021	\$5,573,916	\$5,414,089	\$5,006,854	\$5,113,259	\$4,494,479	\$3,835,567	\$3,211,184	\$2,749,619	\$2,319,652		
2	Monthly Carrying Charge Rate	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%		
3	Monthly Carrying Charge	\$16,560	\$42,545	\$40,932	\$39,445	\$38,213	\$35,185	\$35,653	\$31,058	\$26,185	\$21,583	\$18,176	\$15,035	\$360,581	
4	CIP Program Charges	\$342,718	\$267,252	\$427,595	\$444,090	\$268,386	\$860,758	\$180,555	\$157,401	\$138,840	\$220,057	\$216,454	\$277,721	\$3,801,828	
5	CIP Incentive	\$3,908,628	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,908,628	
6	Less: CIP Recovery thru Base Rates	-\$131,542	-\$136,241	-\$277,711	-\$268,854	-\$301,916	-\$337,184	-\$357,197	-\$362,206	-\$336,735	-\$297,919	-\$279,240	-\$267,384	-\$3,354,137	
7	Less: Conservation Adjustment (CIP Revenue)	-\$428,163	-\$442,255	-\$441,915	-\$374,508	-\$411,918	-\$452,357	-\$477,790	-\$485,166	-\$452,673	-\$405,286	-\$385,358	-\$422,164	-\$5,179,552	
8	End of Period Balance	\$6,093,716	\$5,825,021	\$5,573,916	\$5,414,089	\$5,006,854	\$5,113,259	\$4,494,479	\$3,835,567	\$3,211,184	\$2,749,619	\$2,319,652	\$1,922,863		
9	CCRA (% of revenue)	4.00%													
10	Projected CIP expenditures 2011	\$3,989,897													
11	Projected CIP expenditures 2012	\$3,445,795													
12	Historic monthly percent	8.59%	6.70%	10.72%	11.13%	6.73%	21.57%	5.24%	4.57%	4.03%	6.39%	6.28%	8.06%	100.00%	
13	Projected sales (kWh)	156,971,216	162,579,243	162,028,657	156,857,352	176,147,227	196,723,691	208,399,815	211,322,135	196,461,479	173,815,293	162,917,126	156,000,110	120,223,344	
14	Projected retail revenue	\$10,704,064	\$11,056,380	\$11,047,870	\$9,362,699	\$10,297,946	\$11,308,930	\$11,944,755	\$12,129,140	\$11,316,818	\$10,132,149	\$9,633,939	\$10,554,103	\$129,488,793	
2. CIP TRACKER BY \$/kWh Method															
		July 2011	August 2011	September 2011	October 2011	November 2011	December 2011	January 2012	February 2012	March 2012	April 2012	May 2012	June 2012	Total	
1	Beginning of Period Balance	\$2,385,514	\$6,138,409	\$5,914,800	\$5,709,785	\$5,541,275	\$5,115,643	\$5,193,824	\$4,543,729	\$3,853,737	\$3,202,086	\$2,721,189	\$2,278,584		
2	Monthly Carrying Charge Rate	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%		
3	Monthly Carrying Charge	\$16,560	\$42,545	\$40,932	\$39,445	\$38,213	\$35,185	\$35,653	\$31,058	\$26,185	\$21,583	\$18,176	\$15,035	\$360,581	
4	CIP Program Charges	\$342,718	\$267,252	\$427,595	\$444,090	\$268,386	\$860,758	\$180,555	\$157,401	\$138,840	\$220,057	\$216,454	\$277,721	\$3,801,828	
5	CIP Incentive	\$3,908,628	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,908,628	
6	Less: CIP Recovery thru Base Rates	-\$131,542	-\$136,241	-\$277,711	-\$268,854	-\$301,916	-\$337,184	-\$357,197	-\$362,206	-\$336,735	-\$297,919	-\$279,240	-\$267,384	-\$3,354,137	
7	Less: Conservation Adjustment (CIP Revenue)	-\$383,469	-\$397,169	-\$395,824	-\$383,191	-\$430,315	-\$480,582	-\$509,106	-\$516,245	-\$479,941	-\$424,618	-\$397,995	-\$381,097	-\$5,179,552	
8	End of Period Balance	\$6,138,409	\$5,914,800	\$5,709,785	\$5,541,275	\$5,115,643	\$5,193,824	\$4,543,729	\$3,853,737	\$3,202,086	\$2,721,189	\$2,278,584	\$1,922,863		
9	CCRA (\$ / kWh)	\$0.00244													
10	Projected CIP expenditures 2011	\$3,989,897													
11	Projected CIP expenditures 2012	\$3,445,795													
12	Historic monthly percent	8.59%	6.70%	10.72%	11.13%	6.73%	21.57%	5.24%	4.57%	4.03%	6.39%	6.28%	8.06%	100.00%	
13	Projected sales (kWh)	156,971,216	162,579,243	162,028,657	156,857,352	176,147,227	196,723,691	208,399,815	211,322,135	196,461,479	173,815,293	162,917,126	156,000,110	120,223,344	

Otter Tail Power Company															Exhibit 1
															Page 3
3. CIP TRACKER BY 50/50 Split Method															
		July 2011	August 2011	September 2011	October 2011	November 2011	December 2011	January 2012	February 2012	March 2012	April 2012	May 2012	June 2012	Total	
1	Beginning of Period Balance	\$2,385,514	\$6,138,284	\$5,915,245	\$5,710,215	\$5,543,725	\$5,119,545	\$5,198,238	\$4,545,925	\$3,852,784	\$3,199,497	\$2,718,920	\$2,278,012		
2	Monthly Carrying Charge Rate	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%		
3	Monthly Carrying Charge	\$16,560	\$42,545	\$40,932	\$39,445	\$38,213	\$35,185	\$35,653	\$31,058	\$26,185	\$21,583	\$18,176	\$15,039	\$360,581	
4	CIP Program Charges	\$342,718	\$267,252	\$427,595	\$444,090	\$268,386	\$860,758	\$180,555	\$157,401	\$138,840	\$220,057	\$216,454	\$277,721	\$3,801,828	
5	CIP Incentive	\$3,908,628	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,908,628	
6	Less: CIP Recovery thru Base Rates	-\$131,542	-\$136,241	-\$277,717	-\$268,854	-\$301,916	-\$337,184	-\$357,197	-\$362,206	-\$336,735	-\$297,919	-\$279,240	-\$267,384	-\$3,354,137	
7	Less: Conservation Adjustment (CIP Revenue)	-\$383,594	-\$396,599	-\$395,840	-\$381,171	-\$428,863	-\$480,070	-\$511,323	-\$519,395	-\$481,577	-\$424,297	-\$396,299	-\$380,524	-\$5,179,552	
8	End of Period Balance	\$6,138,284	\$5,915,245	\$5,710,215	\$5,543,725	\$5,119,545	\$5,198,238	\$4,545,925	\$3,852,784	\$3,199,497	\$2,718,920	\$2,278,012	\$1,922,863		
9	CCRA (\$ / kWh) For LGS Class	\$0.00187													
	CCRA (\$ / kWh) For All Other Classes	\$0.00254													
	CCRA (\$ / kW) For LGS Class	\$0.220													
10	Projected CIP expenditures 2011	\$3,989,897													
11	Projected CIP expenditures 2012	\$3,445,795													
12	Historic monthly percent	8.59%	6.70%	10.72%	11.13%	6.73%	21.57%	5.24%	4.57%	4.03%	6.39%	6.28%	8.06%	100.00%	
13	Projected Large Gen. Service sales (kWh)	83,419,132	86,077,363	86,134,871	86,197,021	89,002,149	91,231,278	89,367,891	89,427,990	88,346,026	86,219,313	87,415,125	84,865,265	1,047,703,423	
14	Projected All Other Class sales (kWh)	73,552,085	76,501,880	75,893,786	70,660,331	87,145,078	105,492,414	119,031,924	121,894,145	108,115,453	87,595,980	75,502,001	71,134,846	1,072,519,922	
15	Total Sales (kWh)	156,971,216	162,579,243	162,028,657	156,857,352	176,147,227	196,723,691	208,399,815	211,322,135	196,461,479	173,815,293	162,917,126	156,000,110	2,120,223,344	
16	Projected All Other Class demand (kW)	187,872	190,431	193,497	186,657	189,559	191,846	193,570	196,740	192,908	187,203	189,256	189,530	2,289,070	
4. CIP TRACKER BY PERCENT OF NET-BENEFITS Method															
		July 2011	August 2011	September 2011	October 2011	November 2011	December 2011	January 2012	February 2012	March 2012	April 2012	May 2012	June 2012	Total	
1	Beginning of Period Balance	\$2,385,514	\$6,138,171	\$5,915,023	\$5,709,875	\$5,543,226	\$5,119,014	\$5,197,824	\$4,545,766	\$3,852,901	\$3,199,776	\$2,719,195	\$2,278,160		
2	Monthly Carrying Charge Rate	0.694%	0.694%	0.694%	0.694%	0.694%	0.694%	0.694%	0.694%	0.694%	0.694%	0.694%	0.694%		
3	Monthly Carrying Charge	\$16,560	\$42,545	\$40,932	\$39,445	\$38,213	\$35,185	\$35,653	\$31,058	\$26,185	\$21,583	\$18,176	\$15,039	\$360,581	
4	CIP Program Charges	\$342,718	\$267,252	\$427,595	\$444,090	\$268,386	\$860,758	\$180,555	\$157,401	\$138,840	\$220,057	\$216,454	\$277,721	\$3,801,828	
5	CIP Incentive	\$3,908,628	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,908,628	
6	Less: CIP Recovery thru Base Rates	-\$131,542	-\$136,241	-\$277,717	-\$268,854	-\$301,916	-\$337,184	-\$357,197	-\$362,206	-\$336,735	-\$297,919	-\$279,240	-\$267,384	-\$3,354,137	
7	Less: Conservation Adjustment (CIP Revenue)	-\$383,708	-\$396,708	-\$395,957	-\$381,331	-\$428,895	-\$479,952	-\$511,069	-\$519,118	-\$481,415	-\$424,302	-\$396,425	-\$380,672	-\$5,179,552	
8	End of Period Balance	\$6,138,171	\$5,915,023	\$5,709,875	\$5,543,226	\$5,119,014	\$5,197,824	\$4,545,766	\$3,852,901	\$3,199,776	\$2,719,195	\$2,278,160	\$1,922,863		
9	CCRA (\$ / kWh) For LGS Class	\$0.00187													
	CCRA (\$ / kWh) For All Other Classes	\$0.00253													
	CCRA (\$ / kW) For LGS Class	\$0.221													
10	Projected CIP expenditures 2011	\$3,989,897													
11	Projected CIP expenditures 2012	\$3,445,795													
12	Historic monthly percent	8.59%	6.70%	10.72%	11.13%	6.73%	21.57%	5.24%	4.57%	4.03%	6.39%	6.28%	8.06%	100.00%	
13	Projected Large Gen. Service sales (kWh)	83,419,132	86,077,363	86,134,871	86,197,021	89,002,149	91,231,278	89,367,891	89,427,990	88,346,026	86,219,313	87,415,125	84,865,265	1,047,703,423	
14	Projected All Other Class sales (kWh)	73,552,085	76,501,880	75,893,786	70,660,331	87,145,078	105,492,414	119,031,924	121,894,145	108,115,453	87,595,980	75,502,001	71,134,846	1,072,519,922	
15	Total Sales (kWh)	156,971,216	162,579,243	162,028,657	156,857,352	176,147,227	196,723,691	208,399,815	211,322,135	196,461,479	173,815,293	162,917,126	156,000,110	2,120,223,344	
16	Projected All Other Class demand (kW)	187,872	190,431	193,497	186,657	189,559	191,846	193,570	196,740	192,908	187,203	189,256	189,530	2,289,070	

Otter Tail Power Company
Comparison of Monthly Bill Impacts by Method

Exhibit 2

Method #1, calculates change from 3% to 4% of billed revenue.

Method #2, calculates change from 3% to \$/kWh, based on all customers paying the same \$/kWh.

Method #3, calculates change from 3% to \$/kWh & \$/kW, based on the 50/50-Split method.

Method #4, calculates change from 3% to \$/kWh & \$/kW, based on the % of Net Benefits method.

Rate Class	*Average Data	Monthly Bill Impacts				
		Method #1	Method #2	Method #3	Method #4	
Residential	825 avg. kWh/bills	0.97%	-0.27%	-0.17%	-0.18%	Monthly % Increase
	\$74.15 avg. \$ / bill before CCRA	\$0.74	-\$0.21	-\$0.13	-\$0.14	Monthly \$ Increase
Farm	2,193 avg. kWh/bills	0.97%	-0.05%	0.06%	0.05%	Monthly % Increase
	\$181.75 avg. \$ / bill before CIP	\$1.82	-\$0.09	\$0.11	\$0.09	Monthly \$ Increase
General Service	2,644 avg. kWh/bills	0.97%	-0.11%	0.00%	-0.01%	Monthly % Increase
	\$223.48 avg. \$ / bill before CIP	\$2.23	-\$0.25	\$0.00	-\$0.02	Monthly \$ Increase
Large General Serv.	211,031 avg. kWh/bills	0.97%	1.23%	1.02%	1.04%	Monthly % Increase
	\$12,076.11 avg. \$ / bill before CIP	\$120.76	\$153.25	\$126.85	\$128.81	Monthly \$ Increase
Irrigation	433 avg. kW/bills					
	1,858 avg. kWh/bills	0.97%	0.86%	1.00%	0.99%	Monthly % Increase
	\$116.93 avg. \$ / bill before CIP	\$1.17	\$1.03	\$1.21	\$1.19	Monthly \$ Increase
Outdoor Lighting	83 avg. kWh/bills	0.97%	-1.11%	-1.04%	-1.05%	Monthly % Increase
	\$10.93 avg. \$ / bill before CIP	\$0.11	-\$0.13	-\$0.12	-\$0.12	Monthly \$ Increase
Municipal Pumping	3,273 avg. kWh/bills	0.97%	0.63%	0.77%	0.75%	Monthly % Increase
	\$219.09 avg. \$ / bill before CIP	\$2.19	\$1.42	\$1.73	\$1.70	Monthly \$ Increase
Water Heating, Cntrl	216 avg. kWh/bills	0.97%	0.39%	0.52%	0.51%	Monthly % Increase
	\$15.47 avg. \$ / bill before CIP	\$0.15	\$0.06	\$0.08	\$0.08	Monthly \$ Increase
Interruptible Load	1,958 avg. kWh/bills	0.97%	2.07%	2.26%	2.25%	Monthly % Increase
	\$93.16 avg. \$ / bill before CIP	\$0.93	\$1.99	\$2.17	\$2.15	Monthly \$ Increase
Deferred Load	1,857 avg. kWh/bills	0.97%	1.85%	2.03%	2.02%	Monthly % Increase
	\$92.48 avg. \$ / bill before CIP	\$0.92	\$1.76	\$1.94	\$1.92	Monthly \$ Increase

*All average data comes from Otter Tail's proposed rates in Schedule-E that was filed February 24, 2011 in compliance to the ALJ's findings (Docket no. E017/GR-10-239).

Otter Tail Power Company

Exhibit 3

Large General Service Intra-Class Customer Monthly Impacts

Rates based on February 24, 2011 Compliance Filing, per ALJ Findings (Docket no. E017/GR-10-239)

Secondary Voltage	Summer	Winter
Customer \$/Month	\$40.00	\$40.00
Facilities \$/kW	\$0.24	\$0.24
Energy \$/kWh	\$0.04611	\$0.04992
Demand \$/kW	\$7.29	\$6.13

Load Factor	kWh	kW
80%	1,752,000	3,000

Secondary Voltage	Summer	Winter
Customer Charge	\$40.00	\$40.00
Facilities Charge	\$720.00	\$720.00
Energy Charge	\$80,784.72	\$87,459.84
Demand Charge	\$21,870.00	\$18,390.00
FCA is Assumed \$0.00	\$0.00	\$0.00
Subtotal	\$103,414.72	\$106,609.84

LGS Monthly Bill \$	Summer	Winter
Existing CIP CCRA 3.00%	\$3,102.44	\$3,198.30
Proposed CIP 4.00%	\$4,136.59	\$4,264.39
Proposed \$0.00244/kWh	\$4,280.01	\$4,280.01
Proposed 50/50 Split	\$3,928.95	\$3,928.95
Proposed Net Benefits	\$3,944.65	\$3,944.65

Monthly Bill Increase from 3.00% of Revenue		
Proposed CIP CCRA 4.00%	0.97%	0.97%
Proposed \$0.00244/kWh	1.11%	0.99%
Proposed 50/50 Split	0.78%	0.67%
Proposed Net Benefits	0.79%	0.68%

Average CIP (CCRA) \$ / kWh		
Proposed CIP CCRA 4.00%	\$0.00236	\$0.00243
Proposed \$0.00244/kWh	\$0.00244	\$0.00244
Proposed 50/50 Split	\$0.00224	\$0.00224
Proposed Net Benefits	\$0.00225	\$0.00225

Secondary Voltage	Summer	Winter
Customer \$/Month	\$40.00	\$40.00
Facilities \$/kW	\$0.24	\$0.24
Energy \$/kWh	\$0.04611	\$0.04992
Demand \$/kW	\$7.29	\$6.13

Load Factor	kWh	kW
60%	1,314,000	3,000

Secondary Voltage	Summer	Winter
Customer Charge	\$40.00	\$40.00
Facilities Charge	\$720.00	\$720.00
Energy Charge	\$60,588.54	\$65,594.88
Demand Charge	\$21,870.00	\$18,390.00
FCA is Assumed \$0.00	\$0.00	\$0.00
Subtotal	\$83,218.54	\$84,744.88

LGS Monthly Bill \$	Summer	Winter
Existing CIP CCRA 3.00%	\$2,496.56	\$2,542.35
Proposed CIP 4.00%	\$3,328.74	\$3,389.80
Proposed \$0.00244/kWh	\$3,210.01	\$3,210.01
Proposed 50/50 Split	\$3,112.06	\$3,112.06
Proposed Net Benefits	\$3,124.51	\$3,124.51

Monthly Bill Increase from 3.00% of Revenue		
Proposed CIP CCRA 4.00%	0.97%	0.97%
Proposed \$0.00244/kWh	0.83%	0.76%
Proposed 50/50 Split	0.72%	0.65%
Proposed Net Benefits	0.73%	0.67%

Average CIP (CCRA) \$ / kWh		
Proposed CIP CCRA 4.00%	\$0.00253	\$0.00258
Proposed \$0.00244/kWh	\$0.00244	\$0.00244
Proposed 50/50 Split	\$0.00237	\$0.00237
Proposed Net Benefits	\$0.00238	\$0.00238

Exhibit 3 shows the intra-class impact for two LGS customers with different load factors. The comparison above shows the average CIP CCRA revenue per a kWh for the two customers. All methods are more beneficial for the higher load factor customer other than the \$0.00244/kWh method which is the same for both customers. The Renewable Resource Adjustment Rider and the MN Transmission Cost Recovery Rider were not included in the calculation of the total monthly bill. These amounts are in the process of being updated and are not fully known on a forward basis at this time.

