VOLUME 6:

INTEGRATED RESOURCE ANALYSIS

KANSAS CITY POWER & LIGHT COMPANY (KCP&L)

INTEGRATED RESOURCE PLAN

4 CSR 240-22.060

CASE NO. EO-2012-0323

APRIL, 2012

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VOLUME 6: INTEGRATED RESOURCE ANALYSIS

PURPOSE: This rule requires the utility to design alternative resource plans to meet the planning objectives identified in 4 CSR 240-22.010(2) and sets minimum standards for the scope and level of detail required in resource plan analysis, and economically equivalent analysis of alternative resource plans. This rule also requires the utility to identify the critical uncertain factors that affect the performance of alternative resource plans and establishes minimum standards for the methods used to assess the risks associated with these uncertainties.

SECTION 1: RESOURCE PLANNING OBJECTIVES

(1) Resource Planning Objectives. The utility shall design alternative resource plans to satisfy at least the objectives and priorities identified in 4 CSR 240-22.010(2). The utility may identify additional planning objectives that alternative resource plans will be designed to meet. The utility shall describe and document its additional planning objectives and its guiding principles to design alternative resource plans that satisfy all of the planning objectives and priorities.

The fundamental objective of all the alternative resource plans is to provide the public with energy services that are safe reliable and efficient. The plans comply with current legal mandates in a manner that serves the public interest and is consistent with state energy and environmental policies.

All of the Alternative Resource Plans developed for the IRP are based upon the impact of future renewable generation requirements for KCP&L. In Missouri, these requirements are based on Rule 4 CSR 240-20.100 which requires that an electric utility's compliance with the Renewable Energy Standard (RES) is based on total retail electric sales, or total retail electric energy usage, delivered in each year to its Missouri retail customers. For the state of Kansas, pursuant to Kansas statues and standards, an affected utility is required to provide net

renewable generation capacity based on its Kansas retail one-hour peak demand for each of the previous three calendar years and the average for these years. The specific renewable portfolio and RES requirements are provided in Section 3.1 below.

Other issues that drove plan selection for this filing are the impact of DSM programs, potential coal unit retirements, choice of alternative generation, natural gas conversion, early imposition of environmental rules, and the risk of a Federal Energy Efficiency Standard. Other risks were also analyzed but were determined to not be critical to the selection of alternative resource plans. Details of these additional risks and how they were examined is given in Section 5: of this document.

As required by Rule 22.010(2), demand-side resources were analyzed on an equivalent basis with supply-side resources.

Net present value of revenue requirements [NPVRR] of each plan including probable environmental costs [PEC] was calculated. Minimization of NPVRR with PEC was used as the primary criteria for determination of the ordinal preference of a particular plan. Risks associated with critical uncertain factors, those associated with new or more stringent legal mandates are included in the integrated analysis of the resource planning process. Rate increases associated with the alternative resource plans are determined in the analysis as well. All performance measures are detailed in Section 2: of this document.

SECTION 2: PERFORMANCE MEASURES

(2) Specification of Performance Measures. The utility shall specify, describe, and document a set of quantitative measures for assessing the performance of alternative resource plans with respect to resource planning objectives.

(A) These performance measures shall include at least the following:

1. Present worth of utility revenue requirements, with and without any rate of return or financial performance incentives for demand-side resources the utility is planning to request;

Annual Revenue Requirement is calculated by totaling all expenses of the company in a year plus the return on ratebase. The ratebase increases as capital expenditures grow and plant is put into service, but is reduced by depreciation and amortization of assets. This measure includes the total cost of operation of the company and any costs associated with probable environmental compliance.

The NPVRR is calculated by applying the discount rate consistent with rule 4 CSR 240-22.060 (2) (B) to the future estimated Annual Revenue Requirement to estimate the total future requirement on a present value basis. This value is the primary measure of plan financial performance.

For DSM, the revenue requirement assumed all DSM expenditures were to be capitalized into ratebase and amortized over six years. For this IRP, no further incentive payment is assumed for our analysis. When NPVRR is estimated without rate of return or financial performance incentives, all expenditures for DSM is expensed in the year incurred, with no increase to ratebase from those outlays.

2. Present worth of probable environmental costs;

The Present Worth of Probable Environmental Costs are determined by removing all capital and O&M costs from future environmental retrofits to estimate the cost of utility operations absent environmental expenditures. These results are compared to the NPVRR of the plans with environmental costs to determine the cost of these laws on total company operation and financial performance.

CO2 credits are assumed to be a market risk. In the integrated analysis, endpoints contain different assumptions of CO2 credit prices or no CO2 market at all. Therefore the analysis of plans without PEC is calculated both with and without a CO2 market.

3. Present worth of out-of-pocket costs to participants in demand-side programs and demand-side rates;

The cost of DSM programs is an input to the integrated analysis. As such it is an exogenous driver of each plan and does not exhibit variability within the analysis of an individual plan. The present value of these programs is calculated using the estimated future costs of the programs and applying the discount rate consistent with rule 4 CSR 240-22.060 (2) (B).

4. Levelized annual average rates;

Annual average rates are calculated by dividing the total estimated annual revenue requirement, calculated as described earlier in this section, by the forecasted total retail energy sales volume. The levelized value is the simple average of the 20-year estimate of annual rates.

5. Maximum single-year increase in annual average rates;

Single year increases (and decreases) in rates are developed as year-on-year percent changes to the rate calculation as described earlier in this section. The Maximum value is determined from the highest year-on-year percent change.

6. Financial ratios (e.g., pretax interest coverage, ratio of total debt to total capital, ratio of net cash flow to capital expenditures) or other credit metrics indicative of the utility's ability to finance alternative resource plans; and

The company uses three financial metrics; pretax times interest earned, total debt to total capital and capital expenditures to free cash flow.

7. Other measures that utility decision makers believe are appropriate for assessing the performance of alternative resource plans relative to the planning objectives identified in 4 CSR 240-22.010(2).

The Company finds that the required financial measures provide an appropriate indication of financial performance. No additional measures are proposed

(B) All present worth and levelization calculations shall use the utility discount rate and all costs and benefits shall be expressed in nominal dollars.

For all purposes in this analysis, a discount rate of 7.260% has been utilized.

SECTION 3: ALTERNATIVE RESOURCE PLANS

(3) Development of Alternative Resource Plans. The utility shall use appropriate combinations of candidate demand-side resources and supply-side resources to develop a set of alternative resource plans, each of which is designed to achieve one (1) or more of the planning objectives identified in 4 CSR 240-22.010(2). Demand-side resources are the demand-side candidate resource options and portfolios developed in 4 CSR 240-22.050(6). Supply-side resources are the supply-side candidate resource options developed in 4 CSR 240-22.040(4). The goal is to develop a set of alternative plans based on substantively different mixes of supply-side resources and demand-side resources and variations in the timing of resource acquisition to assess their relative performance under expected future conditions as well as their robustness under a broad range of future conditions.

Alternative Resource Plans were developed using a combination of various capacities of supply-side resources, demand-side resources, biomass retrofit and differing the timing of resource additions. "DSM A" consists of a suite of twelve Energy Efficiency and two Demand Response programs that KCP&L considers the capacity and energy estimated from these programs comprise realistically achievable levels. On February 17, 2012, KCP&L filed to withdraw the MEEIA filing, Case EO-2012-0008, made on December 22, 2012 due to the lagging economic environment, declines in weather-normalized retail demand, softness in the wholesale energy market due to low natural gas prices, and no current need for capacity. However, the DSM proposed in the MEEIA filing was used to develop the "DSM A" by assuming the programs begin in 2014. For 2012 and 2013, the DSM A consists of Persistence DSM and contractually obligated Demand Response.

In total, twenty-two Alternative Resource Plans were developed for the integrated resource analysis. An overview of the Alternative Resource Plans are shown on Table 1, Table 2 and Table 3.

Table 1: Overview of Alternative Resource Plans

Resource	Plan AAAK1	Plan AAAK9	Plan ABEK1	Plan ABEK2
DSM	DSM A	DSM A	DSM A	DSM A
Solar	11 MW in 2018	11 MW in 2018	11 MW in 2018	11 MW in 2018
Solar	6 MW in 2021	6 MW in 2021	6 MW in 2021	6 MW in 2021
Solar	3 MW in 2023	3 MW in 2023	3 MW in 2023	3 MW in 2023
Wind	100 MW in 2016	100 MW in 2016	100 MW in 2016	100 MW in 2016
Wind	200 MW in 2020	200 MW in 2020	200 MW in 2020	200 MW in 2020
Wind	100 MW in 2023	100 MW in 2023	100 MW in 2023	100 MW in 2023
Coal Retire			334 MW in 2016 (M 1-2)	334 MW in 2016 (M 1-2)
Coal				
Coal				
Nuclear				
Nuclear				
Combustion Turbine			154 MW in 2029	
Combustion Turbine				
Combustion Turbine				
Combustion Turbine				
Combustion Turbine				
Combined Cycle				300 MW in 2024
Combined Cycle				
Resource	**Plan ABEK4**	**Plan ABEK5**	**Plan ABEK6**	**Plan ABEK7**
DSM	DSM A	DSM A	DSM A	DSM A
Solar	11 MW in 2018	11 MW in 2018	11 MW in 2018	11 MW in 2018
Solar	6 MW in 2021	6 MW in 2021	6 MW in 2021	6 MW in 2021
Solar	3 MW in 2023	3 MW in 2023	3 MW in 2023	3 MW in 2023
Wind	100 MW in 2016	100 MW in 2016	200 MW in 2016	100 MW in 2016
Wind	200 MW in 2020	200 MW in 2020	400 MW in 2020	200 MW in 2020
Wind	100 MW in 2023	100 MW in 2023	200 MW in 2023	100 MW in 2023
Coal Retire	334 MW in 2016 (M 1-2)	334 MW in 2016 (M 1-2)	334 MW in 2016 (M 1-2)	334 MW in 2016 (M 1-2)
Coal	200 MW in 2024			
Coal	200 MW in 2030			
Nuclear		200 MW in 2024		
Nuclear		200 MW in 2030		
Combustion Turbine			154 MW in 2025	
Combustion Turbine			154 MW in 2030	
Combustion Turbine				
Combustion Turbine				
Combustion Turbine				
Combined Cycle				310 MW in 2013
Combined Cycle				

Table 2: Overview of Alternative Resource Plans (continued)

Resource	Plan ACEK1	Plan ACEK2	Plan ADDK1	Plan AEDK1
DSM	DSM A	DSM A	DSM A	DSM A
Solar	11 MW in 2018	11 MW in 2018	11 MW in 2018	11 MW in 2018
Solar	6 MW in 2021	6 MW in 2021	6 MW in 2021	6 MW in 2021
Solar	3 MW in 2023	3 MW in 2023	3 MW in 2023	3 MW in 2023
Wind	100 MW in 2016	100 MW in 2016	100 MW in 2016	100 MW in 2016
Wind	200 MW in 2020	200 MW in 2020	200 MW in 2020	200 MW in 2020
Wind	100 MW in 2023	100 MW in 2023	100 MW in 2023	100 MW in 2023
Coal Retire	510 MW in 2016 (M 1-2-3)	510 MW in 2016 (M 1-2-3)	368 MW in 2015 (L1)	343 MW in 2015 (L2)
Coal				
Coal				
Nuclear				
Nuclear				
Combustion Turbine	154 MW in 2016		154 MW in 2024	154 MW in 2024
Combustion Turbine	154 MW in 2024		154 MW in 2028	154 MW in 2029
Combustion Turbine	154 MW in 2028			
Combustion Turbine				
Combustion Turbine				
Combined Cycle		300 MW in 2016		
Combined Cycle		300 MW in 2028		
Resource	**Plan AFDK1**	**Plan AGEK1**	**Plan AGEK9**	**Plan AIEK9**
DSM	DSM A	DSM A	DSM A	DSM A
Solar	11 MW in 2018	11 MW in 2018	11 MW in 2018	11 MW in 2018
Solar	6 MW in 2021	6 MW in 2021	6 MW in 2021	6 MW in 2021
Solar	3 MW in 2023	3 MW in 2023	3 MW in 2023	3 MW in 2023
Wind	100 MW in 2016	100 MW in 2016	100 MW in 2016	100 MW in 2016
Wind	200 MW in 2020	200 MW in 2020	200 MW in 2020	200 MW in 2020
Wind	100 MW in 2023	100 MW in 2023	100 MW in 2023	100 MW in 2023
Coal Retire	711 MW in 2015 (L 1-2)	170 MW in 2016 (M1)	170 MW in 2016 (M1)	170 MW in 2016 (M1)
Coal				10% Biomass (M 2-3)
Coal				
Nuclear				
Nuclear				
Combustion Turbine	308 MW in 2015	154 MW in 2029		
Combustion Turbine	154 MW in 2021			
Combustion Turbine	154 MW in 2027			
Combustion Turbine	154 MW in 2031			
Combustion Turbine				
Combined Cycle			150 MW in 2028	150 MW in 2028
Combined Cycle				

Table 3: Overview of Alternative Resource Plans (continued)

Resource	Plan BBEK1	Plan CBEK1	Plan DBEK1	Plan DCEK1
DSM	EE Only	DR Only	Aggressive DSM	Aggressive DSM
Solar	11 MW in 2018	11 MW in 2018	11 MW in 2018	11 MW in 2018
Solar	6 MW in 2021	6 MW in 2021	6 MW in 2021	6 MW in 2021
Solar	3 MW in 2023	3 MW in 2023	3 MW in 2023	3 MW in 2023
Wind	100 MW in 2016	100 MW in 2016	100 MW in 2016	100 MW in 2016
Wind	200 MW in 2020	200 MW in 2020	200 MW in 2020	200 MW in 2020
Wind	100 MW in 2023	100 MW in 2023	100 MW in 2023	100 MW in 2023
Coal Retire	334 MW in 2016 (M 1-2)	334 MW in 2016 (M 1-2)	334 MW in 2016 (M 1-2)	510 MW in 2016 (M 1-2-3)
Coal				
Coal				
Nuclear				
Nuclear				
Combustion Turbine	154 MW in 2019	154 MW in 2020		154 MW in 2031
Combustion Turbine	154 MW in 2025	154 MW in 2024		
Combustion Turbine	154 MW in 2030	154 MW in 2027		
Combustion Turbine		154 MW in 2030		
Combustion Turbine				
Combined Cycle				
Combined Cycle				

Resource	Plan EBEK1	Plan XBEK1
DSM	Very Aggressive DSM	Persistance DSM
Solar	11 MW in 2018	11 MW in 2018
Solar	6 MW in 2021	6 MW in 2021
Solar	3 MW in 2023	3 MW in 2023
Wind	100 MW in 2016	100 MW in 2016
Wind	200 MW in 2020	200 MW in 2020
Wind	100 MW in 2023	100 MW in 2023
Coal Retire	334 MW in 2016 (M 1-2)	334 MW in 2016 (M 1-2)
Coal		
Coal		
Nuclear		
Nuclear		
Combustion Turbine		154 MW in 2018
Combustion Turbine		154 MW in 2022
Combustion Turbine		154 MW in 2025
Combustion Turbine		154 MW in 2028
Combustion Turbine		154 MW in 2031
Combined Cycle		
Combined Cycle		

3.1 DEVELOPMENT OF ALTERNATIVE RESOURCE PLANS

(A) The utility shall develop, and describe and document, at least one (1) alternative resource plan, and as many as may be needed to assess the range of options for the choices and timing of resources, for each of the following cases. Each of the alternative resource plans for cases pursuant to paragraphs (3)(A)1.–(3)(A)5. shall provide resources to meet at least the projected load growth and resource retirements over the planning period in a manner specified by the case. The utility shall examine cases that—

1. Minimally comply with legal mandates for demand-side resources, renewable energy resources, and other mandated energy resources. This constitutes the compliance benchmark resource plan for planning purposes;

All Alternative Resource Plans comply with the renewable energy mandates (Missouri Renewable standard) and demand-side mandates.

A recap of the RPS model supporting renewable non-solar additions is provided in Table 4 below:

Table 4: KCP&L Non-Solar Renewable Requirements

Year	3-Year average retail peak	RES Requirement	KCP&L Requirement	KS Share of Installed Capacity	Future Renewable Additions Needed (MW)	
	MW		MW	MW	Total	KS share
2011	1,636	10%	164	70		
2012	1,673	10%	167	119		
2013	1,716	10%	172	178		
2014	1,749	10%	175	234		
2015	1,765	10%	177	234		
2016	1,786	15%	268	234	100	47
2017	1,802	15%	270	234		
2018	1,816	15%	272	234		
2019	1,828	15%	274	234		
2020	1,841	20%	368	234	200	94
2021	1,854	20%	371	234		
2022	1,869	20%	374	234		
2023	1,884	20%	377	234	100	47
2024	1,899	20%	380	234		
2025	1,915	20%	383	234		
2026	1,932	20%	386	234		
2027	1,950	20%	390	234		
2028	1,970	20%	394	234		
2029	1,991	20%	398	234		
2030	2,014	20%	403	234		
2031	2,037	20%	407	234		

2. Utilize only renewable energy resources, up to the maximum potential capability of renewable resources in each year of the planning horizon, if that results in more renewable energy resources than the minimally compliant plan. This constitutes the aggressive renewable energy resource plan for planning purposes;

Alternative Resource Plan ABEK6 was developed to meet this rule.

3. Utilize only demand-side resources, up to the maximum achievable potential of demand-side resources in each year of the planning horizon, if that results in more demand-side resources than the minimally compliant

plan. This constitutes the aggressive demand-side resource plan for planning purposes;

Alternative Resource Plans DBEK1 and DCEK1 were developed to meet this rule.

4. In the event that legal mandates identify energy resources other than renewable energy or demand-side resources, utilize only the other energy resources, up to the maximum potential capability of the other energy resources in each year of the planning horizon, if that results in more of the other energy resources than the compliance benchmark resource plan. For planning purposes, this constitutes the aggressive legally-mandated other energy resource plan;

Alternative Resource Plan XBEK1 was developed to meet this rule.

5. Optimally comply with legal mandates for demand-side resources, renewable energy resources, and other targeted energy resources. This constitutes the optimal compliance resource plan, where every legal mandate is at least minimally met, but some resources may be optimally utilized at levels greater than the mandated minimums;

Alternative Resource Plans DBEK1, DCEK1, and EBEK1 were developed to meet this rule.

6. Any other plan specified by the commission as a special contemporary issue pursuant to 4 CSR 240-22.080(4);

Alternative Resource Plan ABEK6 was developed to evaluate Contemporary Issue 1b.

Alternative Resource Plans DBEK1 and DCEK1 were developed to evaluate Contemporary Issue 1h.

Alternative Resource Plan EBEK1 was developed to evaluate Contemporary Issue 1c.

7. Any other plan specified by commission order; and

There are no other plans specified by commission order.

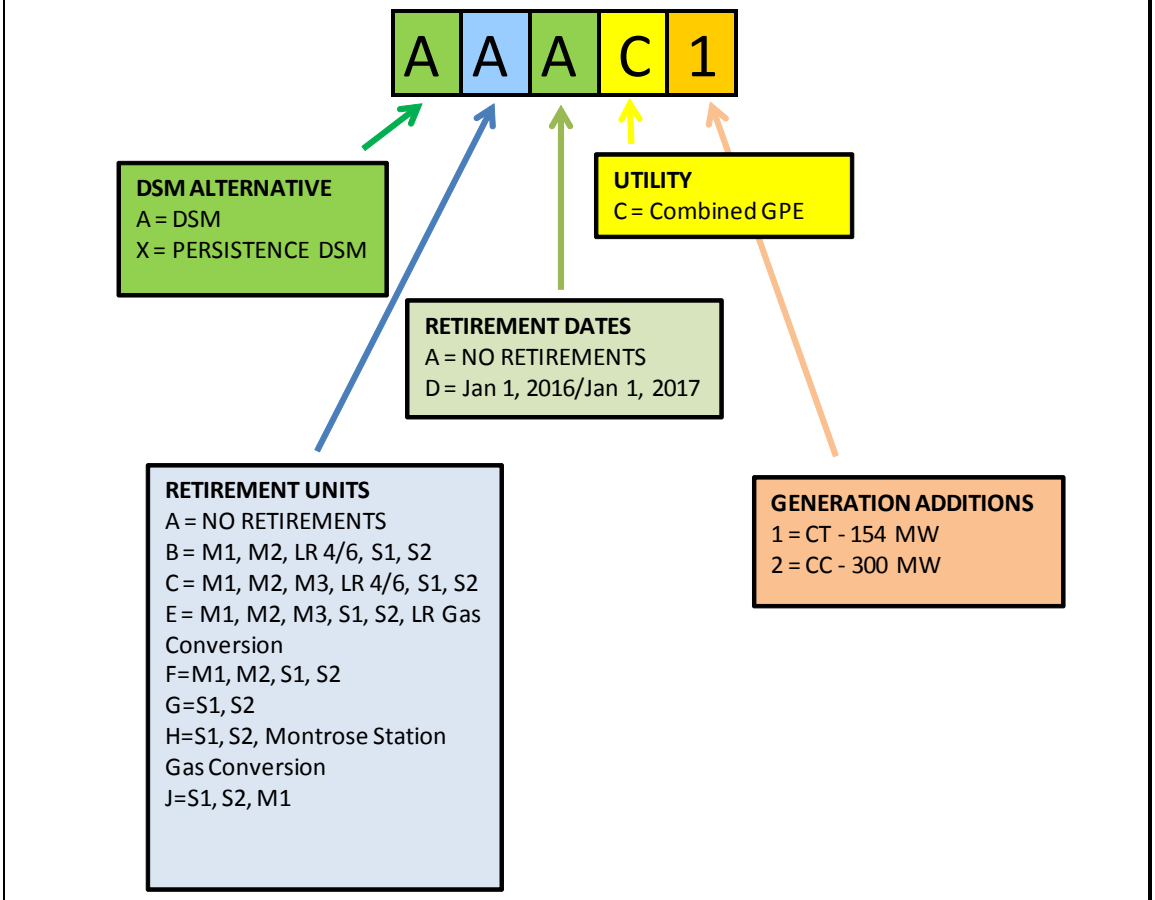
8. Any additional alternative resource plans that the utility deems should be analyzed.

KCP&L also considers prudent resource planning to develop and analyze alternative resource plans that are based upon KCP&L and GMO combining resources. Evaluating alternative resource plans on a combined-company basis can provide a platform to determine if combined-company planning "serves the public interest" as mandated in 4 CSR 240-22.010 Policy Objectives.

Alternative resource plans were developed using a combination of various capacities of supply-side sources, demand-side resources and differing the timing of resource additions. The plan-naming convention utilized for the alternative resource plans developed is shown in Table 5 below:

Table 5: Alternative Resource Plan Naming Convention

NAMING CONVENTION FOR ALTERNATIVE RESOURCE PLANS ON A COMBINED-COMPANY BASIS



Definitions:

DSM - Demand-Side Management	M1 - Montrose Unit 1	CT - Combustion Turbine
EE - Energy Efficiency	M2 - Montrose Unit 2	CC - Combined Cycle
DR - Demand Response	M3 - Montrose Unit 3	RPS - Renewable Portfolio Standard
S1 - Sibley Unit 1	S2 - Sibley Unit 2	LR 4/6 - Lake Road 4/6

Various combined-company Alternative Resource Plans were derived and an overview of each is provided in Table 6 and Table 7 below:

Table 6: Overview of Combined-Company Resource Plans

Resource	Plan AAAC1	Plan AAAC2	Plan ABDC1	Plan ABDC2
DSM	DSM A	DSM A	DSM A	DSM A
Solar	21 MW in 2018	21 MW in 2018	21 MW in 2018	21 MW in 2018
Solar	12 MW in 2021	12 MW in 2021	12 MW in 2021	12 MW in 2021
Solar	6 MW in 2023	6 MW in 2023	6 MW in 2023	6 MW in 2023
Wind	100 MW in 2016	100 MW in 2016	100 MW in 2016	100 MW in 2016
Wind	150 MW in 2019	150 MW in 2019	150 MW in 2019	150 MW in 2019
Wind	200 MW in 2020	200 MW in 2020	200 MW in 2020	200 MW in 2020
Wind	100 MW in 2021	100 MW in 2021	100 MW in 2021	100 MW in 2021
Wind	100 MW in 2023	100 MW in 2023	100 MW in 2023	100 MW in 2023
Wind	100 MW in 2024	100 MW in 2024	100 MW in 2024	100 MW in 2024
Coal Retire			334 MW in 2016	334 MW in 2016
Coal Retire			198 MW in 2017	198 MW in 2017
Combustion Turbine	308 MW in 2026		308 MW in 2017	
Combustion Turbine	308 MW in 2031		308 MW in 2021	
Combustion Turbine			308 MW in 2028	
Combustion Turbine				
Combustion Turbine				
Combined Cycle		300 MW in 2026		300 MW in 2017
Combined Cycle		300 MW in 2031		300 MW in 2021
Combined Cycle				300 MW in 2027
Combined Cycle				
Combined Cycle				

Resource	Plan ACDC1	Plan ACDC2	Plan AEDC2	Plan AFDC1
DSM	DSM A	DSM A	DSM A	DSM A
Solar	21 MW in 2018	21 MW in 2018	21 MW in 2018	21 MW in 2018
Solar	12 MW in 2021	12 MW in 2021	12 MW in 2021	12 MW in 2021
Solar	6 MW in 2023	6 MW in 2023	6 MW in 2023	6 MW in 2023
Wind	100 MW in 2016	100 MW in 2016	100 MW in 2016	100 MW in 2016
Wind	150 MW in 2019	150 MW in 2019	150 MW in 2019	150 MW in 2019
Wind	200 MW in 2020	200 MW in 2020	200 MW in 2020	200 MW in 2020
Wind	100 MW in 2021	100 MW in 2021	100 MW in 2021	100 MW in 2021
Wind	100 MW in 2023	100 MW in 2023	100 MW in 2023	100 MW in 2023
Wind	100 MW in 2024	100 MW in 2024	100 MW in 2024	100 MW in 2024
Coal Retire	510MW in 2016	510MW in 2016	510MW in 2016	334 MW in 2016
Coal Retire	198 MW in 2017	198 MW in 2017	99 MW in 2017	99 MW in 2017
Combustion Turbine	308 MW in 2016			231 MW in 2017
Combustion Turbine	308 MW in 2017			154 MW in 2021
Combustion Turbine	308 MW in 2024			154 MW in 2025
Combustion Turbine	308 MW in 2028			154 MW in 2028
Combustion Turbine				154 MW in 2030
Combined Cycle		613 MW in 2016	300 MW in 2016	
Combined Cycle		300 MW in 2024	300 MW in 2018	
Combined Cycle		300 MW in 2029	300 MW in 2026	
Combined Cycle			300 MW in 2031	
Combined Cycle				

Table 7: Overview of Combined-Company Resource Plans (continued)

Resource	Plan AFDC2	Plan AGDC1	Plan AGDC2	Plan AHDC1
DSM	DSM A	DSM A	DSM A	DSM A
Solar	21 MW in 2018	21 MW in 2018	21 MW in 2018	21 MW in 2018
Solar	12 MW in 2021	12 MW in 2021	12 MW in 2021	12 MW in 2021
Solar	6 MW in 2023	6 MW in 2023	6 MW in 2023	6 MW in 2023
Wind	100 MW in 2016	100 MW in 2016	100 MW in 2016	100 MW in 2016
Wind	150 MW in 2019	150 MW in 2019	150 MW in 2019	150 MW in 2019
Wind	200 MW in 2020	200 MW in 2020	200 MW in 2020	200 MW in 2020
Wind	100 MW in 2021	100 MW in 2021	100 MW in 2021	100 MW in 2021
Wind	100 MW in 2023	100 MW in 2023	100 MW in 2023	100 MW in 2023
Wind	100 MW in 2024	100 MW in 2024	100 MW in 2024	100 MW in 2024
Coal Retire	334 MW in 2016	99 MW in 2017	99 MW in 2017	99 MW in 2017
Coal Retire	99 MW in 2017			
Combustion Turbine		308 MW in 2024		308 MW in 2024
Combustion Turbine		308 MW in 2029		308 MW in 2029
Combustion Turbine				
Combustion Turbine				
Combustion Turbine				
Combined Cycle	300 MW in 2017		300 MW in 2024	
Combined Cycle	300 MW in 2024		300 MW in 2029	
Combined Cycle	300 MW in 2029			
Combined Cycle				
Combined Cycle				

Resource	Plan AJDC2	Plan XJDC2		
DSM	DSM A	DSM A		
Solar	21 MW in 2018	21 MW in 2018		
Solar	12 MW in 2021	12 MW in 2021		
Solar	6 MW in 2023	6 MW in 2023		
Wind	100 MW in 2016	100 MW in 2016		
Wind	150 MW in 2019	150 MW in 2019		
Wind	200 MW in 2020	200 MW in 2020		
Wind	100 MW in 2021	100 MW in 2021		
Wind	100 MW in 2023	100 MW in 2023		
Wind	100 MW in 2024	100 MW in 2024		
Coal Retire	170 MW in 2016	170 MW in 2016		
Coal Retire	99 MW in 2017	99 MW in 2017		
Combustion Turbine				
Combustion Turbine				
Combustion Turbine				
Combustion Turbine				
Combustion Turbine				
Combined Cycle	300 MW in 2021	300 MW in 2017		
Combined Cycle	300 MW in 2028	300 MW in 2020		
Combined Cycle		300 MW in 2024		
Combined Cycle		300 MW in 2027		
Combined Cycle		300 MW in 2030		

The 20-year NPVRR for each of combined company plans was determined for each of the 27 scenarios established for this IRP. The lowest cost combined company plans on an expected value basis are AJDC2 and AGDC2. Based on these results, two additional KCP&L specific resource plans were developed (AAAK9 and AGEK9). These KCP&L specific plans are based on allocating the resource additions in the combined company plans between GMO and KCP&L.

