

ATTACHMENT A:

RESPONSE DETAILS

CASE NO. EE-2008-0034



S.D-1:

The elasticities were shown in the work papers submitted in the Metrix ND models and are shown below.

MO Residential Elasticities

Variable	Value	Definition
HSize_Ht	0.20	Household size elasticity for space heating
HIncm_Ht	0.20	Household income elasticity for space heating
Price_Ht	-0.15	Electricity price elasticity for space heating
HSize_Cl	0.20	Household size elasticity for space cooling
HIncm_Cl	0.20	Household income elasticity for space cooling
Price_Cl	-0.15	Electricity price elasticity for space cooling
HSize_Oth	0.20	Household size elasticity for non HVAC end-uses
HIncm_Oth	0.10	Household income elasticity for non HVAC end-uses
Price_Oth	-0.15	Electricity price elasticity for non HVAC end-uses

MO Commercial Elasticities

Variable	Value	Definition
Output_CS	0.20	Output elasticity for CS
Price_CS	-0.15	Price elasticity for CS
Output_PO	0.80	Output elasticity for PO
Price_PO	-0.15	Price elasticity for PO

MO Industrial Elasticities

Variable	Value	Definition
Output_MP	0.80	Output elasticity for MP
Price_MP	-0.15	Price elasticity for MP
Output_MO	0.20	Output elasticity for MO
Price_MO	-0.10	Price elasticity for MO

KS Residential Elasticities

Variable	Value	Definition
HSize_Ht	0.20	Household size elasticity for space heating
HIncm_Ht	0.20	Household income elasticity for space heating
Price_Ht	-0.15	Electricity price elasticity for space heating
HSize_Cl	0.20	Household size elasticity for space cooling
HIncm_Cl	0.20	Household income elasticity for space cooling
Price_Cl	-0.15	Electricity price elasticity for space cooling
HSize_Oth	0.20	Household size elasticity for non HVAC end-uses
HIncm_Oth	0.20	Household income elasticity for non HVAC end-uses
Price_Oth	-0.15	Electricity price elasticity for non HVAC end-uses

KS Commercial Elasticities

Variable	Value	Definition
Output_CS	0.20	Output elasticity for CS
Price_CS	-0.15	Price elasticity for CS
Output_PO	0.80	Output elasticity for PO
Price_PO	-0.15	Price elasticity for PO

KS Industrial Elasticities

Variable	Value	Definition
Output_MP	0.80	Output elasticity for MP
Price_MP	-0.15	Price elasticity for MP
Output_MO	0.15	Output elasticity for MO
Price_MO	-0.10	Price elasticity for MO

The SAE models were originally setup for KCP&L by Itron, who served as both a consultant and software vendor. The consultants at Itron were formerly RER, the firm that maintained REEPS, COMMEND and INFORM for EPRI. The price elasticities were chosen based on consultations with ITRON and are the same as those that ITRON recommended for Ameren for use in its IRP. The output elasticities were 0.8 in sales models and 0.2 in sales per customer models. The household size and household income elasticities were based on the judgment of either ITRON as provided in the original models or experts at KCP&L.

S.D-2

In the residential sector there are a number of factors that have tended to increase electric use per customer. For example, new homes are typically larger than existing homes and that would tend to increase use per unit for heating, cooling and other end uses. Also, inflation adjusted household incomes are rising, which would tend to increase energy use because the consumption of most goods and services increases with higher income. Also, KCP&L's inflation adjusted electric rates were also decreasing up until 2007, which would tend to increase kwh use per customer because the consumption of most goods and services rises as the price falls. Furthermore, the amount of small appliances and equipment is increasing in the household. Examples are personal computers, DVD players, TIVOs and large screen HDTVs.

On the other hand, there are many factors that are driving down electric use per customer. Homes are typically currently constructed with more insulation and windows have higher R-values than were used in older homes. Equipment standards mandate higher HVAC efficiencies and technology advances are increasing the efficiency of light bulbs. The average number occupants per household has been declining over time.

In the commercial sector, newer buildings tend to be larger than old buildings. Walmart supercenters are now responsible for a significant share of retail sales and have replaced many smaller businesses. This trend tends to increase kwh sales per customer.

