## **ASSUMPTIONS AND INPUTS**

	F				
	Program Duration	Vooro			
	Number of CEL Types	Number	1		
	Dragram Ctart Vaar	Number	1		
		real	2010		
		%	0.85		
	NIG - Net-to-Gross Ratio	%	0.9		
	Losses and Breakage	%	0.025		
		Units	Year 1	Year 2	Year 3
	No. of CFLs Installed				
	Type 1	Thousands	0	0	0
	Type 2	Thousands	1000	0	0
	Туре 3	Thousands	0	0	0
	Cost of CFLs Procured				
	Type 1	\$/CFL	1.00	1.00	0.00
	Type 2	\$/CFL	1.00	1.00	0.00
	Туре 3	\$/CFL	1.20	1.20	1.20
	Cost Charged to Customer				
	Type 1	\$/CFL	0.00	0.00	0.00
	Type 2	\$/CFL	0.00	0.00	0.00
	Type 3	\$/CFL	0.00	0.00	0.00
	Distribution Costs per CFL	\$/CFL	0.20	0.35	0.00
	Management & Admin Cost	000 \$	100	0	0
	Marketing & Promotion Costs	000 \$	200	0	0
	Other Program Costs	000 \$	200	0	0
	other rogium oosts	000 φ	0	Ū	0
F		CEL INFORM			
		Units	Type 1	Type 2	Type 3
	Wattage of CFI	Watts	12	15	25
	Rated Life of CEI	Hours	6000	8000	10000
	Wattage of Incand Replaced	Watts	40	60	100
	Rated Life of Incandescent	Hours	1000	1000	1000
	Cost of Inconsiders cont	¢/lamp	0.25	0.25	0.25
	Hours of Lise	ψ/iamp Hours/Day	3.5	3.5	3.5
		Tiours/Day	5.5	5.5	5.5
	Power Factor	%	0.5	0.5	05
	Power Factor	%	0.5	0.5	0.5
	Power Factor	%	0.5	0.5	0.5
ŀ	Power Factor CAPACITY Avoided Capacity Cost	%	0.5 OSTS AND TAR	0.5	0.5
	Power Factor CAPACITY Avoided Capacity Cost Generation Level	% AND ENERGY C \$/kW/year	0.5 OSTS AND TAR	0.5	0.5
	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level	% AND ENERGY C \$/kW/year \$/kW/year	0.5 OSTS AND TAR 100 125	0.5	0.5
	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year	0.5 OSTS AND TAR 100 125 150	0.5	0.5
	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year	0.5 <b>OSTS AND TAR</b> 100 125 150	0.5	0.5
	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period)	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year	0.5 <b>OSTS AND TAR</b> 100 125 150	0.5	0.5
ļ	Power Factor <b>CAPACITY</b> Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year	0.5 OSTS AND TAR 100 125 150 8.0	0.5	0.5
ļ	Power Factor <b>CAPACITY</b> Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0	0.5 IIFS	0.5
	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0	0.5 IIFS	0.5
ļ	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0	0.5	0.5
, ,	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Period)	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0	0.5	0.5
ļ	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0	0.5 IIFS	0.5
, ,	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0	0.5 IIFS	0.5
, ,	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Transmission Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 5.0 9.0	0.5	0.5
, ,	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 8.0 8.0	0.5	0.5
, ,	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 5.0 8.0	0.5	0.5
4	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Distribution Level Distribution Level Distribution Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 5.0 8.0	0.5	0.5
•	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Long-run Marginal Costs Generation Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 5.0 8.0 6.0	0.5	0.5
, ,	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Distribution Level Long-run Marginal Costs Generation Level Transmission Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 5.0 8.0 6.0 8.0	0.5	0.5
4	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Long-run Marginal Costs Generation Level Transmission Level Distribution Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 5.0 8.0 6.0 8.0 10.0 10.0	0.5	0.5
4	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Distribution Level Distribution Level Transmission Level Distribution Level Distribution Level Distribution Level Long-run Marginal Costs Generation Level Transmission Level Distribution Level Distribution Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 5.0 8.0 10.0 12.0	0.5	0.5
4	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Long-run Marginal Costs Generation Level Transmission Level Distribution Level Transmission Level Transmission Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 8.0 6.0 8.0 10.0	0.5	0.5
,	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Long-run Marginal Costs Generation Level Transmission Level Distribution Level Transmission Level Distribution Level Tansmission Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 8.0 6.0 8.0 10.0 5%	0.5	0.5
	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Long-run Marginal Costs Generation Level Transmission Level Distribution Level Transmission Level Transmission Level Distribution Level Tansmission Level Tansmission Level Distribution Losses Distribution Losses	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 8.0 10.0 8.0 10.0 5% 10%	0.5	0.5
	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Long-run Marginal Costs Generation Level Transmission Level Distribution Level Distribution Level Tansmission Level Distribution Level Tansmission Level Distribution Level	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 5.0 8.0 10.0 6.0 8.0 10.0 5% 10%	0.5	0.5
	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Long-run Marginal Costs Generation Level Transmission Level Distribution Level Tansmission Level Distribution Level Tansmission Level Distribution Level T&D Losses Transmission Losses Distribution Losses	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 8.0 10.0 8.0 10.0 5.0 8.0 10.0 5.0 8.0 10.0 5.0 8.0 10.0 5.0 5.0 8.0 10.0 5.0 5.0 8.0 10.0 5.0 5.0 8.0 10.0 5.0 5.0 8.0 10.0 5.0 5.0 8.0 10.0 5.0 5.0 8.0 10.0 5.0 8.0 10.0 12.0 5.0 8.0 10.0 12.0 5.0 8.0 10.0 12.0 5.0 8.0 10.0 12.0 5.0 8.0 10.0 12.0 5.0 8.0 10.0 12.0 5.0 8.0 10.0 5.0 8.0 10.0 10.0 10.0 5.0 8.0 10.0 10.0 5.0 8.0 10.0 5.0 8.0 10.0 5.0 8.0 10.0 1	0.5	0.5
,	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Long-run Marginal Costs Generation Level Transmission Level Distribution Level Tansmission Level Transmission Level Distribution Level T&D Losses Transmission Losses Distribution Losses Distribution Losses	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 8.0 10.0 6.0 8.0 10.0 5% 10%	0.5	0.5
	Power Factor CAPACITY Avoided Capacity Cost Generation Level Transmission Level Distribution Level Avoided Energy Costs (Peak Period) Generation Level Transmission Level Distribution Level Avoided Energy Costs (Off-Peak Per Generation Level Transmission Level Distribution Level Long-run Marginal Costs Generation Level Transmission Level Distribution Level Transmission Level Distribution Level Tansmission Level Tansmission Level Distribution Level T&D Losses Transmission Losses Distribution Losses Distribution Losses Discount rate For Economic Analysis For Financial Analysis	% AND ENERGY C \$/kW/year \$/kW/year \$/kW/year Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh Cents/kWh	0.5 OSTS AND TAR 100 125 150 8.0 10.0 12.0 5.0 5.0 5.0 8.0 6.0 8.0 10.0 5% 10% 10% 7%	0.5	0.5