All plans assuming combined company planning were each subjected to similar analysis as the integrated analysis for each of the stand-alone company plans.

The resulting expected value NPVRR for each of the combined company plans is detailed in the table below.

Table 8: Combined Company Plan Results

Total Revenue Requirement			
Rank	Plan	NPVRR ($mm)	Delta
1	AJDC2	33,064.5	-
2	AGDC2	33,068.4	3.9
3	AGDC1	33,120.4	55.9
4	AAAC2	33,137.1	72.5
5	AAAC1	33,162.8	98.3
6	AFDC2	33,259.4	194.9
7	AFDC1	33,262.6	198.1
8	ABDC2	33,297.0	232.5
8	ABDC1	33,358.7	294.2
10	AHDC2	33,449.9	385.4
11	AEDC2	33,452.7	388.2
12	ACDC2	33,551.3	486.7
13	ACDC1	33,596.9	532.4
14	XJDC2	33,961.9	897.4

(B) The alternative resource plans developed at this stage of the analysis shall not include load-building programs, which shall be analyzed as required by 4 CSR 240-22.070(5).

No load-building programs have been included as a resource in any alternative resource plan.

(C) The utility shall include in its development of alternative resource plans the impact of—

1. The potential retirement or life extension of existing generation plants;

Several unit retirement options were evaluated in the Alternative Resource Plans including Montrose 1, Montrose 2, Montrose 3, LaCygne 1, and LaCygne 2.

2. The addition of equipment and other retrofits on generation plants to meet environmental requirements; and

Retrofits and other equipment potentially expected to be required to comply with currently proposed environmental regulations and assumed compliance dates are shown in Table 9 through Table 11 below for KCP&L's coal units:

Table 9: Environmental Equipment - Montrose 1

Environmental Regulation	Start Date	Assumed Equipment
Mercury and Air Toxics Standards Rule	2015	Activated Carbon Injection/Baghouse
SO_2 National Ambient Air Quality Standards	2017	Dry Sorbent Injection
PM National Ambient Air Quality Standards	2020	Selective Catalyst Reduction
PM National Ambient Air Quality Standards	2020	Scrubber
Clean Water Act Section 316(b)	2018	Fish-Friendly Screens
Clean Water Act Section 316(a) - Lake Units	2021	Cooling Towers
Effluent Guidelines	2017	Cease Wet Sluicing
Coal Combustion Residuals Rule	2018	Close Ash Ponds

Table 10: Environmental Equipment - Montrose 2

Environmental Regulation	Start Date	Assumed Equipment
Mercury and Air Toxics Standards Rule	2015	Activated Carbon Injection/Baghouse
SO_2 National Ambient Air Quality Standards	2017	Scrubber
PM National Ambient Air Quality Standards	2020	Selective Catalyst Reduction
PM National Ambient Air Quality Standards	2020	Scrubber
Clean Water Act Section 316(b)	2018	Fish-Friendly Screens
Clean Water Act Section 316(a) - Lake Units	2021	Cooling Towers
Effluent Guidelines	2017	Cease Wet Sluicing
Coal Combustion Residuals Rule	2018	Close Ash Ponds

Table 11: Environmental Equipment - Montrose 3

Environmental Regulation	Start Date	Assumed Equipment
Mercury and Air Toxics Standards Rule	2015	Activated Carbon Injection/Baghouse
SO_2 National Ambient Air Quality Standards	2017	Scrubber
PM National Ambient Air Quality Standards	2020	Selective Catalyst Reduction
PM National Ambient Air Quality Standards	2020	Scrubber
Clean Water Act Section 316(b)	2018	Fish-Friendly Screens
Clean Water Act Section 316(a) - Lake Units	2021	Cooling Towers
Effluent Guidelines	2017	Cease Wet Sluicing
Coal Combustion Residuals Rule	2018	Close Ash Ponds

3. The conclusion of any currently implemented demand-side resources.

Alternative Resource Plan XBEK1 was developed to evaluate this rule.

(D) The utility shall provide a description of each alternative resource plan including the type and size of each demand-side resource and supply-side resource addition and a listing of the sequence and schedule for the end of life of existing resources and for the acquisition of each new resource.

Twenty-two Alternative Resource Plans were developed using a combination of various capacities of supply-side resources, demand-side resources, biomass retrofit and resource addition timing. It should be noted that wind and solar additions are based on installed capacity. These individual plans are shown in Table 12 through Table 33.

Table 12: Alternative Resource Plan AAAK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		100	195		4,567
2017	-			213		4,567
2018	-	11		201		4,567
2019	-			223		4,567
2020	-		200	242		4,567
2021	-	6		215		4,567
2022	-			279		4,567
2023	-	3	100	295		4,567
2024	-			312		4,511
2025	-			328		4,511
2026	-			346		4,511
2027	-			363		4,511
2028	-			380		4,511
2029	-			397		4,511
2030	-			415		4,511
2031	-			433		4,511

Plan AAAK1 modeled no retirements.

Table 13: Alternative Resource Plan AAAK9

Year	CC's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		100	195		4,567
2017	-			213		4,567
2018	-	11		201		4,567
2019	-			223		4,567
2020	-		200	242		4,567
2021	-	6		215		4,567
2022	-			279		4,567
2023	-	3	100	295		4,567
2024	-			312		4,511
2025	-			328		4,511
2026	-			346		4,511
2027	-			363		4,511
2028	-			380		4,511
2029	-			397		4,511
2030	-			415		4,511
2031	-			433		4,511

Plan AAAK9 modeled no retirements on a combined-company basis.

Table 14: Alternative Resource Plan ABEK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		100	195	334	4,233
2017	-			213		4,233
2018	-	11		201		4,233
2019	-			223		4,233
2020	-		200	242		4,233
2021	-	6		215		4,233
2022	-			279		4,233
2023	-	3	100	295		4,233
2024	154			312		4,177
2025	-			328		4,177
2026	-			346		4,177
2027	-			363		4,177
2028	-			380		4,177
2029	154			397		4,177
2030	-			415		4,177
2031	-			433		4,177

Plan ABEK1 modeled Montrose 1 and 2 retirements.

Table 15: Alternative Resource Plan ABEK2

Year	CC's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		100	195	334	4,233
2017	-			213		4,233
2018	-	11		201		4,233
2019	-			223		4,233
2020	-		200	242		4,233
2021	-	6		215		4,233
2022	-			279		4,233
2023	-	3	100	295		4,233
2024	300			312		4,177
2025	-			328		4,177
2026	-			346		4,177
2027	-			363		4,177
2028	-			380		4,177
2029	-			397		4,177
2030	-			415		4,177
2031	-			433		4,177

Plan ABEK2 modeled Montrose 1 and 2 retirements.

Table 16: Alternative Resource Plan ABEK4

Year	Coal (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		100	195	334	4,233
2017	-			213		4,233
2018	-	11		201		4,233
2019	-			223		4,233
2020	-		200	242		4,233
2021	-	6		215		4,233
2022	-			279		4,233
2023	-	3	100	295		4,233
2024	200			312		4,177
2025	-			328		4,177
2026	-			346		4,177
2027	-			363		4,177
2028	-			380		4,177
2029	-			397		4,177
2030	200			415		4,177
2031	-			433		4,177

Plan ABEK4 modeled Montrose 1 and 2 retirements.

Table 17: Alternative Resource Plan ABEK5

Year	Nuclear (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		100	195	334	4,233
2017	-			213		4,233
2018	-	11		201		4,233
2019	-			223		4,233
2020	-		200	242		4,233
2021	-	6		215		4,233
2022	-			279		4,233
2023	-	3	100	295		4,233
2024	200			312		4,177
2025	-			328		4,177
2026	-			346		4,177
2027	-			363		4,177
2028	-			380		4,177
2029	-			397		4,177
2030	200			415		4,177
2031	-			433		4,177

Plan ABEK5 modeled Montrose 1 and 2 retirements.

Table 18: Alternative Resource Plan ABEK6

Year	CT's (MW)	Solar (MW)	Doubling Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		200	195	334	4,233
2017	-			213		4,233
2018	-	11		201		4,233
2019	-			223		4,233
2020	-		400	242		4,233
2021	-	6		215		4,233
2022	-			279		4,233
2023	-	3	200	295		4,233
2024	-			312		4,177
2025	154			328		4,177
2026	-			346		4,177
2027	-			363		4,177
2028	-			380		4,177
2029	-			397		4,177
2030	154			415		4,177
2031	-			433		4,177

Plan ABEK6 modeled Montrose 1and 2 retirements. Plan ABEK6 complies with Section 1.b of the Order Establishing Special Contemporary Resource Planning Issues.

Table 19: Alternative Resource Plan ABEK7

Year	Existing CC (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	310			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		100	195	334	4,233
2017	-			213		4,233
2018	-	11		201		4,233
2019	-			223		4,233
2020	-		200	242		4,233
2021	-	6		215		4,233
2022	-			279		4,233
2023	-	3	100	295		4,233
2024	-			312		4,177
2025	-			328		4,177
2026	-			346		4,177
2027	-			363		4,177
2028	-			380		4,177
2029	-			397		4,177
2030	-			415		4,177
2031	-			433		4,177

Plan ABEK7 modeled Montrose 1and 2 retirements.

Table 20: Alternative Resource Plan ACEK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	154		100	195	510	4,057
2017	-			213		4,057
2018	-	11		201		4,057
2019	-			223		4,057
2020	-		200	242		4,057
2021	-	6		215		4,057
2022	-			279		4,057
2023	-	3	100	295		4,057
2024	154			312		4,001
2025	-			328		4,001
2026	-			346		4,001
2027	-			363		4,001
2028	154			380		4,001
2029	-			397		4,001
2030	-			415		4,001
2031	-			433		4,001

Plan ACEK1 modeled Montrose 1, 2 and 3 retirements.

Table 21: Alternative Resource Plan ACEK2

Year	CC's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	300		100	195	510	4,057
2017	-			213		4,057
2018	-	11		201		4,057
2019	-			223		4,057
2020	-		200	242		4,057
2021	-	6		215		4,057
2022	-			279		4,057
2023	-	3	100	295		4,057
2024	-			312		4,001
2025	-			328		4,001
2026	-			346		4,001
2027	-			363		4,001
2028	300			380		4,001
2029	-			397		4,001
2030	-			415		4,001
2031	-			433		4,001

Plan ACEK2 modeled Montrose 1, 2 and 3 retirements.

Table 22: Alternative Resource Plan ADDK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185	368	4,234
2016	-		100	195		4,199
2017	-			213		4,199
2018	-	11		201		4,199
2019	-			223		4,199
2020	-		200	242		4,199
2021	-	6		215		4,199
2022	-			279		4,199
2023	-	3	100	295		4,199
2024	154			312		4,143
2025	-			328		4,143
2026	-			346		4,143
2027	-			363		4,143
2028	154			380		4,143
2029	-			397		4,143
2030	-			415		4,143
2031	-			433		4,143

Plan ADDK1 modeled LaCygne 1 retirement.

Table 23: Alternative Resource Plan AEDK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185	343	4,259
2016	-		100	195		4,224
2017	-			213		4,224
2018	-	11		201		4,224
2019	-			223		4,224
2020	-		200	242		4,224
2021	-	6		215		4,224
2022	-			279		4,224
2023	-	3	100	295		4,224
2024	154			312		4,168
2025	-			328		4,168
2026	-			346		4,168
2027	-			363		4,168
2028	-			380		4,168
2029	154			397		4,168
2030	-			415		4,168
2031	-			433		4,168

Plan AEDK1 modeled LaCygne 2 retirement.

Table 24: Alternative Resource Plan AFDK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	308			185	711	3,891
2016	-		100	195		3,856
2017	-			213		3,856
2018	-	11		201		3,856
2019	-			223		3,856
2020	-		200	242		3,856
2021	154	6		215		3,856
2022	-			279		3,856
2023	-	3	100	295		3,856
2024	-			312		3,800
2025	-			328		3,800
2026	-			346		3,800
2027	154			363		3,800
2028	-			380		3,800
2029	-			397		3,800
2030	-			415		3,800
2031	154			433		3,800

Plan AFDK1 modeled LaCygne 1 and LaCygne 2 retirement.

Table 25: Alternative Resource Plan AGEK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		100	195	170	4,397
2017	-			213		4,397
2018	-	11		201		4,397
2019	-			223		4,397
2020	-		200	242		4,397
2021	-	6		215		4,397
2022	-			279		4,397
2023	-	3	100	295		4,397
2024	-			312		4,341
2025	-			328		4,341
2026	-			346		4,341
2027	-			363		4,341
2028	-			380		4,341
2029	154			397		4,341
2030	-			415		4,341
2031	-			433		4,341

Plan AGEK1 modeled Montrose 1 retirement.

Table 26: Alternative Resource Plan AGEK9

Year	CC's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		100	195	170	4,397
2017	-			213		4,397
2018	-	11		201		4,397
2019	-			223		4,397
2020	-		200	242		4,397
2021	-	6		215		4,397
2022	-			279		4,397
2023	-	3	100	295		4,397
2024	-			312		4,341
2025	-			328		4,341
2026	-			346		4,341
2027	-			363		4,341
2028	150			380		4,341
2029	-			397		4,341
2030	-			415		4,341
2031	-			433		4,341

Plan AGEK9 modeled Montrose 1 retirement.

Table 27: Alternative Resource Plan AIEK9

Year	CC's (MW)	Solar (MW)	Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		100	195	170	4,397
2017	-			213		4,397
2018	-	11		201		4,397
2019	-			223		4,397
2020	-		200	242		4,397
2021	-	6		215		4,397
2022	-			279		4,397
2023	-	3	100	295		4,397
2024	-			312		4,341
2025	-			328		4,341
2026	-			346		4,341
2027	-			363		4,341
2028	150			380		4,341
2029	-			397		4,341
2030	-			415		4,341
2031	-			433		4,341

Plan AIEK9 modeled Montrose 1 retirement.

Table 28: Alternative Resource Plan BBEK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	EE Only (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			99		4,609
2015	-			112		4,602
2016	-		100	125	334	4,233
2017	-			138		4,233
2018	-	11		122		4,233
2019	154			136		4,233
2020	-		200	149		4,233
2021	-	6		116		4,233
2022	-			177		4,233
2023	-	3	100	191		4,233
2024	-			205		4,177
2025	154			220		4,177
2026	-			235		4,177
2027	-			250		4,177
2028	-			265		4,177
2029	-			280		4,177
2030	154			296		4,177
2031	-			312		4,177

Plan BBEK1 modeled Montrose 1 and 2 retirements.

Table 29: Alternative Resource Plan CBEK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	DR Only (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			160		4,609
2015	-			163		4,602
2016	-		100	160	334	4,233
2017	-			165		4,233
2018	-	11		140		4,233
2019	-			148		4,233
2020	154		200	154		4,233
2021	-	6		160		4,233
2022	-			163		4,233
2023	-	3	100	165		4,233
2024	154			168		4,177
2025	-			169		4,177
2026	-			172		4,177
2027	154			174		4,177
2028	-			176		4,177
2029	-			178		4,177
2030	154			180		4,177
2031	-			182		4,177

Plan CBEK1 modeled Montrose 1 and 2 retirements.

Table 30: Alternative Resource Plan DBEK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	Aggressive DSM (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			248		4,609
2015	-			280		4,602
2016	-		100	301	334	4,233
2017	-			335		4,233
2018	-	11		341		4,233
2019	-			385		4,233
2020	-		200	423		4,233
2021	-	6		464		4,233
2022	-			497		4,233
2023	-	3	100	529		4,233
2024	-			562		4,177
2025	-			596		4,177
2026	-			631		4,177
2027	-			665		4,177
2028	-			698		4,177
2029	-			734		4,177
2030	-			769		4,177
2031	-			805		4,177

Plan DBEK1 modeled Montrose 1 and 2 retirements. Plan DBEK1 complies with Section 1.h of the Order Establishing Special Contemporary Resource Planning Issues.

Table 31: Alternative Resource Plan DCEK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	Aggressive DSM (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			248		4,609
2015	-			280		4,602
2016	-		100	301	510	4,057
2017	-			335		4,057
2018	-	11		341		4,057
2019	-			385		4,057
2020	-		200	423		4,057
2021	-	6		464		4,057
2022	-			497		4,057
2023	-	3	100	529		4,057
2024	-			562		4,001
2025	-			596		4,001
2026	-			631		4,001
2027	-			665		4,001
2028	-			698		4,001
2029	-			734		4,001
2030	-			769		4,001
2031	154			805		4,001

Plan DCEK1 modeled Montrose 1, 2 and 3 retirements. Plan DCEK1 complies with Section 1.h of the Order Establishing Special Contemporary Resource Planning Issues.

Table 32: Alternative Resource Plan EBEK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	Very Aggressive DSM (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			405		4,609
2015	-			469		4,602
2016	-		100	511	334	4,233
2017	-			580		4,233
2018	-	11		620		4,233
2019	-			708		4,233
2020	-		200	785		4,233
2021	-	6		678		4,233
2022	-			933		4,233
2023	-	3	100	996		4,233
2024	-			1,063		4,177
2025	-			1,130		4,177
2026	-			1,201		4,177
2027	-			1,268		4,177
2028	-			1,335		4,177
2029	-			1,406		4,177
2030	-			1,477		4,177
2031	-			1,548		4,177

Plan EBEK1 complies with Section 1.c of the Order Establishing Special Contemporary Resource Planning Issues. Plan EBEK1 modeled Montrose 1 and 2 retirements.

Table 33: Alternative Resource Plan XBEK1

Year	CT's (MW)	Solar (MW)	Wind (MW)	No DSM (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			90		4,609
2015	-			90		4,602
2016	-		100	90	334	4,233
2017	-			90		4,233
2018	154	11		61		4,233
2019	-			61		4,233
2020	-		200	61		4,233
2021	-	6		61		4,233
2022	154			61		4,233
2023	-	3	100	61		4,233
2024	-			61		4,177
2025	154			61		4,177
2026	-			61		4,177
2027	-			61		4,177
2028	154			61		4,177
2029	-			61		4,177
2030	-			61		4,177
2031	154			61		4,177

Plan XBEK1 modeled Montrose 1and 2 retirements.

SECTION 4: ANALYSIS OF RESOURCE PLAN

(4) Analysis of Alternative Resource Plans.

The utility shall describe and document its assessment of the relative performance of the alternative resource plans by calculating for each plan the value of each performance measure specified pursuant to section (2). This calculation shall assume values for uncertain factors that are judged by utility decision makers to be most likely. The analysis shall cover a planning horizon of at least twenty (20) years and shall be carried out on a year by year basis in order to assess the annual and cumulative impacts of alternative resource plans. The analysis shall be based on the assumption that rates will be adjusted annually, in a manner that is consistent with Missouri law. The analysis shall treat supply-side and demand-side resources on a logically-consistent and economically-equivalent basis, such that the same types or categories of costs, benefits, and risks shall be considered and such that these factors shall be quantified at a similar level of detail and precision for all resource types. The utility shall provide the following information:

(A) A summary tabulation that shows the performance of each alternative resource plan as measured by each of the measures specified in section (2) of this rule;

The expected value of each plan performance measures is provided below:

Table 34: Expected Value Plan Performance Measures

Plan	NPVRR ($MM)	Probable Environmenal Costs ($MM)	DSM Costs ($MM)	Levelized Annual Rates ($/kw-hr)	Maximum Rate Increase	Times Interest Earned	Total Debt to Capital	Cap Ex to FFO
AAAK1	20,910	1,569	198	0.122	7.54%	4.30	50.40	1.45
AAAK9	20,896	1,569	198	0.122	7.56%	4.30	50.40	1.45
ABEK1	20,869	1,207	198	0.122	7.27%	4.33	50.41	1.40
ABEK2	20,877	1,213	198	0.122	7.27%	4.30	50.41	1.43
ABEK4	20,950	1,203	198	0.123	7.27%	4.25	50.38	1.27
ABEK5	21,100	1,202	198	0.124	7.29%	4.11	50.34	1.09
ABEK6	21,000	1,200	198	0.123	8.84%	4.27	50.39	1.45
ABEK7	21,081	1,218	198	0.123	6.66%	4.32	50.41	1.48
ACEK1	21,013	1,039	198	0.123	9.79%	4.33	50.42	1.43
ACEK2	21,056	1,053	198	0.123	11.01%	4.29	50.40	1.42
ADDK1	20,920	1,159	198	0.123	7.16%	4.34	50.41	1.38
AEDK1	20,909	1,107	198	0.123	7.25%	4.35	50.41	1.38
AFDK1	21,307	689	198	0.125	7.28%	4.37	50.36	1.40
AGEK1	20,839	1,377	198	0.122	6.53%	4.32	50.41	1.42
AGEK9	20,830	1,378	198	0.122	6.63%	4.31	50.41	1.40
AIEK9	20,843	1,382	198	0.122	6.63%	4.32	50.41	1.45
BBEK1	20,916	1,207	138	0.123	7.21%	4.32	50.41	1.39
CBEK1	21,222	1,209	102	0.122	7.03%	4.33	50.40	1.32
DBEK1	20,774	1,205	662	0.125	7.61%	4.33	50.42	1.60
DCEK1	20,722	1,037	662	0.125	8.15%	4.35	50.43	1.59
EBEK1	20,975	1,201	1,533	0.134	8.51%	4.31	50.40	1.85
XBEK1	21,263	1,209	-	0.122	7.00%	4.32	50.40	1.30

(B) For each alternative resource plan, a plot of each of the following over the planning horizon:

1. The combined impact of all demand-side resources on the base-case forecast of summer and winter peak demands;

The combined impact of all demand-side resources on the base-case forecast of summer and winter peak demands is shown in the following charts, Chart 1 through Chart 22.