The trend of household use per unit (sales on page H-83 and peak demands on page I-23) shows that summer use was rising and is expected to be steady. The main factor that is dampening this trend is high efficiency AC standards introduced in 2006. These standards will affect all new homes and older homes as AC equipment is replaced. Non summer use was rising and is expected to continue to rise but at a slower rate. Electric space heating penetrations are more than twice as high as current saturation rates because electric heating with heat pumps has become more competitive relative to gas heating over time. Many homes are also converted to electric heating when AC equipment is replaced.

Residential summer peak demand is expected to remain steady at about 3.3 kW per household. There is almost no trend in this series despite a rising share of central air conditioners relative to room units and larger homes because these have been offset by better insulated homes and higher equipment standards. DSM programs have also had an impact. On the other hand, winter peaks have been rising and are expected to rise because of much higher saturations of electric space heating.

Among Commercial Secondary customers, use per unit is rising in both the historical and forecasted period. Winter sales per customer are rising at a faster rate than summer sales per customer (page H-85). The same is true for peak demand per customer (page I-25). Again, this is mainly because the saturations of electric space heat are rising because electric heating has become more competitive to gas heating. Electric rates have fallen whereas natural gas prices have risen steeply. Also, commercial buildings have grown in size over time. The forecast also reflects changes in commercial building construction and equipment efficiencies as determined by the US DOE.

Sales per Commercial Primary customer (page H-87) has a puzzling historical trend. In Missouri, use rose from 1990 to 1997, then fell until 2004. In Kansas, use was steady until 1997, then rose until 2001, then fell until 2005. These classes have a small number of customers and the size of a few new customers can change the overall average use per customer. Peak demands per customer show a similar but less pronounced change in trend (page I-27). For the system, the historical trends for this class are steadier and use per customer is growing at a historical trend. The forecast also reflects changes in commercial building construction and equipment efficiencies as determined by the US DOE.

Manufacturing Other (secondary) sales per customer (page H-93) shows a slow rise in both the historical and forecasted period. The number of customers has been growing at a slower rate than sales because new customers have been larger than existing customers. Peak demand per customer (page I-33) shows a similar pattern. The 2005 value is an anomaly caused by the day of week used to determine the peak for that year, a Saturday. This anomaly occurs only on the plot and does not affect the forecast of hourly loads.

In Missouri, Manufacturing Primary grew a rapid rate from 1990 to 2003, declined for two years and then rose (page H-91). In Kansas, this class grew very rapidly from 1990 to 1995, then declined rapidly until 2002, and then grew modestly after

that. These classes have a small number of customers, and the actions of a few customers can radically alter growth trends for the class. Future trends reflect changes in building construction and equipment efficiencies as determined by the US DOE. The historical and forecasted peak demand per customer (page I-31) show a trend similar to kwh sales per customer.

S.D-4:

	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Elasticity
	B	Std. Error				
Gross_Metro_Product	4.844	1.580	0.271	3.1	0.00252	0.28
Employment_Manufacturing	3.421	0.517	0.273	6.6	0.00000	0.29
cdd65_cust	0.076	0.037	0.056	2.0	0.04280	0.03
hdd40_cust	-0.340	0.089	-0.260	-3.8	0.00019	-0.14
Income_Total_Personal	0.004	0.002	0.213	2.4	0.01768	0.21
hdd35_cust	0.154	0.051	0.129	3.0	0.00275	0.06
cdd55_cust	0.358	0.062	0.231	5.8	0.00000	0.16
hdd55_cust	0.449	0.061	0.294	7.4	0.00000	0.19
RealPriceElec	-1040	365	-0.074	-2.9	0.00487	-0.09

The dependent variable is billed sales. The degree days are per customer. Personal income and GMP are in constant dollars. The standardized coefficients show the relative importance of each variable in explaining the dependent variable. Also shown in the table are the elasticities which estimate the percentage change in the dependent variable for a 1% change in the independent variable.