1	CIP Surcharge Revenue Requirement	\$5,179,552	50% Demand 50% Energy	\$2,589,776 Demand \$2,589,776 Energy	
2	Use D1 and E8760 Allocators	Allocator	\$2,589,776	Allocator	\$2,589,776
	Classes	D1	D1 \$	E2	E2 \$
	1 Residential	28.76%	\$744,897	22.43%	\$580,868
	2 Farm	2.46%	\$63,600	1.74%	\$45,154
	3 General Service	19.47%	\$504,227	15.59%	\$403,785
	4 Large General Service	45.74%	\$1,184,605	49.20%	\$1,274,069
	5 Irrigation	0.00%	\$0	0.20%	\$5,084
	6 Lighting	0.81%	\$20,854	0.94%	\$24,332
	7 OPA	0.98%	\$25,504	0.94%	\$24,269
	8 Water Heating	0.11%	\$2,751	1.12%	\$29,133
	9 Interruptible	1.49%	\$38,585	6.58%	\$170,482
	10 Deferred Load	0.18%	\$4,751	1.26%	\$32,599
		100%	\$2,589,776	100%	\$2,589,776
3	LGS	\$1,184,605	LGS	\$1,274,069	
	All Others	\$1,405,171	All Others	\$1,315,707	
	Total	\$2,589,776	Total	\$2,589,776	
4	LGS Rev Requirement	\$2,458,673	47.5%		
	All Others Rev. Requirement	\$2,720,879	52.5%		
	Based on D1 and E8760	\$5,179,552			
5	LGS Energy Rev	\$18,775,535			
	LGS TOD Energy Rev	\$26,655,051			
	LGS Rider Energy Rev	\$2,228,054			
		\$47,658,639	79.47%		
	LGS Demand Rev	\$6,318,005			
	LGS TOD Demand Rev	\$5,991,220			
	LGS Rider Demand Rev	\$0			
		\$12,309,224	20.53%		
		\$59,967,864			
6	LGS Energy Rev.	\$1,953,997	\$0.00187/kWh		
	LGS Demand Rev.	\$504,676	\$0.2205/kW		
	All Other Energy Rev.	\$2,720,879	\$0.00254/kWh		
		\$5,179,552			

1	Total Benefits	Total - 2007, 2008, 2010	\$55,818,449			
		Weighted Average - Avoided T&D	\$6,425,118	44.5%	Demand	
		Weighted Average - Avoided Energy	\$30,975,723	55.5%	Energy	
		Weighted Average - Avoided Capacity	\$18,417,607			
2	CIP Surcharge Revenue Requirement		\$5,179,552	\$2,305,227	Demand	
				\$2,874,325	Energy	
3	Use D1 and E8760 Allocators		Allocator	\$2,305,227	Allocator	\$2,874,325
	Classes	D1	D1 \$	E2	E2 \$	
	1 Residential	28.76%	\$663,052	22.43%	\$644,691	
	2 Farm	2.46%	\$56,612	1.74%	\$50,116	
	3 General Service	19.47%	\$448,826	15.59%	\$448,151	
	4 Large General Service	45.74%	\$1,054,447	49.20%	\$1,414,056	
	5 Irrigation	0.00%	\$0	0.20%	\$5,643	
	6 Lighting	0.81%	\$18,563	0.94%	\$27,006	
	7 OPA	0.98%	\$22,702	0.94%	\$26,936	
	8 Water Heating	0.11%	\$2,449	1.12%	\$32,334	
	9 Interruptible	1.49%	\$34,346	6.58%	\$189,214	
	10 Deferred Load	0.18%	\$4,229	1.26%	\$36,181	
		100%	\$2,305,227	100%	\$2,874,325	
4	LGS	\$1,054,447	LGS	\$1,414,056		
	All Others	\$1,250,780	All Others	\$1,460,269		
	Total	\$2,305,227	Total	\$2,874,325		
5	LGS Rev Requirement	\$2,468,503	47.66%			
	All Others Rev. Requirement	\$2,711,049	52.34%			
	Based on D1 and E8760	\$5,179,552				
6	LGS Energy Rev	\$18,775,535				
	LGS TOD Energy Rev	\$26,655,051				
	LGS Rider Energy Rev	\$2,228,054				
		\$47,658,639	79.47%			
	LGS Demand Rev	\$6,318,005				
	LGS TOD Demand Rev	\$5,991,220				
	LGS Rider Demand Rev	\$0				
		\$12,309,224	20.53%			
		\$59,967,864				
7	LGS Energy Rev.	\$1,961,809	\$0.00187	/kWh		
	LGS Demand Rev.	\$506,694	\$0.2214	/kW		
	All Other Energy Rev.	\$2,711,049	\$0.00253	/kWh		
		\$5,179,552				

Appendix A: Tables

Table 1 - 2010

CALCULATION OF CARRYING CHARGE ON CONSERVATION DOLLARS - CIP TRACKER
Financial Incentive Project - Conservation Improvement Programs
Otter Tail Power Company

				<div>Dr. 1860.3100</div> <div>Cr. 4310.4000</div> <div>Carrying</div> <div>Charge 8.33%*</div>	<div>Balance</div> <div>Account</div> <div>1860.3000 +</div> <div>1860.3100</div>
	Capital Expenses (A)	Operating Expenses (B)	Revenues Received (C)	(D)	(E)
Balance December 31, 2009	\$0.00	\$36,984,549.21	-\$35,498,579.28	\$26,437.49	\$1,927,314.35
January:					
Carrying Charge	--	--	--	\$13,378.77	\$13,378.77
Trf Carrying Charge Bal	\$0.00	\$26,437.49	\$0.00	-\$26,437.49	\$0.00
Activity	\$0.00	\$378,538.81	-\$426,246.92	--	-\$47,708.11
Balance January 31, 2010	\$0.00	\$37,389,525.51	-\$35,924,826.20	\$13,378.77	\$1,892,985.01
February:					
Carrying Charge	--	--	--	\$13,140.47	\$13,140.47
Activity	\$0.00	\$263,376.07	-\$399,339.98	--	-\$135,963.91
Balance February 28, 2010	\$0.00	\$37,652,901.58	-\$36,324,166.18	\$26,519.24	\$1,770,161.57
March:					
Carrying Charge	--	--	--	\$12,287.87	\$12,287.87
Activity	\$0.00	\$359,089.98	-\$365,376.05	--	-\$6,286.07
Balance March 30, 2010	\$0.00	\$38,011,991.56	-\$36,689,542.23	\$38,807.11	\$1,776,163.37
April:					
Carrying Charge	--	--	--	\$12,329.53	\$12,329.53
Activity	\$0.00	\$382,412.95	-\$339,457.15	--	\$42,955.80
Balance April 30, 2010	\$0.00	\$38,394,404.51	-\$37,028,999.38	\$51,136.64	\$1,831,448.70
May:					
Carrying Charge	--	--	--	\$12,713.31	\$12,713.31
Activity	\$0.00	\$255,576.20	-\$295,263.64	--	-\$39,687.44
Balance May 31, 2010	\$0.00	\$38,649,980.71	-\$37,324,263.02	\$63,849.95	\$1,804,474.57
June:					
Carrying Charge	--	--	--	\$12,526.06	\$12,526.06
Activity	\$0.00	\$505,277.74	-\$330,063.05	--	\$175,214.69
Balance June 30, 2010	\$0.00	\$39,155,258.45	-\$37,654,326.07	\$76,376.01	\$1,992,215.32
July:					
Carrying Charge	--	--	--	\$13,829.29	\$13,829.29
Activity	\$0.00	\$244,183.46	-\$342,119.53	--	-\$97,936.07
Balance July 31, 2010	\$0.00	\$39,399,441.91	-\$37,996,445.60	\$90,205.30	\$1,908,108.54
August:					
Carrying Charge	--	--	\$0.00	\$13,245.45	\$13,245.45
Activity	\$0.00	\$347,277.15	-\$372,297.82	--	-\$25,020.67
Balance August 31, 2010	\$0.00	\$39,746,719.06	-\$38,368,743.42	\$103,450.75	\$1,896,333.32
September:					
Carrying Charge	--	--	--	\$13,163.71	\$13,163.71
Activity	\$0.00	\$357,134.60	-\$350,894.25	--	\$6,240.35
Balance September 30, 2010	\$0.00	\$40,103,853.66	-\$38,719,637.67	\$116,614.46	\$1,915,737.38
October:					
Carrying Charge	--	--	--	\$13,298.41	\$13,298.41
Lost Margin & Bonus/Ince	\$0.00	\$1,101,060.00	\$0.00	\$0.00	\$1,101,060.00
Activity	\$0.00	\$345,628.89	-\$289,692.40	--	\$55,936.49
Balance October 31, 2010	\$0.00	\$41,550,542.55	-\$39,009,330.07	\$129,912.87	\$3,086,032.28

November:					
Carrying Charge	--	\$0.00	--	\$21,422.21	\$21,422.21
Activity	\$0.00	\$467,108.27	-\$471,068.68	--	-\$3,960.41
Balance November 30, 2010	\$0.00	\$42,017,650.82	-\$39,480,398.75	\$151,335.08	\$3,103,494.08
December:					
Carrying Charge	--	--	--	\$21,543.42	\$21,543.42
Activity	\$0.00	\$1,137,724.15	-\$541,096.35	--	\$596,627.80
Balance December 31, 2010	\$0.00	\$43,155,374.97	-\$40,021,495.10	\$172,878.50	\$3,721,665.30

* Rate of return allowed in Otter Tail's general rate case, Docket No. E017/GR-07-1178, effective with final rates February 1, 2009.

Table 2 - A
2010 INCENTIVE MECHANISM - PRE-YEAR INCENTIVE CALCULATION FIGURES
Financial Incentive Project
Otter Tail Power Company

3-year Weather-Normalized Sales Average:	2,090,184,028	
1.0% of Sales:	20,901,840	From Utility's Tri/Biennial filing
For CIP Budget, Energy Goal, and Estimated Benefits, include only those modifications that were required by the Commissioner's Order or which the utility notified the OES that it planned to include in the incentive calculation upon approval. Include a summary of the modifications below.		
Approved CIP Budget:	\$4,172,300	From Commissioner's Order approving Tri/Biennial Filing
Approved CIP Energy Goal:	21,236,338	From Commissioner's Order approving Tri/Biennial Filing
Estimated Net Benefits at Approved Goal:	\$19,416,380	From Utility Tri/Biennial Filing.
Modifications:		
Budget	None	
Energy	None	
Net Benefits	None	
Include the budget and energy goal changes for each modification included.		
A single entry for net benefits reflecting the combined impact of all included modifications is sufficient.		
OTP INPUTS INDICATED IN YELLOW		

OTTER TAIL POWER COMPANY		
for 2010		
Inputs:		
Average Sales:	2,090,184,028	
1.0% Energy Savings:	20,901,840	
Historic Average Savings:	0.73%	2004-2008
Earning Threshold:	0.30%	plus one unit of energy
Earning Threshold in Energy Savings:	6,270,553	
Award zero point:	0.20%	
Award zero point in Energy Savings:	4,180,368	
Steps from zero point to 1.5%	13	
Size of steps in Energy Savings:	2,090,184	
Incentive Calibration:		
Average Incentive per unit at 1.5%:	\$0.09	Set by Commission in approval of incentive mechanism & calibration
Incentive Cap:	\$0.113	125% of incentive per kwh
Energy savings at 1.5%:	31,352,760	
Targeted incentive at 1.5%:	\$2,821,748	
Multiplier:	0.00757	Percent of Net Benefits received for every 0.1% of sales saved
Multiplier (non-linear):	0.00946	

Table 2 - A
2010 INCENTIVE MECHANISM - PRE-YEAR INCENTIVE CALCULATION FIGURES
Financial Incentive Project
Otter Tail Power Company

Estimated Incentive Levels:	Achievement Level (% of sales)	Energy Saved	Percent of Benefits Awarded - Linear	Percent of Benefits Awarded - Non-linear	Non-linear Correction Factor (value of 1 = no correction)	Adjusted Net Benefits - Non-linear	Incentive Award- Non-linear Proposal, \$0.11/kWh Cap	Average Incentive per unit Saved
	0.0%	0	0.000%	0.000%	1.00	\$0	\$0	\$0.0000
	0.1%	2,090,184	0.000%	0.000%	1.00	\$1,911,055	\$0	\$0.0000
	0.2%	4,180,368	0.000%	0.000%	1.00	\$3,822,110	\$0	\$0.0000
	0.3%	6,270,552	0.000%	0.000%	1.00	\$5,733,165	\$0	\$0.0000
	0.4%	8,360,736	1.514%	1.893%	1.00	\$7,644,220	\$144,705	\$0.0173
	0.5%	10,450,920	2.272%	2.839%	1.00	\$9,555,275	\$271,322	\$0.0260
	0.6%	12,541,104	3.029%	3.786%	1.00	\$11,466,329	\$434,115	\$0.0346
	0.7%	14,631,288	3.786%	4.732%	1.00	\$13,377,384	\$633,085	\$0.0433
	0.8%	16,721,472	4.543%	5.679%	1.00	\$15,288,439	\$868,230	\$0.0519
	0.9%	18,811,656	5.300%	6.625%	1.00	\$17,199,494	\$1,139,552	\$0.0606
	1.0%	20,901,840	6.058%	7.572%	1.00	\$19,110,549	\$1,447,050	\$0.0692
	1.1%	22,992,024	6.815%	8.518%	1.05	\$20,020,575	\$1,705,452	\$0.0742
	1.2%	25,082,208	7.572%	9.465%	1.10	\$20,847,872	\$1,973,251	\$0.0787
	1.3%	27,172,392	8.329%	10.411%	1.15	\$21,603,229	\$2,249,220	\$0.0828
	1.4%	29,262,576	9.086%	11.358%	1.20	\$22,295,641	\$2,532,338	\$0.0865
	1.5%	31,352,760	9.844%	12.304%	1.25	\$22,932,659	\$2,821,748	\$0.0900
	1.6%	33,442,944	10.601%	13.251%	1.30	\$23,520,676	\$3,116,724	\$0.0932
	1.7%	35,533,128	11.358%	14.197%	1.35	\$24,065,136	\$3,416,647	\$0.0962
	1.8%	37,623,313	12.115%	15.144%	1.40	\$24,570,706	\$3,720,987	\$0.0989
	1.9%	39,713,497	12.872%	16.090%	1.45	\$25,041,409	\$4,029,287	\$0.1015
	2.0%	41,803,681	13.630%	17.037%	1.50	\$25,480,732	\$4,341,151	\$0.1038
	2.1%	43,893,865	14.387%	17.983%	1.55	\$25,891,712	\$4,656,235	\$0.1061
	2.2%	45,984,049	15.144%	18.930%	1.60	\$26,277,005	\$4,974,236	\$0.1082
	2.3%	48,074,233	15.901%	19.876%	1.65	\$26,638,947	\$5,294,889	\$0.1101
	2.4%	50,164,417	16.658%	20.823%	1.70	\$26,979,599	\$5,617,961	\$0.1120
	2.5%	52,254,601	17.416%	21.769%	1.75	\$27,300,784	\$5,878,643	\$0.1125
	2.6%	54,344,785	18.173%	22.716%	1.80	\$27,604,127	\$6,113,788	\$0.1125
	2.7%	56,434,969	18.930%	23.662%	1.85	\$27,891,072	\$6,348,934	\$0.1125
	2.8%	58,525,153	19.687%	24.609%	1.90	\$28,162,914	\$6,584,080	\$0.1125
	2.9%	60,615,337	20.444%	25.555%	1.95	\$28,420,817	\$6,819,225	\$0.1125
	3.0%	62,705,521	21.202%	26.502%	2.00	\$28,665,824	\$7,054,371	\$0.1125

Table 2 - B
2010 INCENTIVE MECHANISM - POST-YEAR INCENTIVE CALCULATION FIGURES
Financial Incentive Project
Otter Tail Power Company

Actual CIP Results for 2010

Spending:	\$5,030,119	From Utility Status Report
Energy Saved:	33,109,206	From Utility Status Report
Net Benefits Achieved:	\$29,837,612	From Utility Status Report

158% percent of the 1% goal achieved

Resulting Incentive:

Steps above Zero Point:	13.84033
Percent of Net Benefits Awarded:	10.47973% Linear
Percent of Net Benefits Awarded:	13.09967% Non-Linear

Financial Incentive Award:	\$3,126,902	Linear
	\$3,908,628	Non-Linear

OTP INPUTS INDICATED IN YELLOW

CALCULATED FINANCIAL INCENTIVE AWARD IN GREEN

Table 3
2010 PROJECT COSTS, SAVINGS, AND BENEFITS
Financial Incentive Project
Otter Tail Power Company

	2010 PROPOSED SAVINGS, COSTS AND BENEFITS				2010 ACTUAL SAVINGS, COSTS AND BENEFITS			
	ENERGY SAVINGS	TOTAL COSTS	TOTAL BENEFITS	NET BENEFITS	ENERGY SAVINGS	TOTAL COSTS	TOTAL BENEFITS	NET BENEFITS
Residential								
Hotpacks	310,460	\$30,000	\$252,117	\$222,117	141,259	\$11,286	\$114,713	\$103,427
Residential Demand Control	50,814	\$97,800	\$1,075,817	\$978,017	4,782	\$16,105	\$101,253	\$85,148
Air Source Heat Pumps - Residential	434,569	\$137,000	\$490,208	\$353,208	464,368	\$139,879	\$523,823	\$383,944
Geothermal Heat Pumps - Residential	361,200	\$77,000	\$852,359	\$775,359	674,240	\$147,770	\$1,591,071	\$1,443,301
Home Insulation - Pilot 2010	967,500	\$127,500	\$1,093,713	\$966,213	38,700	\$11,055	\$43,749	\$32,693
Air Conditioning Control	36,848	\$83,000	\$1,418,553	\$1,335,553	4,100	\$63,601	\$157,826	\$94,225
Advertising & Education - Residential	191,194	\$224,000	\$27,676	(\$196,324)	703,682	\$260,683	\$52,894	(\$207,789)
Change A Light	1,181,381	\$127,700	\$1,064,008	\$936,308	1,043,928	\$73,897	\$862,539	\$788,642
Appliance Recycling (NEW)	372,971	\$95,500	\$214,195	\$118,695	299,750	\$74,657	\$172,145	\$97,488
Implementation & Training - Residential	0	\$40,000	\$0	(\$40,000)	0	\$70,621	\$0	(\$70,621)
Financing - Residential	0	\$12,200	\$0	(\$12,200)	0	\$12,508	\$0	(\$12,508)
Total - Residential	3,906,937	\$1,051,700	\$6,488,648	\$5,436,948	3,374,809	\$882,063	\$3,620,013	\$2,737,950
Commercial								
Grant	4,515,000	\$440,000	\$5,765,055	\$5,325,055	2,681,844	\$358,087	\$3,722,249	\$3,364,162
Motors	523,646	\$184,000	\$551,112	\$367,112	745,066	\$245,254	\$749,554	\$504,299
Redirect (NEW)	698,750	\$73,000	\$321,110	\$248,110	0	\$1,718	\$0	(\$1,718)
Lighting	1,982,779	\$285,000	\$1,897,369	\$1,612,369	11,352,309	\$1,077,509	\$11,338,433	\$10,260,924
Implementation & Training - Commercial	416,885	\$98,000	\$53,283	(\$44,717)	166,754	\$94,805	\$11,107	(\$83,698)
Cooking	127,539	\$51,800	\$126,854	\$75,054	107,343	\$35,716	\$106,767	\$71,051
Commercial Refrigeration	1,658,516	\$169,200	\$1,037,413	\$868,213	683,930	\$75,832	\$381,300	\$305,468
Air Source Heat Pumps - Commercial	152,129	\$68,000	\$186,105	\$118,105	232,342	\$52,642	\$284,232	\$231,591
Geothermal Heat Pumps - Commercial	350,719	\$76,000	\$785,840	\$709,840	2,117,119	\$418,342	\$2,830,952	\$2,412,610
Adj Speed Drives (NEW)	2,700,937	\$153,000	\$2,702,805	\$2,549,805	5,273,272	\$449,395	\$5,391,267	\$4,941,872
Lighting - New Construction (NEW)	614,824	\$87,500	\$626,749	\$539,249	694,223	\$33,678	\$716,830	\$683,152
Plan Review	994,701	\$76,000	\$1,229,988	\$1,153,988	3,050,826	\$159,029	\$3,749,892	\$3,590,863
Advertising & Education - Commercial	0	\$10,000	\$0	(\$10,000)	0	\$2,555	\$0	(\$2,555)
Financing - Commercial	0	\$32,000	\$0	(\$32,000)	0	\$12,508	\$0	(\$12,508)
Compressed Air Audits	0	\$20,000	\$0	(\$20,000)	0	\$9,853	\$0	(\$9,853)
Total - Commercial	14,736,425	\$1,823,500	\$15,283,683	\$13,460,183	27,105,028	\$3,026,924	\$29,282,583	\$26,255,659
On For Conservation								
Town Energy Challenge - (NEW PILOT FOR 2010)	780,977	\$282,000	\$606,667	\$324,667	754,421	\$228,234	\$630,240	\$402,006
Campus Energy Challenge - (NEW PILOT FOR 2010)	1,468,758	\$269,600	\$900,556	\$630,956	1,334,809	\$169,821	\$910,133	\$740,312
Total - On For Conservation	2,249,735	\$551,600	\$1,507,222	\$955,622	2,089,230	\$398,055	\$1,540,373	\$1,142,318
Low-Income								
House Therapy	343,241	\$170,500	\$309,127	\$138,627	540,138	\$173,425	\$424,763	\$251,338
Program Development & Regulatory Requirements								
Program Development / Inactive Programs	0	\$500,000	\$0	(\$500,000)	0	\$458,048	\$0	(\$458,048)
PUC Assessments	0	\$75,000	\$0	(\$75,000)	0	\$3,610	\$0	(\$3,610)
Regulatory Assessments (NEW)	0	\$0	\$0	\$0	0	\$87,994	\$0	(\$87,994)
Total - Development & Regulatory Requirements	0	\$575,000	\$0	(\$575,000)	0	\$549,652	\$0	(\$549,652)
Total - All CIP	21,236,338	\$4,172,300	\$23,588,680	\$19,416,380	33,109,206	\$5,030,119	\$34,867,731	\$29,837,612

All numbers are for a single year - 2010. DSMORE software was used for the analysis, with figures discounted to 2010

TABLE 4
2010 BENEFIT COST RATIOS - DIRECT IMPACT & TOTAL CIP
Financial Incentive Project
Otter Tail Power Company

	AS FILED - 2010 PROPOSED BENEFIT/COST RATIOS					ACTUAL - 2010 BENEFIT/COST RATIOS				
	Utility 8.00%	Ratepayer 8.00%	Participant 8.00%	Total Resource 4.37%	Societal 4.37%	Utility 8.00%	Ratepayer 8.00%	Participant 8.00%	Total Resource 4.37%	Societal 4.37%
Residential										
Hotpacks	8.40	1.11	inf.	21.16	22.78	10.16	1.14	inf.	18.95	20.40
Residential Demand Control	11.00	1.70	6.21	11.06	11.42	6.29	1.52	5.99	6.24	6.45
Air Source Heat Pumps - Residential	3.58	1.00	1.78	2.16	2.31	3.74	1.01	1.74	2.12	2.27
Geothermal Heat Pumps - Residential	11.07	2.31	1.98	5.64	5.82	10.77	2.30	2.03	5.86	6.06
Home Insulation (New 2010)	8.58	1.17	1.94	2.72	2.91	3.96	1.01	1.91	2.06	2.21
Air Conditioning Control	17.09	12.38	inf.	29.16	29.22	2.48	2.35	inf.	3.16	3.16
Advertising & Education - Residential	0.12	0.11	inf.	0.13	0.14	0.20	0.16	inf.	0.20	0.23
Change A Light	8.33	1.27	inf.	13.10	13.96	11.67	1.25	11.96	10.19	10.90
Appliance Recycling (NEW)	2.24	0.77	inf.	3.28	3.56	2.31	0.78	inf.	3.42	3.71
Implementation & Training - Residential	inf.	inf.	inf.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Financing - Residential	inf.	inf.	inf.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total - Residential	6.17	1.55	3.58	4.94	5.16	4.10	1.29	3.19	3.49	3.67
Commercial										
Grant	13.10	1.78	1.30	2.91	3.07	10.39	1.55	1.12	2.18	2.29
Motors	3.00	1.13	3.58	3.54	3.75	3.06	1.10	3.32	3.92	4.17
Redirect (NEW)	4.40	1.00	24.90	4.18	4.51	inf.	inf.	inf.	inf.	inf.
Lighting	6.66	1.22	1.23	1.79	1.91	10.52	1.34	1.24	2.00	2.13
Implementation & Training - Commercial	0.54	0.32	inf.	0.73	0.83	0.12	0.10	inf.	0.12	0.13
Cooking	2.45	0.95	2.14	1.96	2.08	2.99	1.03	2.30	2.54	2.70
Commercial Refrigeration	6.13	1.13	2.59	3.07	3.29	5.03	1.06	6.56	6.08	6.53
Air Source Heat Pumps - Commercial	2.74	1.01	1.49	1.85	1.96	5.40	1.24	1.22	1.89	2.00
Geothermal Heat Pumps - Commercial	10.34	2.28	1.86	5.18	5.35	6.77	1.39	1.36	2.37	2.51
Adj Speed Drives (NEW)	17.67	1.60	4.45	8.31	8.83	12.00	1.38	1.22	2.14	2.28
Lighting - New Construction (NEW)	7.16	1.25	3.16	3.82	4.07	21.28	1.44	2.42	4.12	4.38
Plan Review	16.18	1.46	2.74	4.85	5.15	23.58	1.51	6.13	10.90	11.57
Advertising & Education - Commercial	inf.	inf.	inf.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Financing - Commercial	inf.	inf.	inf.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressed Air Audits	inf.	inf.	inf.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total - Commercial	8.38	1.47	1.87	3.21	3.40	9.67	1.37	1.44	2.42	2.57
On For Conservation										
Town Energy Challenge - (NEW PILOT FOR 2010)	2.15	0.88	3.08	2.09	2.23	2.76	1.16	3.29	3.00	3.14
Campus Energy Challenge - (NEW PILOT FOR 2010)	3.34	1.06	2.08	2.08	2.22	5.36	1.21	4.67	4.76	5.09
Total - On For Conservation	2.73	0.98	2.42	2.09	2.23	3.87	1.19	4.04	3.81	4.04
Low-Income										
House Therapy	1.81	0.80	inf.	2.13	2.27	2.45	0.87	inf.	2.84	3.05
Program Development & Regulatory Requirements										
Program Development	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PUC Assessments	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Regulatory Assessments (NEW)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total - Development & Regulatory Requirements	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total - All CIP	5.65	1.38	2.20	3.19	3.37	6.93	1.32	1.58	2.46	2.62