Chart 1: Alternative Resource Plan Peak Demand Side Impact AAAK1

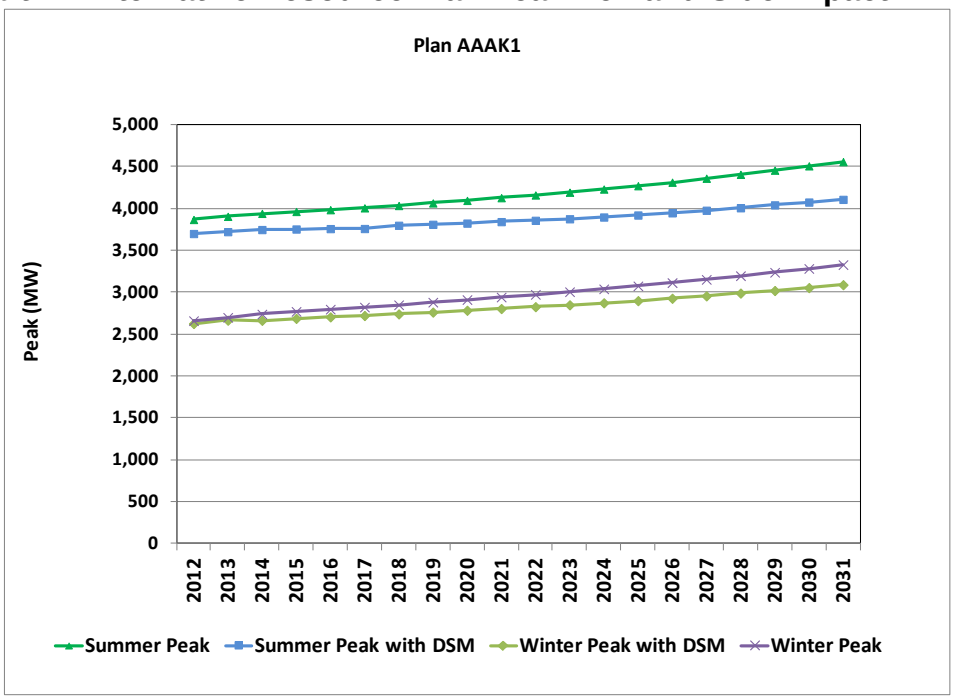


Chart 2: Alternative Resource Plan Demand Side Impact AAAK9

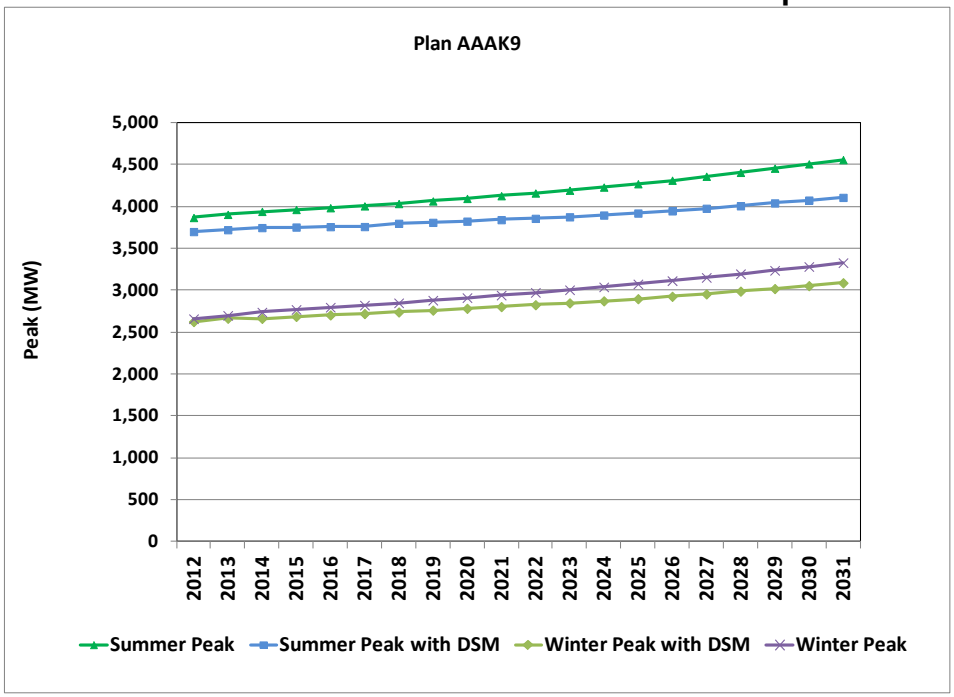


Chart 3: Alternative Resource Plan Peak Demand Side Impact ABEK1

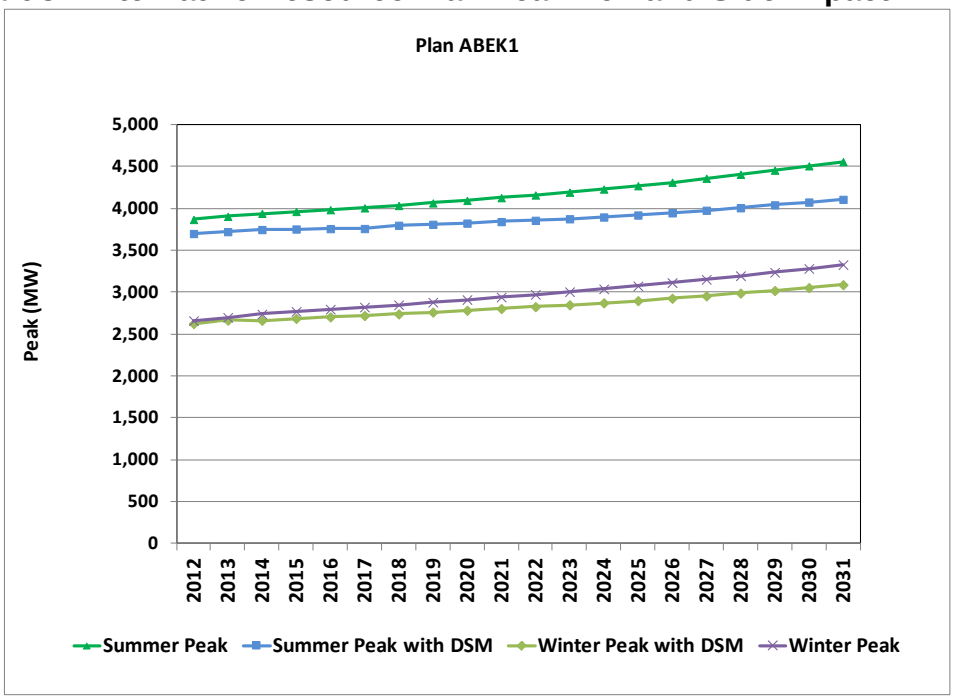


Chart 4: Alternative Resource Plan Peak Demand Side Impact ABEK2

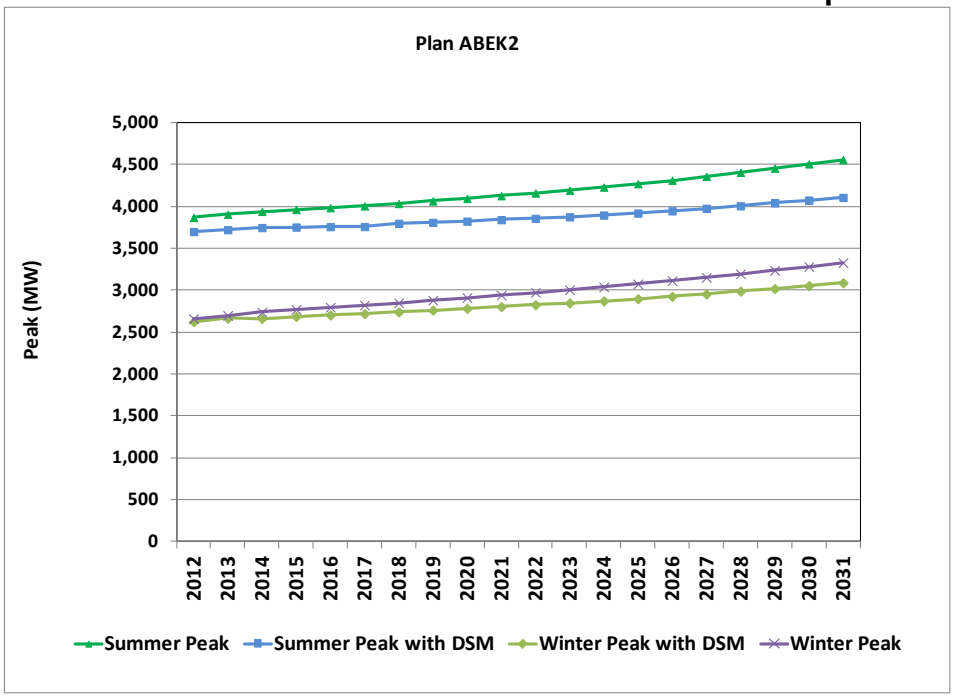


Chart 5: Alternative Resource Plan Peak Demand Side Impact ABEK4

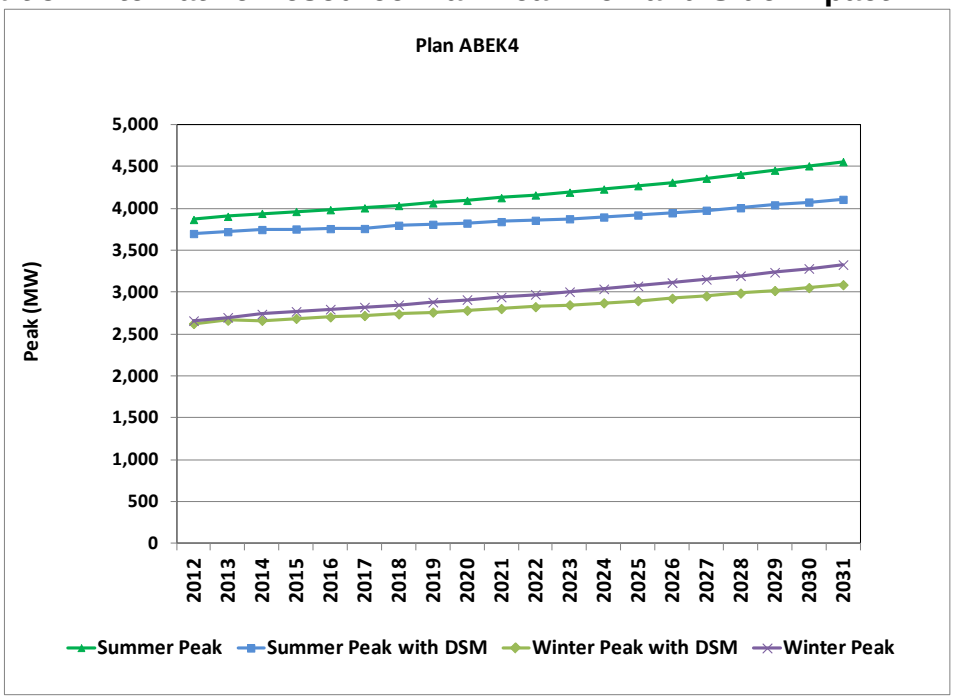


Chart 6: Alternative Resource Plan Peak Demand Side Impact ABEK5

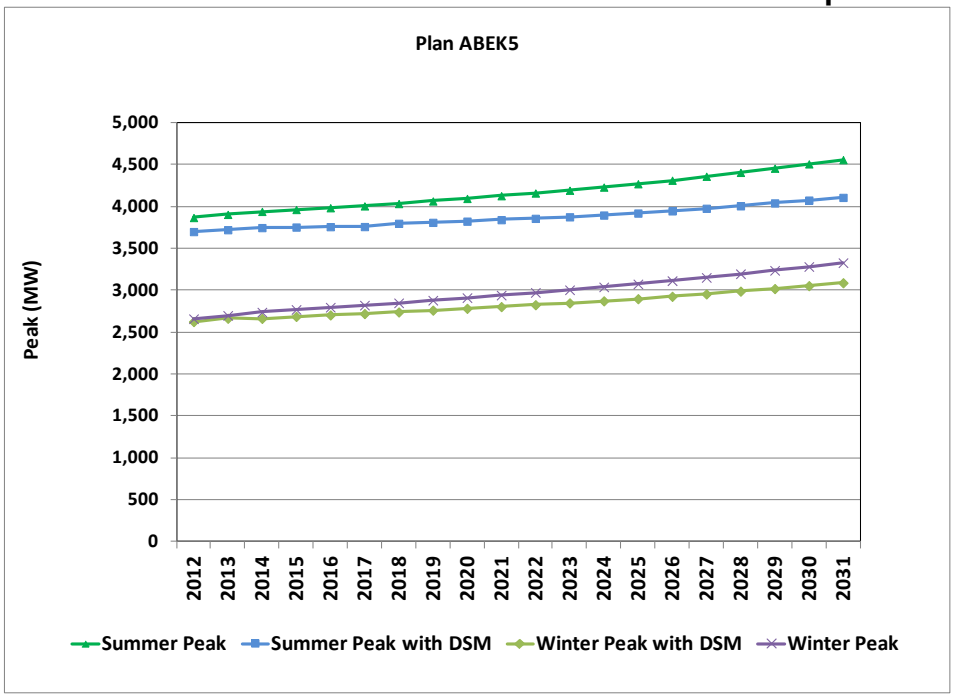


Chart 7: Alternative Resource Plan Peak Demand Side Impact ABEK6

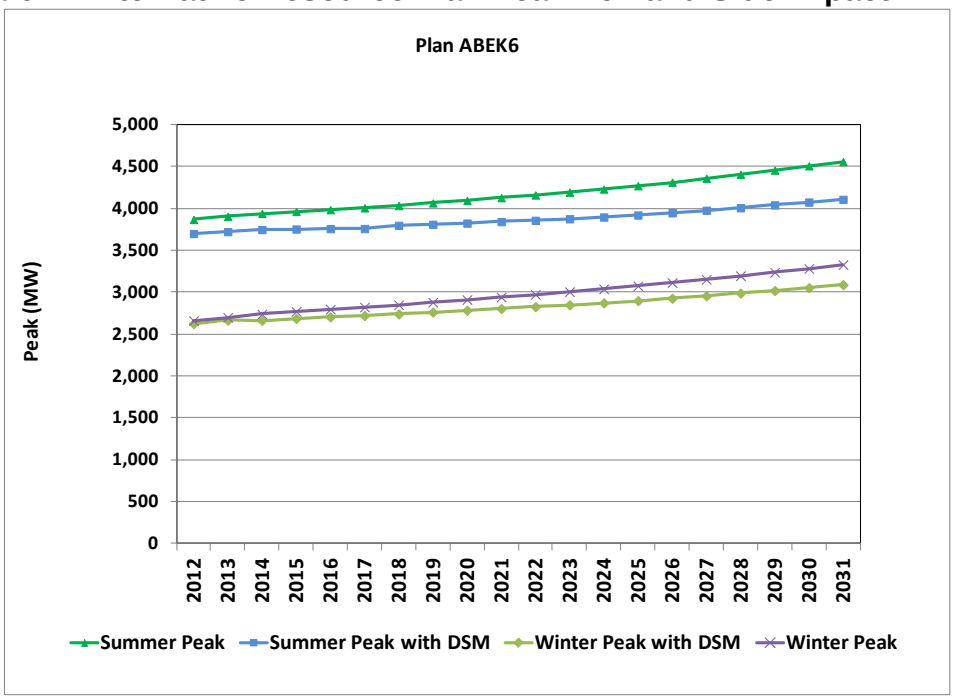


Chart 8: Alternative Resource Plan Peak Demand Side Impact ABEK7

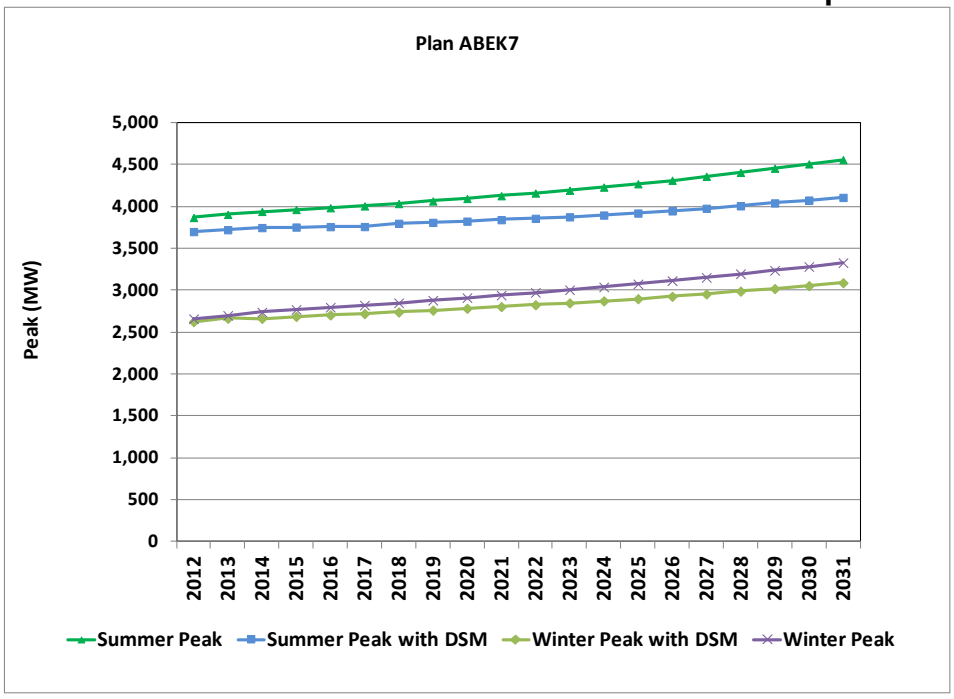


Chart 9: Alternative Resource Plan Peak Demand Side Impact ACEK1

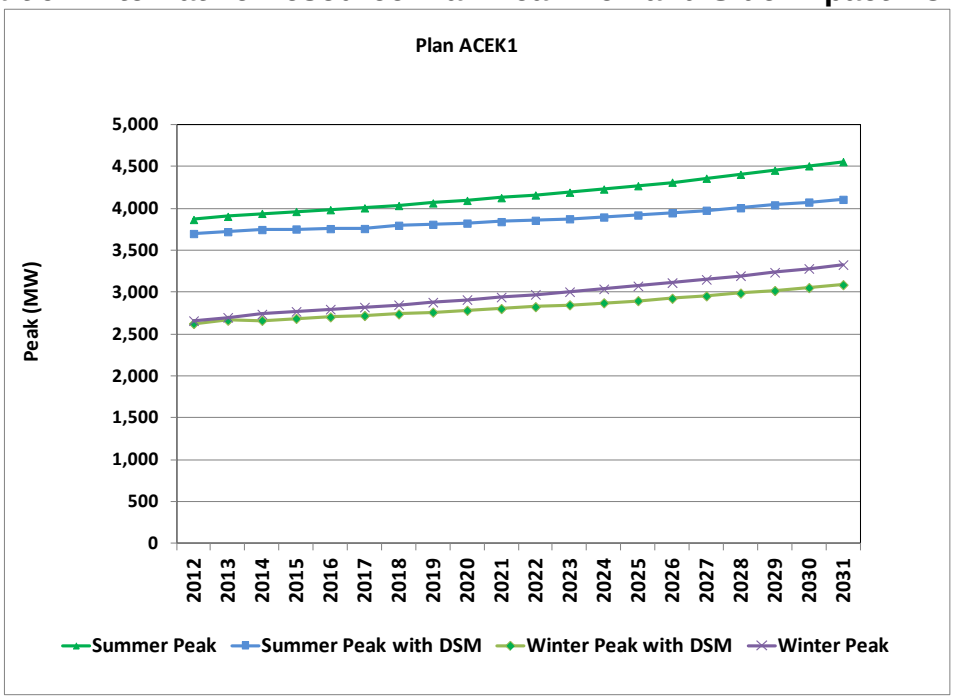


Chart 10: Alternative Resource Plan Peak Demand Side Impact ACEK2

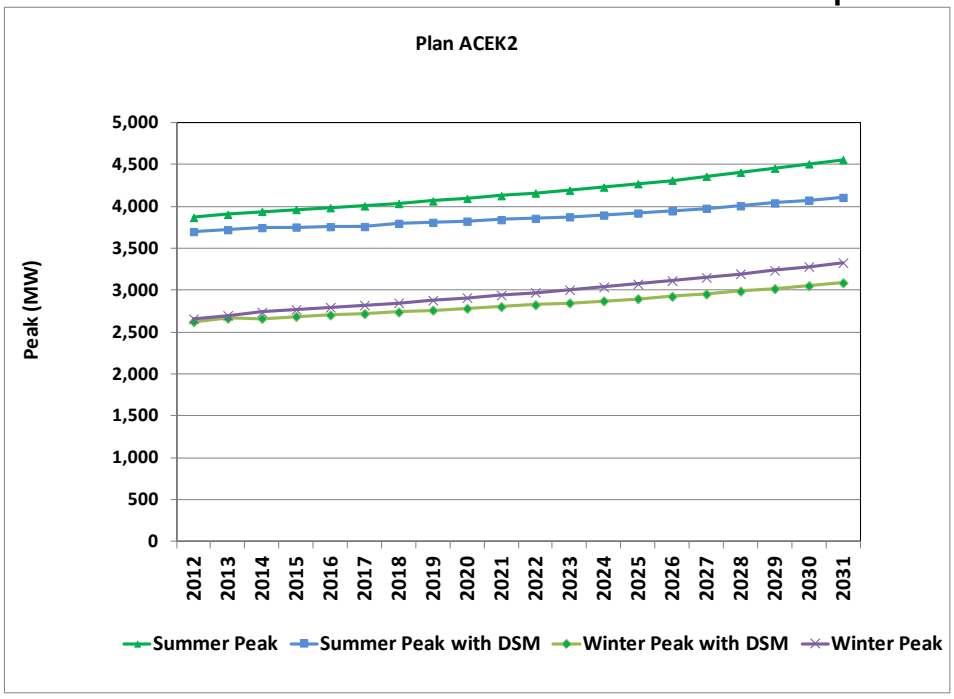


Chart 11: Alternative Resource Plan Peak Demand Side Impact ADDK1

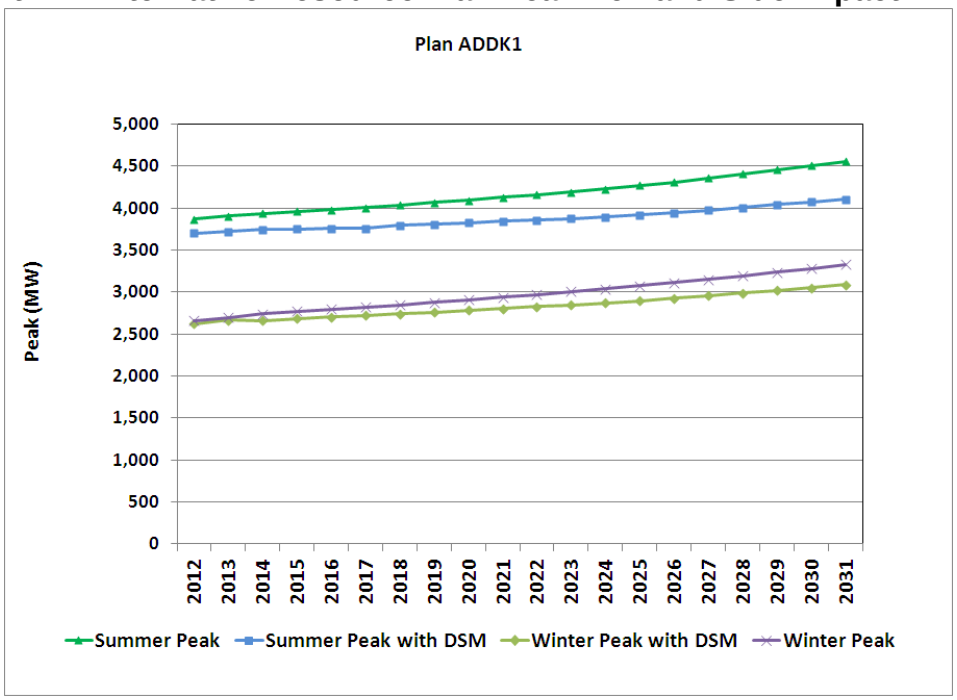


Chart 12: Alternative Resource Plan Peak Demand Side Impact AEDK1

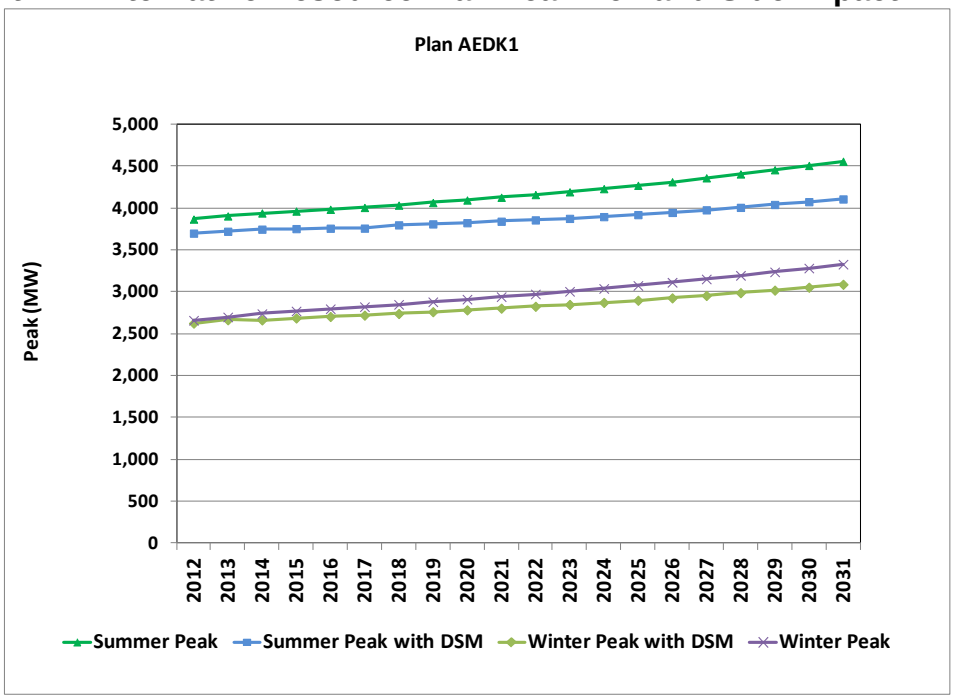