S.D-7:

KCP&L is in the process of evaluating all of the Residential, Commercial and Industrial rate structures and submits the following timelines in Table 1 and Table 2 below:

Table 1: Time of Use and Critical Peak Pricing Study Analysis and Timeline

Time of Use and Critical Peak Rate Structure Analysis	
Evaluate Existing Rates	May-09
Obtain historical list of customers on rates and usage data from period when on rate	April-09
Complete load profile/customer response analysis	May-09
Identify best practices	April-09
Research American Council on Energy Efficient Economy Reports	April-09
Research other utility programs	April-09
Review of KEMA study	April-09
Develop menu of proposed programs	July-09
Back test against historical customer participation	May-09
Assess market	June-09
Participation/Impacts Forecast	July-09
SmartGrid Integration	September-09
Identify technologies required for price delivery	September-09
Identify technologies available for automated response	September-09
Rate Impact Study	October-09
Rate case analysis/revenue requirements	October-09

Table 2: Demand Response Study Analysis and Timeline

Demand Response Program Analysis	
Evaluate existing programs	April-09
Review historical programs and participation rates	April-09
Identify gaps in current offering/market opportunities	April-09
Evaluate current and future capacity needs in context of KCPL/GMO current portfolios	April-09
Research best practices in DR	April-09
Research American Council on Energy Efficient Economy Reports	April-09
Research other utility programs	April-09
Review of KEMA study	April-09
Develop menu of proposed programs	May-09
Engage stakeholders in evaluation -- Roundtables/Focus groups	May-09
Assess market	May-09
Participation impacts/forecasts	May-09
SmartGrid	September-09
Identify enabling technologies	June-09
Evaluate vendors	July-09
Develop implementation plan	September-09
Rate Impact Study	October-09
Rate case analysis/revenue impacts	October-09

Company agrees to consider the findings of these studies in the next IRP filing and in the next rate case filed after completion of the studies.

S.D-10:

Residential end-use measures rejected:

- Adding two more inches of attic duct insulation
- Add insulation to floor
- Purchase an Energy Star dishwasher or clothes washer
- Insulate hot water pipes
- Replacing a SEER 13 air-conditioner with a 14, 15 or 16 SEER unit.

End-use renewable generation rejected:

- Solar PV
- Small scale wind turbines
- Solar air heat
- Solar hot water

S.D-12:

KCP&L provided combinations of outcomes under which individual plans were optimal in Volume 7, Table 4, page 24 which is shown as follows:

Scenario	Least NPVRR Plan	Conditional Probability
BBBBB	Plan26	6.250%
BBBBH	Plan11	3.125%
BBBBL	Plan15	3.125%
BBHBB	Plan26	3.125%
BBHBH	Plan7	1.563%
BBHBL	Plan15	1.563%
BBLBB	Plan26	3.125%
BBLBH	Plan7	1.563%
BBLBL	Plan20	1.563%
BHBBB	Plan26	4.188%
BHBBH	Plan11	2.063%
BHHBB	Plan26	2.094%
BHHBH	Plan11	1.031%
BHLBB	Plan26	2.094%
BHLBH	Plan7	1.031%
BLBBB	Plan26	4.188%
BLBBL	Plan15	2.063%
BLHBB	Plan26	2.094%
BLHBL	Plan15	1.031%
BLLBB	Plan15	2.094%
BLLBL	Plan20	1.031%
HBBBB	Plan26	5.611%
HBBBH	Plan7	2.764%
HBHBB	Plan26	2.806%
HBHBH	Plan11	1.382%
HBLBB	Plan26	2.806%
HBLBH	Plan7	1.382%
HHHBB	Plan7	4.125%
HHHBH	Plan11	2.063%
HHLBH	Plan7	2.063%
LBBBB	Plan26	5.611%
LBBBL	Plan15	2.764%
LBHBB	Plan26	2.806%
LBHBL	Plan15	1.382%
LBLBB	Plan26	2.806%
LBLBL	Plan20	1.382%
LLBBL	Plan15	4.125%
LLHBL	Plan15	2.063%
LLLBL	Plan20	2.063%

This table lists all the combinations of outcomes that were tested within the integrated analysis. The integrated analysis evaluated each of the 26 alternative plans to the listed combination of critical uncertainty values by scenario. KCP&L will for future IRP's, submit ranges of critical uncertain factors within which the Preferred Resource Plan is optimal.