VAT	%	10%				
Current Retail Tariffs (Excl. VAT) Peak hours Off-Peak Hours % Energy Use during Peak Period	Cents/kWh Cents/kWh %	12.0 8.0 100%				
c	DM INPUTS					
GHG Reduction Factor	ka/kWh	0.8				
CDM Costs - First Year	000 \$	100				
CDM Costs - Recurring	000 \$	50				
CDM Revenues per CER	\$/Ton	10.0				
CEL Survival Curves		1	2	3	1	5
	%	100%	98%	90%	80%	68%
Type 2	%	100%	99%	95%	90%	82%
Type 3	%	100%	100%	99%	98%	97%
Reactive Power		13.4	16.8	28.0		

<b>Year</b>				
6	7	8	9	10
50%	0%	0%	0%	0%
72%	61%	50%	0%	0%
95%	85%	80%	65%	50%

486%

## Economic and Benefit/Cost Analysis Compact Flourescent Lamp (CFL) Program

	Units	Type 1	Type 2	Type 3
Power Factor Correction	%	94.9%	96.1%	96.1%
Capacity Savings per CFL - Customer Level	Watts	28.0	45.0	75.0
Capacity Savings per CFL - Generation Level	Watts	23.9	38.9	64.8
Annual Energy Savings per CFL - Customer Level	kWh	35.8	57.5	95.8
Annual \Energy Savings per CFL - Generation Level	kWh	37.9	60.9	101.4
Annual \Energy Savings per CFL - Generation Level	kWh	37.9	60.9	101.4