Chart 13: Alternative Resource Plan Peak Demand Side Impact AFDK1

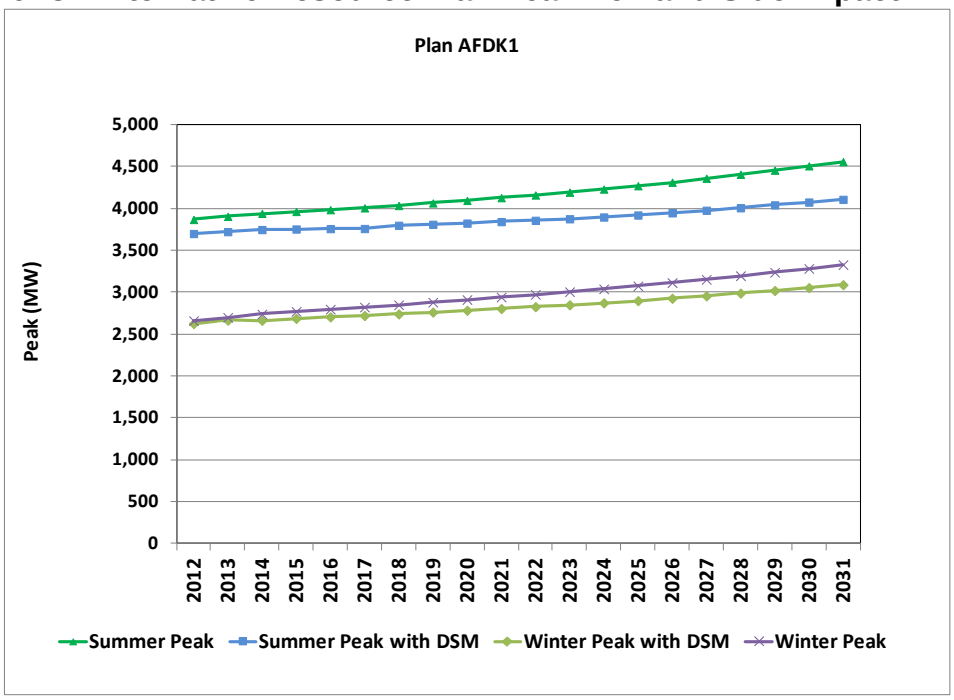


Chart 14: Alternative Resource Plan Peak Demand Side Impact AGEK1

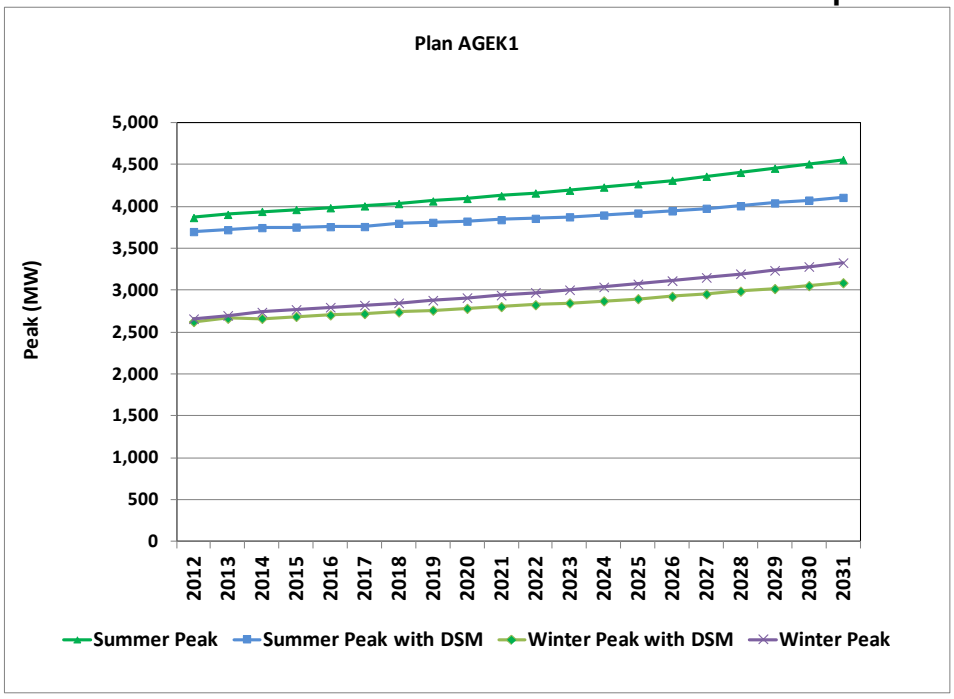


Chart 15: Alternative Resource Plan Peak Demand Side Impact AGEK9

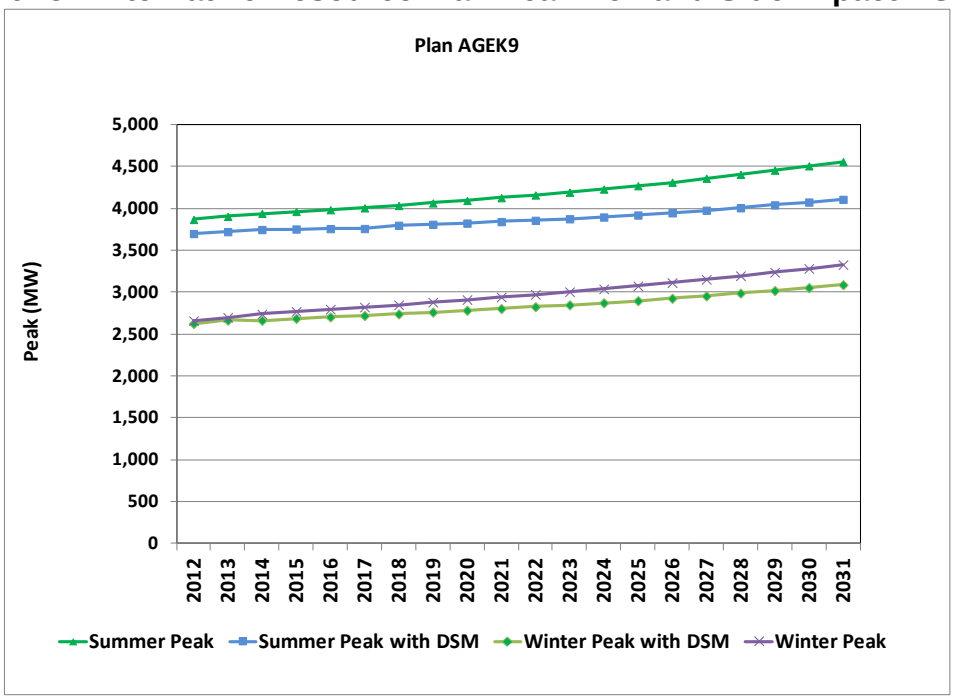


Chart 16: Alternative Resource Plan Peak Demand Side Impact AIEK9

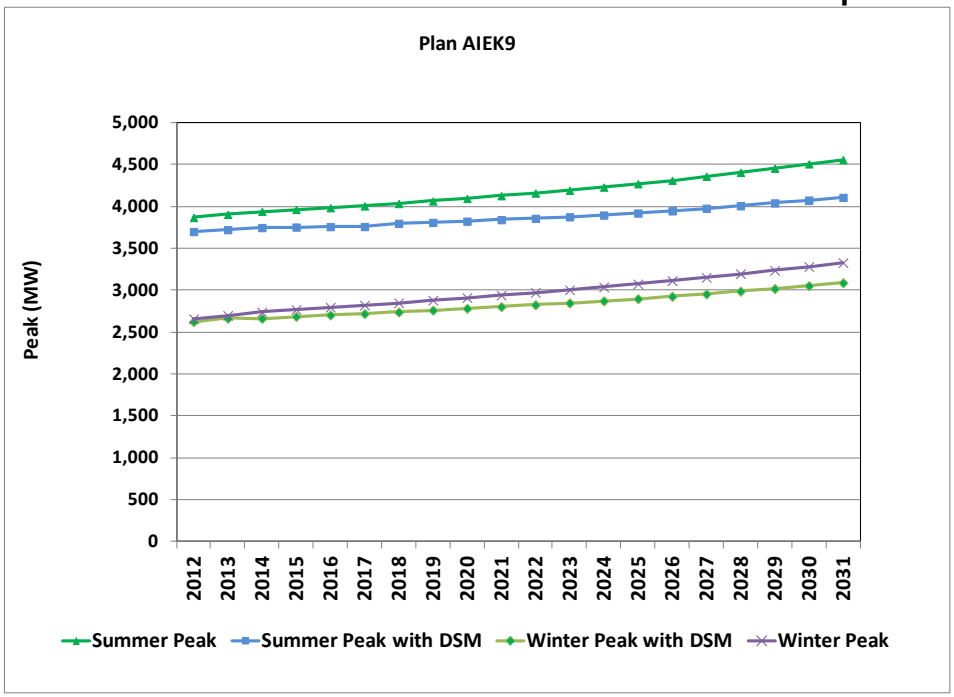


Chart 17: Alternative Resource Plan Peak Demand Side Impact BBEK1

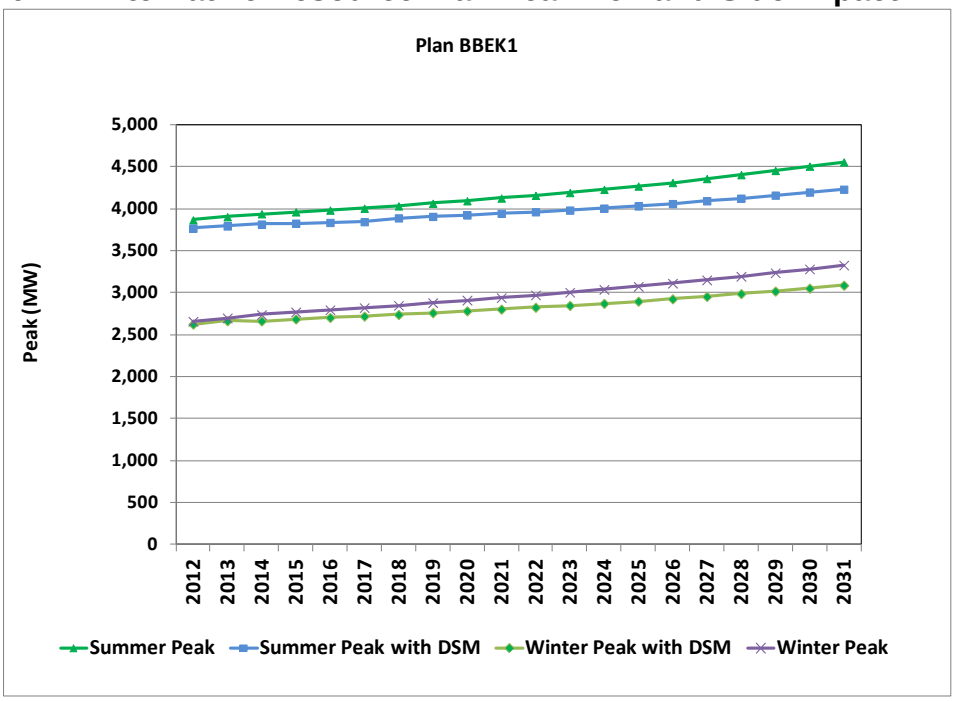


Chart 18: Alternative Resource Plan Peak Demand Side Impact CBEK1

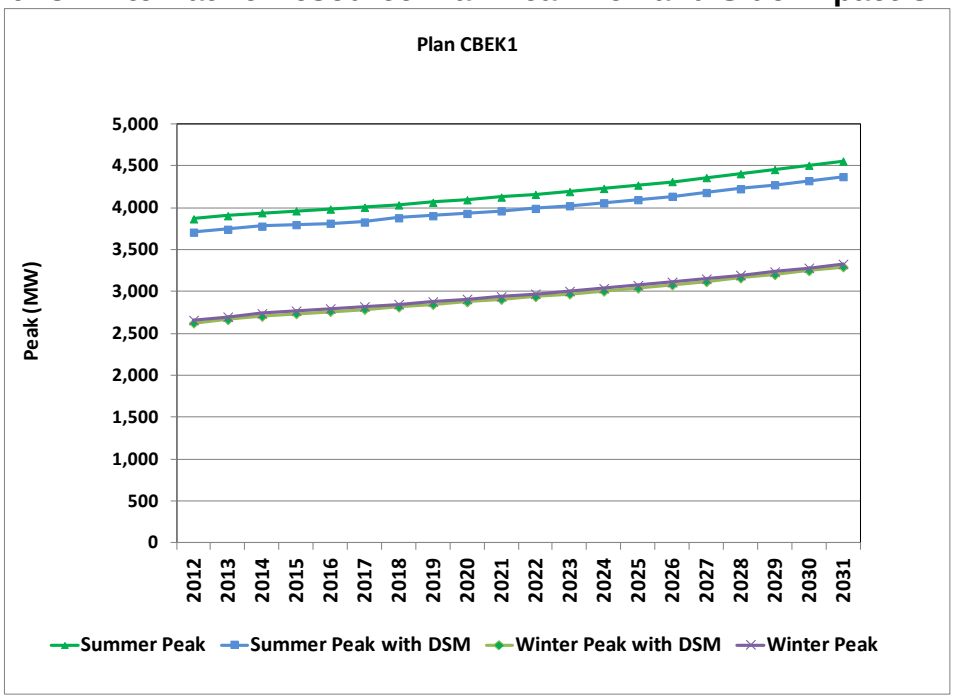


Chart 19: Alternative Resource Plan Peak Demand Side Impact DBEK1

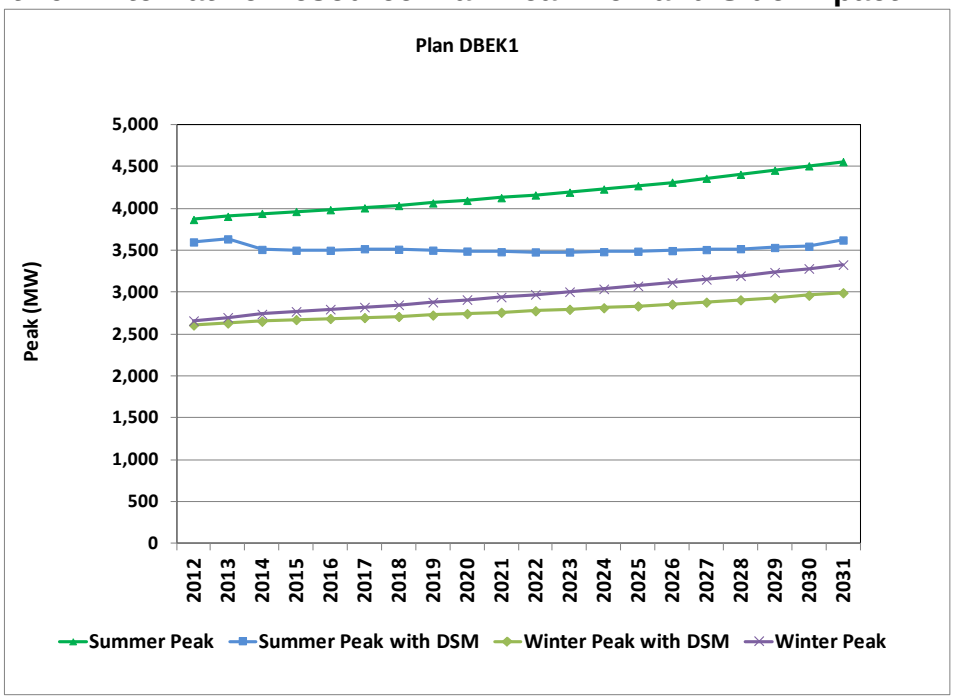


Chart 20: Alternative Resource Plan Peak Demand Side Impact DCEK1

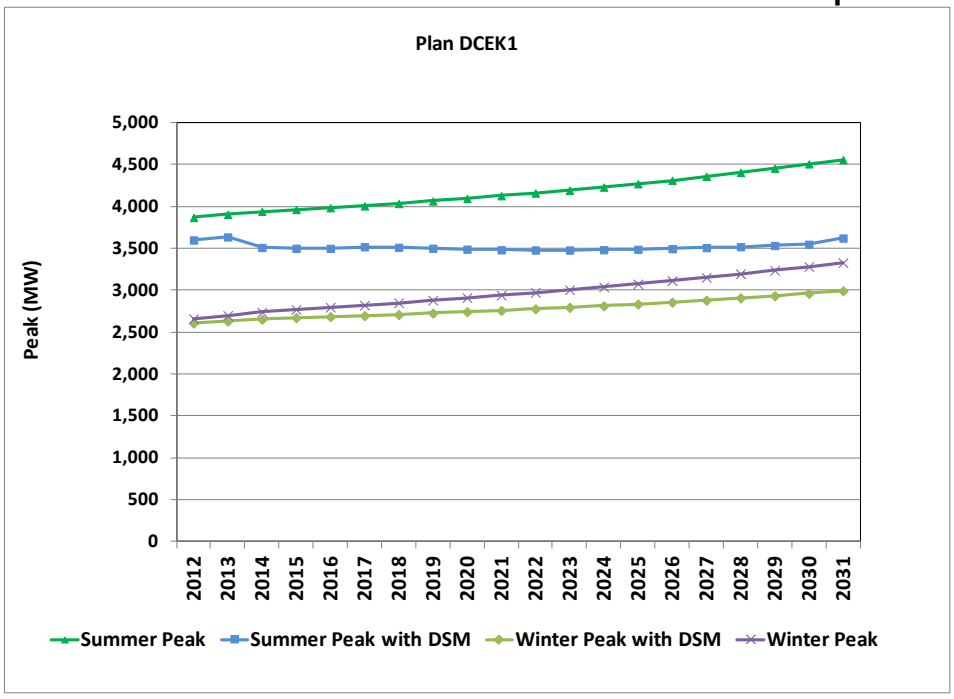


Chart 21: Alternative Resource Plan Peak Demand Side Impact EBEK1

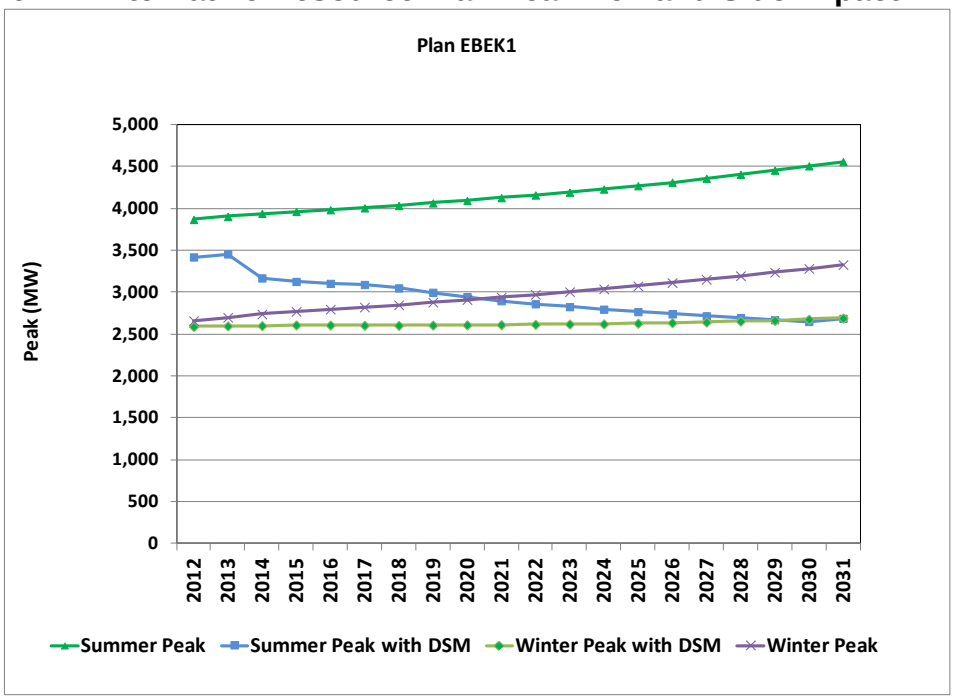
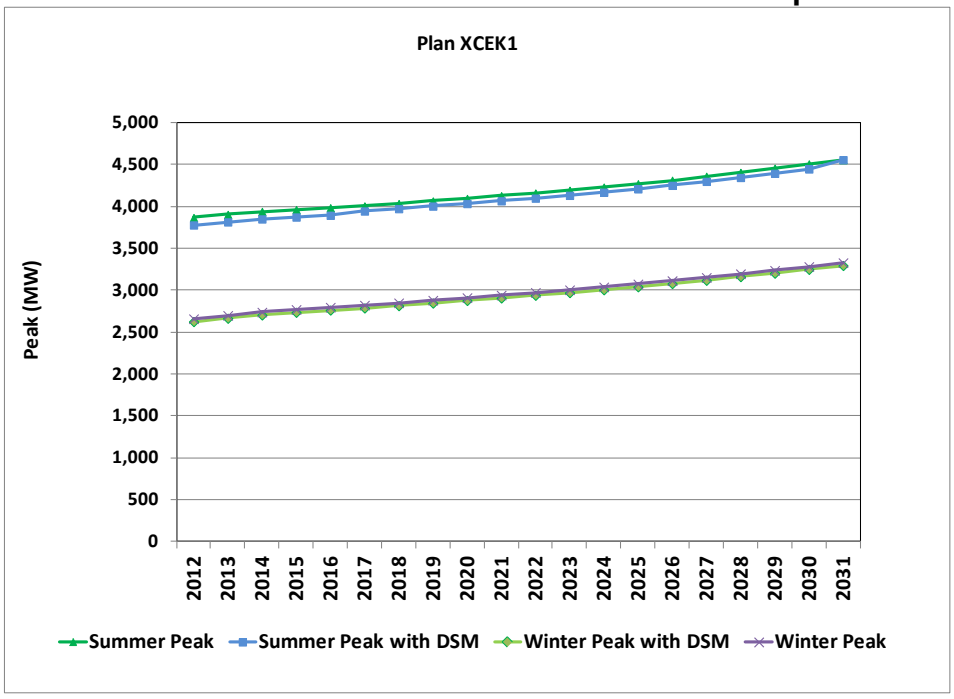


Chart 22: Alternative Resource Plan Demand Side Impact XCEK1



2. The composition, by program and demand-side rate, of the capacity provided by demand-side resources;

The composition, by program and demand-side rate, of the capacity provided by demand-side resources is shown in the following charts, Chart 23 through Chart 44.