The values of each critical uncertain factor by scenario are detailed in the Probable Environmental Cost Decision Tree, Figure 3, in Volume 7 page 29 which is shown as follows:

MIDAS MODEL SCENARIOS AND CONDITIONAL PROBABILITIES-PROBABLE ENVIRONMENTAL COSTS										
Natural Gas Prices		Enviromental Allowance Prices		Load Growth		Coal Prices		CO2 Allowance Prices		Scenario
				High	25%	Base	100%	High	100%	2.0625% HHHBH
				Base	50%	Base	100%	High	100%	4.1250% HHBBH
				Low	25%	Base	100%	High	100%	2.0625% HHLBH
								High	33%	1.3819% HBHBH
				High	25%	Base	100%	Base	67%	2.8056% HBHBB
								High	33%	2.7638% HBBBBH
				Base	50%	Base	100%	Base	67%	5.6113% HBBBBB
								High	33%	1.3819% HBLBH
				Low	25%	Base	100%	Base	67%	2.8056% HBLBB
								High	33%	1.0313% BHHBH
				High	25%	Base	100%	Base	67%	2.0938% BHBBH
								High	33%	2.0625% BHBBH
				High	25%	Base	100%	Base	67%	4.1875% BHBBB
								High	33%	1.0313% BHLBH
				Low	25%	Base	100%	Base	67%	2.0938% BHLBB
								High	25%	1.5625% BBHBH
				High	25%	Base	100%	Base	50%	3.1250% BBHBB
								Low	25%	1.5625% BBHBL
								High	25%	3.1250% BBBBH
				Base	50%	Base	100%	Base	50%	6.2500% BBBBB
								Low	25%	3.1250% BBBBL
								High	25%	1.5625% BBLBH
				Low	25%	Base	100%	Base	50%	3.1250% BBLBB
								Low	25%	1.5625% BBLBL
				High	25%	Base	100%	Base	67%	2.0938% BLHBB
								Low	33%	1.0313% BLHBL
				Low	25%	Base	100%	Base	67%	4.1875% BLBBB
								Low	33%	2.0625% BLBBL
				Low	25%	Base	100%	Base	67%	2.0938% BLLBB
								Low	33%	1.0313% BLLBL
				High	25%	Base	100%	Base	67%	2.8056% LBHBB
								Low	33%	1.3819% LBHBL
				Base	50%	Base	100%	Base	67%	5.6113% LBBBBB
								Low	33%	2.7638% LBBBL
				Low	25%	Base	100%	Base	67%	2.8056% LBLBB
								Low	33%	1.3819% LBLBL
				High	25%	Base	100%	Low	100%	2.0625% LLHBL
				Base	50%	Base	100%	Low	100%	4.1250% LLBBL
				Low	25%	Base	100%	Low	100%	2.0625% LLLBL

An example of how to use this figure might be illuminating. Suppose long-term CO₂ prices are expected to fall into the low price forecast range. If we assume that all other critical uncertain factors remain at the base (mid) level, we would

know that they are moving from scenario BBBBBB to scenario BBBBL by consulting the figure. To see if our least cost plan has changed, we look at the plans corresponding to scenarios BBBBBB and BBBBL in the prior table. We see that under BBBBBB our least cost plan was Plan 26, but in the low CO₂ case, the new least cost plan is Plan 15.

OPC-1:

The proposed schedule for completing street light and outdoor lighting alternatives is shown below.

Estimated Date: April, 2009

1. Determine customer count, identify rate codes and monthly/annual usage in kWh

Estimated Date: May, 2009

2. Develop list of technology current in use

Estimated Date: June, 2009

3. Internal review of lighting tariff structures

Estimated Date: July, 2009

4. Review potential technology alternatives.

- * Contact City of Los Angeles, Mr. Novo – They are evaluating 11 different LED street lighting manufacturers
- * Contact PG&E and NJ
- * Develop list of technology end-use measures

Estimated Date: October, 2009

5. Develop market potential for annual penetration, technical, economic, and annual market DSM potential
6. Obtain product cost information
7. Develop incentive payment scenarios for benefit cost analysis
8. Estimate annual impact:
 - * kW, kWh saved
 - * Lost revenue