All numbers are for a single year - 2010. DSMORE software was used for the analysis, with figures discounted to 2010

Appendix A - Tables

Table 5 - A
2011 INCENTIVE MECHANISM - PROPOSED INCENTIVE CALCULATION FIGURES
Financial Incentive Project
Otter Tail Power Company

3-year Weather-Normalized Sales Average:	2,142,354,181	
1.0% of Sales:	21,423,542	From Utility's Tri/Biennial filing
For CIP Budget, Energy Goal, and Estimated Benefits, include only those modifications that were required by the Commissioner's Order or which the utility notified the OES that it planned to include in the incentive calculation upon approval. Include a summary of the modifications below.		
Approved CIP Budget:	\$3,451,895	From Commissioner's Order approving Tri/Biennial Filing
Approved CIP Energy Goal:	24,505,704	From Commissioner's Order approving Tri/Biennial Filing
Estimated Net Benefits at Approved Goal:	\$14,401,918	From Utility Tri/Biennial Filing.
Modifications:		
Budget	None	
Energy	None	
Net Benefits	None	
Include the budget and energy goal changes for each modification included.		
A single entry for net benefits reflecting the combined impact of all included modifications is sufficient.		
OTP INPUTS INDICATED IN YELLOW		

OTTER TAIL POWER COMPANY		
for 2011		
Inputs:		
Average Sales:	2,142,354,181	
1.0% Energy Savings:	21,423,542	
Historic Average Savings:	0.73%	2004-2008
Earning Threshold:	0.30%	plus one unit of energy
Earning Threshold in Energy Savings:	6,427,064	
Award zero point:	0.20%	
Award zero point in Energy Savings:	4,284,708	
Steps from zero point to 1.5%	13	
Size of steps in Energy Savings:	2,142,354	
Incentive Calibration:		
Average Incentive per unit at 1.5%:	\$0.09	Set by Commission in approval of incentive mechanism & calibration
Incentive Cap:	\$0.113	125% of incentive per kwh
Energy savings at 1.5%:	32,135,313	
Targeted incentive at 1.5%:	\$2,892,178	
Multiplier:	0.01178	Percent of Net Benefits received for every 0.1% of sales saved
Multiplier (non-linear):	0.01473	

Table 5 - A
2011 INCENTIVE MECHANISM - PROPOSED INCENTIVE CALCULATION FIGURES
Financial Incentive Project
Otter Tail Power Company

Estimated Incentive Levels:	Achievement Level (% of sales)	Energy Saved	Percent of Benefits Awarded - Linear	Percent of Benefits Awarded - Non-linear	Non-linear Correction Factor (value of 1 = no correction)	Adjusted Net Benefits - Non-linear	Incentive Award- Non-linear Proposal, \$0.11/kWh Cap	Average Incentive per unit Saved
	0.0%	0	0.000%	0.000%	1.00	\$0	\$0	\$0.0000
	0.1%	2,142,354	0.000%	0.000%	1.00	\$1,259,054	\$0	\$0.0000
	0.2%	4,284,708	0.000%	0.000%	1.00	\$2,518,108	\$0	\$0.0000
	0.3%	6,427,063	0.000%	0.000%	1.00	\$3,777,163	\$0	\$0.0000
	0.4%	8,569,417	2.356%	2.945%	1.00	\$5,036,217	\$148,317	\$0.0173
	0.5%	10,711,771	3.534%	4.418%	1.00	\$6,295,271	\$278,094	\$0.0260
	0.6%	12,854,125	4.712%	5.890%	1.00	\$7,554,325	\$444,950	\$0.0346
	0.7%	14,996,479	5.890%	7.363%	1.00	\$8,813,379	\$648,886	\$0.0433
	0.8%	17,138,833	7.068%	8.835%	1.00	\$10,072,434	\$889,901	\$0.0519
	0.9%	19,281,188	8.246%	10.308%	1.00	\$11,331,488	\$1,167,995	\$0.0606
	1.0%	21,423,542	9.424%	11.780%	1.00	\$12,590,542	\$1,483,168	\$0.0692
	1.1%	23,565,896	10.602%	13.253%	1.05	\$13,190,092	\$1,748,020	\$0.0742
	1.2%	25,708,250	11.780%	14.725%	1.10	\$13,735,137	\$2,022,502	\$0.0787
	1.3%	27,850,604	12.958%	16.198%	1.15	\$14,232,787	\$2,305,359	\$0.0828
	1.4%	29,992,959	14.136%	17.670%	1.20	\$14,688,966	\$2,595,544	\$0.0865
	1.5%	32,135,313	15.314%	19.143%	1.25	\$15,108,650	\$2,892,178	\$0.0900
	1.6%	34,277,667	16.492%	20.615%	1.30	\$15,496,052	\$3,194,516	\$0.0932
	1.7%	36,420,021	17.670%	22.088%	1.35	\$15,854,757	\$3,501,925	\$0.0962
	1.8%	38,562,375	18.848%	23.560%	1.40	\$16,187,840	\$3,813,861	\$0.0989
	1.9%	40,704,729	20.026%	25.033%	1.45	\$16,497,952	\$4,129,856	\$0.1015
	2.0%	42,847,084	21.204%	26.505%	1.50	\$16,787,389	\$4,449,505	\$0.1038
	2.1%	44,989,438	22.382%	27.978%	1.55	\$17,058,154	\$4,772,453	\$0.1061
	2.2%	47,131,792	23.560%	29.450%	1.60	\$17,311,995	\$5,098,391	\$0.1082
	2.3%	49,274,146	24.738%	30.923%	1.65	\$17,550,452	\$5,427,048	\$0.1101
	2.4%	51,416,500	25.916%	32.395%	1.70	\$17,774,883	\$5,758,183	\$0.1120
	2.5%	53,558,855	27.094%	33.868%	1.75	\$17,986,489	\$6,025,371	\$0.1125
	2.6%	55,701,209	28.272%	35.340%	1.80	\$18,186,338	\$6,266,386	\$0.1125
	2.7%	57,843,563	29.450%	36.813%	1.85	\$18,375,386	\$6,507,401	\$0.1125
	2.8%	59,985,917	30.628%	38.285%	1.90	\$18,554,483	\$6,748,416	\$0.1125
	2.9%	62,128,271	31.806%	39.758%	1.95	\$18,724,396	\$6,989,431	\$0.1125
	3.0%	64,270,625	32.984%	41.230%	2.00	\$18,885,813	\$7,230,445	\$0.1125

Table 5 - B
2011 PROJECT COSTS, SAVINGS, AND BENEFITS
Financial Incentive Project
Otter Tail Power Company

	2011 PROPOSED SAVINGS, COSTS AND BENEFITS			
	ENERGY SAVINGS	TOTAL COSTS	TOTAL BENEFITS	NET BENEFITS
Residential				
Air Conditioning Control	3,660	\$37,500	\$132,365	\$94,865
Air Source Heat Pumps	1,215,825	\$113,000	\$1,057,090	\$944,090
Appliance Recycling	294,013	\$77,000	\$153,914	\$76,914
Change A Light	1,181,381	\$90,000	\$854,455	\$764,455
Energy Feedback Program (New)	6,884,246	\$397,500	\$483,181	\$85,681
Geothermal Heat Pumps	296,979	\$64,000	\$454,800	\$390,800
Home Insulation	430,000	\$66,000	\$444,608	\$378,608
Residential Demand Control	14,945	\$29,000	\$262,664	\$233,664
Advertising & Education	0	\$146,500	\$0	(\$146,500)
Financing	0	\$13,000	\$0	(\$13,000)
Implementation & Training	0	\$40,000	\$0	(\$40,000)
Total - Residential	10,321,049	\$1,073,500	\$3,843,077	\$2,769,577
Commercial				
Adjustable Speed Drives	2,187,625	\$151,000	\$2,007,101	\$1,856,101
Air Source Heat Pumps	712,725	\$63,000	\$693,936	\$630,936
Business Education	104,221	\$11,000	\$15,436	\$4,436
Geothermal Heat Pumps	831,351	\$163,000	\$1,034,620	\$871,620
Grant	5,643,750	\$540,000	\$5,775,482	\$5,235,482
Lighting	2,138,116	\$285,000	\$2,032,634	\$1,747,634
Lighting - New Construction	191,689	\$31,395	\$191,627	\$160,232
Motors	182,115	\$61,000	\$185,392	\$124,392
Plan Review	1,371,917	\$106,000	\$1,587,792	\$1,481,792
Refrigeration	453,846	\$65,000	\$224,088	\$159,088
Advertising & Education	0	\$25,000	\$0	(\$25,000)
Compressed Air Audits	0	\$20,000	\$0	(\$20,000)
Financing	0	\$32,000	\$0	(\$32,000)
Implementation & Training	0	\$60,000	\$0	(\$60,000)
Total - Commercial	13,817,356	\$1,613,395	\$13,748,107	\$12,134,712
Low-Income				
House Therapy	367,300	\$150,000	\$262,629	\$112,629
Program Development And Regulatory Requirements				
Program Development	0	\$500,000	\$0	(\$500,000)
PUC Assessments	0	\$90,000	\$0	(\$90,000)
Regulatory Other	0	\$25,000	\$0	(\$25,000)
Total - Development & Regulatory Requirements	0	\$615,000	\$0	(\$615,000)
Total - All CIP	24,505,704	\$3,451,895	\$17,853,813	\$14,401,918

All numbers are for a single year - 2010. DSMORE software was used for the analysis, with figures discounted to 2010

Table 5 - C
2011 BENEFIT COST RATIOS - DIRECT IMPACT & TOTAL CIP
Financial Incentive Project
Otter Tail Power Company

	AS FILED - 2011 PROPOSED BENEFIT/COST RATIOS				
	Utility Test	TRC Test	RIM Test	Societal Test	Participant Test
Residential					
Air Conditioning Control	3.53	4.49	3.24	4.50	inf.
Air Source Heat Pumps	9.35	5.38	1.05	5.59	4.74
Appliance Recycling	2.00	2.88	0.71	3.01	inf.
Change A Light	9.49	8.42	1.06	8.75	12.83
Energy Feedback Program (New)	1.22	1.22	0.49	1.29	inf.
Geothermal Heat Pumps	7.11	1.88	1.42	1.93	1.10
Home Insulation	6.74	2.38	1.02	2.47	2.09
Residential Demand Control	9.06	9.21	2.29	9.35	3.89
Advertising & Education	NA	NA	NA	NA	NA
Financing	NA	NA	NA	NA	NA
Implementation & Training	NA	NA	NA	NA	NA
Total - Residential	3.58	2.85	0.93	2.95	4.32
Commercial					
Adjustable Speed Drives	13.29	1.85	1.21	1.91	1.27
Air Source Heat Pumps	11.01	7.17	1.15	7.43	5.90
Business Education	1.40	3.15	0.56	3.31	inf.
Geothermal Heat Pumps	6.35	1.64	1.30	1.68	1.09
Grant	10.70	2.32	1.33	2.32	1.40
Lighting	7.13	2.93	1.10	3.04	2.46
Lighting - New Construction	6.10	2.11	1.08	2.19	1.77
Motors	3.04	3.05	1.02	3.15	3.35
Plan Review	14.98	7.40	1.19	7.67	5.84
Refrigeration	3.45	3.03	0.89	3.14	5.47
Advertising & Education	NA	NA	NA	NA	NA
Compressed Air Audits	NA	NA	NA	NA	NA
Financing	NA	NA	NA	NA	NA
Implementation & Training	NA	NA	NA	NA	NA
Total - Commercial	8.52	2.47	1.21	2.55	1.74
Low-Income					
House Therapy	1.75	2.04	0.71	2.11	inf.
Program Development And Regulatory Requirements					
Program Development	NA	NA	NA	NA	NA
PUC Assessments	NA	NA	NA	NA	NA
Regulatory Assessments (NEW)	NA	NA	NA	NA	NA
Total - Development & Regulatory Requirements	NA	NA	NA	NA	NA
Total - All CIP	5.17	2.36	1.08	2.42	2.06

All numbers are for a single year - 2011. DSMORE software was used for the analysis, with figures discounted to 2011.

Table 6
2010 CIP PROGRAM STATUS REPORT / CIP TRACKER RECAP
Financial Incentive Project -- 2010 Conservation Improvement Programs
Otter Tail Power Company

	2010 EXPENDITURES			2010 PARTICIPATION			2010 ENERGY SAVINGS - KWH			2010 DEMAND SAVINGS - KW		
	ACTUAL	BUDGET	% GOAL	ACTUAL	BUDGET	% GOAL	ACTUAL	BUDGET	% GOAL	ACTUAL	BUDGET	% GOAL
RESIDENTIAL PROGRAMS												
Hotpacks	\$11,286	\$30,000	38%	182	400	46%	141,259	310,460	46%	26	58	45%
Residential Demand Control	\$16,105	\$97,800	16%	8	85	9%	4,782	50,814	9%	62	664	9%
Air Source Heat Pumps - Residential	\$139,879	\$137,000	102%	187	175	107%	464,368	434,569	107%	87	81	107%
Geothermal Heat Pumps - Residential	\$147,770	\$77,000	192%	56	30	187%	674,240	361,200	187%	482	258	187%
Home Insulation - (NEW PILOT FOR 2010)	\$11,055	\$127,500	9%	9	225	4%	38,700	967,500	4%	7	180	4%
Air Conditioning Control	\$63,601	\$83,000	77%	84	755	11%	4,100	36,848	11%	81	730	11%
Advertising & Education - Residential	\$260,683	\$224,000	116%	5,587	4,950	113%	703,682	191,194	368%	254	69	368%
Change A Light	\$73,897	\$127,700	58%	16,329	20,300	80%	1,043,928	1,181,381	88%	196	257	76%
Appliance Recycling (NEW)	\$74,657	\$95,500	78%	368	450	82%	299,750	372,971	80%	56	70	80%
Implementation & Training - Residential	\$70,621	\$40,000	177%	153	175	87%	NA	NA	NA	NA	NA	NA
Financing - Residential	\$12,508	\$12,200	103%	2	7	29%	NA	NA	NA	NA	NA	NA
TOTAL - RESIDENTIAL	\$882,063	\$1,051,700	84%	22,965	27,552	83%	3,374,809	3,906,937	86%	1,251	2,367	53%
COMMERCIAL PROGRAMS												
Grant	\$358,087	\$440,000	81%	24	30	80%	2,681,844	4,515,000	59%	560	968	58%
Motors	\$245,254	\$184,000	133%	472	285	166%	745,066	523,646	142%	92	81	113%
Redirect (NEW)	\$1,718	\$73,000	2%	0	10	0%	0	698,750	0%	0	106	0%
Lighting	\$1,077,509	\$285,000	378%	431	96	449%	11,352,309	1,982,779	573%	1,715	486	353%
Implementation & Training - Commercial	\$94,805	\$98,000	97%	267	270	99%	166,754	416,885	40%	25	63	40%
Cooking	\$35,716	\$51,800	69%	12	17	71%	107,343	127,539	84%	16	19	85%
Commercial Refrigeration	\$75,832	\$169,200	45%	41	114	36%	683,930	1,658,516	41%	103	251	41%
Air Source Heat Pumps - Commercial	\$52,642	\$68,000	77%	84	55	153%	232,342	152,129	153%	35	23	153%
Geothermal Heat Pumps - Commercial	\$418,342	\$76,000	550%	210	25	840%	2,117,119	350,719	604%	320	235	136%
Adj Speed Drives (NEW)	\$449,395	\$153,000	294%	209	21	995%	5,273,272	2,700,937	195%	650	333	195%
Lighting - New Construction (NEW)	\$33,678	\$87,500	38%	39	29	134%	694,223	614,824	113%	105	150	70%
Plan Review	\$159,029	\$76,000	209%	9	11	82%	3,050,826	994,701	307%	461	150	307%
Advertising & Education - Commercial	\$2,555	\$10,000	26%	109	100	109%	NA	NA	NA	NA	NA	NA
Financing - Commercial	\$12,508	\$32,000	39%	1	5	20%	NA	NA	NA	NA	NA	NA
Compressed Air Audits	\$9,853	\$20,000	49%	1	4	25%	NA	NA	NA	NA	NA	NA
TOTAL - COMMERCIAL	\$3,026,924	\$1,823,500	166%	1,909	1,072	178%	27,105,028	14,736,425	184%	4,081	2,865	142%
On For Conservation												
Town Energy Challenge -PILOT	\$228,234	\$282,000	81%	743	1,666	45%	754,421	780,977	97%	223	229	97%
Campus Energy Challenge - PILOT	\$169,821	\$269,600	63%	4	123	3%	1,334,809	1,468,758	91%	165	240	69%
Total - On For Conservation	\$398,055	\$551,600	72%	747	1,789	42%	2,089,230	2,249,735	93%	388	469	83%
LOW INCOME												
HOUSE THERAPY	\$173,425	\$170,500	102%	251	200	126%	540,138	343,241	157%	125	107	117%

Table 6
2010 CIP PROGRAM STATUS REPORT / CIP TRACKER RECAP
Financial Incentive Project -- 2010 Conservation Improvement Programs
Otter Tail Power Company

	2010 EXPENDITURES			2010 PARTICIPATION			2010 ENERGY SAVINGS - KWH			2010 DEMAND SAVINGS - KW		
	ACTUAL	BUDGET	% GOAL	ACTUAL	BUDGET	% GOAL	ACTUAL	BUDGET	% GOAL	ACTUAL	BUDGET	% GOAL
PROG DEVELOPMENT & REGULATORY												
Program Development	\$458,048	\$500,000	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA
PUC Assessments	\$3,610	\$75,000	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA
Regulatory Assessments (NGEA)	\$87,994	\$0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total - Development & Regulatory	\$549,652	\$575,000	96%									
INACTIVE / MISCELLANEOUS PROJECTS												
Accounting Adjustments	\$13,209											
TOTAL - INACTIVE / MISCELLANEOUS	\$13,209			0			0			0		
TOTAL - 2010 CIP PROJECT COSTS	\$5,043,328	\$4,172,300	121%	25,872	30,613	85%	33,109,206	21,236,338	156%	5,845	5,808	101%
CIP TRACKER CARRYING COSTS												
TOTAL - 2010 CIP w/ CARRYING COSTS	\$5,043,328	\$4,172,300	121%	25,872	30,613	85%	33,109,206	21,236,338	156%	5,845	5,808	101%
INCENTIVES - 2008 [Bonus]												
CIP RECOVERY MECHANISM												
RECOVERED THROUGH RATES (inc cc recovery)												
PRIOR YEAR CARRY FORWARD BAL.												
TRACKER BALANCE - YEAR END 2010	\$5,043,328											

Table 7
2010 CIP PROGRAM STATUS REPORT / CIP TRACKER RECAP - COST PER KW / KWH
Financial Incentive Project -- 2010 Conservation Improvement Programs
Otter Tail Power Company