Chart 23: Alternative Resource Plan Capacity Composition AAAK1

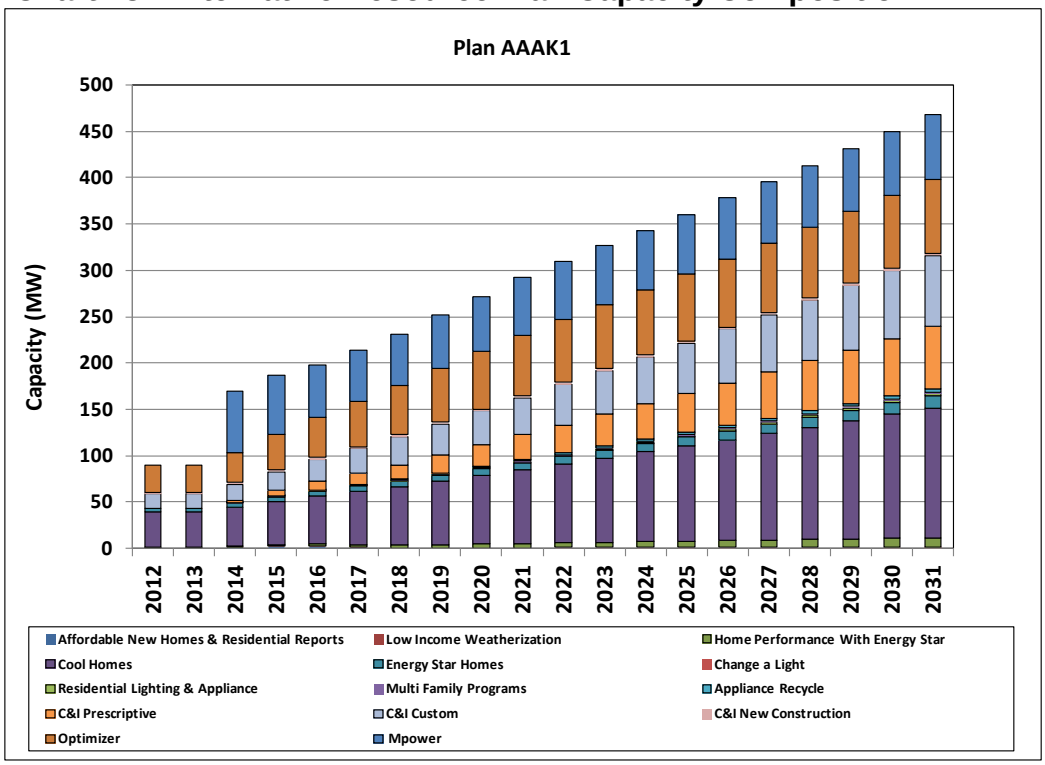


Chart 24: Alternative Resource Plan Capacity Composition AAAK9

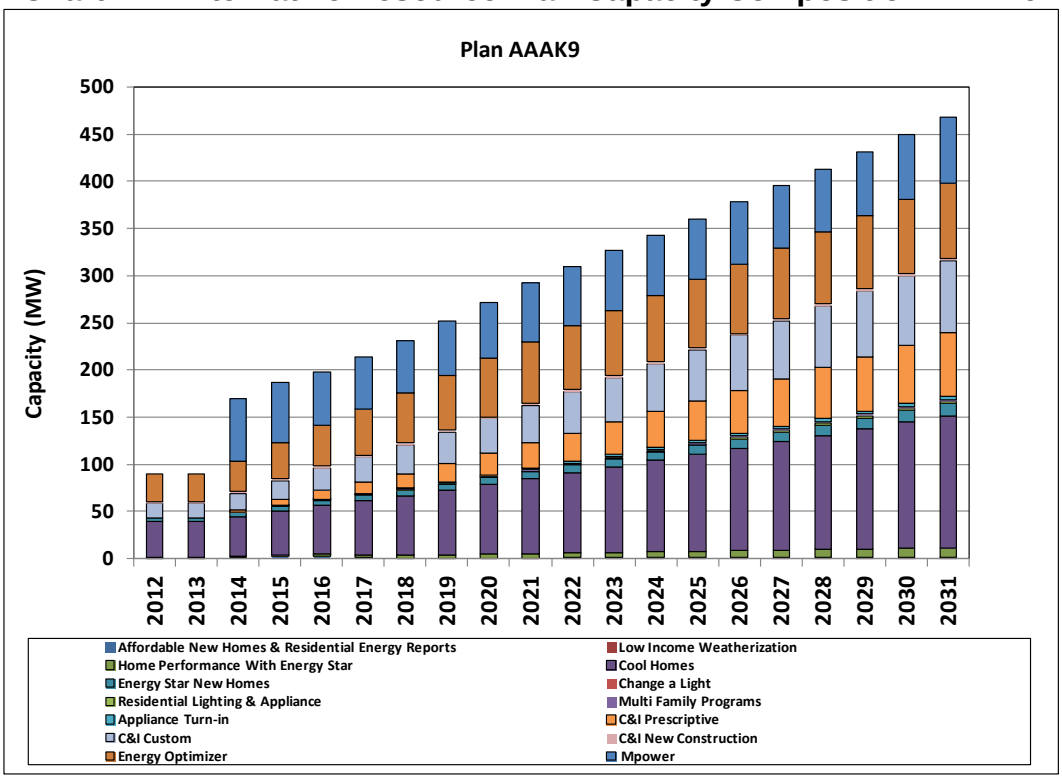


Chart 25: Alternative Resource Plan Capacity Composition ABEK1

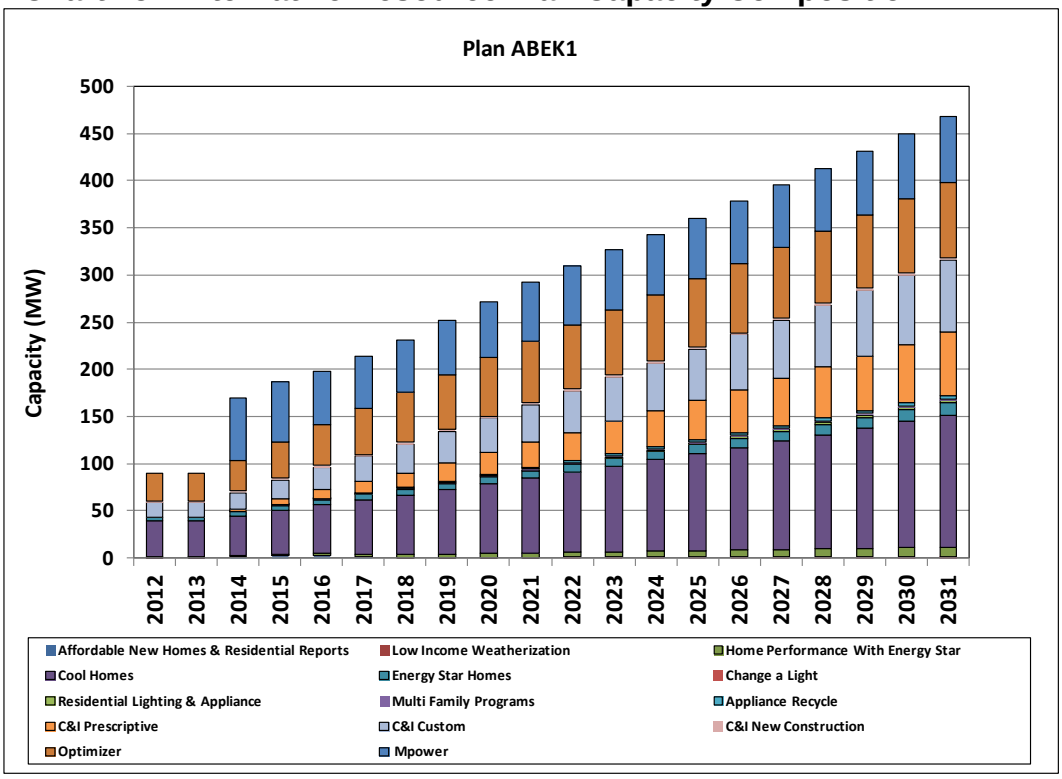


Chart 26: Alternative Resource Plan Capacity Composition ABEK2

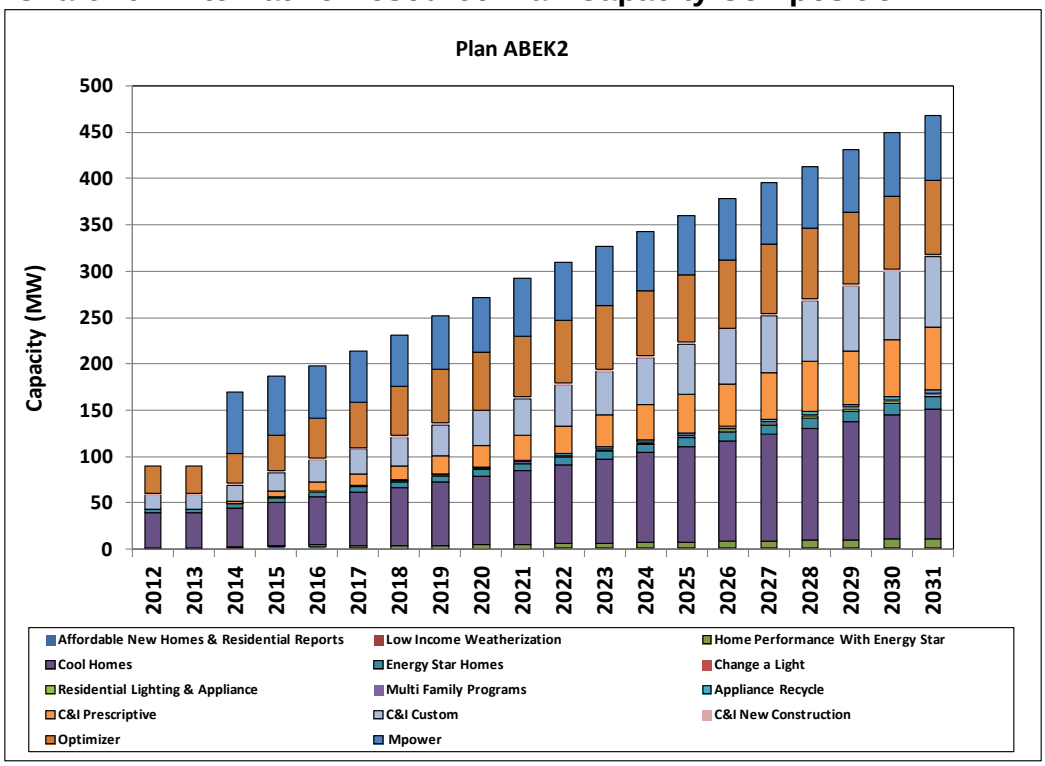


Chart 27: Alternative Resource Plan Capacity Composition ABEK4

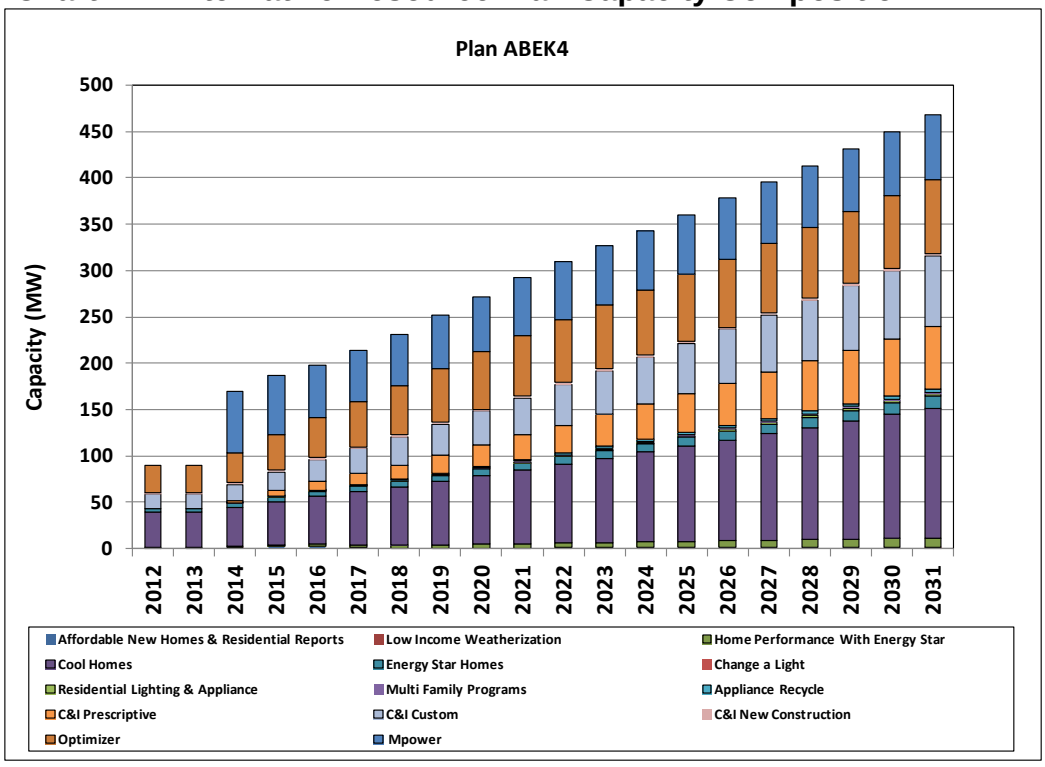


Chart 28: Alternative Resource Plan Capacity Composition ABEK5

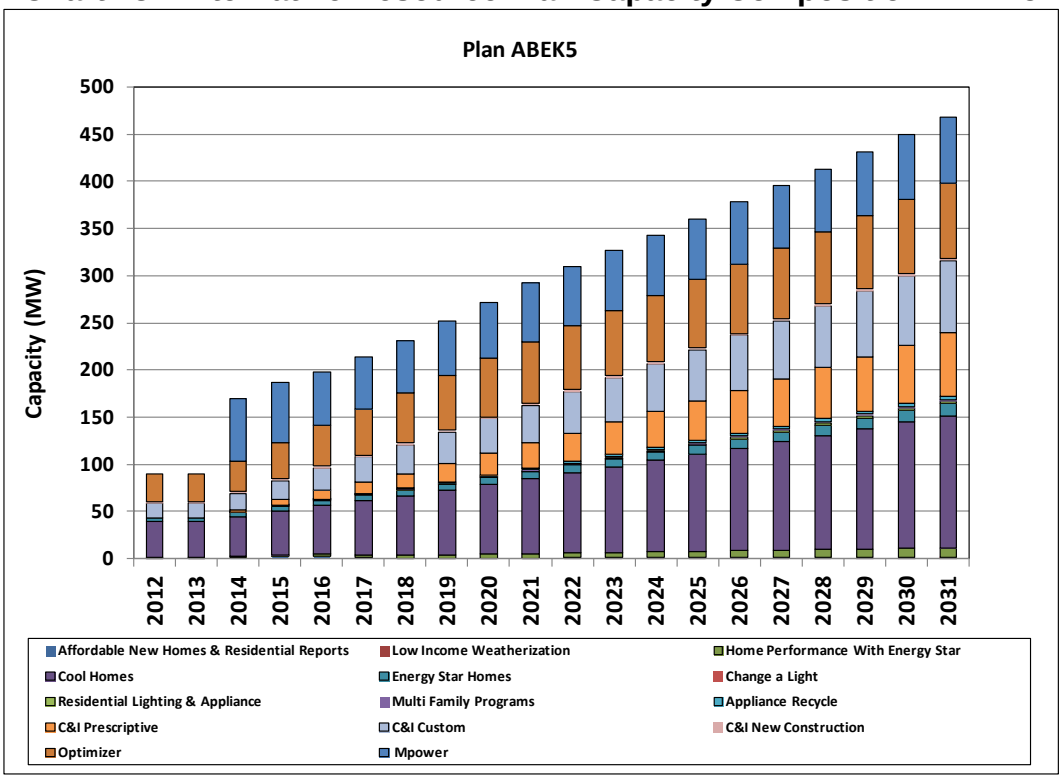


Chart 29: Alternative Resource Plan Capacity Composition ABEK5

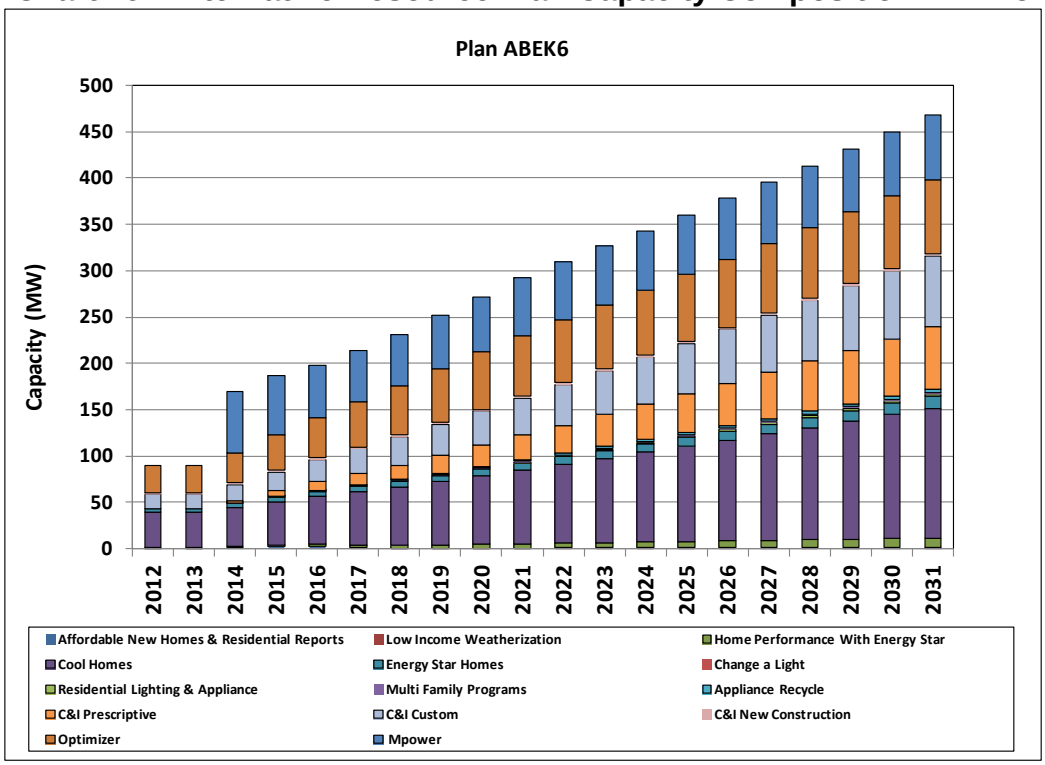


Chart 30: Alternative Resource Plan Capacity Composition ABEK7

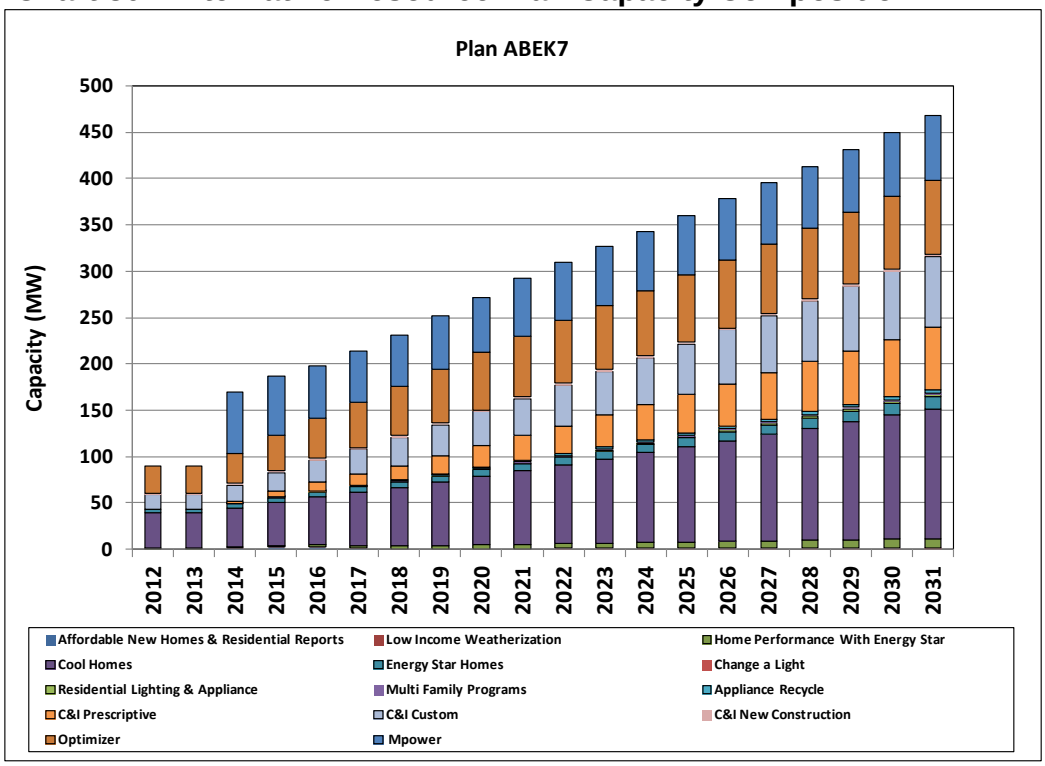


Chart 31: Alternative Resource Plan Capacity Composition ACEK1

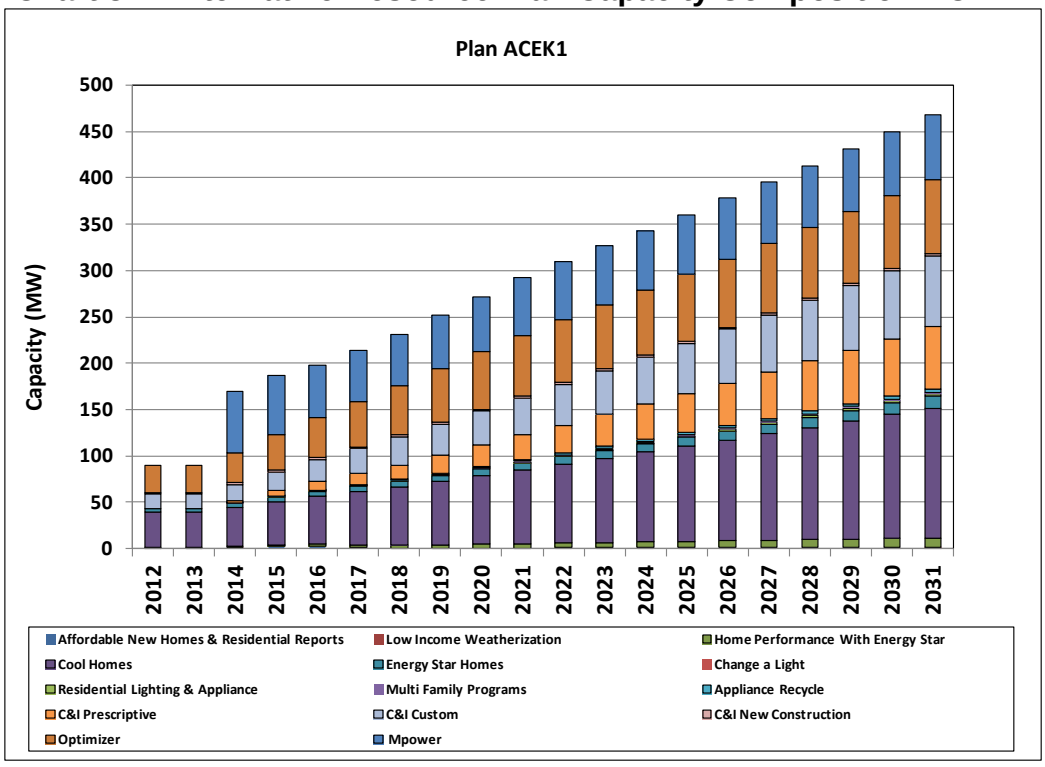


Chart 32: Alternative Resource Plan Capacity Composition ACEK2

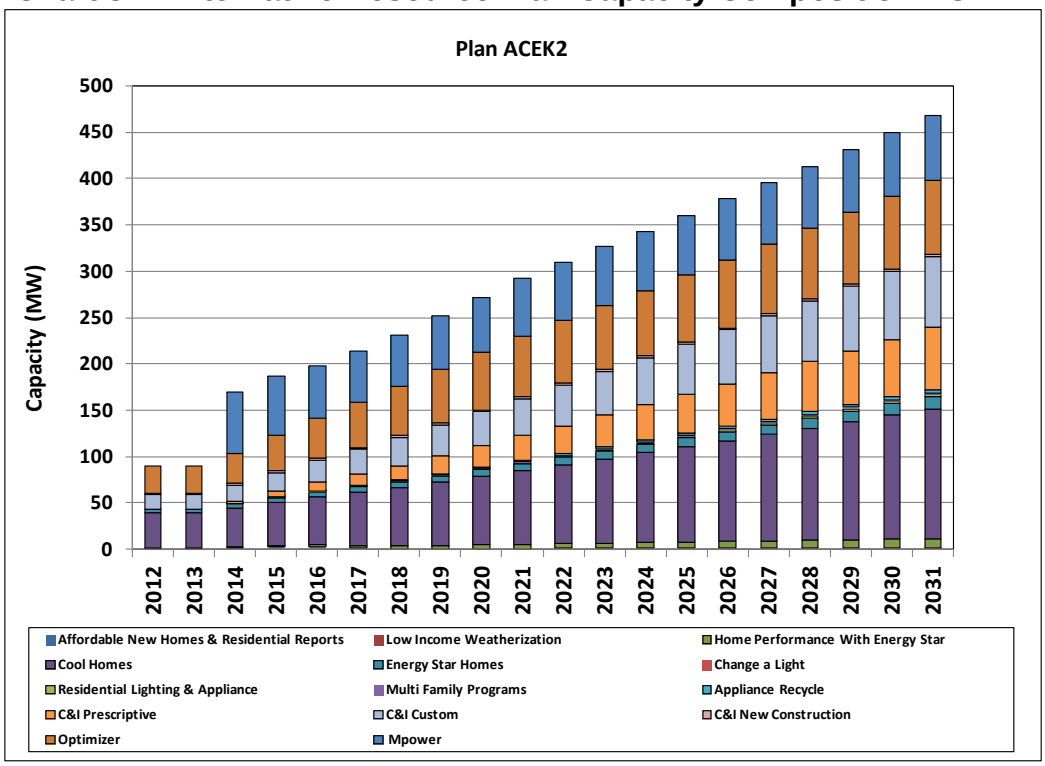


Chart 33: Alternative Resource Plan Capacity Composition ADDK1

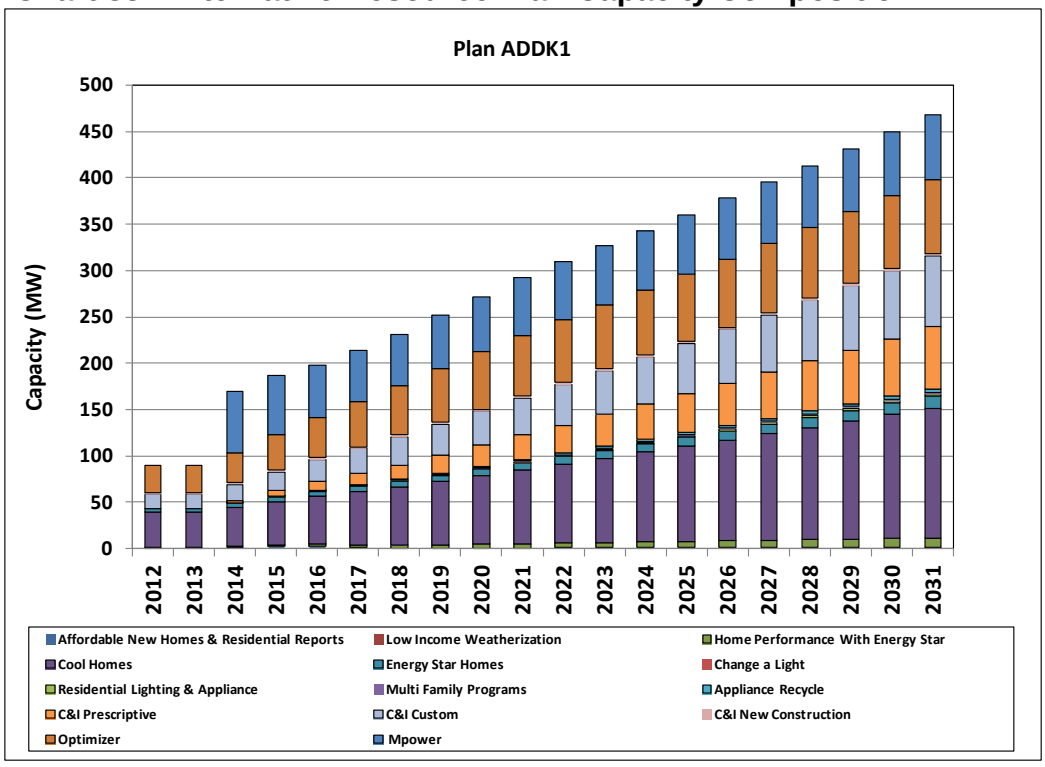


Chart 34: Alternative Resource Plan Capacity Composition AEDK1

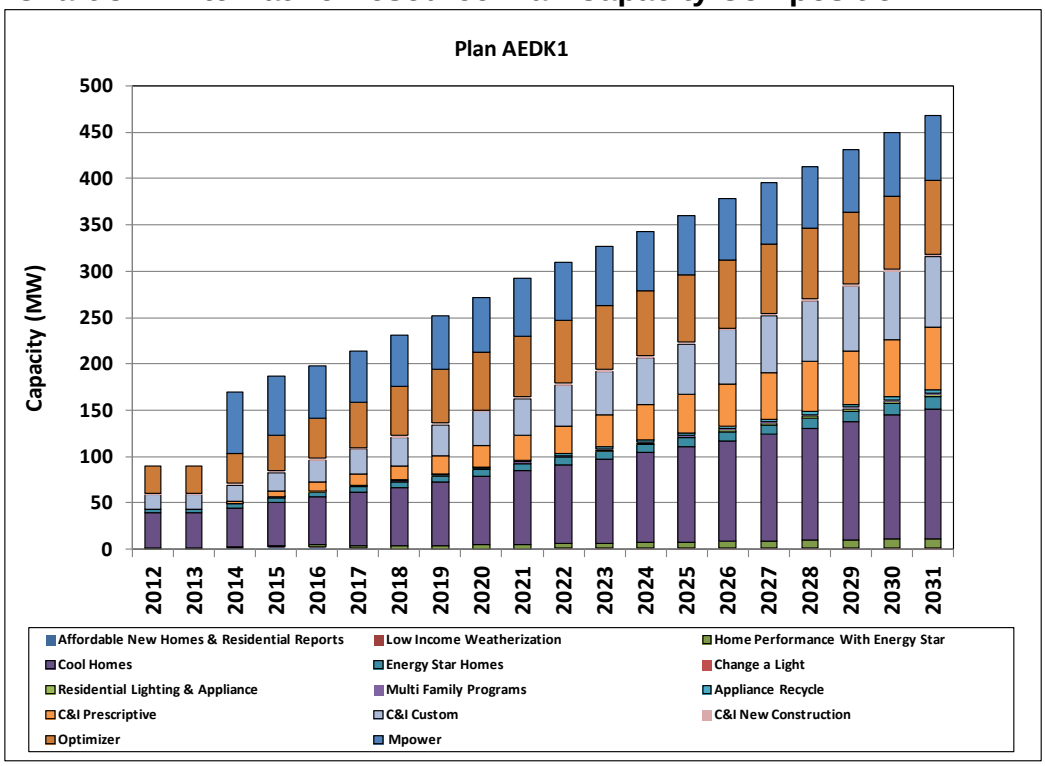


Chart 35: Alternative Resource Plan Capacity Composition AFDK1