- * Avoided production costs; energy, capacity, T&D, ancillary services
 - * Utility costs
 - * Participant cost.
9. Complete economic benefit cost analysis
 10. Calculate standard practice test results
 - * Total resource cost
 - * Utility Cost test
 - * Participant cost test
 - * Rate Impact Measure
 - * Societal Cost Test
 11. Develop program recommendations and timeline

OPC-2:

KCP&L Plan to Evaluate Feasibility of Financing for Energy Efficiency Programs

March 2009

Start industry review
 Gather secondary research from expert partners and web
 Gather list of utilities that offer financing programs
 Schedule meetings to discuss financing programs with other utilities (success/failures)
 Work with industry partners, and others to host information gathering sessions

April – May 2009

Participate in knowledgebase organization meetings/webinars (industry partners)
 Review secondary research material
 Identify programs to explore/model for a KCP&L program
 Consider impact of stimulus package (if any)
 Continue discussions of financing programs with other utilities/experts
 Review case studies/existing programs (if any)
 Request and conduct meetings with third party vendors offering turnkey financing
 Engage with commission staff, OPC, MO DNR and other stakeholders
 Update CPAG on progress

June – August 2009

Review third party vendor models
 Review financing options and impacts on each KCP&L program

Discuss cost effectiveness and long term options and alternatives
Decide which model KCP&L would like to consider (internal or external hosted offering)
Update CPAG on progress
Engage with commission staff, OPC, MO DNR and other stakeholders
Host external meetings with financial institutions to discuss options for on-bill financing
Host internal meetings to discuss technical challenges of on-bill financing
Schedule meetings with each department at KCP&L to determine steps required to create on-bill financing:

- IT
- Legal
- Regulatory
- Finance
- Customer Service
- Billing
- Accounting
- Executive
- Energy Solutions

September – November 2009

Conduct primary customer research about market potential for customer participation (if needed).
Conduct additional primary research to determine financing rate (if needed)
Review primary research
Discuss financial impacts
Decide “go” or “no go” for a financing program
Finalize offering
Determine if RFP is needed to forward
Engage with commission staff, OPC, MO DNR and other stakeholders
Update CPAG on progress
Submit RFP for third party vendors, review proposals, decide on vendor

OPC-6:

In the original filings, the Iatan and LaCygne activities cited as deficiencies were assumed to be included in all alternative resource plans and were not considered “new” projects tied to the IRP Preferred Resource Plan. These projects are currently included in other regulatory proceedings associated with the Comprehensive Energy Plan (CEP) and therefore were not considered as optional projects under the IRP. The implementation plans for these projects are

included in the CEP proceedings. Budget schedules for these projects are shown in Exhibit A.

MDNR-15:

Completed Program Evaluation Studies

An evaluation of the on-going “Energy Optimizer” program was completed by the Opinion Dynamics Corporation on April 11, 2008. This report included a description of the methodology used for the evaluation, the impact findings, a process evaluation, and a general discussion of participant satisfaction with this program. A copy of this report was filed as part of KCP&L’s Integrated Resource Plan, Appendix 5I. In addition, an Internet on-line Optimizer program participant satisfaction survey was conducted in April of 2008. The results of this survey were filed as part of KCP&L’s Integrated Resource Plan, Appendix 5R.

An evaluation of the on-going Low Income Weatherization program was completed by the Opinion Dynamics Corporation on July 7, 2008. A copy of this report was filed as part of KCP&L’s Integrated Resource Plan, Appendix 5O, pages 33 through 73. This report included a description of the methodology used for the evaluation, the impact findings, and the process evaluation.

An evaluation of the on-going “Change-A-Light, Change The World” program was completed by the Midwest Energy Efficiency Alliance on April 10, 2006 and again on April 07, 2007. Both reports included an evaluation of the program design and impact (results). Copies of both reports, along with related attachments were filed as part of KCP&L’s Integrated Resource Plan, Appendix 5O, pages 74 through 231.

KCP&L has engaged the Opinion Dynamics Corporation to evaluate the on-going “MPower” program. The evaluation of this program is expected to be completed by mid 2009.