	2010 EXPENDITURES		2010 ENERGY SAVINGS		COST PER KWH		2010 coincident DEMAND SAVINGS		COST PER KW	
	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET
RESIDENTIAL PROGRAMS - DIRECT IMPACT										
Hotpacks	\$11,286	\$30,000	141,259	310,460	\$0.08	\$0.10	26	58	\$429	\$517
Residential Demand Control	\$16,105	\$97,800	4,782	50,814	\$3.37	\$1.92	62	664	\$258	\$147
Air Source Heat Pumps - Residential	\$139,879	\$137,000	464,368	434,569	\$0.30	\$0.32	87	81	\$1,616	\$1,691
Geothermal Heat Pumps - Residential	\$147,770	\$77,000	674,240	361,200	\$0.22	\$0.21	482	258	\$307	\$298
Home Insulation (New 2010)	\$11,055	\$127,500	38,700	967,500	\$0.29	\$0.13	7	180	\$1,532	\$708
Air Conditioning Control	\$63,601	\$83,000	4,100	36,848	\$15.51	\$2.25	81	730	\$785	\$114
Advertising & Education - Residential	\$260,683	\$224,000	703,682	191,194	\$0.37	\$1.17	254	69	\$1,026	\$3,246
Change A Light	\$73,897	\$127,700	1,043,928	1,181,381	\$0.07	\$0.11	196	257	\$377	\$497
Appliance Recycling	\$74,657	\$95,500	299,750	372,971	\$0.25	\$0.26	56	70	\$1,336	\$1,364
TOTAL - RESIDENTIAL	\$798,934	\$999,500	3,374,809	3,906,937	\$0.24	\$0.26	1,251	2,367	\$639	\$422
COMMERCIAL PROGRAMS - DIRECT IMPACT										
Grant	\$358,087	\$440,000	2,681,844	4,515,000	\$0.13	\$0.10	560	968	\$640	\$455
Motors	\$245,254	\$184,000	745,066	523,646	\$0.33	\$0.35	92	81	\$2,670	\$2,272
Redirect	\$1,718	\$73,000	0	698,750	NA	\$0.10	0	106	NA	\$689
Lighting	\$1,077,509	\$285,000	11,352,309	1,982,779	\$0.09	\$0.14	1,715	486	\$628	\$586
Implementation & Training - Commercial	\$94,805	\$98,000	166,754	416,885	\$0.57	\$0.24	25	63	\$3,764	\$1,556
Cooking	\$35,716	\$51,800	107,343	127,539	\$0.33	\$0.41	16	19	\$2,203	\$2,726
Commercial Refrigeration	\$75,832	\$169,200	683,930	1,658,516	\$0.11	\$0.10	103	251	\$734	\$674
Air Source Heat Pumps - Commercial	\$52,642	\$68,000	232,342	152,129	\$0.23	\$0.45	35	23	\$1,500	\$2,957
Geothermal Heat Pumps - Commercial	\$418,342	\$76,000	2,117,119	350,719	\$0.20	\$0.22	320	235	\$1,308	\$323
Adj Speed Drives	\$449,395	\$153,000	5,273,272	2,700,937	\$0.09	\$0.06	650	333	\$691	\$459
Lighting - New Construction	\$33,678	\$87,500	694,223	614,824	\$0.05	\$0.14	105	150	\$321	\$583
Plan Review	\$159,029	\$76,000	3,050,826	994,701	\$0.05	\$0.08	461	150	\$345	\$507
TOTAL - COMMERCIAL	\$3,002,008	\$1,761,500	27,105,028	14,736,425	\$0.11	\$0.12	4,081	2,865	\$736	\$615
LOW INCOME										
HOUSE THERAPY	\$173,425	\$170,500	540,138	343,241	\$0.32	\$0.50	125	107	\$1,390	\$1,593
ON FOR CONSERVATION										
Town Energy Challenge - (NEW PILOT FOR 2010)	\$228,234	\$282,000	754,421	780,977	\$0.30	\$0.36	223	229	\$1,023	\$1,231
Secondary Educ. Campus Energy Challenge - (NEW PILOT FOR 2010)	\$169,821	\$269,600	1,334,809	1,468,758	\$0.13	\$0.18	165	240	\$1,032	\$1,123
TOTAL - ON FOR CONSERVATION	\$398,055	\$551,600	2,089,230	2,249,735	\$0.19	\$0.25	388	469	\$1,027	\$1,176
TOTAL - DIRECT IMPACT	\$4,372,422	\$3,483,100	33,109,206	21,236,338	\$0.13	\$0.16	5,845	5,808	\$748	\$600
TOTAL - INDIRECT IMPACT	\$657,697	\$689,200								
TOTAL - 2010 CIP PROJECT COSTS	\$5,030,119	\$4,172,300	33,109,206	21,236,338	\$0.15	\$0.20	5,845	5,808	\$861	\$718

Appendix B: Integral Analytics' Bill Analyzer Impact Analysis



312 Walnut Street, Suite 1600 Cincinnati Ohio 45202

Final Memorandum

To: Otter Tail Power Company

From: Michael Ozog, Integral Analytics

Date: February 24, 2011

RE: Impact evaluation results for the Bill Analyzer Program

This memo presents the results from the billing analysis of Otter Tail Power Company's (OTPCo's) Bill Analyzer energy efficiency program. The analysis was revised to better capture the differences between the control group and the participant (user) group as well as clarifying the discussion of the analysis. As before, this analysis relied upon a statistical analysis of actual customer billed electricity consumption before and after participation in the program to estimate the impact of the program. Table 1 presents the results of this billing analysis. This table shows that the Bill Analyzer saves 296 kWh/year per participant overall. While there is some indication that there are differences in savings depending upon which Bill Analyzer tool is used or the level achieved, with the highest savings occurring in for those customers who used HEC or CSR, not all the results are statistically significant, so the average savings of 296 kWh/year per participant is the best measure of total program impacts.

Table 1: Average Annual Savings: Overall and by tool or level achieved (savings are donated by a negative value)

Participation Level	Savings (kWh/year)	t-value
Overall (across all users)	-296	3.08
Used Home Energy Center	-434	2.11
Used the dashboard	-151	0.93
Used the Bill History or Bill Analysis	-278	1.44
Used CSR	-412	2.83
Reached Level 1	42	-0.23
Completed Level 2	231	-1.23
Completed Level 3	-314	1.15

For this impact evaluation, data are available both across households (i.e., cross-sectional) and over time (i.e., time-series). With this type of data, known as “panel” data, it becomes possible to control, simultaneously, for differences across households as well as differences across periods in time through the use of a “fixed-effects” panel model specification. The fixed-effect refers to the model specification aspect that differences across homes that do not vary over the estimation period (such as square footage, heating system, etc.) can be explained, in large part, by customer-specific intercept terms that capture the net change in consumption due to the program, controlling for other factors that do change with time (e.g., the weather).

Because the consumption data in the panel model includes months before and after the installation of measures through the program, the period of program participation (or the participation window) may be defined specifically for each customer. This feature of the panel model allows for the pre-installation months of consumption to effectively act as controls for post-participation months. In addition, this model specification, unlike annual pre/post-participation models such as annual change models, does not require a full year of post-participation data. Effectively, the participant becomes their own control group, thus eliminating the need for a non-participant group. However, a non-participant control group was included in the analysis to be consistent with the policy in Minnesota.¹ We know the exact month of participation in the program for each participant, and are able to construct customer specific models that measure the change in usage consumption immediately before and after the date of program participation, controlling for weather and customer characteristics.

The fixed effects model can be viewed as a type of differencing model in which all characteristics of the home, which (1) are independent of time and (2) determine the level of energy consumption, are captured within the customer-specific constant terms. In other words, differences in customer characteristics that cause variation in the level of energy consumption, such as building size and structure, are captured by constant terms representing each unique household.

Algebraically, the fixed-effect panel data model is described as follows:

$$y_{it} = \alpha_i + \beta x_{it} + \varepsilon_{it},$$

where:

y_{it} = energy consumption for home i during month t

α_i = constant term for site i

¹ The models were also estimated without the non-participant control group, and the resulting savings are nearly identical to the results found when the model is estimated with both participants and non-participants. This reaffirms that a control group is generally not needed for a panel data model. The estimation results for these participant only model are presented in Appendix B.

β = vector of coefficients

x = vector of variables that represent factors causing changes in energy consumption for home i during month t (i.e., weather and participation)

ε = error term for home i during month t .

With this specification, the only information necessary for estimation is those factors that vary month to month for each customer, and that will affect energy use, which effectively are weather conditions and program participation. Other non-measurable factors can be captured through the use of monthly indicator variables (e.g., to capture the effect of potentially seasonal energy loads).

Data

The statistical model used to determine the impact of Bill Analyzer incorporates monthly billing data from Jan. 1, 2008 to Dec. 2010 from participants in Minnesota, a control group of non-participating OTPC residential customers also in Minnesota, weather data (average monthly temperature) for the same period, and information about each participant's use of Bill Analyzer (login date and tool used). Table 2 presents the number of households in the participant and non-participant group included in the model.

Table 2: Sample used for estimation.

	Participants	Non-participants
Original Sample size	1,677	1,700
Eliminated due to excessive missing or zero reads	3	3
Estimation Sample	1,674	1,693
Total Sample Size	3,367	

The number of participants that used the Home Energy Center (HEC), the dashboard (IBC), CSR, or bill history or bill analysis (CCSS) tools or have completed Level 1, Level 2, or Level 3 are presented in Table 3. Since a customer can log in multiple times and use different combinations of the Bill Analyzer each time, the total across the different tools/levels will be greater than the number of individual users.

Table 3: Bill Analyzer featured used.

	HEC	IBC	CSR	CCSS	Completed		
					Level 1	Level 2	Level 3
Number	465	1,395	687	326	739	304	72
% of total	28%	83%	41%	19%	44%	18%	4%

Finally, table 4 presents that average annual kWh usage for both the participants and non-participants for 2008, 2009, and 2010.

Table 4: Average annual electricity usage (kWh), by year and group.

Year	Participants	Non-participants
2008	16,908	13,267
2009	17,309	13,628
2010	16,330	12,929

Estimation

In order to capture the effect of the program, two different models were estimated. The first relied upon a variable which is equal to one for all months after the customer first logged into the Bill Analyzer website. Thus the coefficient on this variable is the savings associated with any general interaction with the website. The second model was designed to determine if there is any savings associated with going deeper in the tools available on the website, additional models were estimated that determined the savings from using various features on the site, as well as the highest level achieved by the customer.² Finally, in order to account for differences in billing days, each usage value was normalized by the number of days in the billing cycle.

In addition, the data presented in Table 4 indicates that the non-participant group has, on average, a significantly lower consumption than the participant group. In order to account for this difference in the regression model used to determine program impacts, the dependent variable was the natural log of usage. In this approach, the coefficient on the participation variables is the savings as expressed as a percentage of usage. This is in contrast to a model that has the non-log form of usage as the dependent variable, where the coefficient on the participant variable represents the kWh savings.

The estimated models are presented in Tables 5 and 6.³

² The features used by the customer and the levels (1, 2, and 3) achieved were defined in the dataset obtained from Aclara.

³ The models include weather terms and monthly indicator terms in addition to the variables presented in these tables. These variables were not included in order make interpretation clearer. The full models are included in Appendix A.

Table 5: Estimated Overall Savings – dependent variable is the natural log of daily kWh usage, Jan. 2008 through Nov. 2010 (savings are negative).

Independent Variable	Coefficient (% of Usage)	t-value
Logged into the Bill Analyzer website	-1.71%	-3.075
Sample Size	114,459 obs (3,367 homes)	
R-Squared	77%	

Table 6: Estimated Savings by feature used – dependent variable is natural log of daily kWh usage, Jan. 2008 through Nov. 2010 (savings are negative).

Independent Variable	Coefficient (% of Usage)	t-value
Used Home Energy Center	-2.78%	-2.11
Used the dashboard	-0.91%	-0.93
Used the Bill History or Bill Analysis	-1.59%	-1.44
Used CSR	-2.73%	-2.82
Completed Level 1	2.57%	0.23
Completed Level 2	1.48%	1.23
Completed Level 3	-2.03%	-1.15
Sample Size	114,459 obs (3,367 homes)	
R-Squared	77%	

In order to get the average annual kWh savings associated with the Bill Analyzer, the % savings shown in Tables 5 and 6 are multiplied by the average annual usage during 2009 (the pre-participation period) for the associated participant group. These values and the results are presented in Table 7 (the average annual usage is different because it is based on the actual usage for that customer segment).

Table 7: Estimated kWh savings, overall and by feature used – (savings are negative).

Bill Analyzer Component	Average Annual Usage (kWh)	Savings (% of usage)	Annual kWh Savings (per participant)
Overall	17,309	-1.71%	-296
Used Home Energy Center	15,635	-2.78%	-434
Used the dashboard	16,604	-0.91%	-151
Used the Bill History or Bill Analysis	17,531	-1.59%	-278
Used CSR	15,080	-2.73%	-412
Completed Level 1	16,175	2.57%	42
Completed Level 2	15,672	1.48%	231
Completed Level 3	15,478	-2.03%	-314

These results show that the Bill Analyzer program does induce energy conservation by participants, with a statistically significant average annual savings of 296 kWh. Customers who used CSR or HEC achieved the highest savings level of 412 kWh and 434 kWh respectively. Customer who used the bill history or bill analysis tools achieved some savings (278 kWh), but the results are not statistically significant.

As one would expect, the higher the level the customer achieves, there is an indication that the level of savings also increase. Customers who reach level 1 show no statistical significant change in usage (the increase is not statistically significant). Customers who go on and reached level 2 appear to actually increase their usage by 231 kWh/year, but this result is also not statistically significant. Getting to level 3 results in an a savings of savings of 314 kWh/year , however, as before, these results are not statistically significant. Because none of these results are statistically significant, it is not possible to make definitive statements about how the savings increase from one level to the next.

Based on the estimated results and their statistical significance, the most appropriate savings estimate for the Bill Analyzer program is the overall estimate of 296 kWh/year per participant.

As an aside, if the identical models are estimated over just the participant group (i.e., there is no non-participant group, the estimated impacts are statistically identical to the results found by using both groups, which is consistent with the discussion on the panel model. Table 8 presents a comparison of these results with those discussed before. The detailed model results using participants only is presented in Appendix B.

Table 8: Saving estimates using participants and non-participants compared to using participants only.

Bill Analyzer Component	Participants and Non-Participants		Participants only	
	Savings (% of usage)	t-value	Savings (% of usage)	t-value
Overall	-1.71%	-3.075	-1.70%	-2.27
Used Home Energy Center	-2.78%	-2.11	-2.78%	-2.23
Used the dashboard	-0.91%	-0.93	-1.25%	-1.18
Used the Bill History or Bill Analysis	-1.59%	-1.44	-1.49%	-1.44
Used CSR	-2.73%	-2.82	-3.08%	-3.09
Completed Level 1	2.57%	0.23	0.12%	0.12
Completed Level 2	1.48%	1.23	1.41%	1.25
Completed Level 3	-2.03%	-1.15	-2.10%	-1.26

APPENDIX A: Estimation results – participants and non-participants

Dependent variable: lnkwhd
 Observations : 114459
 Number of Groups : 3367
 Degrees of freedom : 111057
 Residual SS : 24559.045
 Std error of est : 0.470
 Total SS (corrected) : 29828.808

Var	Coef	Std. Error	t-Stat	P-Value
part	-0.017092	0.005558	-3.075241	0.002
jan09	0.221625	0.053887	4.112797	0.000
feb09	0.021056	0.068394	0.307866	0.758
mar09	-0.400954	0.217635	-1.842322	0.065
apr09	-0.981465	0.440492	-2.228110	0.026
may09	-1.453499	0.589678	-2.464905	0.014
jun09	-1.846932	0.715366	-2.581799	0.010
jul09	-1.826337	0.752213	-2.427953	0.015
aug09	-1.800911	0.747750	-2.408440	0.016
sep09	-1.824160	0.734722	-2.482791	0.013
oct09	-1.132124	0.423351	-2.674195	0.007
nov09	-0.994740	0.408464	-2.435318	0.015
dec09	-0.153069	0.039851	-3.841086	0.000
jan10	0.049238	0.029949	1.644065	0.100
feb10	0.027662	0.049827	0.555160	0.579
mar10	-0.706343	0.361875	-1.951897	0.051
apr10	-1.339238	0.562646	-2.380250	0.017
may10	-1.621743	0.644788	-2.515156	0.012
jun10	-1.895892	0.747456	-2.536459	0.011
jul10	-1.869297	0.819335	-2.281480	0.023
aug10	-1.769201	0.814574	-2.171934	0.030
sep10	-1.490779	0.624402	-2.387532	0.017
oct10	-1.520110	0.547408	-2.776922	0.005
nov10	-0.872081	0.289761	-3.009655	0.003
feb08	0.071242	0.021654	3.289994	0.001
mar08	-0.399247	0.211860	-1.884486	0.060
apr08	-1.009672	0.434600	-2.323219	0.020
may08	-1.440244	0.593245	-2.427739	0.015
jun08	-1.854006	0.718163	-2.581595	0.010
jul08	-1.933283	0.806737	-2.396423	0.017
aug08	-1.787027	0.794741	-2.248566	0.025
sep08	-1.661307	0.667282	-2.489662	0.013
oct08	-1.421075	0.506753	-2.804274	0.005
nov08	-0.869335	0.318673	-2.727985	0.006
temp	0.023000	0.012433	1.849974	0.064

R-squared--full model: 0.771

----- BY LEVEL REACHED -----

Dependent variable: lnkwhd
 Observations : 114459
 Number of Groups : 3367
 Degrees of freedom : 111051
 Residual SS : 24554.298
 Std error of est : 0.470
 Total SS (corrected) : 29828.808

Var	Coef	Std. Error	t-Stat	P-Value
hec	-0.027778	0.013178	-2.107946	0.035
ibp	-0.009088	0.009792	-0.928178	0.353
ccss	-0.015852	0.010991	-1.442284	0.149
csr	-0.027323	0.009671	-2.825365	0.005
lvl1	0.002568	0.011046	0.232482	0.816
lvl2	0.014763	0.011968	1.233565	0.217
lvl3	-0.020298	0.017727	-1.145023	0.252
jan09	0.221697	0.053883	4.114413	0.000
feb09	0.020937	0.068389	0.306142	0.759
mar09	-0.400807	0.217620	-1.841774	0.066
apr09	-0.981644	0.440462	-2.228672	0.026
may09	-1.453930	0.589637	-2.465808	0.014
jun09	-1.847553	0.715316	-2.582847	0.010
jul09	-1.827052	0.752160	-2.429071	0.015
aug09	-1.801610	0.747698	-2.409543	0.016
sep09	-1.824843	0.734671	-2.483892	0.013
oct09	-1.132540	0.423322	-2.675363	0.007
nov09	-0.995137	0.408435	-2.436461	0.015
dec09	-0.152735	0.039846	-3.833169	0.000
jan10	0.050066	0.029941	1.672151	0.094
feb10	0.028731	0.049819	0.576713	0.564
mar10	-0.705439	0.361848	-1.949542	0.051
apr10	-1.338104	0.562605	-2.378406	0.017
may10	-1.620254	0.644742	-2.513026	0.012
jun10	-1.894335	0.747403	-2.534557	0.011
jul10	-1.867639	0.819277	-2.279619	0.023
aug10	-1.767470	0.814516	-2.169963	0.030
sep10	-1.488680	0.624357	-2.384340	0.017
oct10	-1.517834	0.547369	-2.772963	0.006
nov10	-0.869381	0.289740	-3.000554	0.003
feb08	0.071225	0.021653	3.289458	0.001
mar08	-0.399547	0.211845	-1.886034	0.059
apr08	-1.010299	0.434570	-2.324824	0.020
may08	-1.441107	0.593204	-2.429364	0.015
jun08	-1.855021	0.718113	-2.583188	0.010
jul08	-1.934429	0.806681	-2.398010	0.016
aug08	-1.788159	0.794685	-2.250147	0.024
sep08	-1.662257	0.667236	-2.491260	0.013
oct08	-1.421806	0.506718	-2.805912	0.005
nov08	-0.869810	0.318651	-2.729666	0.006
temp	0.023018	0.012432	1.851586	0.064

R-squared--full model: 0.771

APPENDIX B: Estimation results – participants only

Dependent variable: lnkwhd
 Observations : 57660
 Number of Groups : 1676
 Degrees of freedom : 55949
 Residual SS : 10942.996
 Std error of est : 0.442
 Total SS (corrected) : 13958.227

Var	Coef	Std. Error	t-Stat	P-Value
part	-0.017006	0.007490	-2.270550	0.023
jan09	0.157320	0.071172	2.210416	0.027
feb09	0.135401	0.090317	1.499180	0.134
mar09	-0.097285	0.287410	-0.338486	0.735
apr09	-0.394229	0.581721	-0.677694	0.498
may09	-0.691621	0.778740	-0.888128	0.374
jun09	-0.908054	0.944729	-0.961180	0.336
jul09	-0.867034	0.993390	-0.872803	0.383
aug09	-0.845721	0.987496	-0.856430	0.392
sep09	-0.875539	0.970291	-0.902348	0.367
oct09	-0.594922	0.559087	-1.064095	0.287
nov09	-0.464932	0.539430	-0.861895	0.389
dec09	-0.104097	0.052698	-1.975339	0.048
jan10	0.091919	0.039698	2.315477	0.021
feb10	0.092793	0.065917	1.407719	0.159
mar10	-0.218099	0.477919	-0.456352	0.648
apr10	-0.600200	0.743060	-0.807741	0.419
may10	-0.788996	0.851538	-0.926553	0.354
jun10	-0.913420	0.987124	-0.925335	0.355
jul10	-0.815187	1.082050	-0.753372	0.451
aug10	-0.710500	1.075764	-0.660461	0.509
sep10	-0.688461	0.824624	-0.834879	0.404
oct10	-0.816286	0.722949	-1.129105	0.259
nov10	-0.496248	0.382720	-1.296635	0.195
feb08	0.107397	0.028594	3.755946	0.000
mar08	-0.106538	0.279782	-0.380791	0.703
apr08	-0.438951	0.573939	-0.764804	0.444
may08	-0.679104	0.783450	-0.866812	0.386
jun08	-0.932209	0.948422	-0.982905	0.326
jul08	-0.909689	1.065395	-0.853852	0.393
aug08	-0.776706	1.049552	-0.740035	0.459
sep08	-0.814093	0.881227	-0.923818	0.356
oct08	-0.775243	0.669227	-1.158415	0.247
nov08	-0.462765	0.420842	-1.099616	0.272
temp	0.006588	0.016419	0.401251	0.688

R-squared--full model: 0.754

----- BY LEVEL REACHED -----

Dependent variable: lnkwhd
 Observations : 57660
 Number of Groups : 1676
 Degrees of freedom : 55943
 Residual SS : 10938.355
 Std error of est : 0.442
 Total SS (corrected) : 13958.227

Var	Coef	Std. Error	t-Stat	P-Value
hec	-0.027764	0.012430	-2.233683	0.026
ibp	-0.012524	0.010636	-1.177566	0.239
ccss	-0.014899	0.010339	-1.441045	0.150
csr	-0.030769	0.009943	-3.094559	0.002
lvl1	0.001218	0.010484	0.116128	0.908
lvl2	0.014115	0.011267	1.252820	0.210
lvl3	-0.021032	0.016671	-1.261570	0.207
jan09	0.157469	0.071161	2.212864	0.027
feb09	0.135156	0.090302	1.496710	0.134
mar09	-0.096697	0.287365	-0.336497	0.736
apr09	-0.394324	0.581629	-0.677965	0.498
may09	-0.692216	0.778616	-0.889034	0.374
jun09	-0.909040	0.944578	-0.962376	0.336
jul09	-0.868182	0.993232	-0.874098	0.382
aug09	-0.846815	0.987339	-0.857674	0.391
sep09	-0.876540	0.970136	-0.903522	0.366
oct09	-0.595089	0.558998	-1.064565	0.287
nov09	-0.464594	0.539341	-0.861411	0.389
dec09	-0.101937	0.052662	-1.935672	0.053
jan10	0.095527	0.039644	2.409629	0.016
feb10	0.097169	0.065870	1.475168	0.140
mar10	-0.213830	0.477835	-0.447498	0.655
apr10	-0.595167	0.742935	-0.801103	0.423
may10	-0.783071	0.851396	-0.919749	0.358
jun10	-0.907175	0.986961	-0.919159	0.358
jul10	-0.808555	1.081872	-0.747366	0.455
aug10	-0.703587	1.075588	-0.654142	0.513
sep10	-0.680586	0.824487	-0.825465	0.409
oct10	-0.807880	0.722829	-1.117664	0.264
nov10	-0.486852	0.382655	-1.272301	0.203
feb08	0.107358	0.028589	3.755177	0.000
mar08	-0.107178	0.279737	-0.383138	0.702
apr08	-0.440287	0.573848	-0.767254	0.443
may08	-0.680940	0.783326	-0.869294	0.385
jun08	-0.934388	0.948271	-0.985360	0.324
jul08	-0.912148	1.065226	-0.856295	0.392
aug08	-0.779136	1.049386	-0.742468	0.458
sep08	-0.816134	0.881087	-0.926281	0.354
oct08	-0.776811	0.669121	-1.160942	0.246
nov08	-0.463772	0.420775	-1.102184	0.270
temp	0.006627	0.016416	0.403695	0.686

R-squared--full model: 0.754

**Appendix C: Integral Analytics' Rothsay Residential
Behavioral Change Impact Analysis**



312 Walnut Street, Suite 1600 Cincinnati Ohio 45202

Final Memorandum

To: Otter Tail Power Company

From: Michael Ozog, Integral Analytics

Date: February 24, 2011

RE: Impact evaluation results for residential customers subject to the Community Energy Challenge at Rothsay, Minnesota

This memo presents the results from the billing analysis of Otter Tail Power Company's (OTPCo's) Community Energy Challenge (CEC), which targeted all customers in Rothsay, Minnesota. For reasons that will be addressed below, this memo only addresses the impact of CEC on Rothsay's residential customers (i.e., those customers in a revenue class below 10). This analysis relied upon a statistical analysis of actual customer billed electricity consumption before and after participation in the program to estimate the impact of the program. Table 1 presents the results of this billing analysis. This table shows that the CEC saved 7.2% (or 1,145 kWh/year) on average, across all the residential customers in Rothsay.