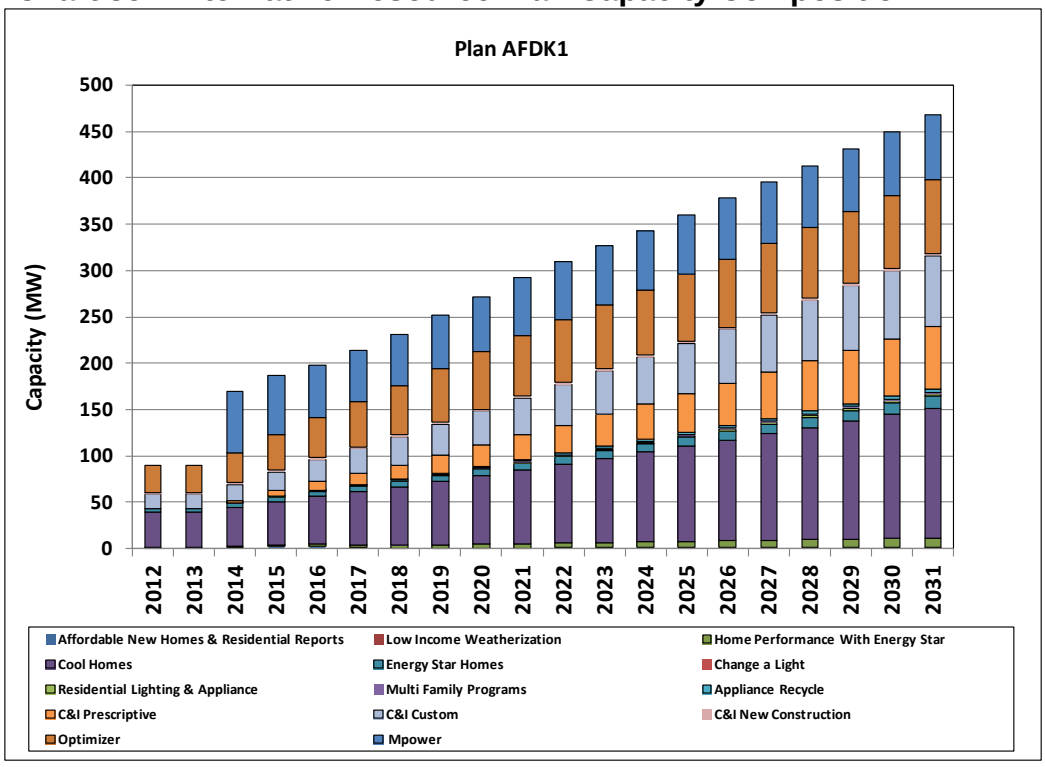


Chart 36: Alternative Resource Plan Capacity Composition AGEK1

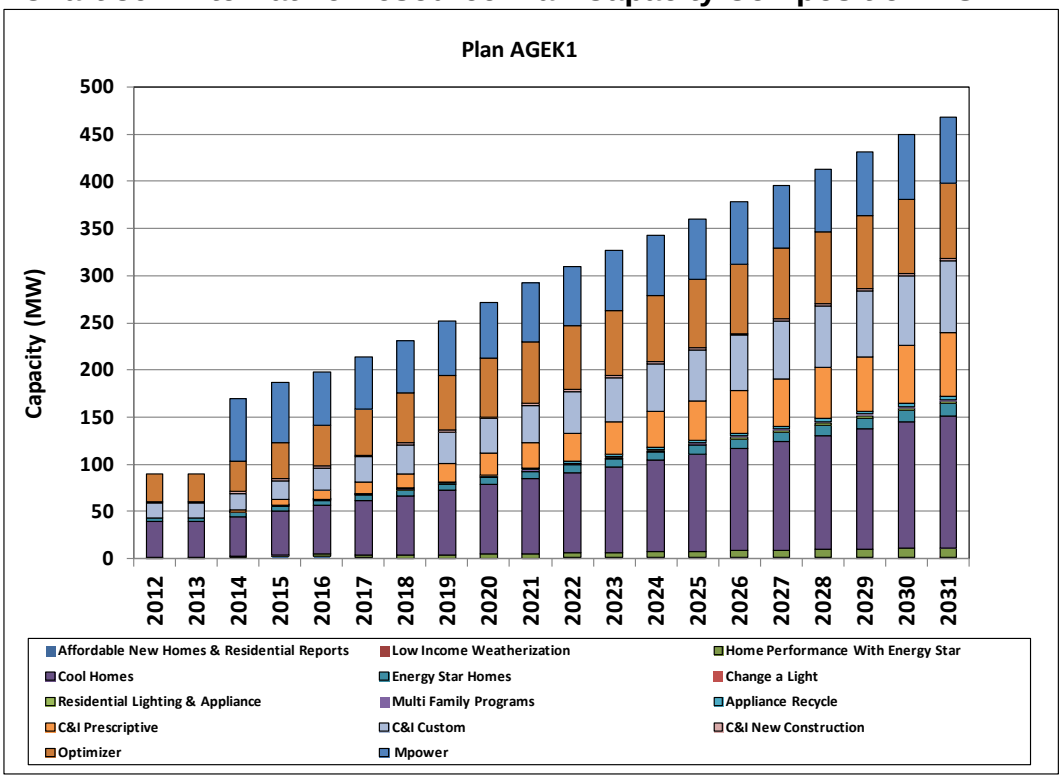


Chart 37: Alternative Resource Plan Capacity Composition AGEK9

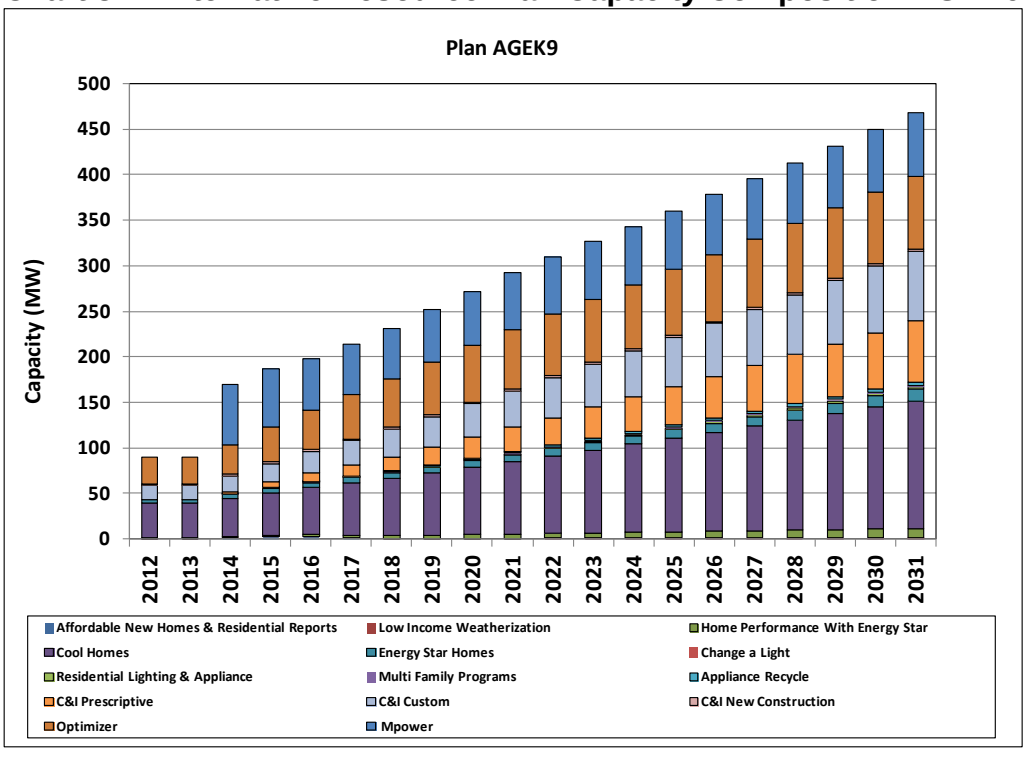


Chart 38: Alternative Resource Plan Capacity Composition AIEK9

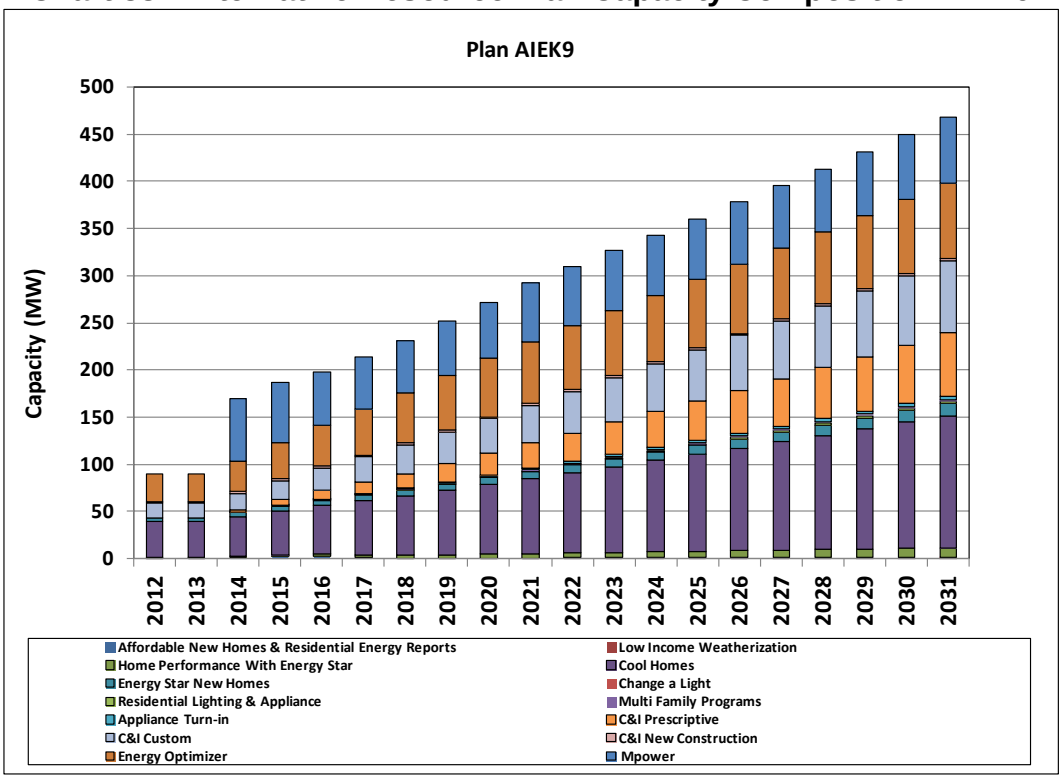


Chart 39: Alternative Resource Plan Capacity Composition BBEK1

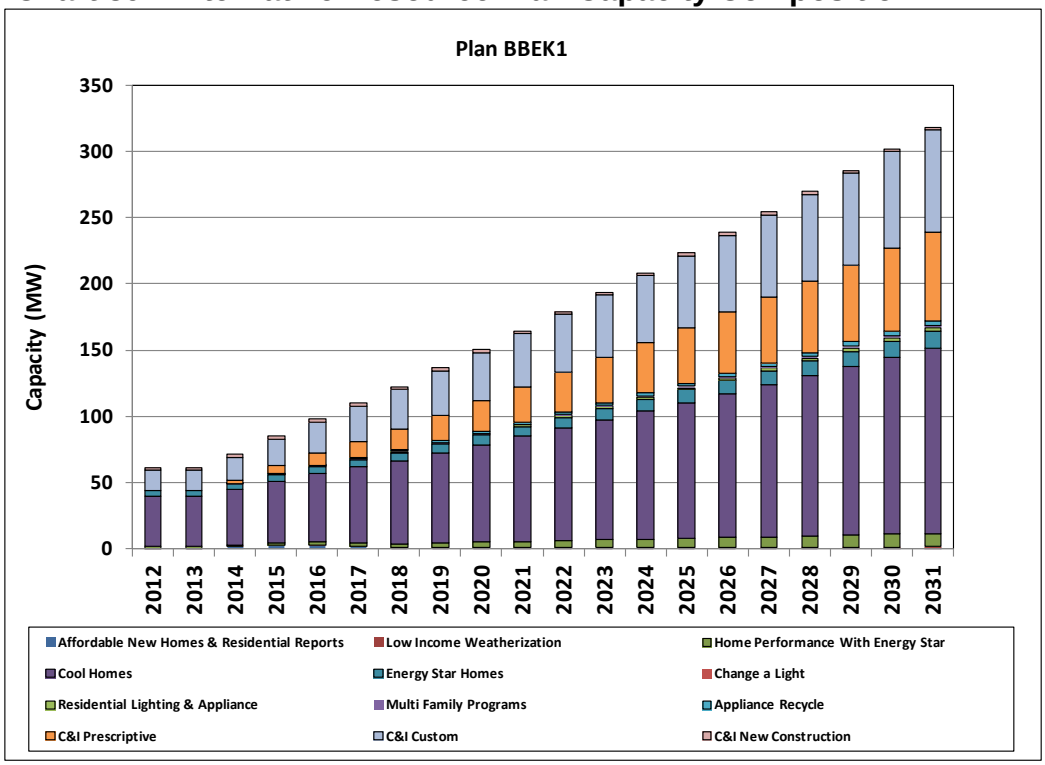


Chart 40: Alternative Resource Plan Capacity Composition CBEK1

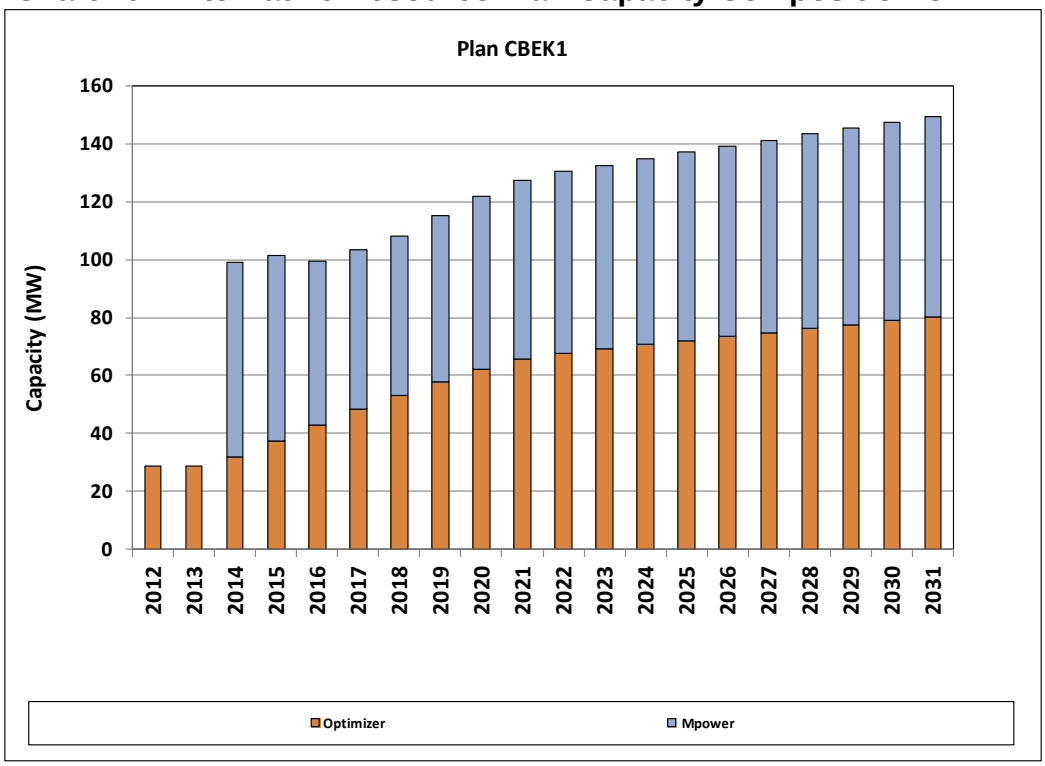


Chart 41: Alternative Resource Plan Capacity Composition DBEK1

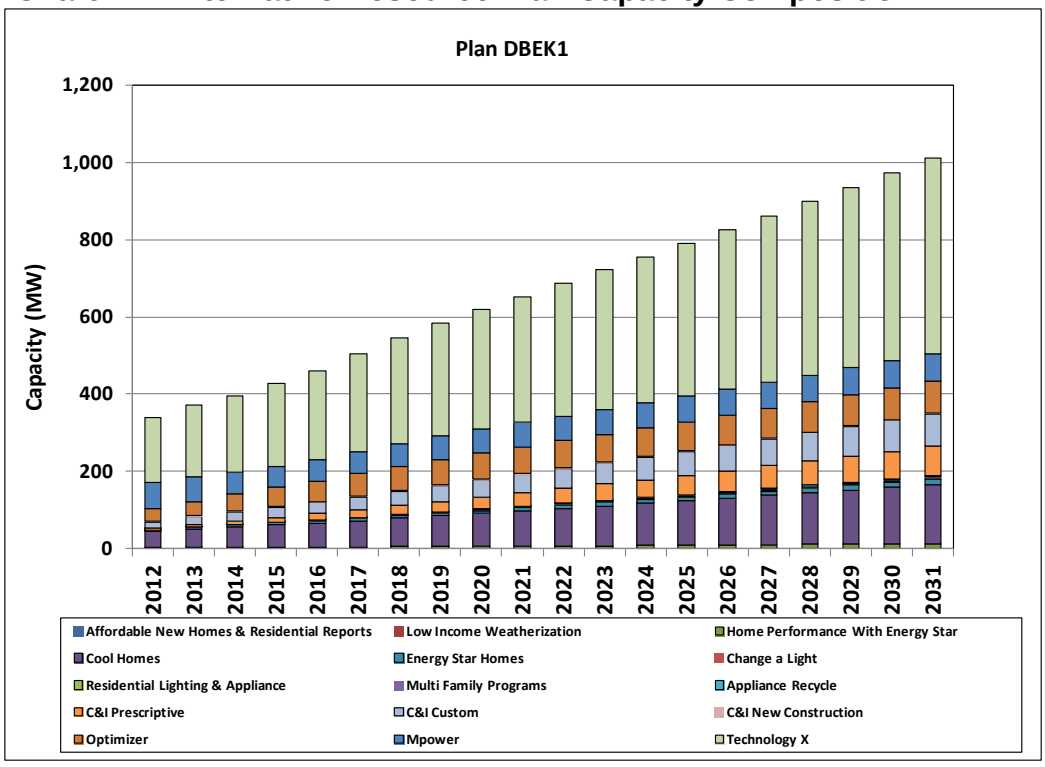


Chart 42: Alternative Resource Plan Capacity Composition DCEK1

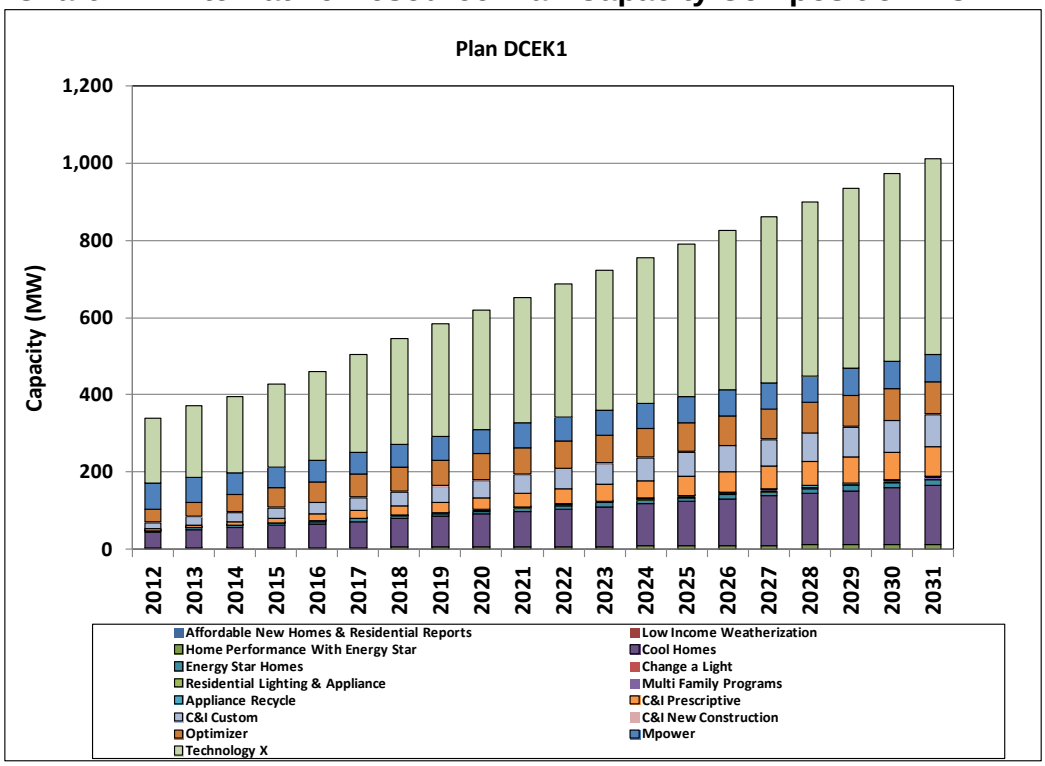


Chart 43: Alternative Resource Plan Capacity Composition EBEK1

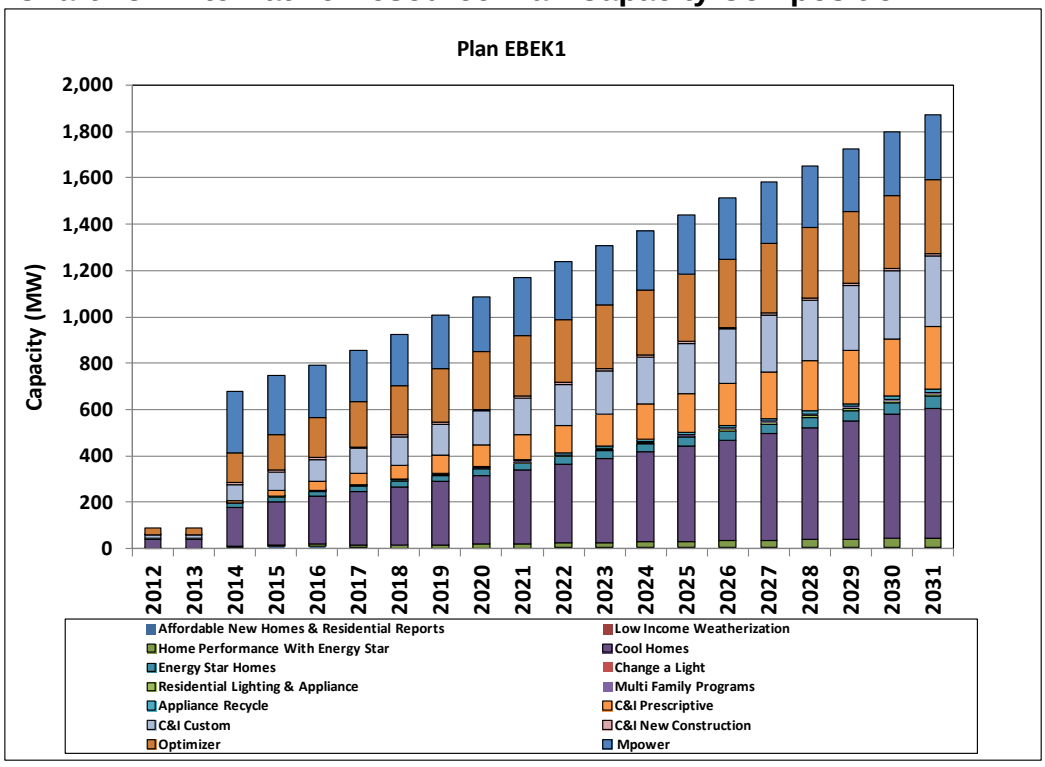
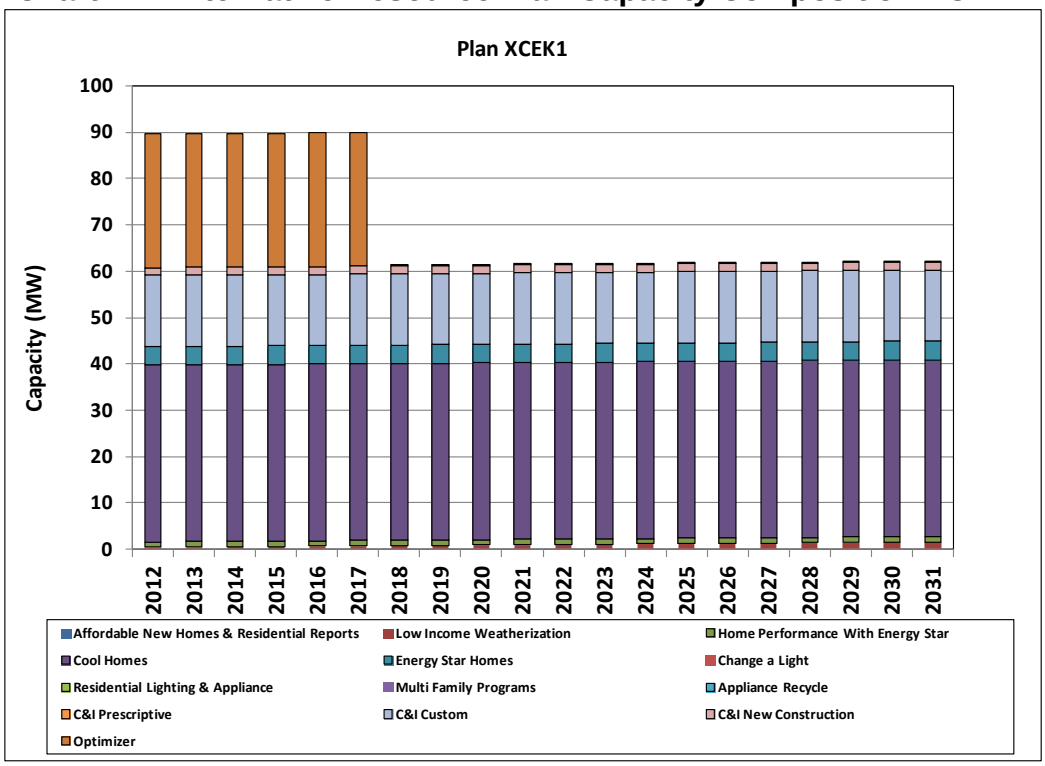


Chart 44: Alternative Resource Plan Capacity Composition XCEK1



3. The composition, by supply-side resource, of the capacity supplied to the transmission grid provided by supply-side resources. Existing supply-side resources may be shown as a single resource;

The composition, by supply-side resource, of the capacity supplied to the transmission grid provided by supply-side resources is shown in the following charts, Chart 45 through Chart 66.