							Year					
			1	2	3	4	5	6	7	8	9	10
		TOTAL	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
			Peak Load	and Energy	Reduction							
Number of CFL Installed during Year												
Type 1	1000s	0	0	0	0	0	0	0	0	0	0	0
Type 2	1000s	1,000	1,000	0	0	0	0	0	0	0	0	0
Type 3	1000s	0	0	0	0	0	0	0	0	0	0	0
Total	1000s	1,000	1,000	0	0	0	0	0	0	0	0	0
Cumulative Number of CFL Operating												
Type 1	1000s		0	0	0	0	0	0	0	0	0	0
Type 2	1000s		1,000	990	950	900	820	720	610	500	0	0
Type 3	1000s		0	0	0	0	0	0	0	0	0	0
Total	1000s		1,000	990	950	900	820	720	610	500	0	0
Total Capacity savings - Customer Level	MW		45.0	44.6	42.8	40.5	36.9	32.4	27.5	22.5	0.0	0.0
Total Capacity savings - Generation Level	MW		38.9	38.5	37.0	35.0	31.9	28.0	23.7	19.5	0.0	0.0
Total Energy savings - Customer Level	GWH	373.1	57.5	56.9	54.6	51.7	47.1	41.4	35.1	28.7	0.0	0.0
Total Energy Savings - Generation Level	GWH	395.0	60.9	60.3	57.8	54.8	49.9	43.8	37.1	30.4	0.0	0.0