Planned Program Evaluation Studies

The schedules to complete existing and proposed program studies are provided in Table 3 and Table 4 below:

Table 3: Evaluation Schedule for Existing CEP Programs

Evaluation Schedule for Existing CEP Programs				
Program	Tariff Approval Date		Evaluation	Evaluation Requirements
	Missouri	Kansas	Due	
Change a Light	10/1/2005	n/a	4/1/2008	Based on evaluations conducted by the EPA and ENERGY STAR.
Energy Optimizer (Air Conditioner Cycling)	10/14/2005	1/10/2006	4/14/2008	Collect customer hourly usage data for the first 3 summers. Evaluate capacity and energy impacts at the end of the third summer season.
Low-income Weatherization	12/1/2005	12/9/2005	6/1/2008	Based on borrowed weatherization analysis from other utility programs for the first two years of the program. Conduct billing analysis in the third year to estimate impacts for all measures.
Energy Analyzer (Residential)	12/21/2005	3/7/2006	6/21/2008	Provide usage reports.
Business Energy Analyzer (Commercial)	2/10/2006	12/22/2006	8/10/2008	Provide usage reports.
MPOWER	3/8/2006	9/25/2006	9/8/2008	Based on customer reasearch from focus groups from 9/05 and 9/06. Telephone surveys from 10/05 and 10/06. Process evaluation at 12/05 and 12/06. Impact evaluation at 11/05 and 11/06.
C&I Audit/Custom Rebate - Retrofit & New Constr	7/3/2006	1/17/2007	1/3/2009	Based on detailed engineering analysis.
Building Operator Certification	2/2/2007	5/15/2007	8/2/2009	Based on evaluations conducted by the Missouri Department of Natural Resources.
Affordable New Homes	2/12/2007	7/23/2007	8/12/2009	Based on engineering analysis. If a control group can be identified, a billing analysis may be conducted after participating homes have been occupied for at least one year.
Cool Homes	3/30/2007	7/12/2007	9/30/2009	Based on random on-site inspections and engineering analysis. Collect spot metering and runtime data to verfiy the connected load and full load hour estimates used in the engineering analysis.
Home Performance with Energy Star	1/23/2008	n/a	7/23/2010	Track whole-house evaluations performed by certified contractors. Conduct billing analysis the third year between participant and control groups.
Energy Star Homes	4/6/2008	11/14/2008	10/6/2010	Based on random on-site inspections and engineering analysis. Conduct billing analysis the third year between participant and control groups.

Table 4: Evaluation Schedule for Proposed New Programs

	CEP Programs Revised	Programs in IRP	Budgets approved and tariffs filed	Program Launch	Program Report Due	EM&V Report Due
Proposed enhancements to existing programs - Residential						
Cool Homes	1/1/2008	8/5/2008	4th Qtr 2009	1/1/2010	1/1/2012	7/1/2012
Home Performance with Energy Star	1/1/2008	8/5/2008	4th Qtr 2009	1/1/2010	1/1/2012	7/1/2012
Online Energy Information And Analysis Program	1/1/2008	8/5/2008	4th Qtr 2009	1/1/2010	1/1/2012	7/1/2012
Proposed enhancements to existing programs - Commercial						
Custom C&I Incentive Program		8/5/2008	4th Qtr 2009	1/1/2010	1/1/2012	7/1/2012
C&I New Construction Program		8/5/2008	4th Qtr 2009	1/1/2010	1/1/2012	7/1/2012
Proposed new programs - Commercial & Industrial						
C&I Prescriptive program	1/1/2008	8/5/2008	4th Qtr 2009	1/1/2010	1/1/2012	7/1/2012
C&I RFP Program	1/1/2008	8/5/2008	4th Qtr 2009	1/1/2010	1/1/2012	7/1/2012
Proposed new programs - Residential						
Appliance Turn In		8/5/2008	4th Qtr 2009	1/1/2010	1/1/2012	7/1/2012
Energy Use Monitor		8/5/2008	4th Qtr 2009	1/1/2010	1/1/2012	7/1/2012