Table 1: Impact of OTPCo's Community Energy Challenge– Rothsay residential customers (savings are denoted by a negative value)

	Impact	t-value
As percentage of overall usage	-7.20%	-4.88
Average annual kWh	-1,145 kWh/year	

For this impact evaluation, data are available both across households (i.e., cross-sectional) and over time (i.e., time-series). With this type of data, known as "panel" data, it becomes possible to control, simultaneously, for differences across households as well as differences across periods in time through the use of a "fixed-effects" panel model specification. The details of this approach will be addressed once the impacts of the CEC are finalized.

Since the CEC was a community-wide program, all households and firms in Rothsay are likely to be influenced to some degree by the program. This implies that once the CEC program started, all of

OTPCo's customers in Rothsay become participants. As such, there is no variation in the program participation dates across customers which can be used to account for non-program effects over time. To disentangle the effect of CEC from other factors that may alter energy use, the preferred approach is to use a group of customers that were not exposed to the CEC (i.e., a control group). For the residential analysis, the control group from the Bill Analyzer evaluation was used, eliminating any customers that were located in Rothsay. Since these customers are in the same geographic area as Rothsay, it is likely that these customers share the same general characteristics and attitudes as Rothsay residents. The situation is far more complicated for the non-residential customers in Rothsay, since the energy usage for a non-residential customer depends a great deal upon the type of business (or farm) they are. Thus, a random sample of non-residential customers may not be representative of Rothsay customers. Therefore, the approach in the non-residential analysis will differ from the residential analysis presented in this memo.

Data

The statistical model used to determine the impact of CEC for residential customers incorporates all the available monthly billing data from Jan. 1, 2008 to Dec. 2010 from the residential customers in Rothsay. This data was combined with the monthly billing data covering the same period for a control group of non-participating OTPC residential customers also in Minnesota. This monthly billing data was merged with the associated weather data (average monthly temperature) from Fargo. Table 2 presents the number of households in the Rothsay and non-participant group included in the model.

Table 2: Sample used for estimation.

	Rothsay	Control
Original Sample size	205	1,700
Eliminated due to excessive missing or zero reads or Rothsay customer in control group	1	6
Estimation Sample	205	1,693
Total Sample Size	1,895	

Table3 presents that average annual kWh usage for both Rothsay customers and for 2008, 2009, and 2010.

Table3: Average annual electricity usage (kWh), by year and group.

Year	Rothsay	Control
2008	15,899	12,989
2009	16,287	13,254
2010	15,381	12,612

The data presented in Table 3 indicates that the non-participant group has, on average, a significantly lower consumption than the participant group. This had significant implications on the statistical model used in the analysis, as will be explained in the next section.

Estimation

To capture the effect of the program, the regression model included a variable that was equal to 1 for Rothsay customers after the start of CEC (based on the information from OTPCo, the start of CEC in Rothsay was assumed to be May, 2009, after the kickoff celebration). This variable was equal to zero for Rothsay customers prior to CEC and for the entire period for control group. To eliminate the savings resulting from the Rothsay customer participating in another OTPCo energy efficiency (EE) program, for any customer that participated in an OTPCo EE program, their usage data after their participation was eliminated from the analysis. Thus, the coefficient on the CEC variable is overall impact of CEC alone, net of participation in other OTPCo programs. Since the data presented in Table 3 indicates that average usage of the control group is lower than Rothsay customers, the dependent variable in the analysis was the natural log of usage. In this approach, the coefficient on the program variable is the savings as expressed as a percentage of usage. The estimated model is presented in Table 4.¹

Table 4: Estimated Overall Savings – dependent variable is the natural log of daily kWh usage, Jan. 2008 through Nov. 2010 (savings are negative).

Independent Variable	Coefficient (% of Usage)	t-value
Rothsay customer during CEC	-7.2%	-4.88
Sample Size	62,593 obs (1,894 homes)	
R-Squared	77%	

In order to get the average annual kWh savings associated with the CEC, the % savings shown in Table 5 is multiplied by the average annualized usage based on the monthly data from Jan, 2008 to December 2008 (the pre-participation period) for Rothsay customers (15,899 kWh), which resulted in an estimated annual savings of 1,145 kWh per customer.

¹ The models include weather terms and monthly indicator terms in addition to the variables presented in these tables. These variables were not included in order make interpretation clearer. The full models are included in Appendix A.

APPENDIX A: Estimation results

Dependent variable: lnkwhd

Observations : 62523
Number of Groups : 1894
Degrees of freedom : 60594
Residual SS : 15783.645
Std error of est : 0.510
Total SS (corrected) : 18419.129
F = 289.078 with 35,60594 degrees of freedom
P-value = 0.000

Var	Coef	Std. Error	t-Stat	P-Value
CEC	-0.072005	0.014743	-4.884004	0.000
jan09	0.420262	0.085980	4.887916	0.000
feb09	-0.255086	0.072894	-3.499396	0.000
mar09	-1.204561	0.265637	-4.534609	0.000
apr09	-2.604454	0.554048	-4.700770	0.000
may09	-3.620237	0.747145	-4.845427	0.000
jun09	-4.487461	0.909833	-4.932183	0.000
jul09	-4.584056	0.957528	-4.787386	0.000
aug09	-4.552456	0.951751	-4.783242	0.000
sep09	-4.528779	0.934888	-4.844194	0.000
oct09	-2.684672	0.531864	-5.047665	0.000
nov09	-2.494465	0.512596	-4.866341	0.000
dec09	-0.288977	0.036830	-7.846207	0.000
jan10	-0.047955	0.025192	-1.903552	0.057
feb10	-0.150833	0.049277	-3.060929	0.002
mar10	-2.052000	0.452296	-4.536851	0.000
apr10	-3.407865	0.712156	-4.785279	0.000
may10	-3.989626	0.818477	-4.874449	0.000
jun10	-4.655006	0.951368	-4.892963	0.000
jul10	-4.878921	1.044407	-4.671474	0.000
aug10	-4.775199	1.038244	-4.599302	0.000
sep10	-3.781217	0.792087	-4.773741	0.000
oct10	-3.523664	0.692429	-5.088845	0.000
nov10	-1.935480	0.358974	-5.391702	0.000
mar08	-1.181311	0.258166	-4.575782	0.000
apr08	-2.608597	0.546423	-4.773956	0.000
may08	-3.618019	0.751763	-4.812714	0.000
jun08	-4.493926	0.913453	-4.919713	0.000
jul08	-4.897790	1.028102	-4.763914	0.000
aug08	-4.708004	1.012575	-4.649538	0.000
sep08	-4.108012	0.847594	-4.846677	0.000
oct08	-3.282687	0.639811	-5.130717	0.000
nov08	-2.043001	0.396383	-5.154110	0.000
dec08	0.019312	0.028011	0.689438	0.491
temp	0.069140	0.016093	4.296258	0.000

R-squared--full model: 0.765

**Appendix D: Integral Analytics' Rothsay Non-Residential
Behavioral Change Impact Analysis**



312 Walnut Street, Suite 1600 Cincinnati Ohio 45202

Final Memorandum

To: Otter Tail Power Company

From: Michael Ozog, Integral Analytics

Date: February 24, 2011

RE: Final impact evaluation results for non-residential customers subject to the Community Energy Challenge at Rothsay, Minnesota

This memo presents the results from the billing analysis of Otter Tail Power Company's (OTPCo's) Community Energy Challenge (CEC), which targeted all customers in Rothsay, Minnesota. As discussed in my prior memo, this memo only addresses the impact of CEC on Rothsay's non-residential customers (i.e., those customers in a revenue class above 10).

This analysis relied upon a statistical analysis of actual customer billed electricity consumption before and after participation in the program to estimate the impact of the program. Table 1 presents the results of this billing analysis. This table shows that, using the very conservative assumption that those customers without a statistically significant estimate on the CEC effect variable had no savings at all,¹ the CEC saved 1,534 kWh/year on average across the non-residential customers in Rothsay (for a total savings of 67,503 kWh over the 44 customers in the analysis).

¹ This is a conservative estimate because we do not necessarily know that those customers with statistically insignificant savings estimates had no savings at all, we just cannot make a definitive statement on the level of savings. Table 1 presents other possible impact estimates based upon how these statistically insignificant savings are addressed.

**Table 1: Impact of OTPCo’s Community Energy Challenge– Rothsay non-residential customers
(savings are donated by a negative value)**

	Impact (per customer)
Average over all customers	-3,221 kWh/year
Average assuming zero savings for non-significant results	-1,534 kWh/year
Average of stat. sig. results (9 customers)	-7,500 kWh/year

As was the case for the residential analysis, data are available both across customers (i.e., cross-sectional) and over time (i.e., time-series). However, unlike the residential analysis, the use of a panel model (which pools the data across customers and over time into a single model) is not appropriate for these customers. With this type of data, known as “panel” data, it becomes possible to control, simultaneously, for differences across households as well as differences across periods in time through the use of a “fixed-effects” panel model specification. When a panel model is used, the underlying assumption is that all customers have similar responses to the independent variables (e.g., the weather and the monthly indicators). This is a reasonable assumption for the residential sector, because it is relatively homogenous. However, the non-residential revenue class is composed of a very diverse group of customers that use electricity in a large range of end-uses, which implies that each customer will have very different responses to the independent variables. This also prevents the development of a meaningful control group.

Since it is not appropriate to use a panel model for this sector, we used the alternative approach of a developing a statistical model that is unique to each customer (i.e., a pure time-series model). Thus, this analysis of the CEC in Rothsay for the non-residential sector involved estimating 46 models, associated with the 46 customers which had complete billing data from 2008 to 2010. The details of this approach will be addressed once the impacts of the CEC are finalized.

Data

The statistical model used to determine the impact of CEC for non-residential customers incorporates all the available monthly billing data from Jan. 1, 2008 to Dec. 2010 from the non-residential customers in Rothsay. This monthly billing data was merged with the associated weather data (average monthly temperate) from Fargo. Five facilities (the Rothsay school, Oscar Mutual Insurance, Rothsay Farmers Co-Op, Rothsay Truck and Trailer Repair, and Rothsay Truck Stop) were eliminated from the analysis since they also participated in separate energy efficiency (EE) programs through OTPCo. By eliminating these three customers, the estimated impacts found in this analysis are due to only the behavioral changes resulting from the CEC, and not measure installations associated with EE programs. Table 2 presents the number of non-residential customers used in the analysis.

Table 2: Sample used for estimation.

	Rothsay customer
Original Sample size	58
Participated in EE program	5
Eliminated due to excessive missing or zero reads	9
Estimation Sample	44

Table3 presents that average annual kWh usage for each of the 46 customers in the analysis.

Table3: Average annual electricity usage (kWh), by year and group.

Premise ID	2008	2009	2010
6309	52,931	51,822	43,236
6313	1,663	920	680
6318	8,266	8,161	4,326
6319	11,739	8,701	5,986
6320	15,346	15,346	13,370
6324	71,546	81,732	88,825
6332	11,454	8,020	7,016
6338	8,919	6,754	2,120
6384	6,307	5,261	5,976
6385	23,162	25,933	19,593
6394	17,535	16,068	17,175
6397	742	689	1,302
6399	48,135	70,910	64,670
6404	5,533	8,453	8,138
6405	9,875	8,339	7,978
6407	4,062	3,963	6,693
6409	131	311	71
6429	20,068	20,185	21,361
6430	11,879	10,884	7,665
6434	4,068	3,539	6,937
6437	19,396	18,126	1,934
6463	131,605	126,864	115,185
6492	64,085	66,356	64,155
6498	3,692	3,729	3,401
6499	1,104	796	631
6512	11,395	12,261	9,939
6531	829	2,753	1,104
6532	134,034	117,249	118,051
6533	94,939	90,234	92,622
6536	48,897	47,157	42,607
19761	105,959	122,092	110,860
19955	381	181	323
20916	43,465	72,313	75,510
21080	2,490	2,517	2,488
21627	186	132	78
21760	96,120	86,832	76,222
22819	2,598	2,496	3,459
23379	2,732	2,839	3,671
25242	5,935	6,791	5,768
25904	23,958	25,587	31,762
26252	104,201	90,283	81,298
26390	2,234	57	18
26718	886	1,133	971
27251	3,216	8,222	15,250

Estimation

To capture the effect of the program, customer-specific regression models were used that included a variable which was equal to 1 for after the start of CEC (based on the information from OTPCo, the start of CEC in Rothsay was assumed to be May, 2009, after the kickoff celebration). This variable was equal to zero for Rothsay customers prior. The model also included general month terms to capture any consistent seasonality, as well as year terms to capture the customer's general trend over time. A summary of the results from each of the regression models are presented in Table 4.²

Based on the results presented in Table 3, the overall average impact of the CEC on the non-residential sector is a savings of 15.8 kWh/day (or 5,783 kWh annually, per non-residential customer). However, that overall average impacts results includes customers where the coefficient on the CEC variable is not statistically significant. Looking only at the statistically significant results give an average savings per customer of 22.9 kWh/day (or 8,359 kWh annually per customer).

² The models include weather terms and monthly indicator terms in addition to the variables presented in these tables as well as an AR(2) correction. These variables were not included in order make interpretation clearer. The full models are included in Appendix A.

Table4: Key results from individual regressions.

Premise ID	Coefficient on Part variable (kWh/day)	t-value
6309	-21.12	-0.76
6313	14.85	0.74
6318	-22.22	-2.95
6319	-8.72	-1.68
6320	-11.76	-3.33
6324	2.48	0.27
6332	-8.67	-1.39
6338	-29.21	-1.59
6384	-2.42	-1.18
6385	-28.43	-2.66
6394	-1.92	-0.30
6397	-1.19	-1.95
6399	-159.28	-2.69
6404	-3.65	-0.20
6405	0.25	0.21
6407	2.71	0.39
6409	-1.89	-0.32
6429	-1.61	-0.25
6430	11.25	1.49
6434	4.53	7.68
6437	2.53	0.31
6463	-46.86	-1.12
6492	4.20	0.21
6498	-3.10	-2.42
6499	0.73	0.83
6512	-10.51	-2.47
6531	-9.06	-0.92
6532	-7.28	-0.26
6533	-12.27	-0.19
6536	-13.91	-1.76
19761	-20.93	-1.33
19955	2.77	8.28
20916	19.31	0.25
21080	-0.43	-0.60
21627	-0.56	-0.66
21760	9.90	0.33
22819	1.01	0.17
23379	-6.61	-0.89
25242	-2.99	-1.74
25904	-4.90	-0.72
26252	-53.16	-1.24
26390	7.89	1.73
26719	-21.18	-1.36
27251	43.04	5.92

APPENDIX A: Estimation results

-> premise = 6309

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 2116.10
Log likelihood = -150.7483 Prob > chi2 = 0.0000

	kwhd	Coef.	OPG Std. Err.	z	P> z	[95% Conf. Interval]	
kwhd		-----					
	cec	-21.11985	27.90453	-0.76	0.449	-75.81173	33.57203
	jan	302.754	34.14004	8.87	0.000	235.8407	369.6673
	feb	306.9603	36.41375	8.43	0.000	235.5906	378.3299
	march	260.9901	47.9079	5.45	0.000	167.0924	354.8879
	april	109.5395	67.65081	1.62	0.105	-23.05362	242.1327
	may	-19.20908	72.82406	-0.26	0.792	-161.9416	123.5234
	june	-87.33332	95.1163	-0.92	0.359	-273.7578	99.0912
	july	-102.668	99.70542	-1.03	0.303	-298.0871	92.751
	aug	-102.1281	95.85982	-1.07	0.287	-290.0099	85.75373
	sept	-88.18842	84.22712	-1.05	0.295	-253.2706	76.89371
	oct	-57.55263	65.64791	-0.88	0.381	-186.2202	71.11492
	nov	-1.637432	66.36783	-0.02	0.980	-131.716	128.4411
	dec	179.0547	56.57634	3.16	0.002	68.16708	289.9423
	y08	13.00019	36.81131	0.35	0.724	-59.14866	85.14904
	y09	24.17197	17.78341	1.36	0.174	-10.68287	59.02681
	temp	1.803408	1.140486	1.58	0.114	-.4319033	4.038719
ARMA		-----					
	ar						
	L1.	.7791047	.3737066	2.08	0.037	.0466533	1.511556
	L2.	-.7107738	.2702413	-2.63	0.009	-1.240437	-.1811106
/sigma		-----					
	/sigma	18.96174	5.387315	3.52	0.000	8.4028	29.52069

-> premise = 6313

ARIMA regression

Sample: 200805 - 201009, but with gaps Number of obs = 15
Wald chi2(10) = 496.66
Log likelihood = -18.50869 Prob > chi2 = 0.0000

	kwhd	Coef.	OPG Std. Err.	z	P> z	[95% Conf. Interval]	
kwhd		-----					
	cec	14.85163	20.12927	0.74	0.461	-24.60102	54.30429
	may	-6.094936	4.531435	-1.35	0.179	-14.97639	2.786513
	june	-2.422383	2.795735	-0.87	0.386	-7.901923	3.057157
	july	-1.260457	4.147982	-0.30	0.761	-9.390352	6.869437
	sept	-1.984347	4.055172	-0.49	0.625	-9.932337	5.963643
	y08	17.35584	18.94198	0.92	0.360	-19.76975	54.48143
	y09	.2496702	1.438688	0.17	0.862	-2.570107	3.069448
	temp	-.1629437	.273429	-0.60	0.551	-.6988547	.3729673

ARMA							
	ar						
	L1.	.1086756	1.776811	0.06	0.951	-3.373811	3.591162
	L2.	-.5223094	2.743801	-0.19	0.849	-5.90006	4.855441
<hr/>							
	/sigma	.7793996	1.193293	0.65	0.514	-1.559412	3.118212
<hr/>							

-> premise = 6318

ARIMA regression

Sample: 200801 - 201010, but with gaps	Number of obs	=	34
	Wald chi2(18)	=	638.61
Log likelihood = -91.22698	Prob > chi2	=	0.0000

		OPG					
	kwhd	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
<hr/>							
kwhd							
	cec	-22.2171	7.539743	-2.95	0.003	-36.99472	-7.439473
	jan	51.66764	24.24824	2.13	0.033	4.141965	99.19331
	feb	57.29357	17.22733	3.33	0.001	23.52862	91.05852
	march	49.36926	11.0272	4.48	0.000	27.75634	70.98218
	april	27.26357	16.96225	1.61	0.108	-5.98183	60.50898
	may	13.19109	20.8234	0.63	0.526	-27.62204	54.00421
	june	7.133584	21.37661	0.33	0.739	-34.7638	49.03097
	july	6.717801	24.19671	0.28	0.781	-40.70687	54.14247
	aug	7.39681	25.11075	0.29	0.768	-41.81936	56.61298
	sept	8.606073	20.54872	0.42	0.675	-31.66868	48.88083
	oct	12.84934	14.84843	0.87	0.387	-16.25306	41.95173
	nov	15.7776	17.35888	0.91	0.363	-18.24518	49.80039
	dec	33.11149	15.872	2.09	0.037	2.002955	64.22003
	y08	-10.39986	8.422979	-1.23	0.217	-26.9086	6.108872
	y09	2.979112	6.667091	0.45	0.655	-10.08815	16.04637
	temp	.2231499	.2722735	0.82	0.412	-.3104964	.7567963
<hr/>							

ARMA							
	ar						
	L1.	1.117895	.1782892	6.27	0.000	.7684548	1.467336
	L2.	-.6676595	.1642624	-4.06	0.000	-.9896079	-.345711
<hr/>							
	/sigma	3.27321	.650306	5.03	0.000	1.998634	4.547786
<hr/>							

-> premise = 6319

ARIMA regression

Sample: 200801 - 201010, but with gaps	Number of obs	=	32
	Wald chi2(18)	=	2979.46
Log likelihood = -101.769	Prob > chi2	=	0.0000