	1	2	3	4	5	6	7	8	9	10
TOTAL	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	UTIL	ITY ANAL	YSIS							
\$ 1,000	1,000	0	0	0	0	0	0	0	0	0
\$ 200	200	0	0	0	0	0	0	0	0	0
\$ 200	200	0	0	0	0	0	0	0	0	0
\$ 100	100	0	0	0	0	0	0	0	0	0
\$ 0	0	0	0	0	0	0	0	0	0	0
\$ 550	100	50	50	50	50	50	50	50	50	50
\$ 2,050	1,600	50	50	50	50	50	50	50	50	50
\$ 2,050	1,600	50	50	50	50	50	50	50	50	50
\$ 1,716										
\$ 1,800										
\$0	0	0	0	0	0	0	0	0	0	0
\$ 0										
\$0										
\$ 44,771	6,899	6,830	6,554	6,209	5,657	4,967	4,208	3,449	0	0
\$ 31,165										
\$ 44,771	6,899	6,830	6,554	6,209	5,657	4,967	4,208	3,449	0	0
\$ 34,470										
	TOTAL         \$ 1,000         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 200         \$ 31,165         \$ 44,771         \$ 34,470	TOTAL     1       TOTAL     2010       UTIL       \$ 1,000       \$ 200       200       \$ 200       200       \$ 200       200       \$ 100       100       \$ 2,050       1,600       \$ 2,050       \$ 1,716       \$ 1,800       \$ 0       \$ 0       \$ 1,800       \$ 44,771       6,899       \$ 34,470	1         2         2010         2011           TOTAL         2010         2011           UTILITY ANAL           \$         1,000         1,000         0           \$         200         200         0           \$         200         200         0           \$         200         200         0           \$         200         200         0           \$         200         200         0           \$         200         200         0           \$         200         200         0           \$         200         200         0           \$         200         200         0           \$         2050         1,600         50           \$         2,050         1,600         50           \$         1,800         50           \$         1,800         50           \$         0         0           \$         31,165         \$           \$         34,470         6,899         6,830	1         2         3           TOTAL         2010         2011         2012           UTILITY ANALYSIS           \$         1,000         0         0           \$         200         200         0         0           \$         200         200         0         0           \$         200         200         0         0           \$         200         200         0         0           \$         100         100         0         0           \$         100         100         0         0           \$         200         200         200         0           \$         200         200         0         0           \$         0         0         0         0           \$         2,050         1,600         50         50           \$         1,716         \$         1,800         \$           \$         0         0         0         0         0           \$         31,165         \$         34,771         6,899         6,830         6,554           \$         34,470         \$         34,470	1         2         3         4           TOTAL         2010         2011         2012         2013           UTILITY ANALYSIS         2010         2011         2012         2013           \$         1,000         1,000         0         0         0         0           \$         200         200         0         0         0         0         0           \$         200         200         200         0         0         0         0           \$         100         100         0         0         0         0         0           \$         100         100         0         0         0         0         0         0           \$         2050         1,600         50         50         50         50           \$         2,050         1,600         50         50         50         50           \$         1,800         0         0         0         0         0         0           \$         44,771         6,899         6,830         6,554         6,209         34,470           \$         34,470         5         6,899         6,830	1         2         3         4         5           TOTAL         2010         2011         2012         2013         2014           UTILITY ANALYSIS         1,000         1,000         0 <td>1         2         3         4         5         6           TOTAL         2010         2011         2012         2013         2014         2015           UTILITY ANALYSIS         UTILITY ANALYSIS         2010         0</td> <td>1         2         3         4         5         6         7           TOTAL         2010         2011         2012         2013         2014         2015         2016           UTILITY ANALYSIS         1,000         1,000         <th< td=""><td>1         2         3         4         5         6         7         8           TOTAL         2010         2011         2012         2013         2014         2015         2016         2017           UTILITY ANALYSIS         UTILITY ANALYSIS         0</td><td>1         2         3         4         5         6         7         8         9           TOTAL         2010         2011         2012         2013         2014         2015         2016         2017         2018           UTILITY ANALYSIS         UTILITY ANALYSIS         0</td></th<></td>	1         2         3         4         5         6           TOTAL         2010         2011         2012         2013         2014         2015           UTILITY ANALYSIS         UTILITY ANALYSIS         2010         0	1         2         3         4         5         6         7           TOTAL         2010         2011         2012         2013         2014         2015         2016           UTILITY ANALYSIS         1,000         1,000         0 <th< td=""><td>1         2         3         4         5         6         7         8           TOTAL         2010         2011         2012         2013         2014         2015         2016         2017           UTILITY ANALYSIS         UTILITY ANALYSIS         0</td><td>1         2         3         4         5         6         7         8         9           TOTAL         2010         2011         2012         2013         2014         2015         2016         2017         2018           UTILITY ANALYSIS         UTILITY ANALYSIS         0</td></th<>	1         2         3         4         5         6         7         8           TOTAL         2010         2011         2012         2013         2014         2015         2016         2017           UTILITY ANALYSIS         UTILITY ANALYSIS         0	1         2         3         4         5         6         7         8         9           TOTAL         2010         2011         2012         2013         2014         2015         2016         2017         2018           UTILITY ANALYSIS         UTILITY ANALYSIS         0

		Econo	omic and	d Benefi	t/Cost Ar	nalysis						
		Compact	Floures	cent La	mp (CFL)	) Progra	m					
- TOTAL COSTS	000 \$	•				, 0						
Total costs - Economic analysis		46,821	8,499	6,880	6,604	6,259	5,707	5,017	4,258	3,499	50	50
Net present value (Economic Analysis)	000 \$	32,881										
Total costs - Financial analysis		46,821	8,499	6,880	6,604	6,259	5,707	5,017	4,258	3,499	50	50
Net present value (Financial Analysis)	000 \$	36,269										
- BENEFITS (AVOIDED COSTS)	000 \$											
Avoided capacity costs	000 \$	37,876	5,836	5,778	5,544	5,252	4,786	4,202	3,560	2,918	0	0
Avoided energy costs	000 \$	31,603	4,870	4,821	4,626	4,383	3,993	3,506	2,970	2,435	0	0
Total Benefits	000 \$	69,479	10,706	10,598	10,170	9,635	8,779	7,708	6,530	5,353	0	0
Net present value (Economic Analysis)	000 \$	48,363										
Net present value (Financial Analysis)	000 \$	53,492										
ECONOMIC ANALYSIS	_											
Benefits - Costs	000 \$	22,657	2,207	3,719	3,567	3,376	3,072	2,691	2,272	1,854	-50	-50
Net present value (Economic Analysis)	000 \$	15,482										
Internal rate of return	%	N/A										
FINANCIAL ANALYSIS												
Benefits - Costs	000 \$	22,657	2,207	3,719	3,567	3,376	3,072	2,691	2,272	1,854	-50	-50
Net present value (Financial Analysis)	000 \$	17,223										
Internal rate of return	%	N/A										