MDNR-22:**Alternative Resource Plans 1-7**

	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 6	Plan 7
EE N= Normal C&I A = Aggressive C&I R= Residential	N + R (2010)	N + R (2010)	A + R (2012)	A + R (2012)	A + R (2012)	A + R (2012)	A + R (2012)
DSM (CEP-1, Growth, Curtail)	CEP-1	CEP-1	CEP-1	CEP-1	CEP-1	CEP-1	CEP-1
Wind			400 MW (2009-2012)		400 MW (2009-2012)	400 MW (2009-2012)	400 MW (2009-2012)
PTC	N.A.	N.A.	No	N.A.	No	No	No
SCPC	300 MW (2022)					300 MW (2025 & 2030) With CCS	LaCygne-2, latan-1 and latan-2 convert to CCS
Combustion Turbines		154 MW (2027 & 2030)	154 MW (2016, 2019, 2024)	154 MW (2016, 2018, 2022)	154 MW (2016, 2019, 2024)	154 MW (2016, 2019, 2024)	154 MW (2022, 2023, 2025, 2028, 2032)
Combined Cycle	273 MW (2031)						
Nuclear			300 MW (2025, 2030)	300 MW (2025, 2030)	300 MW (2025 & 2030) With CCS		
IGCC							
Coal Retirement			510 MW (2016)	510 MW (2016)	510 MW (2016)	510 MW (2016)	CCS Retrofits

Alternative Resource Plans 8-14

	Plan 8	Plan 9	Plan 10	Plan 11	Plan 12	Plan 13	Plan 14
EE N= Normal C&I A = Aggressive C&I R= Residential	A + R (2012)	A + R (2012)	A + R (2010)	A + R (2012)	R (2010)	N (2010)	A (2010)
DSM (CEP-1, Growth, Curtail)	CEP-1	CEP-1	CEP-1	CEP-1	CEP-1	CEP-1	CEP-1
Wind	400 MW (2012-2015)	200 MW (2012 & 2013)	400 MW (2009-2012)	400 MW (2009-2012)			
PTC	No	No	No	Yes	N.A.	N.A.	N.A.
SCPC							
Combustion Turbines	154 MW (2016, 2019, 2024)	154 MW (2016, 2019, 2023)	154 MW (2016, 2019, 2024)	154 MW (2016, 2017, 2021)	154 MW (2026 & 2030)	154 MW (2026 & 2029)	154 MW (2026 & 2030)
Combined Cycle							
Nuclear	300 MW (2025, 2030)	300 MW (2025, 2030)	300 MW (2025, 2030)	300 MW (2025, 2030)			
IGCC							
Coal Retirement	510 MW (2016)	510 MW (2016)	510 MW (2016)	510 MW (2016)			

Alternative Resource Plans 15-21

	Plan 15	Plan 16	Plan 17	Plan 18	Plan 19	Plan 20	Plan 21
EE N= Normal C&I A = Aggressive C&I R= Residential	A + R (2010)	N (2010)			A + R (2010)	A + R (2010)	A + R (2010)
DSM (CEP-1, Growth, Curtail)	CEP-1	CEP-1	Growth	Curtail	CEP-1	Growth	Growth
Wind		2014, 2018, 2121, 2023			400 MW (2009-2012)		400 MW (2009-2012)
PTC	N.A.	Yes	N.A.	N.A.	Yes	N.A.	Yes
Solar		2011, 2014, 2018, 2021					
SCPC							
Combustion Turbines	154 MW (2027 & 2031)	154 MW (2028 & 2032)	154 MW (2026 & 2029)	154 MW (2023, 2027, 2031)	154 MW (2029)	154 MW (2028 & 2032)	154 MW (2029)
Combined Cycle							
Nuclear							
IGCC							
Coal Retirement							

Alternative Resource Plans 22-26

	Plan 22	Plan 23	Plan 24	Plan 25	Plan 26
EE N= Normal C&I A = Aggressive C&I R= Residential	A + R (2010)	A + R (2010)	A + R (2010)	A + R (2010)	A + R (2010)
DSM (CEP-1, Growth, Curtail)	Growth	CEP-1	Curtail	CEP-1	CEP-1
Wind	400 MW (2009-2012)	400 MW (2009-2012)	400 MW (2009-2012)	400 MW (2009-2012)	400 MW (2012-2015)
PTC	No	No	Yes	Yes	Yes
SCPC					
Combustion Turbines		154 MW (2029)	154 MW (2027 & 2031)	154 MW (2029)	154 MW (2029)
Combined Cycle					
Nuclear					
IGCC					
Coal Retirement					