Chart 45: Alternative Resource Plan Capacity to Grid AAAK1

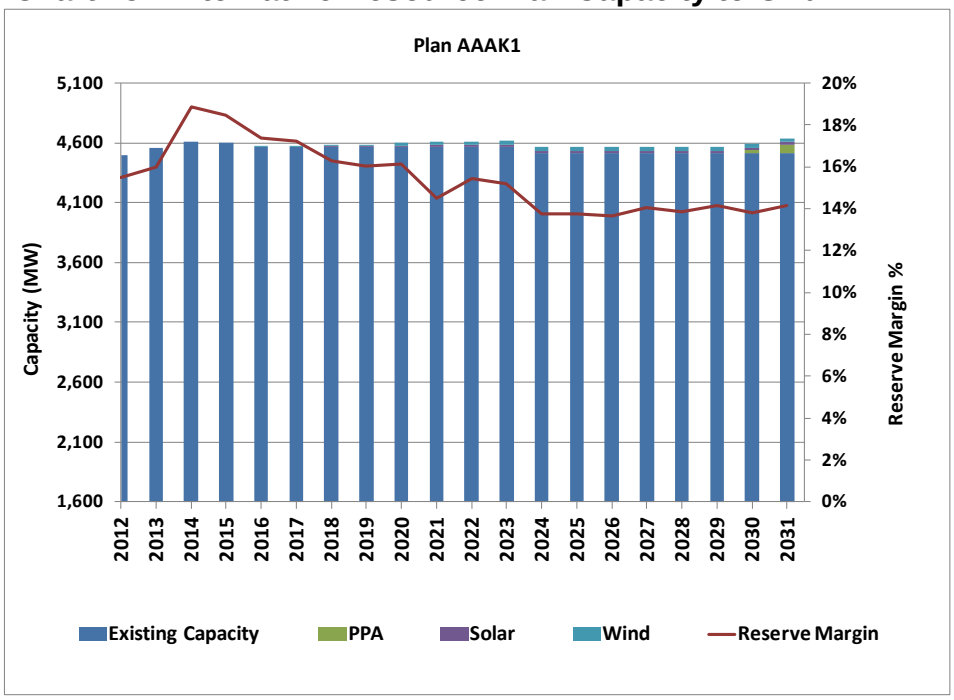


Chart 46: Alternative Resource Plan Capacity to Grid AAAK9

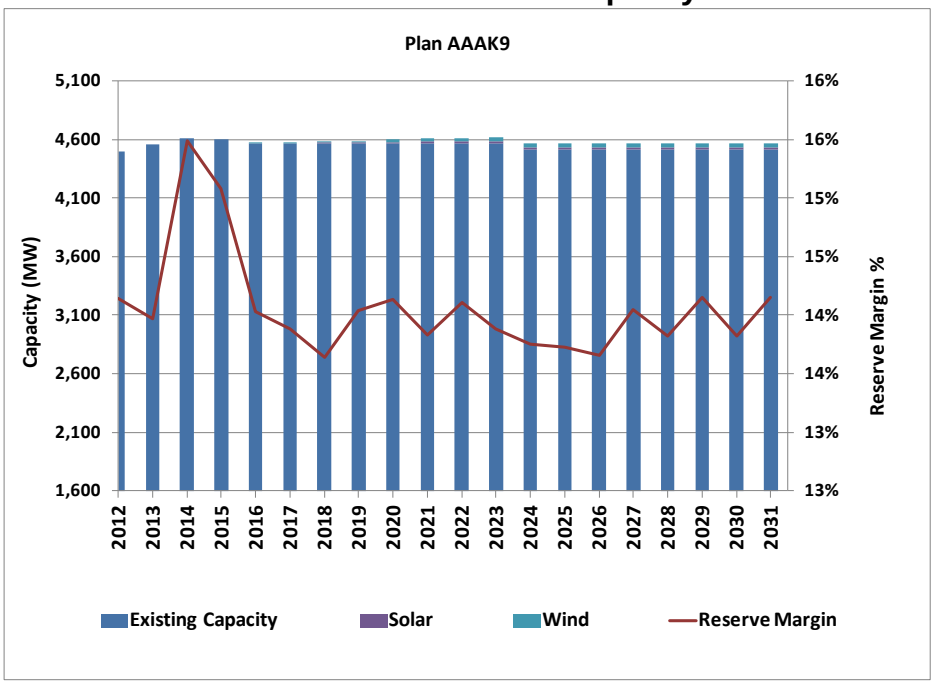


Chart 47: Alternative Resource Plan Capacity to Grid ABEK1

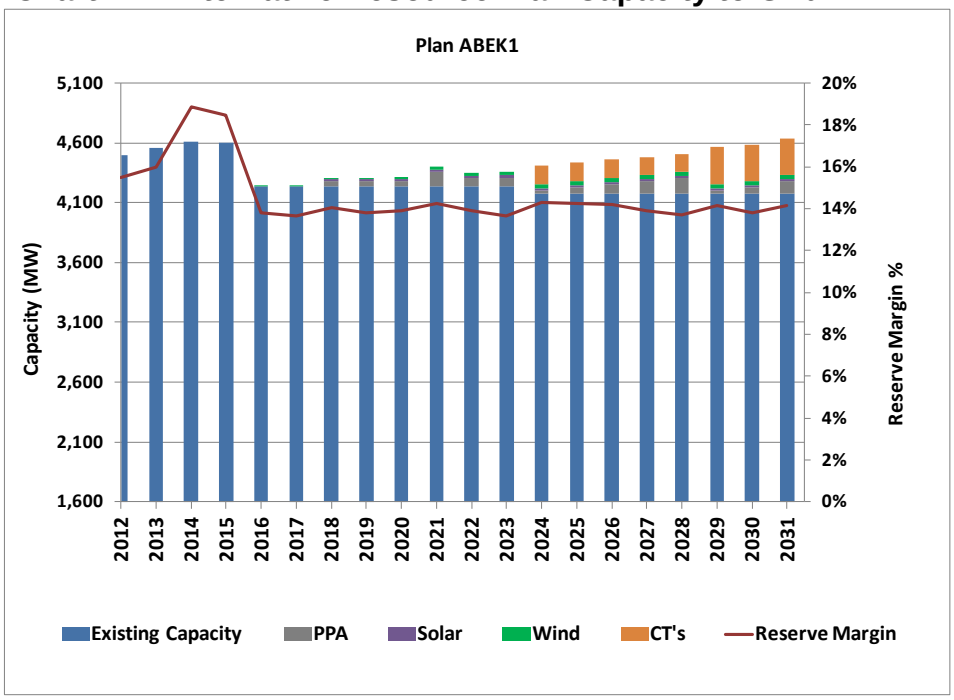


Chart 48: Alternative Resource Plan Capacity to Grid ABEK2

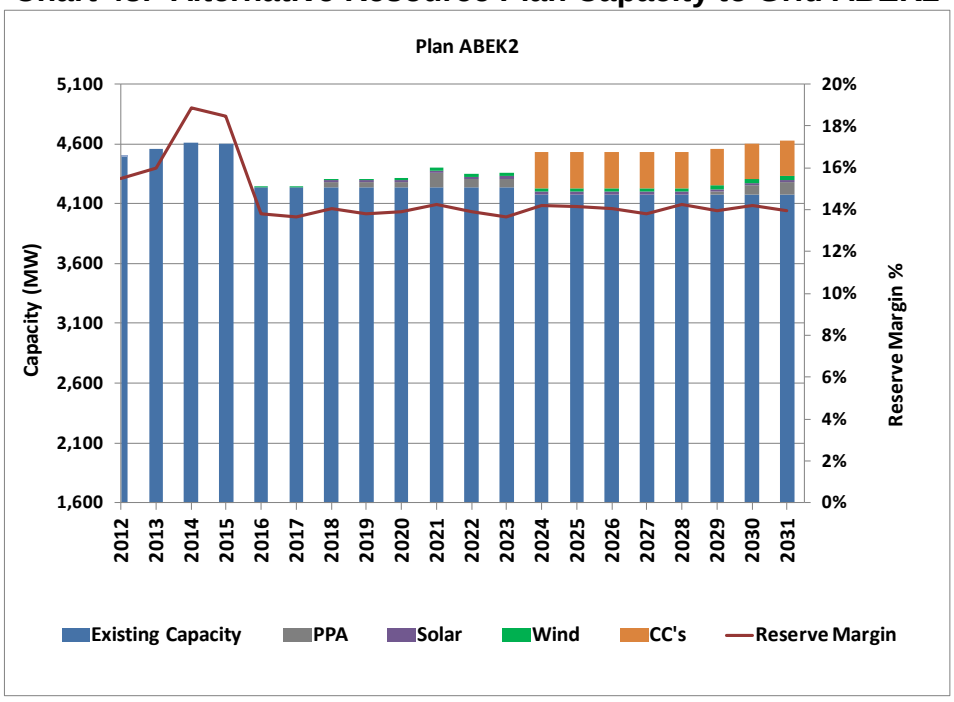


Chart 49: Alternative Resource Plan Capacity to Grid ABEK4

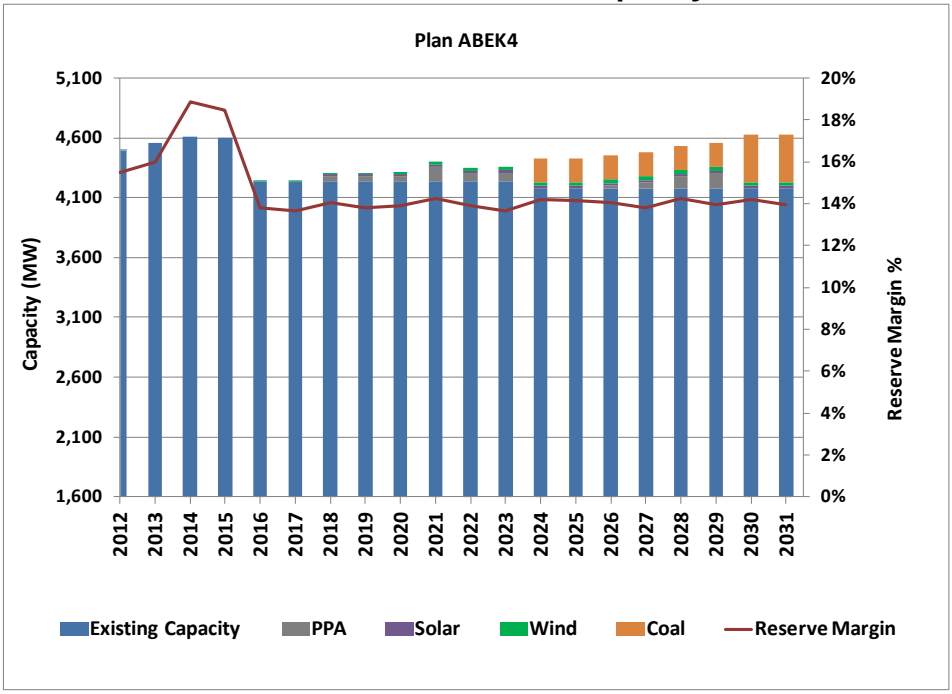


Chart 50: Alternative Resource Plan Capacity to Grid ABEK5

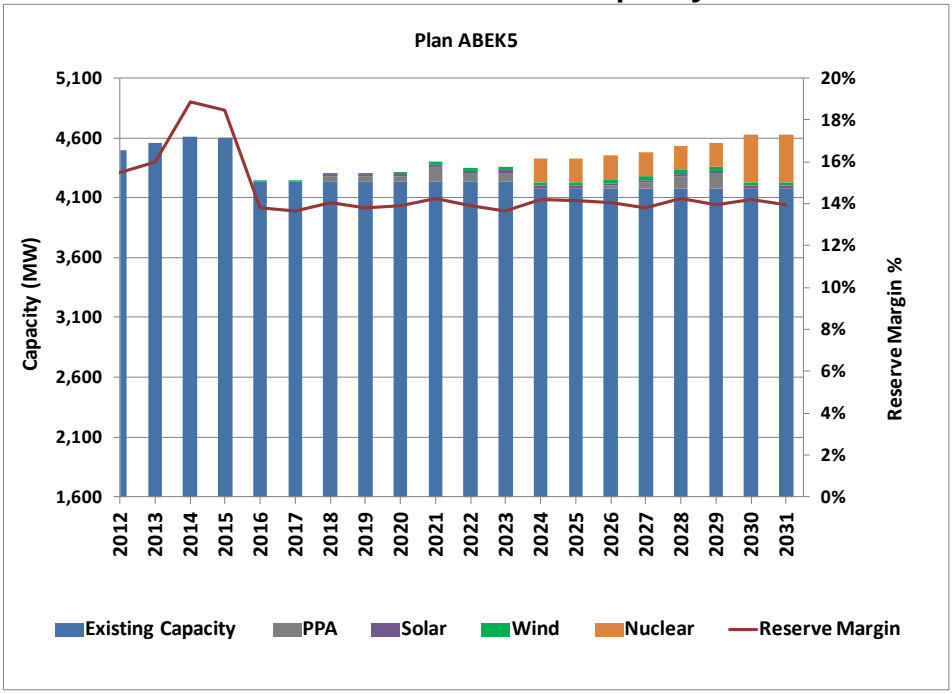


Chart 51: Alternative Resource Plan Capacity to Grid ABEK6

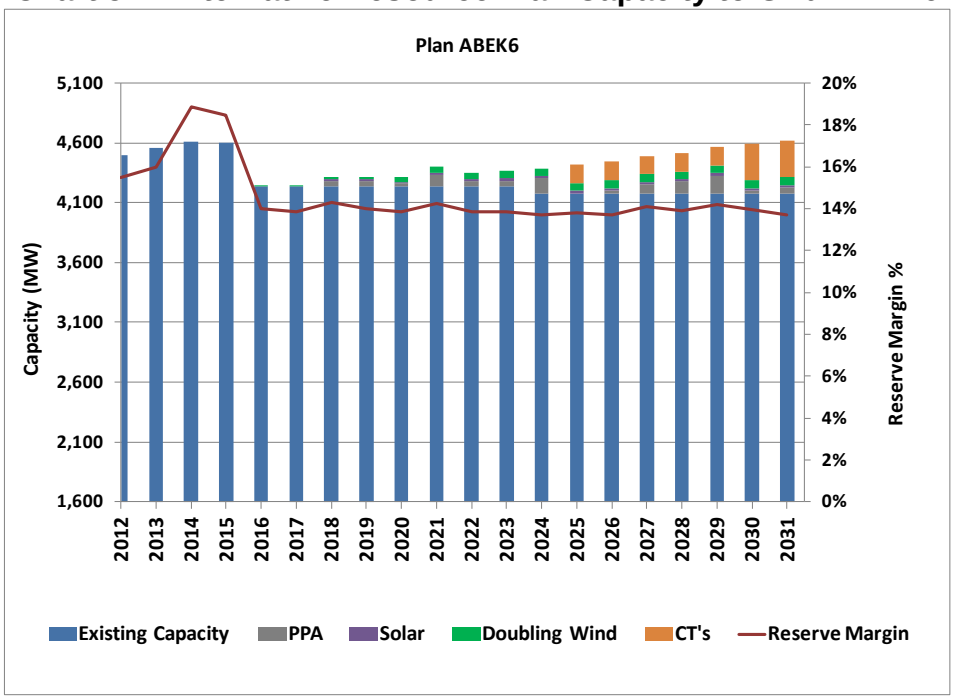


Chart 52: Alternative Resource Plan Capacity to Grid ABEK7

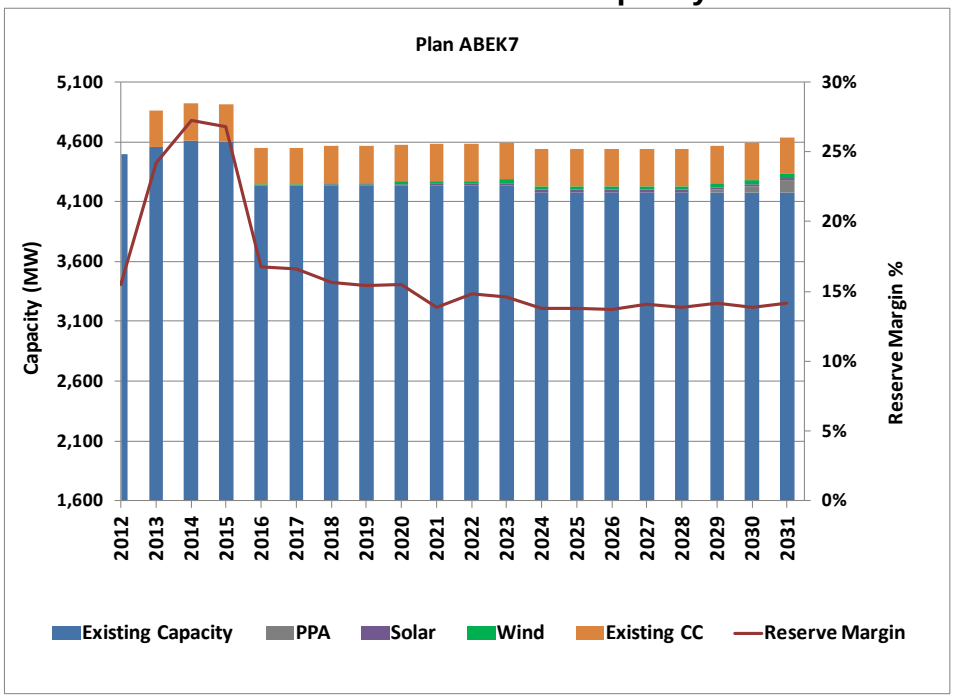


Chart 53: Alternative Resource Plan Capacity to Grid ACEK1

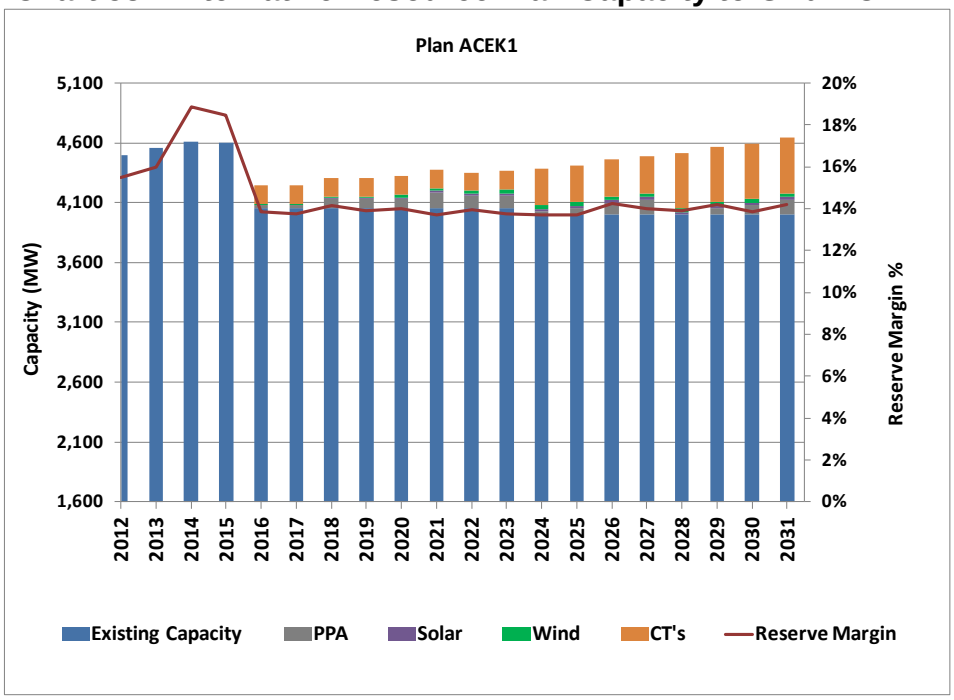


Chart 54: Alternative Resource Plan Capacity to Grid ACEK2

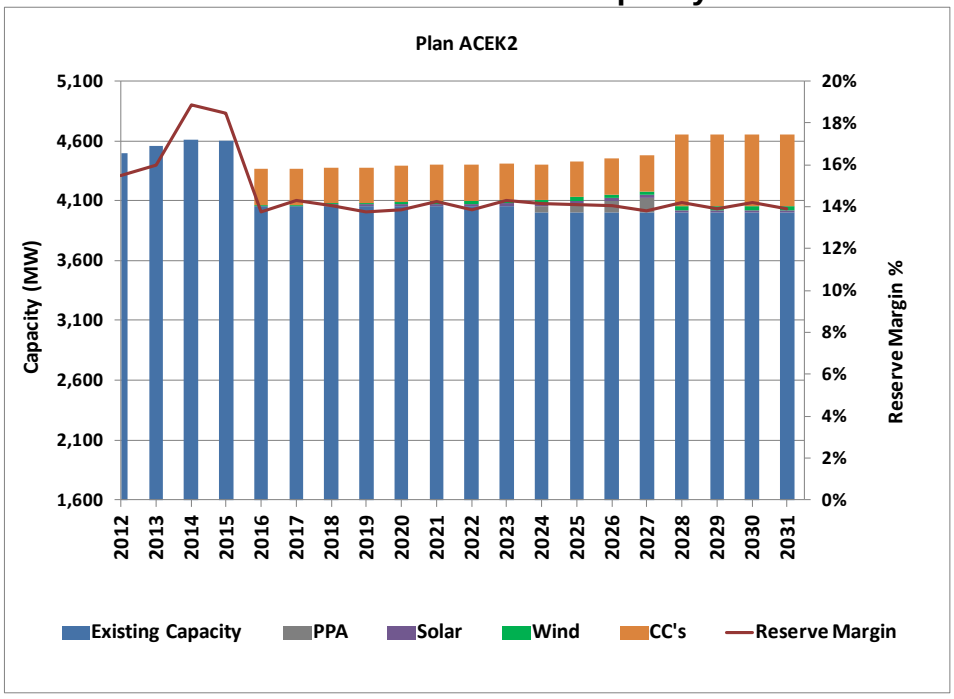


Chart 55: Alternative Resource Plan Capacity to Grid ADDK1

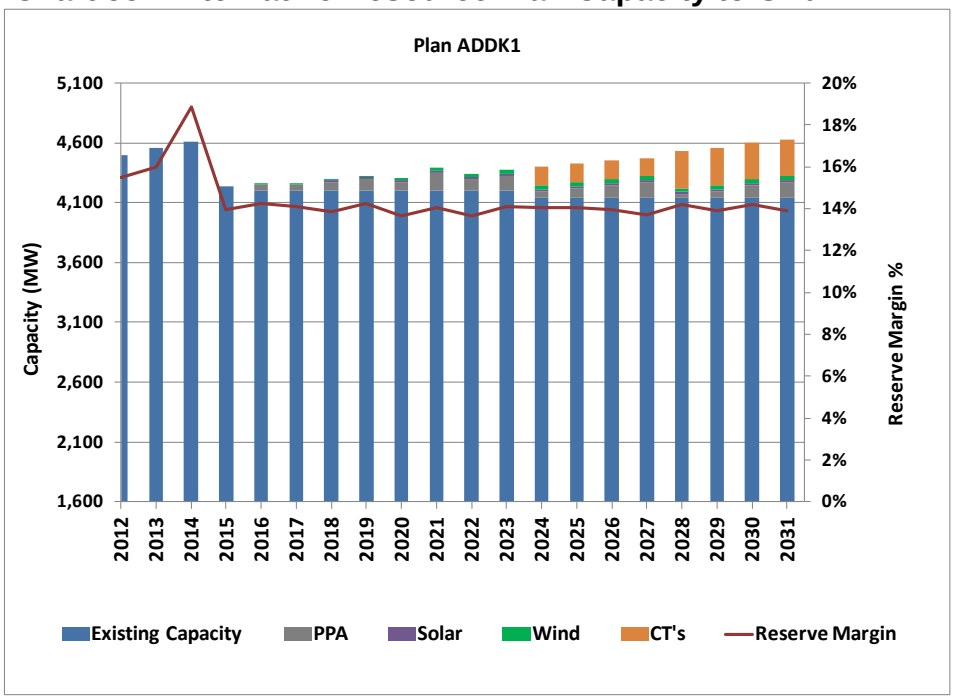


Chart 56: Alternative Resource Plan Capacity to Grid AEDK1

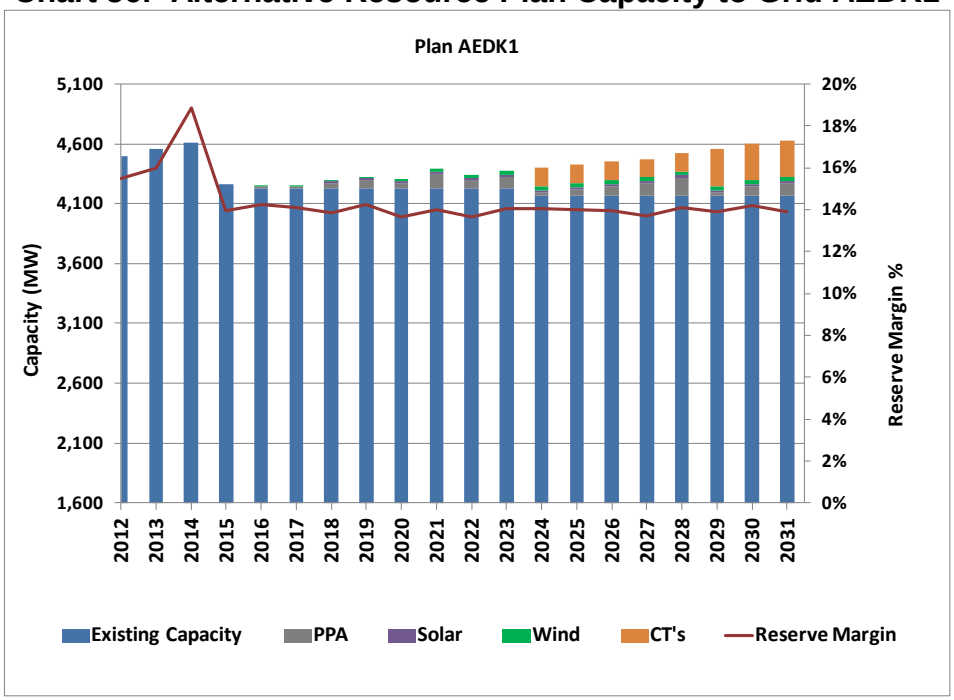


Chart 57: Alternative Resource Plan Capacity to Grid AFDK1

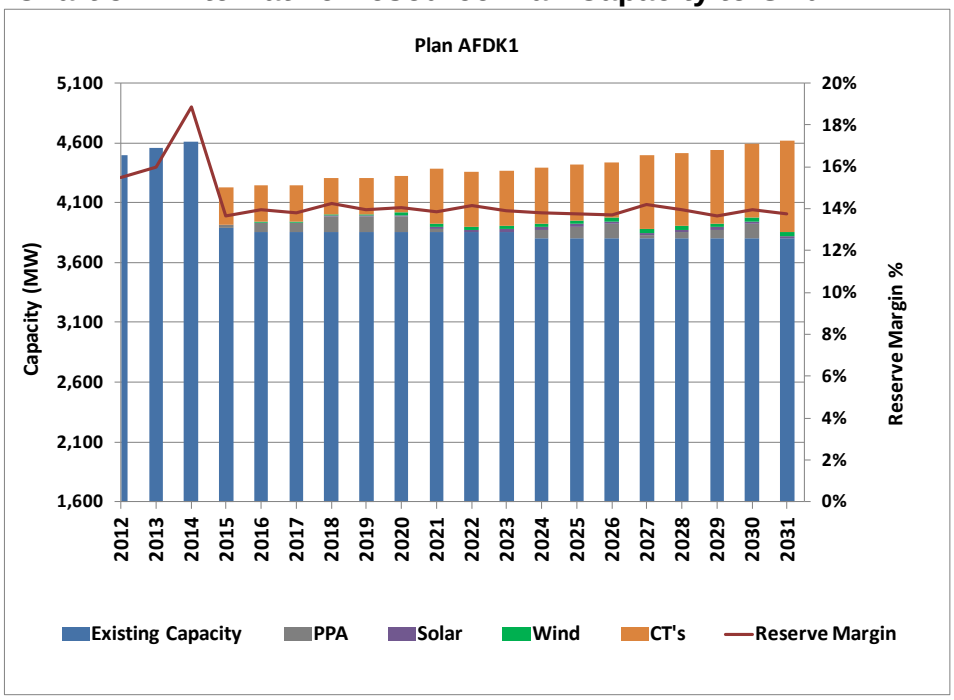


Chart 58: Alternative Resource Plan Capacity to Grid AGEK1

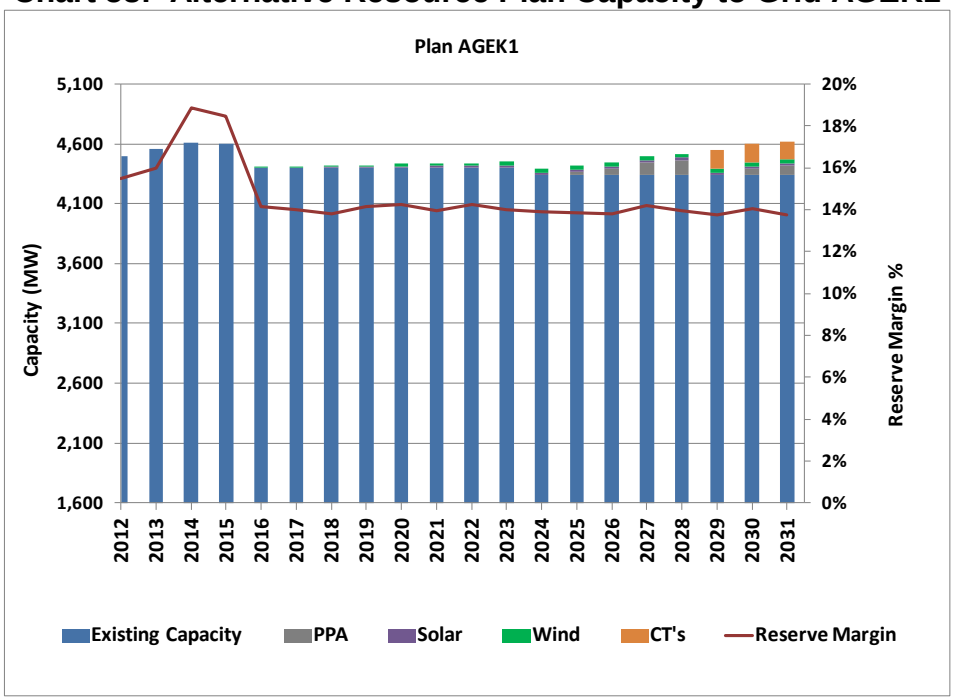


Chart 59: Alternative Resource Plan Capacity to Grid AGEK9

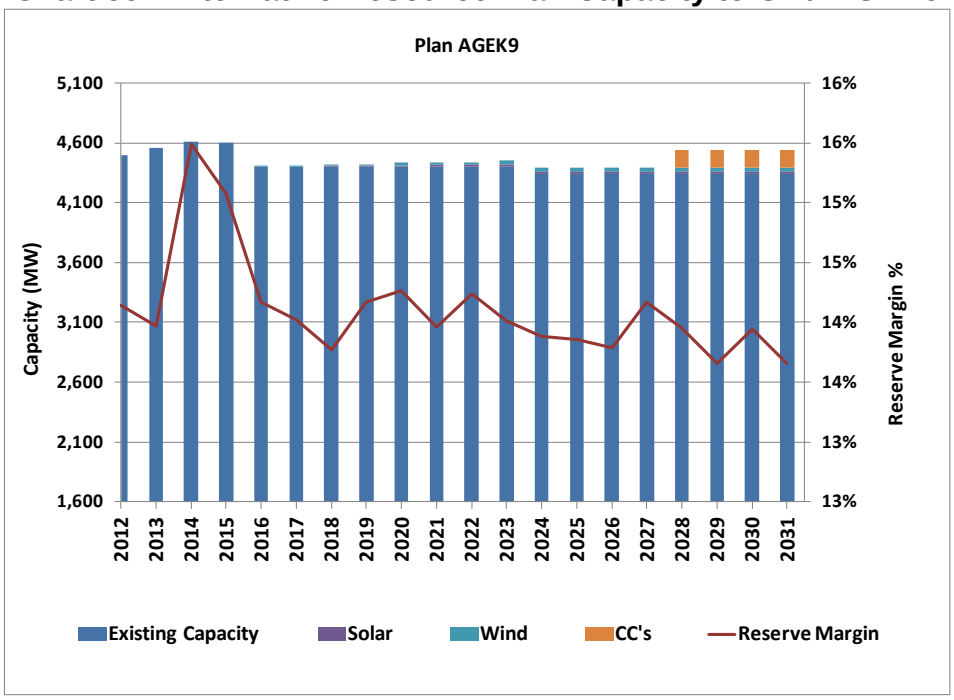


Chart 60: Alternative Resource Plan Capacity to Grid AIEK9

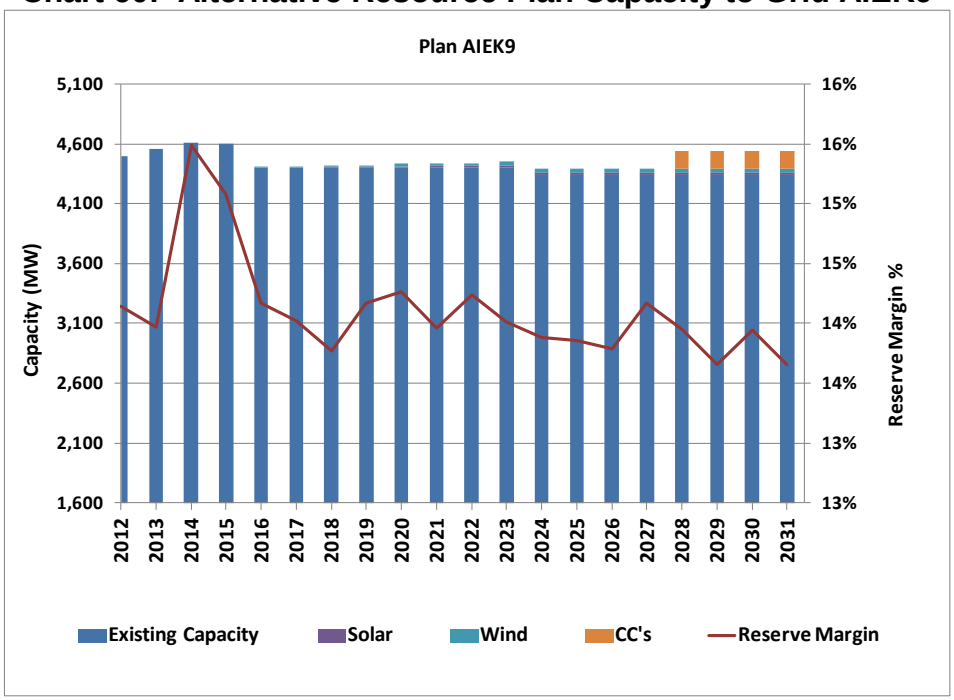


Chart 61: Alternative Resource Plan Capacity to Grid BBEK1

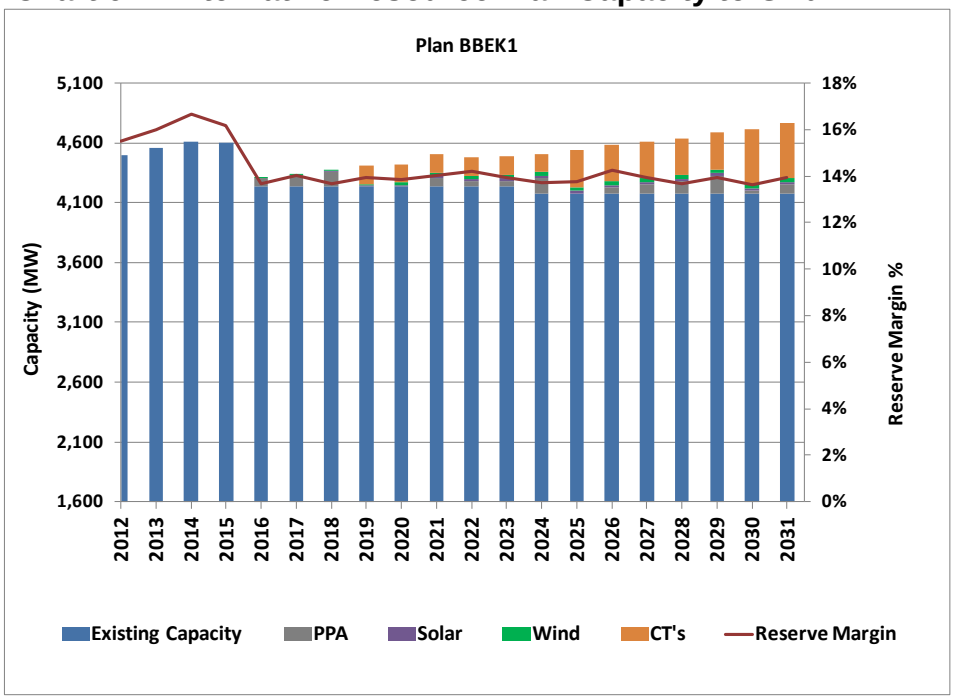


Chart 62: Alternative Resource Plan Capacity to Grid CBEK1

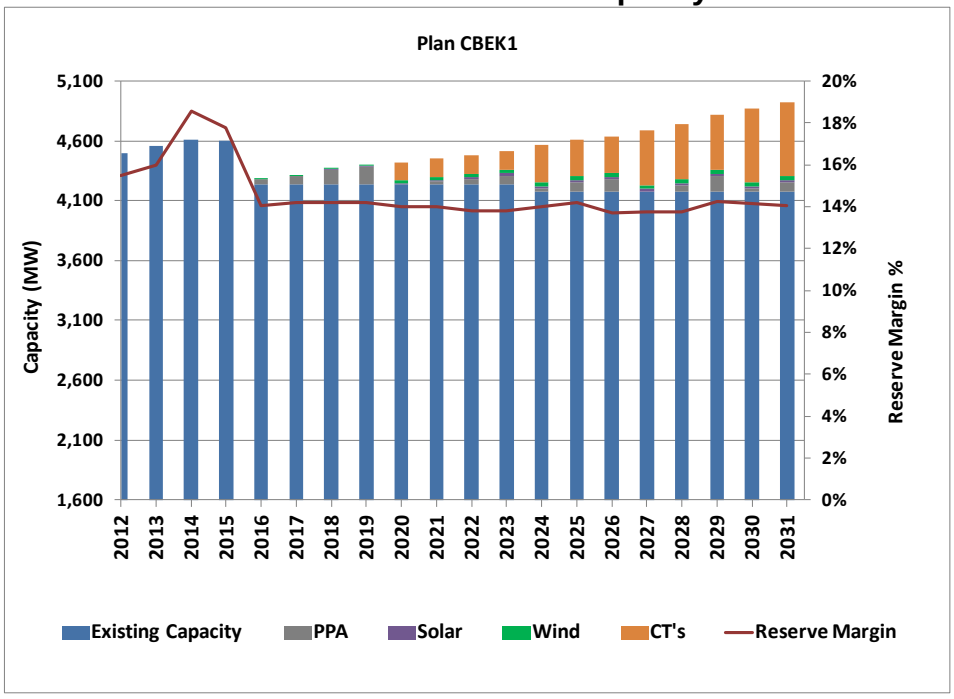


Chart 63: Alternative Resource Plan Capacity to Grid DBEK1

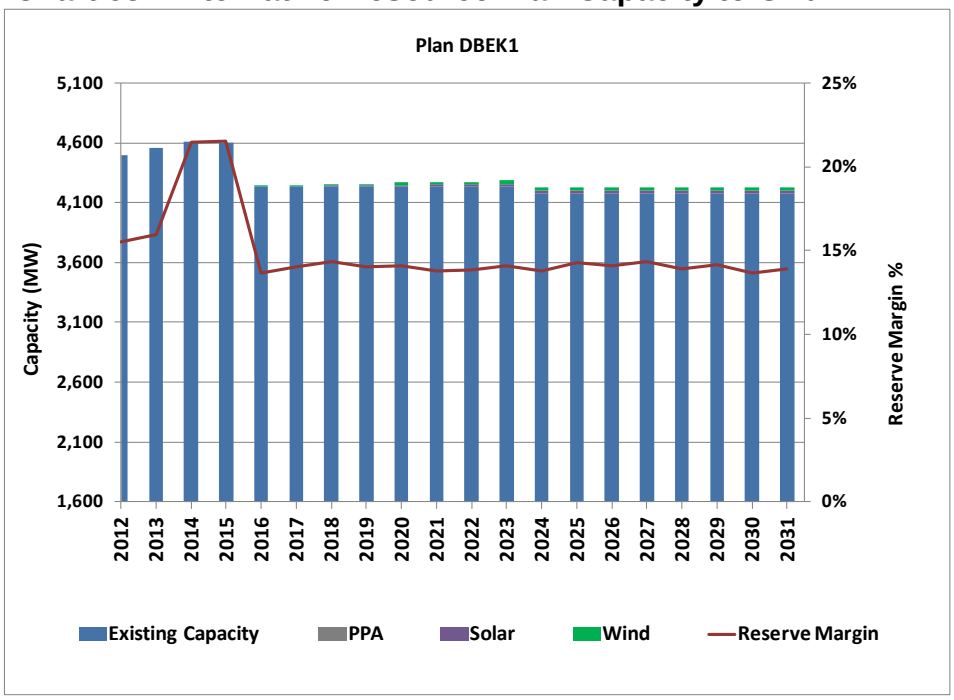


Chart 64: Alternative Resource Plan Capacity to Grid DCEK1

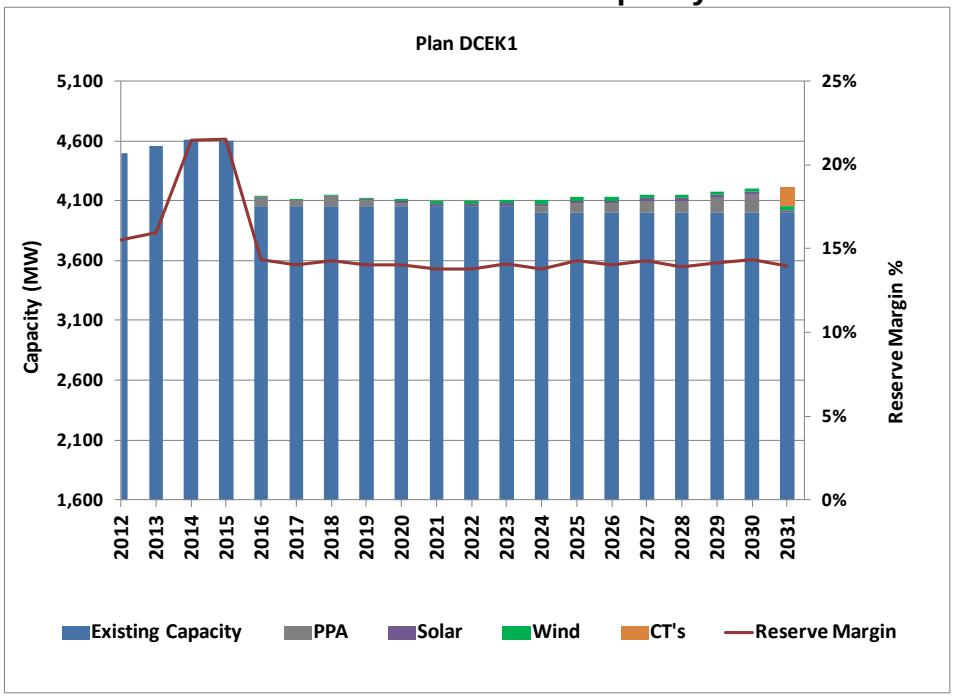


Chart 65: Alternative Resource Plan Capacity to Grid EBEK1

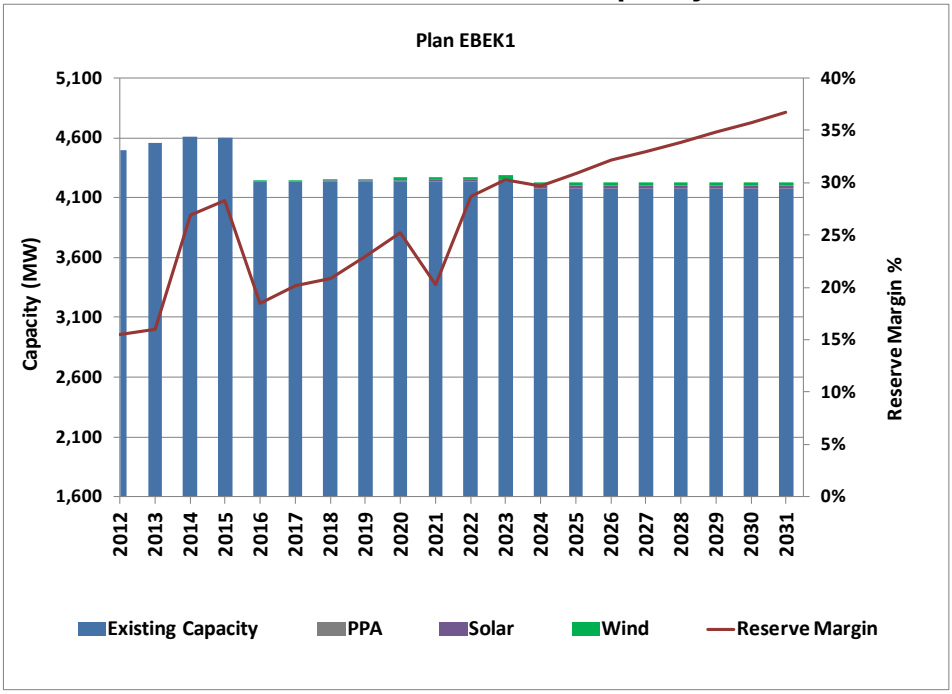
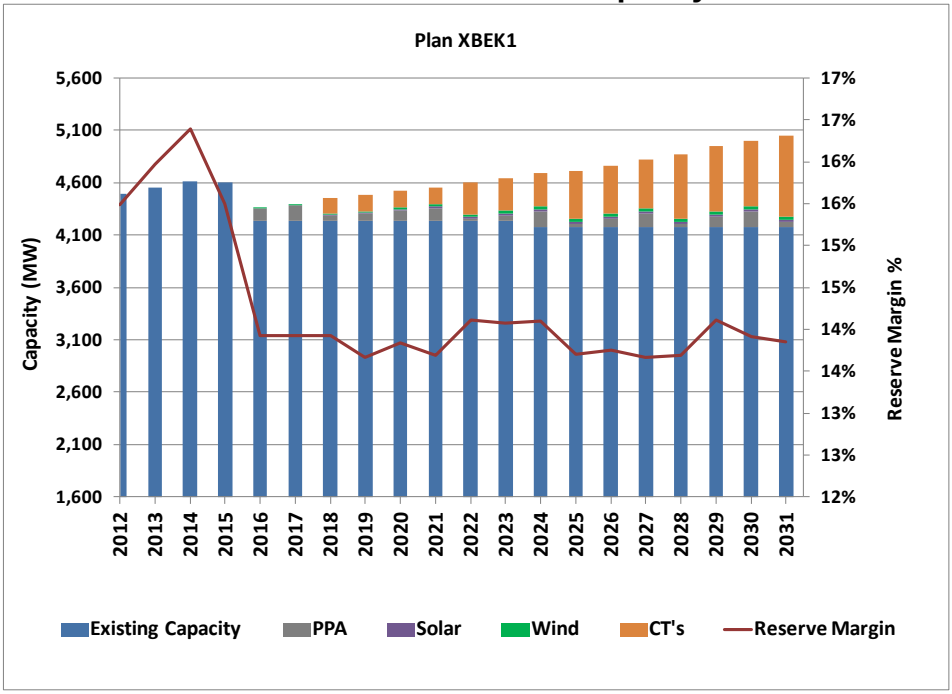


Chart 66: Alternative Resource Plan Capacity to Grid XBEK1



4. The combined impact of all demand-side resources on the base-case forecast of annual energy requirements;

The combined impact of all demand-side resources on the base-case forecast of annual energy requirements is shown for each Alternative Resource Plan in the following charts, Chart 67 through Chart 88.