## Economic and Benefit/Cost Analysis Compact Flourescent Lamp (CFL) Program

		Compact	1100100	Cont Ear	<u> </u>	/ i i egiu						
			CUSTO	DMER AN	ALYSIS							
- Costs												
Equipment Costs to Customer (afetr incentives)	000 \$	0	0	0	0	0	0	0	0	0	0	0
Other costs	000 \$	0	0	0	0	0	0	0	0	0	0	0
Total costs	000 \$	0	0	0	0	0	0	0	0	0	0	0
Net present value (Economic Analysis)	000 \$	0										
Net present value (Financial Analysis)	000 \$	0										
- BENEFITS												
Energy cost savings (Economic Analysis)	000 \$	44,771	6,899	6,830	6,554	6,209	5,657	4,967	4,208	3,449	0	0
Avoided cost of incandescent lamps	000 \$	2,073	319	316	303	287	262	230	195	160	0	0
Total benefits	000 \$	46,844	7,218	7,146	6,857	6,496	5,919	5,197	4,403	3,609	0	0
Net present value (Economic Analysis)	000 \$	32,607										
Energy cost savings (Financial Analysis)	000 \$	49,248	7588	7512	7209	6830	6222	5464	4629	3794	0	0
Avoided cost of incandescent lamps	000 \$	2,073	319	316	303	287	262	230	195	160	0	0
Total benefits	000 \$	51,321	7,908	7,829	7,512	7,117	6,484	5,694	4,824	3,954	0	0
Net present value (Financial Analysis)	000 \$	39,512										
ECONOMIC ANALYSIS												
Benefits - Costs	000 \$	46,844	7,218	7,146	6,857	6,496	5,919	5,197	4,403	3,609	0	0
Net present value (Economic Analysis)	000 \$	32,607										
Internal rate of return	%	N/A										
FINANCIAL ANALYSIS												
Benefits - Costs	000 \$	51,321	7,908	7,829	7,512	7,117	6,484	5,694	4,824	3,954	0	0
Net present value (Financial Analysis)	000 \$	39,512										
Internal rate of return	%	N/A										

		Econ	omic and	d Benefi	t/Cost A	nalysis						
		Compact	Floures	scent La	mp (CFL	) Progra	m					
			NATIO	ONAL AN	ALYSIS	/ 5						
- COSTS												
Program Costs	000 \$	2,050	1,600	50	50	50	50	50	50	50	50	50
Customer Costs	000 \$	0	0	0	0	0	0	0	0	0	0	0
Total costs	000 \$	2,050	1,600	50	50	50	50	50	50	50	50	50
Net present value (Economic Analysis)	000 \$	1,716										
Net present value (Financial Analysis)	000 \$	1,800										
- BENEFITS	000 \$											
Avoided capacity costs	000 \$	37,876	5,836	5,778	5,544	5,252	4,786	4,202	3,560	2,918	0	0
Avoided energy costs	000 \$	31,603	4,870	4,821	4,626	4,383	3,993	3,506	2,970	2,435	0	0
CDM Revenues	000 \$	3,160	487	482	463	438	399	351	297	243	0	0
Total Benefits	000 \$	72,639	11,192	11,081	10,633	10,073	9,178	8,059	6,827	5,596	0	0
Net present value (Economic Analysis)	000 \$	50,563										
Net present value (Financial Analysis)	000 \$	55,925										
ECONOMIC ANALYSIS	_											
Benefits - Costs	000 \$	70,589	9,592	11,031	10,583	10,023	9,128	8,009	6,777	5,546	-50	-50
Net present value (Economic Analysis)	000 \$	48,847										
Internal rate of return	%	N/A										
FINANCIAL ANALYSIS	_											
Benefits - Costs	000 \$	70,589	9,592	11,031	10,583	10,023	9,128	8,009	6,777	5,546	-50	-50
Net present value (Financial Analysis)	000 \$	54,125										
Internal rate of return	%	N/A										
			Gł	IG Reduc	tion							
	-			10.000		10.000						
Reduction in GHG - Annual	lons	316,032	48,695	48,208	46,261	43,826	39,930	35,061	29,704	24,348	0	0
Reduction in GHG - Third Year	lons	46,261										
Reduction in GHG - Program Life	Tons	143,164										
Reduction in GHG - Equipment Life	Ions	316,032										