		OPG					
	kwhd	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
kwhd							
	cec	-8.723192	5.193677	-1.68	0.093	-18.90261	1.456228
	jan	85.36697	7.597363	11.24	0.000	70.47641	100.2575

feb	92.84943	8.552227	10.86	0.000	76.08737	109.6115
march	115.6531	14.87347	7.78	0.000	86.50166	144.8046
april	114.5133	22.70241	5.04	0.000	70.01742	159.0092
may	112.5552	28.66183	3.93	0.000	56.379	168.7313
june	129.5452	30.70179	4.22	0.000	69.37077	189.7196
july	139.5707	35.28543	3.96	0.000	70.41251	208.7289
aug	138.3937	32.92508	4.20	0.000	73.86175	202.9257
sept	122.4861	31.00099	3.95	0.000	61.72523	183.2469
oct	97.32131	24.33185	4.00	0.000	49.63176	145.0109
nov	75.89928	19.28122	3.94	0.000	38.10879	113.6898
dec	68.1417	10.59624	6.43	0.000	47.37344	88.90996
y08	-4.606285	5.737345	-0.80	0.422	-15.85128	6.638706
y09	-1.351611	4.009723	-0.34	0.736	-9.210522	6.507301
temp	-1.878036	.4659992	-4.03	0.000	-2.791377	-.9646939

ARMA						
ar						
L1.	-.5610262	.3293011	-1.70	0.088	-1.206445	.084392
L2.	.2141888	.3591467	0.60	0.551	-.4897258	.9181035

/sigma	5.560714	1.51158	3.68	0.000	2.598071	8.523357

-> premise = 6320

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 8613.86
Log likelihood = -85.08668 Prob > chi2 = 0.0000

		OPG				
	kwhd	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
	cec	-11.7564	3.535385	-3.33	0.001	-18.68562 -4.827171
	jan	85.75365	3.630911	23.62	0.000	78.63719 92.8701
	feb	99.68644	3.978727	25.05	0.000	91.88828 107.4846
	march	107.4297	10.65944	10.08	0.000	86.53754 128.3218
	april	93.55508	15.52408	6.03	0.000	63.12845 123.9817
	may	91.35299	17.11273	5.34	0.000	57.81266 124.8933
	june	88.25277	20.28376	4.35	0.000	48.49732 128.0082
	july	89.98906	22.51725	4.00	0.000	45.85605 134.1221
	aug	89.46044	22.45529	3.98	0.000	45.44889 133.472
	sept	80.67957	18.62109	4.33	0.000	44.18289 117.1762
	oct	70.74874	15.24192	4.64	0.000	40.87513 100.6223
	nov	70.51892	11.46088	6.15	0.000	48.05601 92.98183
	dec	65.84916	5.380433	12.24	0.000	55.30371 76.39462
	y08	-9.308381	3.989981	-2.33	0.020	-17.1286 -1.488162
	y09	-1.12313	1.616176	-0.69	0.487	-4.290777 2.044516
	temp	-.8639112	.3376132	-2.56	0.011	-1.525621 -.2022014

ARMA						
ar						
L1.	-.4577203	.260574	-1.76	0.079	-.9684358	.0529953
L2.	.2266179	.2404524	0.94	0.346	-.2446602	.6978961

/sigma	2.886201	.7858528	3.67	0.000	1.345958	4.426444

-> premise = 6324

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 27606.04
Log likelihood = -135.0376 Prob > chi2 = 0.0000

kwhd	Coef.	OPG Std. Err.	z	P> z	[95% Conf. Interval]	

kwhd						
cec	2.475463	9.278767	0.27	0.790	-15.71059	20.66151
jan	-23.36123	16.62768	-1.40	0.160	-55.95088	9.228414
march	-14.12694	35.2047	-0.40	0.688	-83.12687	54.873
april	-112.8524	52.9228	-2.13	0.033	-216.5792	-9.125624
may	-180.7094	58.06308	-3.11	0.002	-294.511	-66.90789
june	-221.2714	78.18714	-2.83	0.005	-374.5154	-68.02746
july	-241.5361	81.6477	-2.96	0.003	-401.5627	-81.50959
aug	-251.83	74.81465	-3.37	0.001	-398.464	-105.196
sept	-255.742	65.9784	-3.88	0.000	-385.0573	-126.4267
oct	-259.1135	54.98097	-4.71	0.000	-366.8743	-151.3528
nov	-168.4202	40.30107	-4.18	0.000	-247.4089	-89.43157
dec	-114.7482	19.41477	-5.91	0.000	-152.8005	-76.696
y08	392.0271	14.69022	26.69	0.000	363.2348	420.8194
y09	418.256	15.45018	27.07	0.000	387.9742	448.5378
y10	448.4734	18.3204	24.48	0.000	412.5661	484.3807
temp	-1.042558	1.262217	-0.83	0.409	-3.516457	1.431341

ARMA						
ar						
L1.	-.5442679	.2961377	-1.84	0.066	-1.124687	.0361513
L2.	-.4896477	.3750177	-1.31	0.192	-1.224669	.2453736

/sigma	12.45635	3.911397	3.18	0.001	4.79015	20.12254

-> premise = 6332

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 390.83
Log likelihood = -91.18282 Prob > chi2 = 0.0000

kwhd		Coef.	OPG Std. Err.	z	P> z	[95% Conf. Intervall
-----+-----						
kwhd						
	cec	-8.672909	6.228813	-1.39	0.164	-20.88116 3.535341
	jan	53.06995	21.46032	2.47	0.013	11.0085 95.1314
	feb	43.91455	20.75169	2.12	0.034	3.241992 84.58711
	march	35.54958	19.7405	1.80	0.072	-3.141094 74.24025
	april	18.75108	19.14566	0.98	0.327	-18.77372 56.27588
	may	6.918293	19.58463	0.35	0.724	-31.46688 45.30346
	june	1.441065	19.98285	0.07	0.943	-37.72461 40.60674
	july	-1.062696	20.97551	-0.05	0.960	-42.17394 40.04855
	aug	-.4344402	21.61281	-0.02	0.984	-42.79478 41.9259
	sept	.6042275	21.95848	0.03	0.978	-42.43361 43.64206
	oct	1.074229	21.71921	0.05	0.961	-41.49463 43.64309

nov	8.581071	22.58397	0.38	0.704	-35.68269	52.84483
dec	17.52258	24.04008	0.73	0.466	-29.5951	64.64027
y08	23.43193	23.08568	1.01	0.310	-21.81518	68.67903
y09	5.198365	23.95917	0.22	0.828	-41.76075	52.15748
temp	.0925208	.1341616	0.69	0.490	-.1704312	.3554727

ARMA						
ar						
L1.	1.660649	.2152059	7.72	0.000	1.238853	2.082444
L2.	-.743423	.1404432	-5.29	0.000	-1.018687	-.4681594

/sigma	2.965536	.4677982	6.34	0.000	2.048669	3.882404

-> premise = 6338

ARIMA regression

Sample: 200801 - 201010, but with gaps	Number of obs	=	34
	Wald chi2(18)	=	313.52
Log likelihood = -122.6554	Prob > chi2	=	0.0000

		OPG				
kwhd		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
cec	-29.2118	18.36096	-1.59	0.112	-65.19863	6.775031
jan	61.55871	20.44651	3.01	0.003	21.48429	101.6331
feb	60.26025	20.4654	2.94	0.003	20.14881	100.3717
march	59.71047	22.20185	2.69	0.007	16.19564	103.2253
april	39.95657	27.16355	1.47	0.141	-13.283	93.19614
may	38.02913	33.96087	1.12	0.263	-28.53295	104.5912
june	37.36947	42.76273	0.87	0.382	-46.44394	121.1829
july	37.65072	51.01905	0.74	0.461	-62.34479	137.6462
aug	37.12442	53.78947	0.69	0.490	-68.301	142.5498
sept	35.55845	51.01886	0.70	0.486	-64.43668	135.5536
oct	33.54088	42.74261	0.78	0.433	-50.23309	117.3149
nov	30.82955	38.62779	0.80	0.425	-44.87953	106.5386
dec	30.35667	45.38892	0.67	0.504	-58.60397	119.3173
y08	-9.814625	31.38326	-0.31	0.754	-71.32469	51.69544
y09	3.600266	17.48564	0.21	0.837	-30.67096	37.87149
temp	-.181488	.5471519	-0.33	0.740	-1.253886	.8909101

ARMA						
ar						
L1.	1.154788	.1515436	7.62	0.000	.8577681	1.451808
L2.	-.5933614	.178882	-3.32	0.001	-.9439638	-.2427591

/sigma	8.309258	2.964931	2.80	0.005	2.498101	14.12042

-> premise = 6384

ARIMA regression

Sample: 200801 - 201010, but with gaps	Number of obs	=	34
	Wald chi2(18)	=	1221.08
Log likelihood = -48.20477	Prob > chi2	=	0.0000

		OPG				
kwhd		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
	cec	-2.416699	2.051893	-1.18	0.239	-6.438336 1.604938
	jan	20.83365	3.429838	6.07	0.000	14.1113 27.55601
	feb	21.22134	3.341386	6.35	0.000	14.67234 27.77034
	march	20.187	4.085453	4.94	0.000	12.17966 28.19435
	april	17.70434	5.344859	3.31	0.001	7.228609 28.18007
	may	16.25227	5.807901	2.80	0.005	4.868998 27.63555
	june	14.3922	6.503847	2.21	0.027	1.644892 27.1395
	july	14.90602	6.728967	2.22	0.027	1.717486 28.09455
	aug	16.02529	6.379564	2.51	0.012	3.521571 28.529
	sept	14.69415	6.186604	2.38	0.018	2.568625 26.81967
	oct	13.67132	4.980021	2.75	0.006	3.910663 23.43198
	nov	15.07201	4.719521	3.19	0.001	5.821921 24.3221
	dec	18.26647	3.967783	4.60	0.000	10.48976 26.04318
	y08	-1.187665	2.8937	-0.41	0.681	-6.859213 4.483882
	y09	-2.168354	1.971528	-1.10	0.271	-6.032477 1.695769
	temp	.0348633	.083134	0.42	0.675	-.1280763 .1978029

ARMA						
	ar					
	L1.	.9386683	.247952	3.79	0.000	.4526913 1.424645
	L2.	-.3108413	.4168001	-0.75	0.456	-1.127755 .5060719

	/sigma	.9590923	.2259916	4.24	0.000	.516157 1.402028

-> premise = 6385

ARIMA regression

Sample: 200801 - 201010, but with gaps	Number of obs	=	34
	Wald chi2(18)	=	2744.44
Log likelihood = -113.1149	Prob > chi2	=	0.0000

		OPG				
kwhd		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
	cec	-28.42501	10.69571	-2.66	0.008	-49.38822 -7.461795
	jan	109.4405	12.56817	8.71	0.000	84.80729 134.0736
	feb	102.1449	16.16714	6.32	0.000	70.45791 133.8319
	march	98.0528	18.57528	5.28	0.000	61.64593 134.4597
	april	69.56482	22.36188	3.11	0.002	25.73634 113.3933
	may	46.54122	29.12134	1.60	0.110	-10.53556 103.618
	june	27.51009	35.99334	0.76	0.445	-43.03556 98.05574
	july	23.25057	36.45481	0.64	0.524	-48.19955 94.70069
	aug	18.97956	33.31241	0.57	0.569	-46.31156 84.27068
	sept	21.1055	28.84129	0.73	0.464	-35.42239 77.63338
	oct	27.41594	23.52957	1.17	0.244	-18.70117 73.53304
	nov	43.20277	23.81117	1.81	0.070	-3.466273 89.87181
	dec	94.13063	18.78515	5.01	0.000	57.3124 130.9489
	y08	-15.40562	12.21111	-1.26	0.207	-39.33896 8.527724
	y09	9.264568	8.293144	1.12	0.264	-6.989696 25.51883
	temp	.5637856	.3751851	1.50	0.133	-.1715638 1.299135

ARMA						
	ar					
	L1.	.9024124	.5054347	1.79	0.074	-.0882214 1.893046

L2.	- .6124342	.3222371	-1.90	0.057	-1.244007	.0191389
/sigma	6.3587	1.354007	4.70	0.000	3.704895	9.012506

-> premise = 6394

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 4366.62
Log likelihood = -84.07668 Prob > chi2 = 0.0000

		OPG		z	P> z	[95% Conf. Interval]	
kwhd		Coef.	Std. Err.				
kwhd							
	cec	-1.917006	6.487552	-0.30	0.768	-14.63237	10.79836
	jan	58.79217	6.586434	8.93	0.000	45.883	71.70135
	feb	59.01255	5.801628	10.17	0.000	47.64157	70.38353
	march	55.78341	6.423954	8.68	0.000	43.19269	68.37413
	april	47.48541	7.528413	6.31	0.000	32.72999	62.24083
	may	35.65675	9.318306	3.83	0.000	17.39321	53.92029
	june	27.14534	11.28539	2.41	0.016	5.026371	49.2643
	july	26.70832	12.41257	2.15	0.031	2.380119	51.03651
	aug	22.39249	15.24043	1.47	0.142	-7.478207	52.26319
	sept	24.0323	13.3311	1.80	0.071	-2.096186	50.16078
	oct	28.61198	9.883373	2.89	0.004	9.240928	47.98304
	nov	44.71532	8.404428	5.32	0.000	28.24295	61.1877
	dec	55.77117	8.508269	6.55	0.000	39.09527	72.44707
	y08	-1.627955	6.918825	-0.24	0.814	-15.1886	11.93269
	y09	-4.0745	3.676084	-1.11	0.268	-11.27949	3.130493
	temp	.2201767	.1452251	1.52	0.129	-.0644592	.5048126
ARMA							
	ar						
	L1.	.7589371	.4045764	1.88	0.061	-.0340182	1.551892
	L2.	-.2879533	.3914748	-0.74	0.462	-1.05523	.4793231
	/sigma	2.794065	.6804664	4.11	0.000	1.460375	4.127754

-> premise = 6397

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 1070.61
Log likelihood = -31.69676 Prob > chi2 = 0.0000

		OPG		z	P> z	[95% Conf. Interval]	
kwhd		Coef.	Std. Err.				
kwhd							
	cec	-1.18705	.609365	-1.95	0.051	-2.381384	.0072831
	jan	2.826092	.721237	3.92	0.000	1.412493	4.23969
	feb	3.347902	.8952402	3.74	0.000	1.593263	5.102541
	march	3.405958	2.152125	1.58	0.114	-.8121301	7.624047
	april	3.792822	3.110657	1.22	0.223	-2.303954	9.889599

may	4.579898	5.290245	0.87	0.387	-5.788791	14.94859
june	4.886777	4.263973	1.15	0.252	-3.470456	13.24401
july	5.537976	4.740025	1.17	0.243	-3.752303	14.82826
aug	6.289091	4.704246	1.34	0.181	-2.931062	15.50924
sept	5.273692	3.893556	1.35	0.176	-2.357538	12.90492
oct	4.417947	3.130158	1.41	0.158	-1.71705	10.55294
nov	5.211236	2.593465	2.01	0.044	.1281382	10.29433
dec	5.325384	.9834877	5.41	0.000	3.397784	7.252985
y08	-2.795662	.732452	-3.82	0.000	-4.231241	-1.360083
y09	-2.197624	.4122136	-5.33	0.000	-3.005547	-1.3897
temp	.0069328	.0670047	0.10	0.918	-.124394	.1382596

ARMA						
ar						
L1.	-.0566043	.2673484	-0.21	0.832	-.5805976	.467389
L2.	-.1364227	.3536171	-0.39	0.700	-.8294994	.5566541

/sigma	.6135191	.1557881	3.94	0.000	.30818	.9188582

-> premise = 6399

ARIMA regression

Sample: 200801 - 201010, but with gaps	Number of obs	=	34
	Wald chi2(18)	=	859.76
Log likelihood = -184.4995	Prob > chi2	=	0.0000

	kwhd	Coef.	OPG Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
	cec	-159.2759	59.13381	-2.69	0.007	-275.1761 -43.37581
	jan	267.8986	76.76649	3.49	0.000	117.439 418.3581
	feb	376.6173	126.2249	2.98	0.003	129.2211 624.0136
	march	130.7422	255.0664	0.51	0.608	-369.1788 630.6632
	april	-76.47804	415.9228	-0.18	0.854	-891.6718 738.7157
	may	-174.9029	536.119	-0.33	0.744	-1225.677 875.871
	june	-259.4775	617.1502	-0.42	0.674	-1469.07 950.1147
	july	-283.4937	678.4901	-0.42	0.676	-1613.31 1046.322
	aug	-266.8653	670.1641	-0.40	0.690	-1580.363 1046.632
	sept	-200.9284	605.3299	-0.33	0.740	-1387.353 985.4965
	oct	-103.0379	431.8639	-0.24	0.811	-949.4756 743.3997
	nov	16.96555	487.5766	0.03	0.972	-938.6671 972.5982
	dec	281.7541	1041.287	0.27	0.787	-1759.13 2322.638
	y08	-175.7944	77.28202	-2.27	0.023	-327.2643 -24.3244
	y09	-5.122809	66.624	-0.08	0.939	-135.7035 125.4578
	temp	8.211329	9.374131	0.88	0.381	-10.16163 26.58429

ARMA						
ar						
L1.	-.1802827	.2584425	-0.70	0.485	-.6868208	.3262553
L2.	.1229445	.43279	0.28	0.776	-.7253084	.9711974

/sigma	54.83325	14.45342	3.79	0.000	26.50507	83.16142

-> premise = 6404

ARIMA regression

Sample: 200801 - 201010, but with gaps
Log likelihood = -118.4698

Number of obs = 34
Wald chi2(18) = 1074.11
Prob > chi2 = 0.0000

		OPG				
kwhd		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
	cec	-3.649827	18.08323	-0.20	0.840	-39.09231 31.79266
	jan	19.56481	17.70218	1.11	0.269	-15.13083 54.26044
	feb	14.02284	18.8548	0.74	0.457	-22.93189 50.97756
	march	2.076112	45.87568	0.05	0.964	-87.83856 91.99079
	april	-4.421808	80.09092	-0.06	0.956	-161.3971 152.5535
	may	20.31786	91.11897	0.22	0.824	-158.272 198.9078
	june	6.487723	104.0547	0.06	0.950	-197.4557 210.4312
	july	-29.29608	128.2434	-0.23	0.819	-280.6485 222.0564
	aug	-28.63343	113.1864	-0.25	0.800	-250.4746 193.2078
	sept	-26.70337	106.163	-0.25	0.801	-234.779 181.3723
	oct	-17.54131	79.08187	-0.22	0.824	-172.5389 137.4563
	nov	3.068937	57.58197	0.05	0.957	-109.7896 115.9275
	dec	25.36136	37.0905	0.68	0.494	-47.33469 98.05741
	y08	-8.944063	16.16819	-0.55	0.580	-40.63313 22.745
	y09	1.52165	8.645737	0.18	0.860	-15.42368 18.46698
	temp	.6311131	1.791751	0.35	0.725	-2.880655 4.142881

ARMA						
	ar					
	L1.	-.1242149	.592616	-0.21	0.834	-1.285721 1.037291
	L2.	-.116867	.4820493	-0.24	0.808	-1.061666 .8279324

	/sigma	7.875602	1.195618	6.59	0.000	5.532234 10.21897

-> premise = 6405

ARIMA regression

Sample: 200801 - 201010, but with gaps
Log likelihood = -58.92627

Number of obs = 34
Wald chi2(18) = 21546.32
Prob > chi2 = 0.0000

		OPG				
kwhd		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
	cec	.2544131	1.185628	0.21	0.830	-2.069374 2.578201
	jan	-6.907124	9.467238	-0.73	0.466	-25.46257 11.64832
	feb	-5.444067	8.648835	-0.63	0.529	-22.39547 11.50734
	march	-3.930062	6.504006	-0.60	0.546	-16.67768 8.817555
	april	-5.234908	4.076687	-1.28	0.199	-13.22507 2.755252
	may	-3.933862	2.198658	-1.79	0.074	-8.243152 .3754282
	june	-1.838624	1.426383	-1.29	0.197	-4.634283 .9570342
	aug	-1.409983	1.679188	-0.84	0.401	-4.701132 1.881165
	sept	-2.895128	1.9454	-1.49	0.137	-6.708043 .9177867
	oct	-6.715765	3.832083	-1.75	0.080	-14.22651 .7949792
	nov	-6.430342	11.40056	-0.56	0.573	-28.77503 15.91434
	dec	-10.55826	20.78045	-0.51	0.611	-51.2872 30.17068
	y08	40.88582	10.11682	4.04	0.000	21.05721 60.71443
	y09	36.41514	9.88148	3.69	0.000	17.0478 55.78249

y10	36.6819	10.699	3.43	0.001	15.71224	57.65156
temp	-.2280088	.1506075	-1.51	0.130	-.5231941	.0671765

ARMA						
ar						
L1.	-.1466975	.2502348	-0.59	0.558	-.6371487	.3437537
L2.	-.5313569	.2743143	-1.94	0.053	-1.069003	.0062891

/sigma	1.329114	.2722513	4.88	0.000	.795511	1.862717

-> premise = 6407

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 350.27
Log likelihood = -97.98617 Prob > chi2 = 0.0000

		OPG				
kwhd		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
cec		2.710746	6.995605	0.39	0.698	-11.00039 16.42188
jan		22.5413	6.532176	3.45	0.001	9.738474 35.34413
feb		19.12755	6.679246	2.86	0.004	6.03647 32.21863
march		11.72484	8.9211	1.31	0.189	-5.760192 29.20988
april		11.45642	13.92396	0.82	0.411	-15.83404 38.74687
may		9.416665	17.02192	0.55	0.580	-23.94568 42.77901
june		8.068096	20.47894	0.39	0.694	-32.06989 48.20608
july		7.056051	21.79396	0.32	0.746	-35.65932 49.77142
aug		4.963524	22.51571	0.22	0.826	-39.16646 49.0935
sept		7.384604	18.36414	0.40	0.688	-28.60844 43.37765
oct		8.401858	13.82158	0.61	0.543	-18.68793 35.49165
nov		16.24207	11.7113	1.39	0.165	-6.711651 39.19579
dec		22.92652	9.852782	2.33	0.020	3.615422 42.23762
y08		-5.230321	7.252791	-0.72	0.471	-19.44553 8.984888
y09		-7.301747	4.677291	-1.56	0.118	-16.46907 1.865575
temp		.0960461	.3311862	0.29	0.772	-.5530669 .7451591