## **BENEFIT/COST ANALYSIS**

(All Benefits and Costs are Net Present Values in Thousand US Dollars) Benefit/Cost analysis conducted for the life of the equipment insrtalled (NPV is the net value of Benefits minus Costs)

Perspective	Economic Analysis									
	Benefits	Costs	NPV	B/C ratio	EIRR					
Utilty	48,363	32,881	15,482	1.5	N/A					
Customer	32,607	0	32,607	N/A	N/A					
National	50,563	1,716	48,847	29.5	N/A					
Perspective		Fin	ancial Analy	ysis						
Perspective	Benefits	Fin Costs	ancial Analy NPV	ysis B/C ratio	FIRR					
Perspective Utilty	Benefits 53,492	Fin Costs 36,269	ancial Analy NPV 17,223	ysis B/C ratio 1.5	FIRR N/A					
Perspective Utilty Customer	<b>Benefits</b> 53,492 39,512	Fin Costs 36,269 0	ancial Analy NPV 17,223 39,512	<b>ysis</b> B/C ratio 1.5 N/A	FIRR N/A N/A					
Perspective Utilty Customer National	<b>Benefits</b> 53,492 39,512 55,925	Fin Costs 36,269 0 1,800	ancial Analy NPV 17,223 39,512 54,125	ysis B/C ratio 1.5 N/A 31.1	FIRR N/A N/A N/A					

PROGRAM INF	ORMATION	
Number of CFLs Installed	Number	1,000,000
Capacity of CFLs	Watts	15
Rated Lifetime of CFLs	Hours	8,000
Capacity of Incand. Replaced	Watts	60
Cost of CFLs	\$/CFL	1.00
Cost Charged to Customer	\$/CFL	0.00
Distribution Cost	\$/CFL	0.20
Program Management Cost	\$	100,000
Marketing & Promotion Cost	\$	200,000
CDM costs	\$	100,000
Daily Usage	Hours/Day	3.5
Power Factor	%	50%
Coincidence factor	%	85%
Net-to-Gross Ratio	%	90%
CUSTOMER BENEF	ITS AND COSTS	
Annual Energy Savings	GWH/Year	57.5
Total Energy Cost Savings	Million \$	44.8
Avoided Costs of Incendescents	Million \$	2.1
Total Benefits	Million \$	46.8
NPV of Benefits (Economic Analysis)	Million \$	32.6
Customer costs	Million \$	0.0
NPV of Net benefits	Million \$	32.6
Net Benefits - Costs	Million \$	32.6
Benefit/Cost Ratio	Ratio	N/A
UTILITY BENEFIT	S AND COSTS	
Capacity Savings - Generation Level	MW	38.9
Annual Energy Savings - Utility	GWH/Year	60.5
Avoided capacity Costs	Million \$	37.9
Avoided Energy Costs	Million \$	31.6
Total Utility Benefits	Million \$	69.5
NPV of Benefits (Economic Analysis)	Million \$	48.4
Program Costs	Million \$	2.0
Revenue Loss	Million \$	44.8
	Willion \$	46.8
NPV of Total Costs	Million \$	32.9
Net Benefits - Costs	Million \$	15.5
Benefit/Cost Ratio	Ratio	1.5
NATIONAL BENEF	ITS AND COSTS	
Avoided capacity Costs	Million \$	37.9
Avoided Energy Costs	Million \$	31.6
CDM Revenues	Million \$	3.2
Total National Benefits	Million \$	72.7
NPV of Benefits (Economic Analysis)	Million \$	50.6
I otal National Costs	Million \$	2.0
NPV of Total Costs	Million \$	1.7
Net Benefits - Costs	Million \$	48.8
Benefit/Cost Ratio	Ratio	29.5

GHG Impacts								
Total GHG reductions	Thousand Tons	316.9						
Total CDM Revenues	Million \$	3.2						