ARMA						
ar						
L1.	.3271167	.3330549	0.98	0.326	-.3256589	.9798924
L2.	-.1032224	.4466097	-0.23	0.817	-.9785614	.7721166

/sigma	4.296905	.9902914	4.34	0.000	2.355969	6.23784

-> premise = 6409

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 21
Wald chi2(15) = 279.39
Log likelihood = -17.40135 Prob > chi2 = 0.0000

		OPG				
kwhd		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
cec	-1.886837	5.947093	-0.32	0.751	-13.54292	9.76925
jan	.4575633	6.21452	0.07	0.941	-11.72267	12.6378
march	-8.564435	3.726033	-2.30	0.022	-15.86733	-1.261544
may	-14.46805	9.007918	-1.61	0.108	-32.12325	3.187143
june	-16.79451	9.168124	-1.83	0.067	-34.7637	1.174687
july	-19.13275	9.913592	-1.93	0.054	-38.56304	.297529
aug	-18.36326	10.26513	-1.79	0.074	-38.48254	1.756015
sept	-14.14111	9.923797	-1.42	0.154	-33.59139	5.309178
oct	-11.71996	8.65514	-1.35	0.176	-28.68372	5.243802
dec	-1.490772	6.262967	-0.24	0.812	-13.76596	10.78442
y08	-.9748388	6.01712	-0.16	0.871	-12.76818	10.8185
y09	1.741373	.6882915	2.53	0.011	.3923461	3.090399
temp	.2790493	.093688	2.98	0.003	.0954242	.4626743

ARMA						
ar						
L1.	.3636886	.8988936	0.40	0.686	-1.39811	2.125488
L2.	-.6126554	.4742492	-1.29	0.196	-1.542167	.3168559
/sigma	.4900928	.2484005	1.97	0.048	.0032368	.9769487

-> premise = 6429

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 7370.55
Log likelihood = -85.41784 Prob > chi2 = 0.0000

		OPG				
kwhd	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
kwhd						
cec	-1.608755	6.540436	-0.25	0.806	-14.42777	11.21026
jan	55.52574	9.320021	5.96	0.000	37.25884	73.79265
feb	59.98191	9.561564	6.27	0.000	41.24159	78.72223
march	67.5982	12.96452	5.21	0.000	42.1882	93.0082
april	72.24159	17.62772	4.10	0.000	37.69191	106.7913
may	75.05113	22.42109	3.35	0.001	31.10659	118.9957
june	80.0093	22.61222	3.54	0.000	35.69016	124.3284
july	90.97305	23.06274	3.94	0.000	45.7709	136.1752
aug	95.39237	23.57604	4.05	0.000	49.18418	141.6006
sept	92.68119	21.87251	4.24	0.000	49.81185	135.5505
oct	74.79337	17.6854	4.23	0.000	40.13062	109.4561
nov	64.38282	61.00349	1.06	0.291	-55.18183	183.9475
dec	58.20478	53.16629	1.09	0.274	-45.99922	162.4088
y08	-5.206669	8.520074	-0.61	0.541	-21.90571	11.49237
y09	-4.067665	4.575805	-0.89	0.374	-13.03608	4.900748
temp	-.3419194	.2702979	-1.26	0.206	-.8716936	.1878548

ARMA						
ar						
L1.	.7491901	.2895171	2.59	0.010	.1817471	1.316633
L2.	-.4813763	.2173415	-2.21	0.027	-.9073577	-.0553949
/sigma	2.877727	.4962149	5.80	0.000	1.905164	3.85029

-> premise = 6430

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 1245.48
Log likelihood = -112.9236 Prob > chi2 = 0.0000

kwhd		Coef.	OPG Std. Err.	z	P> z	[95% Conf. Interval]	

kwhd							
	cec	11.25157	7.546102	1.49	0.136	-3.538523	26.04165
	jan	18.32267	10.86974	1.69	0.092	-2.981629	39.62698
	feb	23.66481	10.57752	2.24	0.025	2.933256	44.39637
	march	61.63434	18.2154	3.38	0.001	25.9328	97.33587
	april	120.9299	30.0653	4.02	0.000	62.00296	179.8568
	may	107.3892	33.2348	3.23	0.001	42.25018	172.5282
	june	73.47681	42.99159	1.71	0.087	-10.78516	157.7388
	july	64.8281	41.31182	1.57	0.117	-16.14157	145.7978
	aug	64.326	41.98644	1.53	0.126	-17.9659	146.6179
	sept	65.67436	35.78862	1.84	0.066	-4.470041	135.8188
	oct	55.78718	28.20499	1.98	0.048	.506413	111.0679
	nov	27.09904	24.94932	1.09	0.277	-21.80073	75.9988
	dec	11.65947	12.44898	0.94	0.349	-12.74009	36.05903
	y08	21.77683	8.972903	2.43	0.015	4.190263	39.3634
	y09	11.24556	4.981907	2.26	0.024	1.481202	21.00992
	temp	-1.164307	.5477198	-2.13	0.034	-2.237818	-.0907957

ARMA							
	ar						
	L1.	.1315252	.3026005	0.43	0.664	-.4615609	.7246112
	L2.	-.1702645	.2468771	-0.69	0.490	-.6541347	.3136057

/sigma		6.679162	1.585464	4.21	0.000	3.571711	9.786614

-> premise = 6434

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 18334.60
Log likelihood = -51.93082 Prob > chi2 = 0.0000

kwhd		OPG		z	P> z	[95% Conf. Interval]						
		Coef.	Std. Err.									

kwhd												
	cec	4.529421	.5898624	7.68	0.000	3.373312	5.68553					
	jan	20.01045	2.287366	8.75	0.000	15.52729	24.4936					
	feb	19.51813	1.656862	11.78	0.000	16.27074	22.76553					
	march	14.75434	3.794619	3.89	0.000	7.317022	22.19165					
	april	4.991927	4.788065	1.04	0.297	-4.392509	14.37636					
	may	-4.755274	6.789133	-0.70	0.484	-18.06173	8.551181					
	june	-6.373136	8.19557	-0.78	0.437	-22.43616	9.689886					
	july	-7.876513	7.592504	-1.04	0.300	-22.75755	7.004523					
	aug	-9.818849	8.070743	-1.22	0.224	-25.63721	5.999517					
	sept	-7.154878	7.229997	-0.99	0.322	-21.32541	7.015656					
	oct	-2.221825	4.99535	-0.44	0.656	-12.01253	7.568881					

nov	-1.84774	5.35554	-0.35	0.730	-12.34441	8.648926
dec	12.00353	3.44913	3.48	0.001	5.243355	18.7637
y08	-1.688019	.8189073	-2.06	0.039	-3.293047	-.08299
y09	-6.048313	.5663469	-10.68	0.000	-7.158333	-4.938294
temp	.2532224	.0995268	2.54	0.011	.0581535	.4482912

ARMA						
ar						
L1.	-.5018496	.3233274	-1.55	0.121	-1.13556	.1318605
L2.	-.7242546	.1531324	-4.73	0.000	-1.024389	-.4241207

/sigma	1.039732	.2162076	4.81	0.000	.6159733	1.463491

-> premise = 6437

ARIMA regression

Sample: 200801 - 201010, but with gaps	Number of obs	=	29
	Wald chi2(18)	=	3212.43
Log likelihood = -102.056	Prob > chi2	=	0.0000

		OPG		z	P> z	[95% Conf. Interval]
kwhd	Coef.	Std. Err.				

kwhd						
cec	2.532003	8.235444	0.31	0.758	-13.60917	18.67318
jan	75.81123	6.689274	11.33	0.000	62.70049	88.92197
feb	70.61295	15.26173	4.63	0.000	40.70052	100.5254
march	89.11927	20.57914	4.33	0.000	48.78489	129.4536
april	47.94368	37.72039	1.27	0.204	-25.98693	121.8743
may	25.56433	40.79431	0.63	0.531	-54.39104	105.5197
june	7.743242	46.81837	0.17	0.869	-84.01907	99.50555
july	1.896982	54.501	0.03	0.972	-104.923	108.717
aug	1.020023	56.44037	0.02	0.986	-109.6011	111.6411
sept	7.293548	43.12544	0.17	0.866	-77.23077	91.81787
oct	17.03408	36.10435	0.47	0.637	-53.72915	87.79731
nov	37.58835	30.07867	1.25	0.211	-21.36476	96.54146
dec	63.44127	23.18035	2.74	0.006	18.00863	108.8739
y09	-4.287302	4.887951	-0.88	0.380	-13.86751	5.292905
y10	-34.24999	7.955756	-4.31	0.000	-49.84299	-18.657
temp	.3711333	.7697677	0.48	0.630	-1.137584	1.87985

ARMA						
ar						
L1.	.1313434	.2774492	0.47	0.636	-.4124471	.6751338
L2.	-.7956979	.1187678	-6.70	0.000	-1.028478	-.5629173

/sigma	7.268281	1.936653	3.75	0.000	3.472511	11.06405

-> premise = 6463

ARIMA regression

Sample: 200801 - 201010, but with gaps	Number of obs	=	34
	Wald chi2(18)	=	6599.75
Log likelihood = -164.4735	Prob > chi2	=	0.0000

		OPG				
kwhd		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
	cec	-46.85819	41.93244	-1.12	0.264	-129.0443 35.32787
	jan	687.856	67.20931	10.23	0.000	556.1282 819.5838
	feb	701.3997	57.79825	12.14	0.000	588.1172 814.6822
	march	765.5423	109.511	6.99	0.000	550.9047 980.1799
	april	708.9991	152.9375	4.64	0.000	409.247 1008.751
	may	665.176	203.6034	3.27	0.001	266.1206 1064.231
	june	636.8255	233.5749	2.73	0.006	179.0271 1094.624
	july	654.6021	249.2729	2.63	0.009	166.0362 1143.168
	aug	646.5887	238.452	2.71	0.007	179.2313 1113.946
	sept	603.4345	233.0896	2.59	0.010	146.5872 1060.282
	oct	519.4503	163.8699	3.17	0.002	198.2711 840.6294
	nov	584.1836	144.4111	4.05	0.000	301.1431 867.224
	dec	542.42	66.85546	8.11	0.000	411.3857 673.4542
	y08	-32.22992	50.26735	-0.64	0.521	-130.7521 66.29228
	y09	-12.90199	29.30848	-0.44	0.660	-70.34555 44.54158
	temp	-6.189108	3.383298	-1.83	0.067	-12.82025 .4420341

ARMA						
	ar					
	L1.	-.0969328	.2063361	-0.47	0.639	-.5013441 .3074786
	L2.	.3741232	.4157029	0.90	0.368	-.4406396 1.188886

	/sigma	30.08438	7.144153	4.21	0.000	16.08209 44.08666

-> premise = 6492

ARIMA regression

Sample: 200801 - 201010, but with gaps	Number of obs	=	34
	Wald chi2(18)	=	9692.37
Log likelihood = -125.0485	Prob > chi2	=	0.0000

		OPG				
kwhd		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
	cec	4.196201	20.40168	0.21	0.837	-35.79036 44.18276
	jan	158.6065	20.50884	7.73	0.000	118.41 198.8031
	feb	169.5229	54.41353	3.12	0.002	62.87438 276.1715
	march	191.9991	42.49415	4.52	0.000	108.7121 275.2861
	april	222.1273	62.90323	3.53	0.000	98.83923 345.4154
	may	243.8276	95.63478	2.55	0.011	56.38684 431.2683
	june	263.5656	96.23376	2.74	0.006	74.95094 452.1803
	july	307.6593	100.0493	3.08	0.002	111.5663 503.7523
	aug	290.7431	99.26705	2.93	0.003	96.18327 485.303
	sept	272.4732	89.39711	3.05	0.002	97.25809 447.6883
	oct	240.9334	63.64815	3.79	0.000	116.1853 365.6814
	nov	214.236	56.87754	3.77	0.000	102.758 325.7139
	dec	167.8744	28.04902	5.99	0.000	112.8993 222.8495
	y08	-3.469017	21.0138	-0.17	0.869	-44.6553 37.71727
	y10	-5.201537	12.78163	-0.41	0.684	-30.25307 19.85
	temp	-1.231248	1.488067	-0.83	0.408	-4.147806 1.68531

ARMA						
	ar					
	L1.	.1165738	.2141345	0.54	0.586	-.303122 .5362696

L2.		.0034924	.3614648	0.01	0.992	-.7049655	.7119504
<hr/>							
/sigma		9.568329	1.195282	8.01	0.000	7.225619	11.91104
<hr/>							

-> premise = 6498

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 4844.48
Log likelihood = -49.7388 Prob > chi2 = 0.0000

		OPG		z	P> z	[95% Conf. Interval]	
kwhd		Coef.	Std. Err.				
<hr/>							
kwhd							
	cec	-3.097486	1.279213	-2.42	0.015	-5.604698	-.590274
	jan	19.39426	1.90504	10.18	0.000	15.66045	23.12807
	feb	17.31064	1.612064	10.74	0.000	14.15105	20.47023
	march	18.78343	2.956532	6.35	0.000	12.98874	24.57813
	april	18.89656	5.038908	3.75	0.000	9.020485	28.77264
	may	15.60994	6.253505	2.50	0.013	3.353291	27.86658
	june	15.38112	7.205423	2.13	0.033	1.258748	29.50349
	july	14.87348	7.763665	1.92	0.055	-.3430242	30.08998
	aug	14.27163	7.87168	1.81	0.070	-1.156578	29.69984
	sept	13.76885	6.791592	2.03	0.043	.4575786	27.08013
	oct	13.0096	5.61915	2.32	0.021	1.996266	24.02293
	nov	13.61972	4.399149	3.10	0.002	4.997543	22.24189
	dec	14.23076	1.941234	7.33	0.000	10.42601	18.0355
	y08	-2.44448	1.45099	-1.68	0.092	-5.288368	.3994078
	y09	-.2459812	.7652977	-0.32	0.748	-1.745937	1.253975
	temp	-.079217	.1119483	-0.71	0.479	-.2986316	.1401976
<hr/>							
ARMA							
	ar						
	L1.	.1929466	.2746026	0.70	0.482	-.3452647	.7311578
	L2.	-.3709308	.3080777	-1.20	0.229	-.974752	.2328903
<hr/>							
	/sigma	1.030299	.2883348	3.57	0.000	.4651736	1.595425
<hr/>							

-> premise = 6499

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 1072.71
Log likelihood = -37.18624 Prob > chi2 = 0.0000

		OPG		z	P> z	[95% Conf. Interval]	
kwhd		Coef.	Std. Err.				
<hr/>							
kwhd							
	cec	.7262172	.8786608	0.83	0.409	-.9959264	2.448361
	jan	3.679738	1.681401	2.19	0.029	.3842522	6.975225
	feb	3.127228	1.592417	1.96	0.050	.0061488	6.248308
	march	3.987018	2.923923	1.36	0.173	-1.743766	9.717802
	april	6.689182	4.535275	1.47	0.140	-2.199792	15.57816

may	3.73232	5.826623	0.64	0.522	-7.687651	15.15229
june	4.239834	6.481712	0.65	0.513	-8.464088	16.94376
july	4.52645	6.908356	0.66	0.512	-9.013679	18.06658
aug	4.710592	7.049848	0.67	0.504	-9.106857	18.52804
sept	4.149927	6.438409	0.64	0.519	-8.469123	16.76898
oct	3.270056	4.794224	0.68	0.495	-6.126451	12.66656
nov	2.325247	3.750553	0.62	0.535	-5.025702	9.676196
dec	1.37299	1.938257	0.71	0.479	-2.425924	5.171905
y08	1.910844	1.131445	1.69	0.091	-.3067475	4.128435
y09	.5478291	.7232763	0.76	0.449	-.8697665	1.965425
temp	-.0667387	.0985909	-0.68	0.498	-.2599733	.126496

ARMA						
ar						
L1.	-.0258506	.954291	-0.03	0.978	-1.896227	1.844525
L2.	-.1739539	.5460788	-0.32	0.750	-1.244249	.896341

/sigma	.7204542	.1414838	5.09	0.000	.4431511	.9977574

-> premise = 6512

ARIMA regression

Sample: 200801 - 201010, but with gaps	Number of obs	=	34
	Wald chi2(18)	=	5267.32
Log likelihood = -107.6002	Prob > chi2	=	0.0000

	kwhd	Coef.	OPG Std. Err.	z	P> z	[95% Conf. Interval]

kwhd	cec	-10.50816	4.250005	-2.47	0.013	-18.83802 -2.178304
	jan	46.73279	36.68614	1.27	0.203	-25.17073 118.6363
	feb	47.40829	35.18202	1.35	0.178	-21.5472 116.3638
	march	49.35418	23.5901	2.09	0.036	3.118437 95.58992
	april	9.684035	13.9398	0.69	0.487	-17.63748 37.00555
	may	23.2008	11.8511	1.96	0.050	-.0269188 46.42853
	june	2.852662	10.32013	0.28	0.782	-17.37441 23.07974
	aug	23.62661	8.176936	2.89	0.004	7.600112 39.65311
	sept	2.024378	11.68772	0.17	0.862	-20.88313 24.93189
	oct	14.19136	15.80109	0.90	0.369	-16.77821 45.16092
	nov	19.41269	21.13502	0.92	0.358	-22.01119 60.83656
	dec	49.0362	67.04822	0.73	0.465	-82.37589 180.4483
	y08	-12.89333	38.24126	-0.34	0.736	-87.84483 62.05817
	y09	-3.571772	36.88593	-0.10	0.923	-75.86686 68.72332
	y10	-8.674809	38.98812	-0.22	0.824	-85.09012 67.7405
	temp	.5034654	.5529422	0.91	0.363	-.5802814 1.587212

ARMA						
ar						
L1.	-.5192555	.2192892	-2.37	0.018	-.9490545	-.0894565
L2.	-.3433497	.2458872	-1.40	0.163	-.8252798	.1385805

/sigma	5.627054	1.251697	4.50	0.000	3.173773	8.080335

-> premise = 6531

ARIMA regression

Sample: 200801 - 201010, but with gaps
Log likelihood = -77.73636

Number of obs = 26
Wald chi2(17) = 90.84
Prob > chi2 = 0.0000

		OPG				
	kwhd	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
	cec	-9.060672	9.852948	-0.92	0.358	-28.3721 10.25075
	jan	13.28942	63.68732	0.21	0.835	-111.5354 138.1143
	feb	10.92146	84.50719	0.13	0.897	-154.7096 176.5525
	april	13.9833	23.25945	0.60	0.548	-31.60439 59.57099
	may	21.42934	27.05938	0.79	0.428	-31.60608 74.46476
	june	27.77404	31.13056	0.89	0.372	-33.24074 88.78883
	july	15.81278	34.72432	0.46	0.649	-52.24564 83.87119
	aug	15.68681	34.28365	0.46	0.647	-51.50791 82.88153
	sept	15.39882	30.63015	0.50	0.615	-44.63518 75.43281
	oct	13.56694	23.34603	0.58	0.561	-32.19043 59.32432
	nov	12.87042	19.9603	0.64	0.519	-26.25105 51.99189
	dec	9.802924	7.28e+07	0.00	1.000	-1.43e+08 1.43e+08
	y08	-9.55873	10.54699	-0.91	0.365	-30.23045 11.11299
	y09	3.898418	4.132659	0.94	0.346	-4.201445 11.99828
	temp	-.092691	.4894413	-0.19	0.850	-1.051978 .8665964

ARMA						
	ar					
	L1.	.2242943	.410831	0.55	0.585	-.5809196 1.029508
	L2.	-.3227998	.9094143	-0.35	0.723	-2.105219 1.45962

	/sigma	4.729292	3.121733	1.51	0.130	-1.389192 10.84778

-> premise = 6532

ARIMA regression

Sample: 200801 - 201010, but with gaps
Log likelihood = -153.4201

Number of obs = 34
Wald chi2(18) = 8780.38
Prob > chi2 = 0.0000

		OPG				
	kwhd	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
	cec	-7.282044	28.46682	-0.26	0.798	-63.07599 48.5119
	jan	572.5147	38.34955	14.93	0.000	497.3509 647.6784
	feb	589.2394	36.82602	16.00	0.000	517.0617 661.4171
	march	561.572	52.9289	10.61	0.000	457.8332 665.3107
	april	366.5285	91.19169	4.02	0.000	187.7961 545.261
	may	292.1299	109.0681	2.68	0.007	78.36037 505.8995
	june	247.7966	152.7146	1.62	0.105	-51.51847 547.1116
	july	221.5411	137.1865	1.61	0.106	-47.33946 490.4217
	aug	222.4233	169.9261	1.31	0.191	-110.6257 555.4723
	sept	218.9644	145.4696	1.51	0.132	-66.15073 504.0795
	oct	210.5112	99.73761	2.11	0.035	15.02909 405.9933
	nov	284.8143	81.90552	3.48	0.001	124.2824 445.3462
	dec	341.3106	52.61198	6.49	0.000	238.193 444.4282
	y08	38.01651	37.86121	1.00	0.315	-36.19009 112.2231
	y09	-2.324542	26.17015	-0.09	0.929	-53.61709 48.968

temp	- .3854744	1.825302	-0.21	0.833	-3.963	3.192051

ARMA						
ar						
L1.	.313438	.2666381	1.18	0.240	-.2091632	.8360391
L2.	-.1333511	.2832478	-0.47	0.638	-.6885067	.4218045

/sigma	21.9421	3.775832	5.81	0.000	14.5416	29.34259

-> premise = 6533

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 4157.86
Log likelihood = -155.6384 Prob > chi2 = 0.0000

		OPG				
	kwhd	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd	cec	-12.26778	65.80873	-0.19	0.852	-141.2505 116.715
	jan	224.1427	95.50948	2.35	0.019	36.9476 411.3379
	feb	222.4949	104.3374	2.13	0.033	17.99729 426.9925
	march	245.8462	191.2344	1.29	0.199	-128.9664 620.6589
	april	255.7437	354.6634	0.72	0.471	-439.3839 950.8712
	may	279.1872	411.0286	0.68	0.497	-526.414 1084.788
	june	311.0785	475.4716	0.65	0.513	-620.8288 1242.986
	july	376.9239	509.9933	0.74	0.460	-622.6446 1376.493
	aug	423.0904	505.6772	0.84	0.403	-568.0187 1414.199
	sept	387.7961	446.5294	0.87	0.385	-487.3855 1262.978
	oct	337.279	343.3377	0.98	0.326	-335.6506 1010.209
	nov	298.192	3307.073	0.09	0.928	-6183.551 6779.935
	dec	255.7066	329.0707	0.78	0.437	-389.2602 900.6734
	y08	-7.694804	68.52084	-0.11	0.911	-141.9932 126.6036
	y09	-11.94438	27.13638	-0.44	0.660	-65.13071 41.24196
	temp	-.8417719	7.004143	-0.12	0.904	-14.56964 12.8861

ARMA						
ar						
L1.	.0941822	.5027468	0.19	0.851	-.8911833	1.079548
L2.	-.0041772	.5171437	-0.01	0.994	-1.01776	1.009406

/sigma	23.53171	4.210743	5.59	0.000	15.27881	31.78462

-> premise = 6536

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 10356.28
Log likelihood = -125.6313 Prob > chi2 = 0.0000

		OPG				
	kwhd	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						

cec	-13.90924	7.904615	-1.76	0.078	-29.402	1.583521
jan	211.7439	11.09779	19.08	0.000	189.9927	233.4952
feb	220.0313	12.11057	18.17	0.000	196.295	243.7675
march	211.2443	25.60142	8.25	0.000	161.0664	261.4222
april	178.8511	35.9799	4.97	0.000	108.3318	249.3704
may	148.148	47.88151	3.09	0.002	54.30199	241.9941
june	136.548	49.33375	2.77	0.006	39.85567	233.2404
july	131.6668	55.45762	2.37	0.018	22.97185	240.3617
aug	133.2663	53.61063	2.49	0.013	28.19137	238.3412
sept	116.8317	47.35226	2.47	0.014	24.02294	209.6404
oct	130.3613	37.64294	3.46	0.001	56.5825	204.1401
nov	152.1974	33.17631	4.59	0.000	87.173	217.2217
dec	165.9125	29.45904	5.63	0.000	108.1738	223.6512
y08	-.358943	9.268703	-0.04	0.969	-18.52527	17.80738
y09	2.933057	5.289879	0.55	0.579	-7.434915	13.30103
temp	-.6496379	.7345447	-0.88	0.376	-2.089319	.7900433

ARMA						
ar						
L1.	-.6539487	.2670898	-2.45	0.014	-1.177435	-.1304623
L2.	-.1900309	.2911929	-0.65	0.514	-.7607586	.3806968

/sigma	9.553645	2.465261	3.88	0.000	4.721823	14.38547

-> premise = 19761						
ARIMA regression						
Sample: 200801 - 201010, but with gaps				Number of obs	=	34
				Wald chi2(18)	=	8504.21
Log likelihood = -154.5902				Prob > chi2	=	0.0000

kwhd	Coef.	OPG Std. Err.	z	P> z	[95% Conf. Interval]	

kwhd						
cec	-20.92678	15.73245	-1.33	0.183	-51.76181	9.908247
jan	387.3076	15.2665	25.37	0.000	357.3858	417.2294
feb	439.27	20.24063	21.70	0.000	399.5991	478.9409
march	438.9682	53.4494	8.21	0.000	334.2093	543.7271
april	368.8648	89.71036	4.11	0.000	193.0357	544.6939
may	343.1203	139.7064	2.46	0.014	69.30082	616.9397
june	331.5743	128.4479	2.58	0.010	79.8211	583.3275
july	300.9849	145.965	2.06	0.039	14.89863	587.0711
aug	290.6595	134.4874	2.16	0.031	27.06906	554.25
sept	341.256	146.6299	2.33	0.020	53.86661	628.6453
oct	344.6522	89.02612	3.87	0.000	170.1642	519.1402
nov	405.0641	81.68467	4.96	0.000	244.9651	565.1631
dec	302.6853	29.88516	10.13	0.000	244.1115	361.2592
y08	-57.61879	13.86513	-4.16	0.000	-84.79395	-30.44363
y10	-22.75456	15.91718	-1.43	0.153	-53.95165	8.44253
temp	-.2449918	2.020558	-0.12	0.903	-4.205212	3.715229

ARMA						
ar						
L1.	-.1115153	.4890409	-0.23	0.820	-1.070018	.8469874
L2.	-.3099312	.3082447	-1.01	0.315	-.9140797	.2942174

/sigma	22.61684	4.531457	4.99	0.000	13.73535	31.49833

-> premise = 19955

ARIMA regression

Sample: 200802 - 201010, but with gaps Number of obs = 23
Wald chi2(18) = 6409.64
Log likelihood = -6.479744 Prob > chi2 = 0.0000

		OPG		z	P> z	[95% Conf. Interval]	
kwhd		Coef.	Std. Err.				
kwhd							
	cec	2.769166	.3345498	8.28	0.000	2.11346	3.424871
	jan	-5.329245	2.070291	-2.57	0.010	-9.386941	-1.27155
	feb	-6.060615	1.369517	-4.43	0.000	-8.74482	-3.376411
	march	-8.109926	2.908765	-2.79	0.005	-13.811	-2.408851
	april	-14.9295	4.086771	-3.65	0.000	-22.93943	-6.919578
	may	-17.26314	4.650767	-3.71	0.000	-26.37848	-8.147809
	june	-17.99932	4.459131	-4.04	0.000	-26.73905	-9.25958
	july	-21.04505	5.62024	-3.74	0.000	-32.06052	-10.02958
	aug	-19.00495	5.495239	-3.46	0.001	-29.77542	-8.234476
	sept	-21.47071	4.604011	-4.66	0.000	-30.49441	-12.44702
	oct	-15.44559	3.426584	-4.51	0.000	-22.16157	-8.729611
	nov	-11.25451	3.586953	-3.14	0.002	-18.28481	-4.224214
	dec	-7.310216	32.01891	-0.23	0.819	-70.06613	55.4457
	y08	5.407725	.5079562	10.65	0.000	4.41215	6.403301
	y09	3.508898	.526689	6.66	0.000	2.476607	4.54119
	temp	.2466277	.0674224	3.66	0.000	.1144822	.3787732
ARMA							
	ar						
	L1.	-.8016501	.0861274	-9.31	0.000	-.9704567	-.6328434
	L2.	-.9808145	.0619777	-15.83	0.000	-1.102289	-.8593404
	/sigma	.1903125	.1133481	1.68	0.093	-.0318458	.4124707

-> premise = 20916

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 505.13
Log likelihood = -161.341 Prob > chi2 = 0.0000

		OPG		z	P> z	[95% Conf. Interval]	
kwhd		Coef.	Std. Err.				
kwhd							
	cec	19.31072	78.60404	0.25	0.806	-134.7504	173.3718
	jan	187.9967	92.08925	2.04	0.041	7.505123	368.4883
	feb	192.1384	129.6187	1.48	0.138	-61.90955	446.1864
	march	178.0447	150.1216	1.19	0.236	-116.1883	472.2776
	april	155.877	144.8831	1.08	0.282	-128.0886	439.8426
	may	136.7259	157.8373	0.87	0.386	-172.6296	446.0813
	june	149.5879	167.6806	0.89	0.372	-179.06	478.2358
	july	131.563	164.3672	0.80	0.423	-190.5907	453.7167
	aug	114.6022	153.7638	0.75	0.456	-186.7693	415.9737

		OPG		z	P> z	[95% Conf. Interval]	
kwhd		Coef.	Std. Err.				
kwhd							
	cec	-.5640627	.8493693	-0.66	0.507	-2.228796	1.100671
	jan	.9915749	.7866088	1.26	0.207	-.55015	2.5333
	feb	.5447614	1.229101	0.44	0.658	-1.864233	2.953756
	march	.6996492	2.510336	0.28	0.780	-4.22052	5.619818
	april	1.8058	4.590312	0.39	0.694	-7.191046	10.80265
	may	3.237678	5.207993	0.62	0.534	-6.969801	13.44516
	june	2.096492	9.000977	0.23	0.816	-15.5451	19.73808
	july	2.189947	6.625804	0.33	0.741	-10.79639	15.17628
	aug	2.322592	6.726776	0.35	0.730	-10.86165	15.50683
	sept	2.0426	5.493528	0.37	0.710	-8.724517	12.80972
	oct	1.787138	4.248334	0.42	0.674	-6.539445	10.11372
	nov	1.592424	3.368472	0.47	0.636	-5.009661	8.194508
	dec	.7784169	1.200774	0.65	0.517	-1.575057	3.13189
	y08	-.2596176	.9337281	-0.28	0.781	-2.089691	1.570456
	y09	-.0325438	.5370156	-0.06	0.952	-1.085075	1.019987
	temp	-.0225727	.0986693	-0.23	0.819	-.2159611	.1708156
ARMA							
	ar						
	L1.	-.013471	.90443	-0.01	0.988	-1.786121	1.759179
	L2.	.05041	.5371209	0.09	0.925	-1.002328	1.103148
	/sigma	.4928579	.1175742	4.19	0.000	.2624167	.723299

-> premise = 21760

ARIMA regression

Sample: 200801 - 201010, but with gaps	Number of obs	=	34
	Wald chi2(18)	=	7984.93
Log likelihood = -140.9204	Prob > chi2	=	0.0000

		OPG		z	P> z	[95% Conf. Interval]	
kwhd		Coef.	Std. Err.				
kwhd							
	cec	9.903608	29.8963	0.33	0.740	-48.69206	68.49927
	jan	329.6556	31.77931	10.37	0.000	267.3693	391.9419
	feb	321.4257	29.32695	10.96	0.000	263.946	378.9055
	march	344.2216	48.60811	7.08	0.000	248.9515	439.4918
	april	339.3845	72.26888	4.70	0.000	197.7401	481.0289
	may	342.1226	83.433	4.10	0.000	178.597	505.6483
	june	313.889	101.9743	3.08	0.002	114.0229	513.755
	july	336.391	109.2186	3.08	0.002	122.3265	550.4555
	aug	305.3321	103.0376	2.96	0.003	103.3822	507.2821
	sept	302.3902	97.03101	3.12	0.002	112.2129	492.5675
	oct	252.5127	69.38986	3.64	0.000	116.5111	388.5144
	nov	288.4429	55.04229	5.24	0.000	180.562	396.3238
	dec	252.6713	13.15475	19.21	0.000	226.8884	278.4541
	y09	-31.42014	29.52169	-1.06	0.287	-89.28159	26.44131
	y10	-62.89798	32.35766	-1.94	0.052	-126.3178	.5218613
	temp	-1.182314	1.566165	-0.75	0.450	-4.251942	1.887313
ARMA							

ar						
L1.	-.1344195	.1818808	-0.74	0.460	-.4908993	.2220603
L2.	.0530776	.2492171	0.21	0.831	-.435379	.5415341

/sigma	15.25241	2.535613	6.02	0.000	10.2827	20.22212

-> premise = 22819

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 788.56
Log likelihood = -68.45333 Prob > chi2 = 0.0000

		OPG					
	kwhd	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	

kwhd							
	cec	1.014472	6.073907	0.17	0.867	-10.89017	12.91911
	jan	13.34943	6.392258	2.09	0.037	.8208379	25.87803
	feb	9.584731	6.751048	1.42	0.156	-3.647079	22.81654
	march	8.604846	11.78235	0.73	0.465	-14.48813	31.69783
	april	6.529545	12.58412	0.52	0.604	-18.13487	31.19396
	may	5.290915	16.40045	0.32	0.747	-26.85338	37.43521
	june	4.983729	16.79707	0.30	0.767	-27.93793	37.90539
	july	7.410941	16.69803	0.44	0.657	-25.31659	40.13848
	aug	6.858129	15.86871	0.43	0.666	-24.24398	37.96024
	sept	6.913149	13.90703	0.50	0.619	-20.34413	34.17043
	oct	5.344795	12.4916	0.43	0.669	-19.13829	29.82788
	nov	5.855107	12.55155	0.47	0.641	-18.74547	30.45569
	dec	8.056694	31.33046	0.26	0.797	-53.34987	69.46326
	y08	-2.065534	6.137122	-0.34	0.736	-14.09407	9.963004
	y09	-2.902211	5.788196	-0.50	0.616	-14.24687	8.442445
	temp	.0338996	.1631314	0.21	0.835	-.285832	.3536312

ARMA						
ar						
L1.	.6561222	.7313241	0.90	0.370	-.7772467	2.089491
L2.	-.1093979	1.188914	-0.09	0.927	-2.439626	2.22083

/sigma	1.775839	.408997	4.34	0.000	.97422	2.577459

-> premise = 23379

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 33
Wald chi2(18) = 136.87
Log likelihood = -95.90266 Prob > chi2 = 0.0000

		OPG				
kwhd		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]

kwhd						
	cec	-6.606129	7.435234	-0.89	0.374	-21.17892 7.966662
	jan	18.39805	7.671316	2.40	0.016	3.362544 33.43355
	feb	14.24879	8.770124	1.62	0.104	-2.94034 31.43791

ARIMA regression

Sample: 200801 - 201010, but with gaps

Number of obs = 34

Wald chi2(18) = 2648.63

Log likelihood = -97.15952

Prob > chi2 = 0.0000

		OPG		z	P> z	[95% Conf. Interval]	
kwhd		Coef.	Std. Err.				
kwhd							
	cec	-4.90119	6.767906	-0.72	0.469	-18.16604	8.363661
	jan	80.06112	8.209121	9.75	0.000	63.97154	96.1507
	feb	79.53958	11.87913	6.70	0.000	56.2569	102.8223
	march	76.96285	14.78405	5.21	0.000	47.98663	105.9391
	april	75.51491	17.61648	4.29	0.000	40.98725	110.0426
	may	81.45416	19.17928	4.25	0.000	43.86347	119.0448
	june	78.12434	21.32489	3.66	0.000	36.32832	119.9204
	july	82.78048	21.72246	3.81	0.000	40.20524	125.3557
	aug	81.78196	21.20613	3.86	0.000	40.21871	123.3452
	sept	85.66078	19.7408	4.34	0.000	46.96952	124.352
	oct	81.43298	19.03091	4.28	0.000	44.13308	118.7329
	nov	78.81584	17.79458	4.43	0.000	43.9391	113.6926
	dec	80.23025	283.2353	0.28	0.777	-474.9007	635.3612
	y08	-22.99495	7.850584	-2.93	0.003	-38.38181	-7.608088
	y09	-16.04569	5.889558	-2.72	0.006	-27.58901	-4.50237
	temp	.2232489	.3065411	0.73	0.466	-.3775606	.8240584
ARMA							
	ar						
	L1.	.9791267	.4141789	2.36	0.018	.1673509	1.790902
	L2.	-.38889	.3196214	-1.22	0.224	-1.015336	.2375564
	/sigma	4.030789	.6161885	6.54	0.000	2.823082	5.238497

-> premise = 26252

ARIMA regression

Sample: 200801 - 201010, but with gaps

Number of obs = 34

Wald chi2(18) = 930.04

Log likelihood = -159.757

Prob > chi2 = 0.0000

		OPG		z	P> z	[95% Conf. Interval]	
kwhd		Coef.	Std. Err.				
kwhd							
	cec	-53.15687	42.89185	-1.24	0.215	-137.2233	30.90961
	jan	481.864	40.91132	11.78	0.000	401.6793	562.0487
	feb	477.0065	36.0964	13.21	0.000	406.2588	547.7541
	march	382.2081	52.97228	7.22	0.000	278.3843	486.0319
	april	206.8814	76.67407	2.70	0.007	56.60302	357.1598
	may	117.5705	84.20597	1.40	0.163	-47.47015	282.6112
	june	25.66841	95.32793	0.27	0.788	-161.1709	212.5077
	july	-22.80099	122.0038	-0.19	0.852	-261.924	216.3221
	aug	-24.38269	139.1871	-0.18	0.861	-297.1844	248.419
	sept	-5.14579	115.9164	-0.04	0.965	-232.3378	222.0462
	oct	68.80882	71.73292	0.96	0.337	-71.78511	209.4028
	nov	190.563	65.60269	2.90	0.004	61.98409	319.1419

dec	359.7871	59.0711	6.09	0.000	244.0099	475.5643
y09	1.204152	47.25268	0.03	0.980	-91.4094	93.8177
y10	-1.380556	58.23953	-0.02	0.981	-115.5279	112.7668
temp	2.297539	1.248811	1.84	0.066	-.1500858	4.745164

ARMA						
ar						
L1.	1.051316	.2677177	3.93	0.000	.5265992	1.576033
L2.	-.5993381	.1867055	-3.21	0.001	-.9652741	-.2334021

/sigma	24.91465	4.560224	5.46	0.000	15.97677	33.85252

-> premise = 26390

ARIMA regression

Sample: 200801 - 201008, but with gaps Number of obs = 30
Wald chi2(18) = 271.19
Log likelihood = -46.00567 Prob > chi2 = 0.0000

		OPG				
kwhd	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	

kwhd						
cec	7.886422	4.570845	1.73	0.084	-1.07227	16.84511
jan	4.697319	5.841214	0.80	0.421	-6.75125	16.14589
feb	4.745136	6.104988	0.78	0.437	-7.220421	16.71069
march	5.324014	5.035389	1.06	0.290	-4.545167	15.1932
april	5.621228	3.844569	1.46	0.144	-1.913988	13.15644
may	2.06598	2.800295	0.74	0.461	-3.422497	7.554456
june	-.4832878	1.274245	-0.38	0.704	-2.980761	2.014186
aug	.3695734	.9923353	0.37	0.710	-1.575368	2.314515
sept	-.6054217	2.030506	-0.30	0.766	-4.585141	3.374298
oct	-2.939588	3.405955	-0.86	0.388	-9.615136	3.73596
nov	-3.67244	4.376322	-0.84	0.401	-12.24987	4.904994
dec	-4.858131	11.14861	-0.44	0.663	-26.70901	16.99275
y08	6.846765	6.315319	1.08	0.278	-5.531032	19.22456
y09	-4.259861	7.340156	-0.58	0.562	-18.6463	10.12658
y10	-9.048326	7.74726	-1.17	0.243	-24.23268	6.136025
temp	-.0355266	.0842683	-0.42	0.673	-.2006894	.1296363

ARMA						
ar						
L1.	1.293593	.1861202	6.95	0.000	.9288042	1.658382
L2.	-.6103021	.2217799	-2.75	0.006	-1.044983	-.1756214

/sigma	.9801428	.1910105	5.13	0.000	.6057691	1.354516

-> premise = 26719

ARIMA regression

Sample: 200801 - 201010, but with gaps Number of obs = 34
Wald chi2(18) = 1349.34
Log likelihood = -132.7957 Prob > chi2 = 0.0000

	OPG
--	-----

kwhd	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
kwhd						
cec	-21.1787	15.52267	-1.36	0.172	-51.60258	9.245176
jan	173.437	21.69672	7.99	0.000	130.9122	215.9618
feb	184.5851	19.10705	9.66	0.000	147.136	222.0342
march	202.6766	33.87459	5.98	0.000	136.2836	269.0696
april	206.7066	57.34881	3.60	0.000	94.30504	319.1082
may	203.8635	74.54586	2.73	0.006	57.75632	349.9707
june	183.385	87.20581	2.10	0.035	12.46479	354.3053
july	208.6499	95.68439	2.18	0.029	21.11196	396.1879
aug	199.8482	92.42605	2.16	0.031	18.69643	380.9999
sept	199.3913	90.73008	2.20	0.028	21.56365	377.219
oct	177.2634	66.74073	2.66	0.008	46.45395	308.0728
nov	160.579	499.8629	0.32	0.748	-819.1343	1140.292
dec	145.6503	272.2791	0.53	0.593	-388.0069	679.3074
y09	-19.86709	14.44963	-1.37	0.169	-48.18784	8.453656
y10	-42.37482	19.30285	-2.20	0.028	-80.20772	-4.541922
temp	-.663028	1.347525	-0.49	0.623	-3.304128	1.978072
ARMA						
ar						
L1.	.5460421	.2524392	2.16	0.031	.0512703	1.040814
L2.	-.1553355	.3054066	-0.51	0.611	-.7539215	.4432504
/sigma	11.86357	2.965579	4.00	0.000	6.051139	17.676

-> premise = 27251

ARIMA regression

Sample: 200807 - 201010, but with gaps Number of obs = 28
Wald chi2(18) = 2635.38
Log likelihood = -81.56208 Prob > chi2 = 0.0000

kwhd	Coef.	OPG Std. Err.	z	P> z	[95% Conf. Interval]	
kwhd						
cec	43.04226	7.269947	5.92	0.000	28.79342	57.29109
jan	14.89525	8.405046	1.77	0.076	-1.578342	31.36883
feb	8.097465	20.60658	0.39	0.694	-32.29068	48.48561
march	3.282977	44.89672	0.07	0.942	-84.71298	91.27894
april	-5.082742	70.68991	-0.07	0.943	-143.6324	133.4669
may	-29.95319	80.70003	-0.37	0.711	-188.1223	128.216
june	-32.18936	94.83162	-0.34	0.734	-218.0559	153.6772
july	-27.6443	104.6376	-0.26	0.792	-232.7302	177.4416
aug	-19.20772	102.3249	-0.19	0.851	-219.7609	181.3455
sept	-19.88368	93.01576	-0.21	0.831	-202.1912	162.4239
oct	-18.86466	71.02694	-0.27	0.791	-158.0749	120.3456
nov	-10.97917	60.56335	-0.18	0.856	-129.6812	107.7228
dec	-1.526813	9.751309	-0.16	0.876	-20.63903	17.5854
y08	14.64294	6.434196	2.28	0.023	2.032147	27.25373
y09	-4.080091	5.686391	-0.72	0.473	-15.22521	7.065032
temp	.235454	1.519519	0.15	0.877	-2.742748	3.213656
ARMA						
ar						
L1.	.0315875	.6101743	0.05	0.959	-1.164332	1.227507
L2.	-.4467949	.587241	-0.76	0.447	-1.597766	.7041764

-----+-----						
/sigma	4.349359	1.633578	2.66	0.008	1.147606	7.551113