Chart 67: Alternative Resource Plan Combined Impact AAAK1

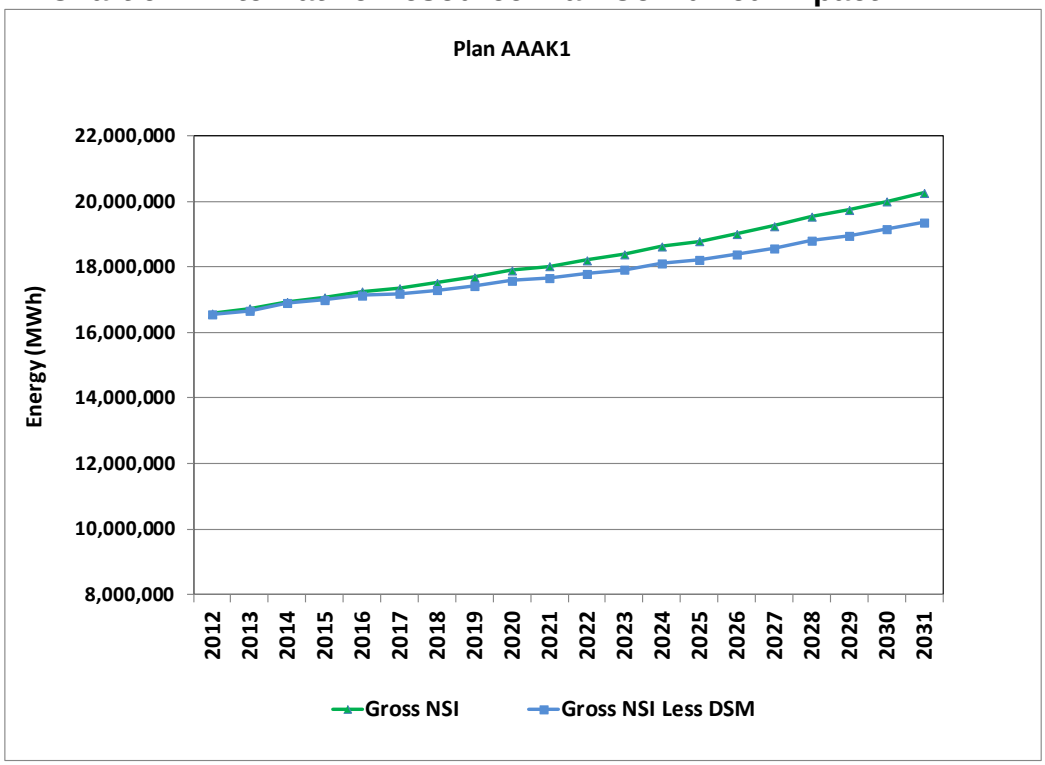


Chart 68: Alternative Resource Plan Combined Impact AAAK9

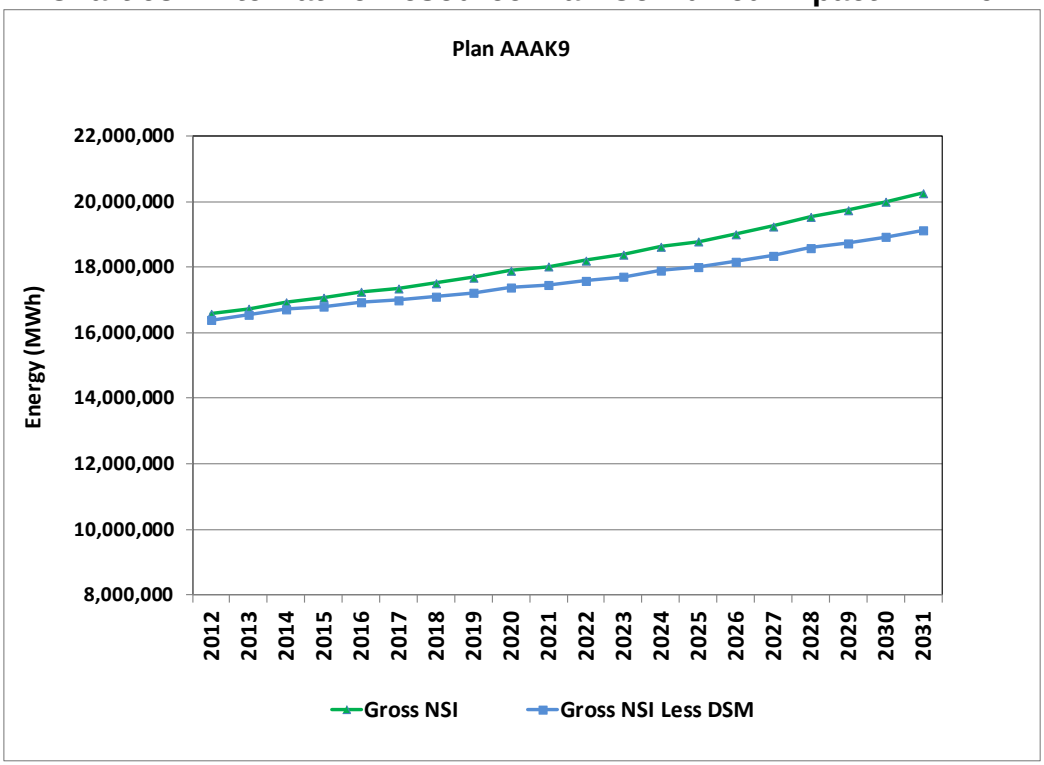


Chart 69: Alternative Resource Plan Combined Impact ABEK1

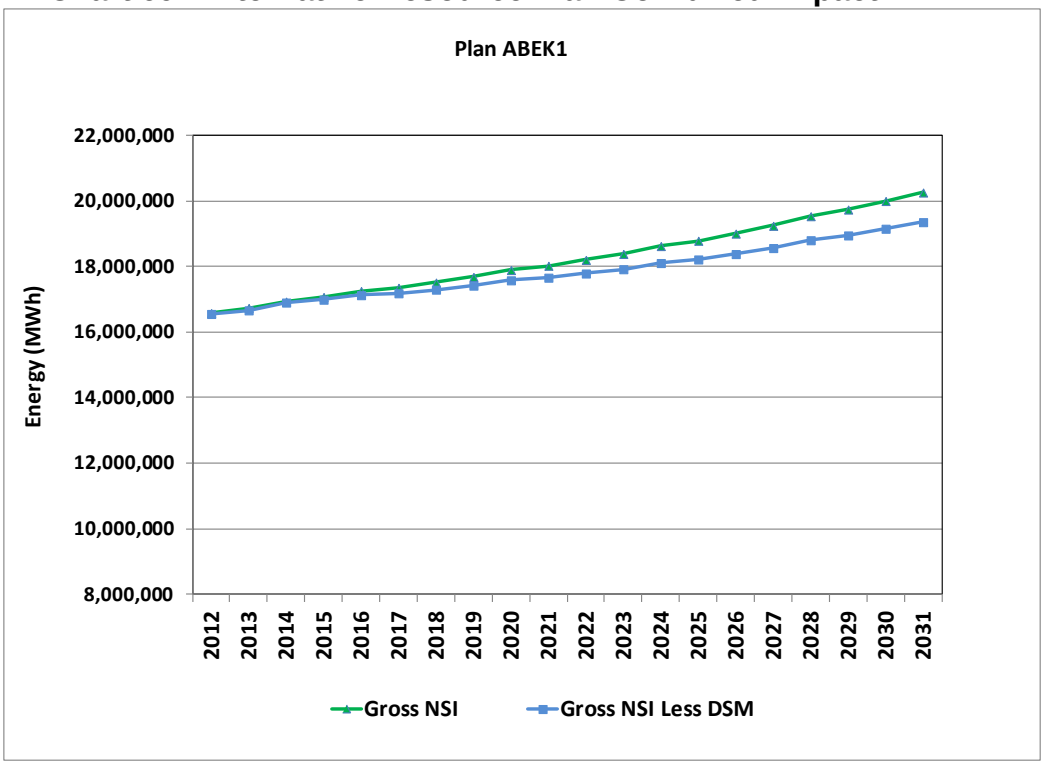


Chart 70: Alternative Resource Plan Combined Impact ABEK2

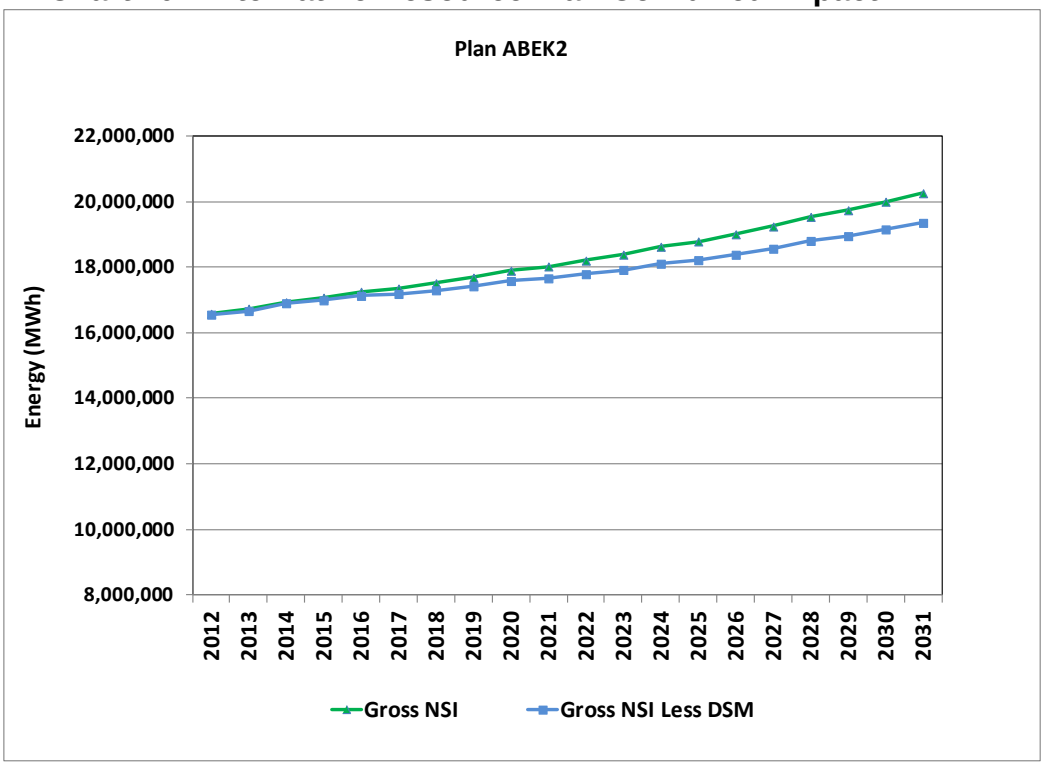


Chart 71: Alternative Resource Plan Combined Impact ABEK4

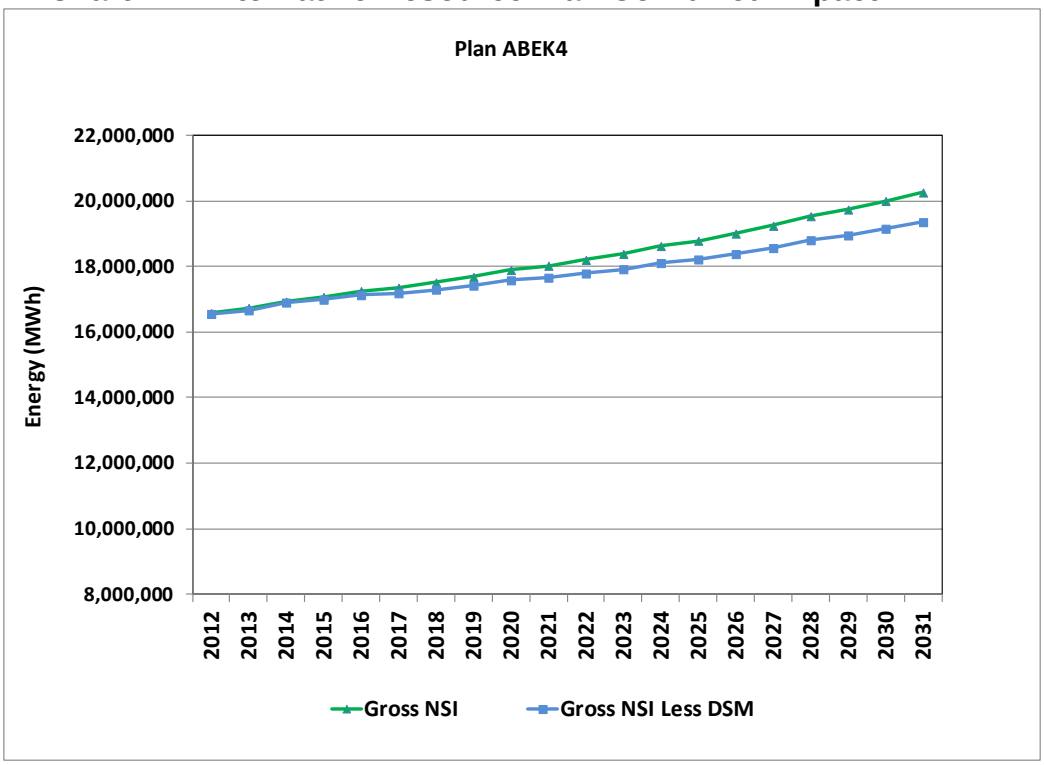


Chart 72: Alternative Resource Plan Combined Impact ABEK5

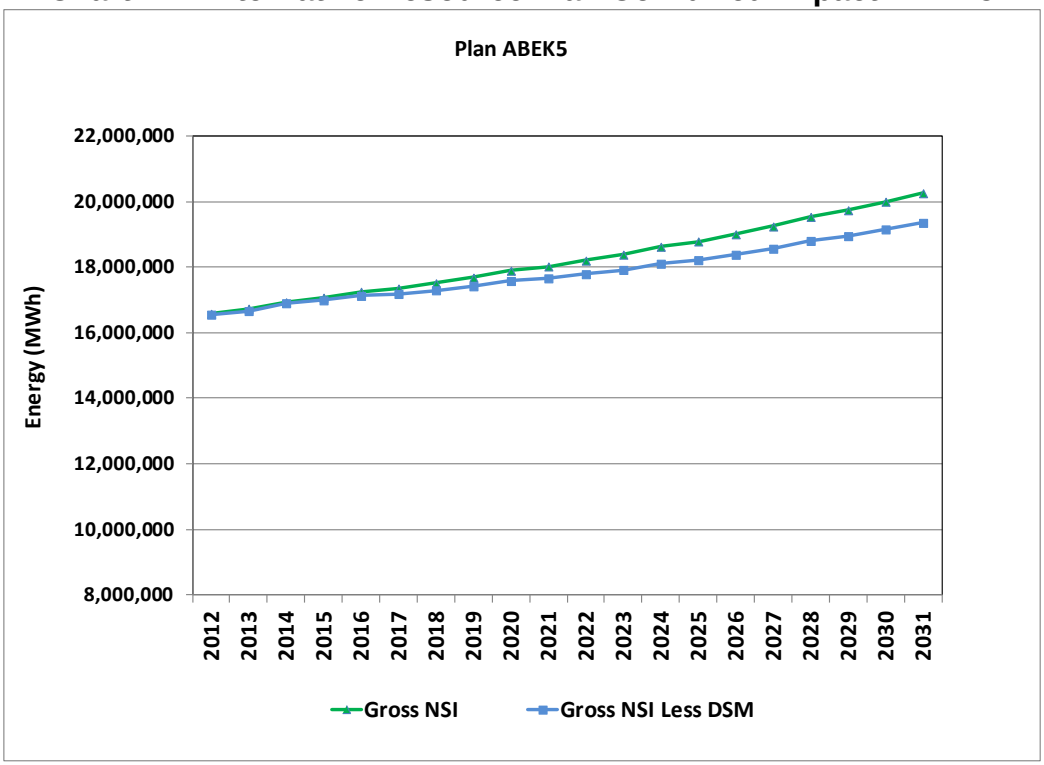


Chart 73: Alternative Resource Plan Combined Impact ABEK6

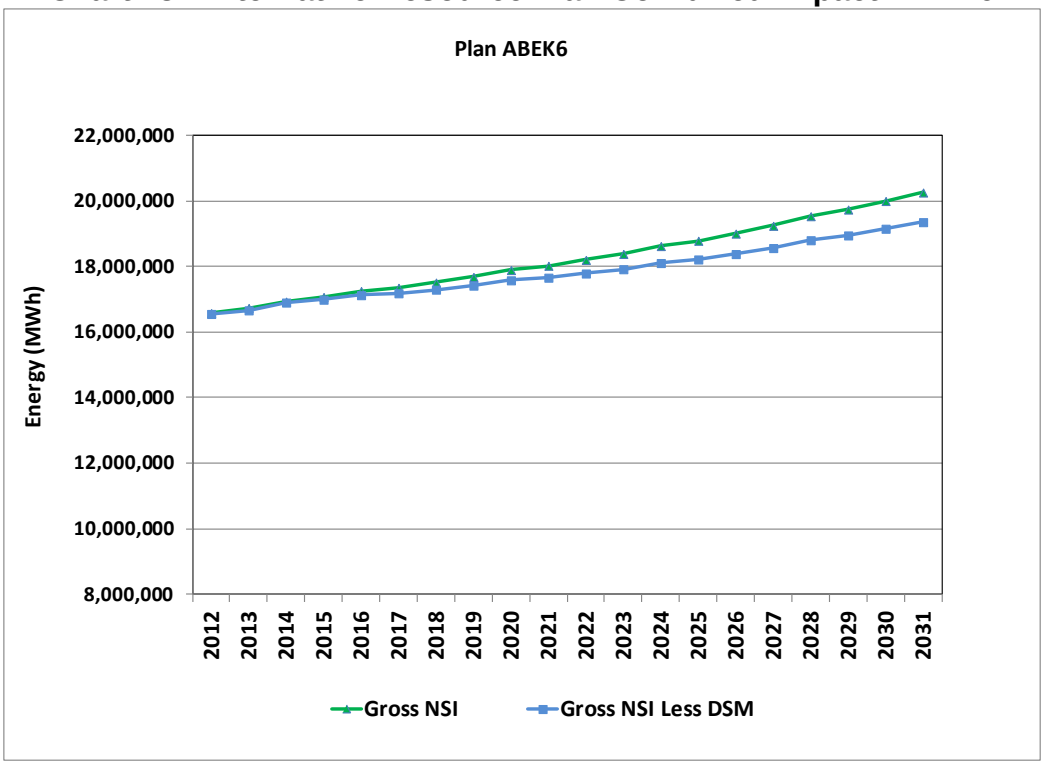


Chart 74: Alternative Resource Plan Combined Impact ABEK7

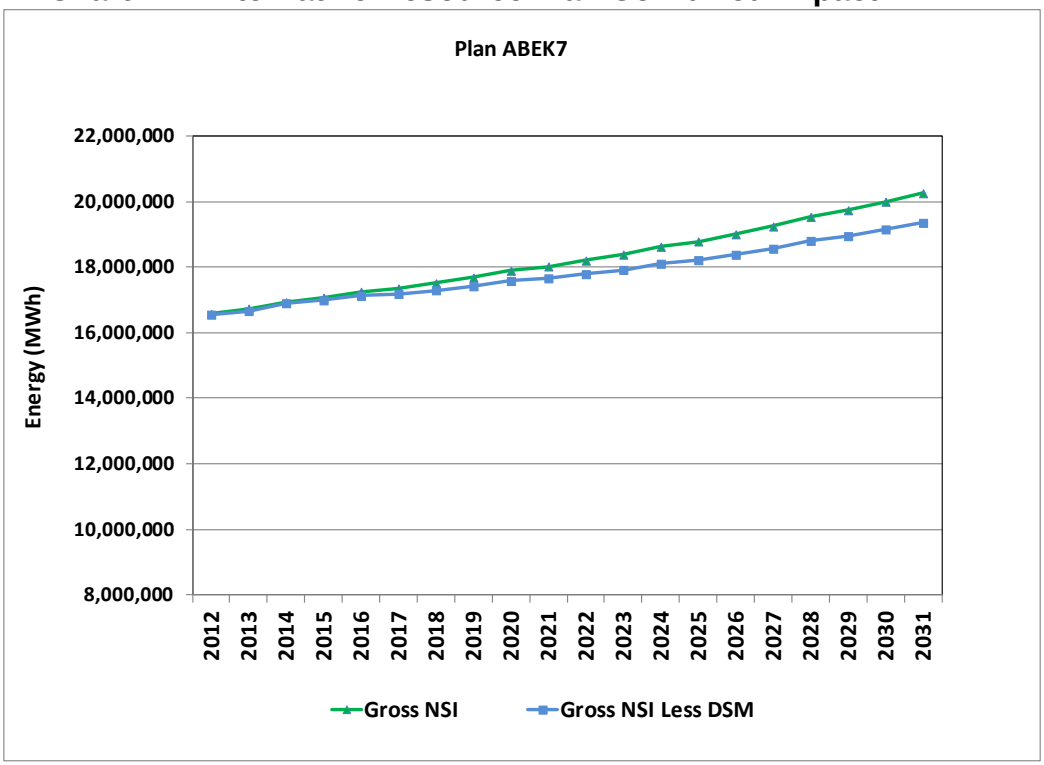


Chart 75: Alternative Resource Plan Combined Impact ACEK1

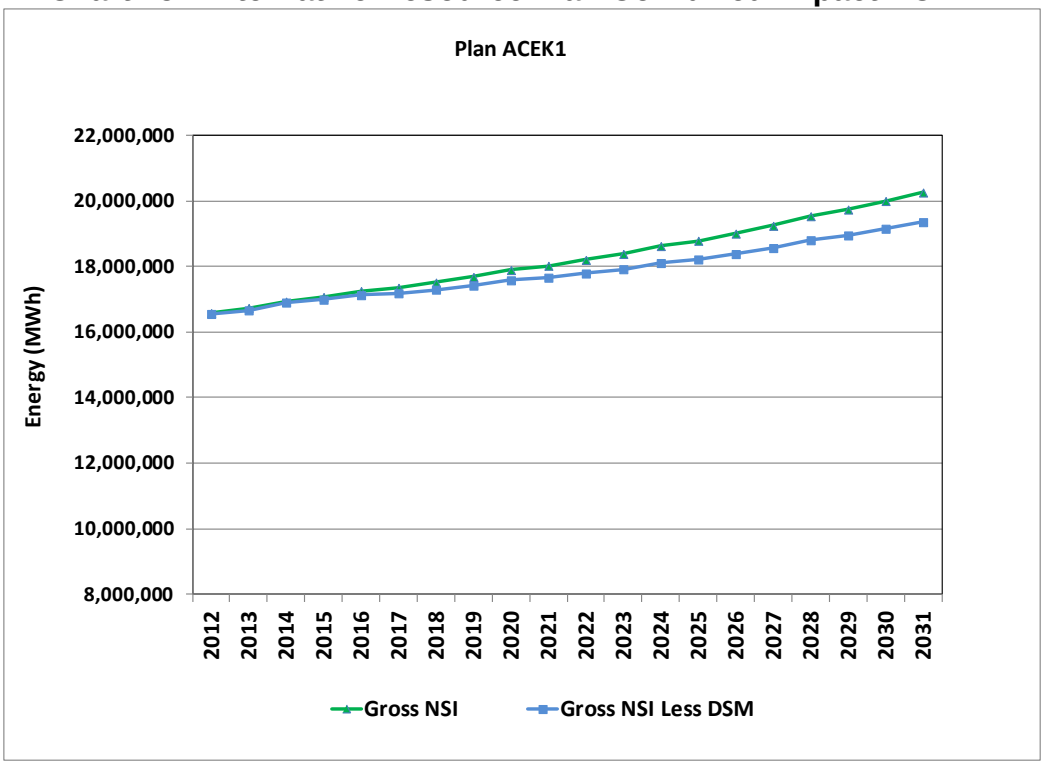


Chart 76: Alternative Resource Plan Combined Impact ACEK2

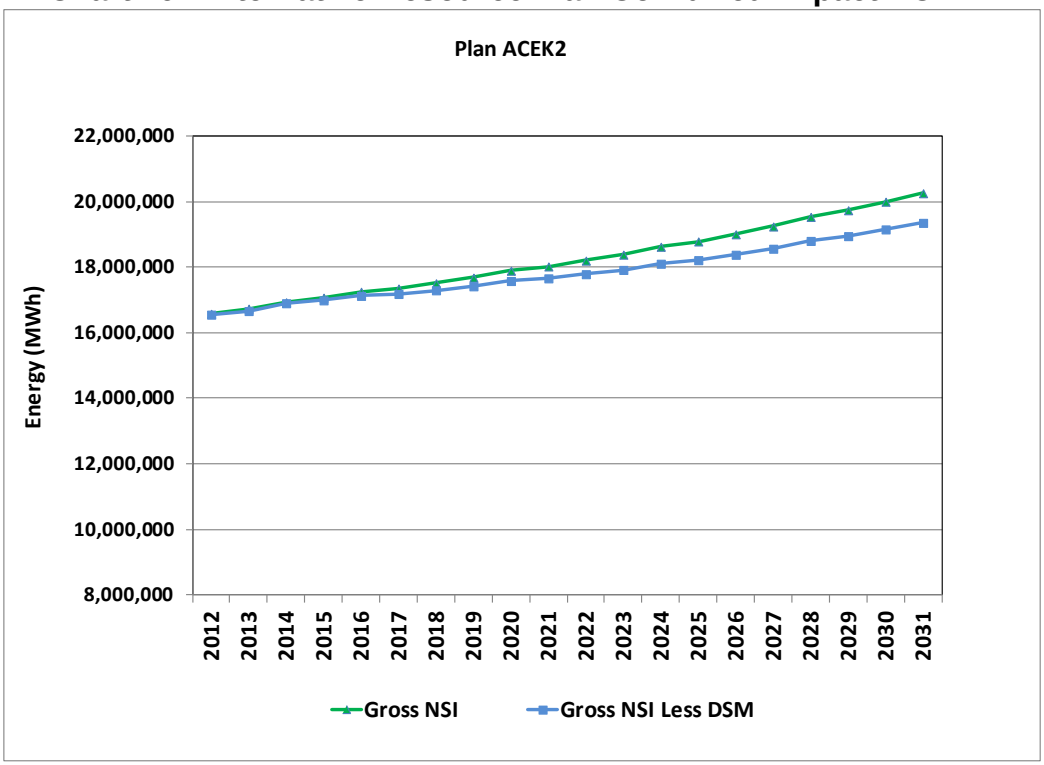


Chart 77: Alternative Resource Plan Combined Impact ADDK1

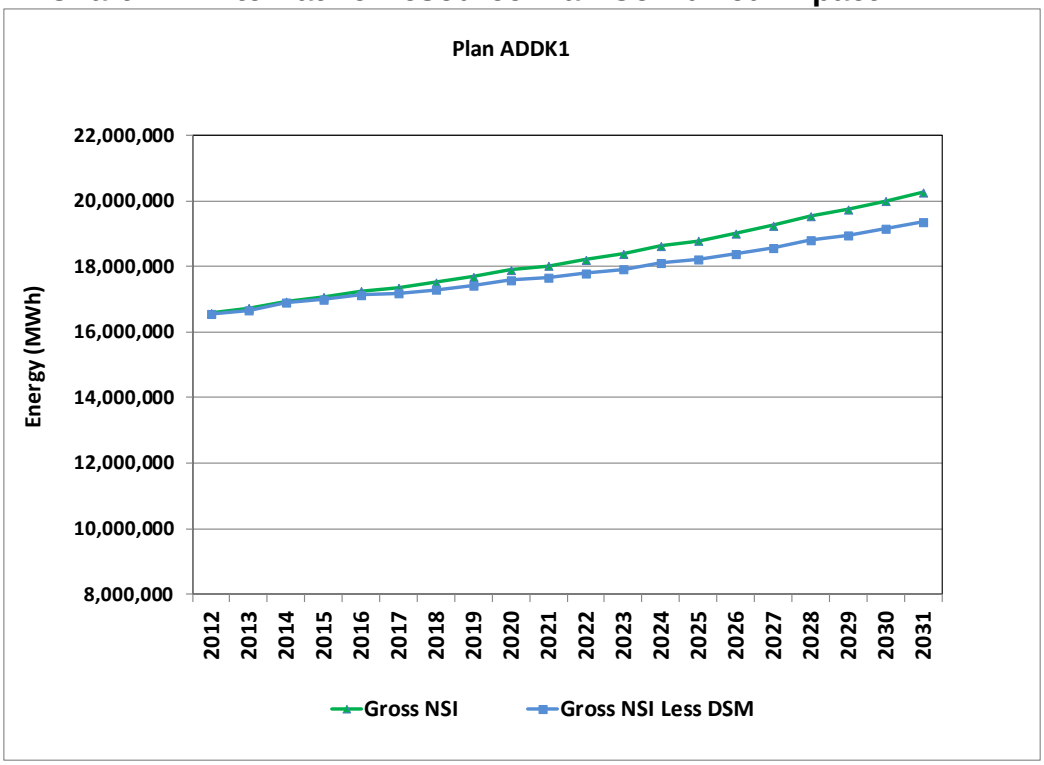


Chart 78: Alternative Resource Plan Combined Impact AEDK1

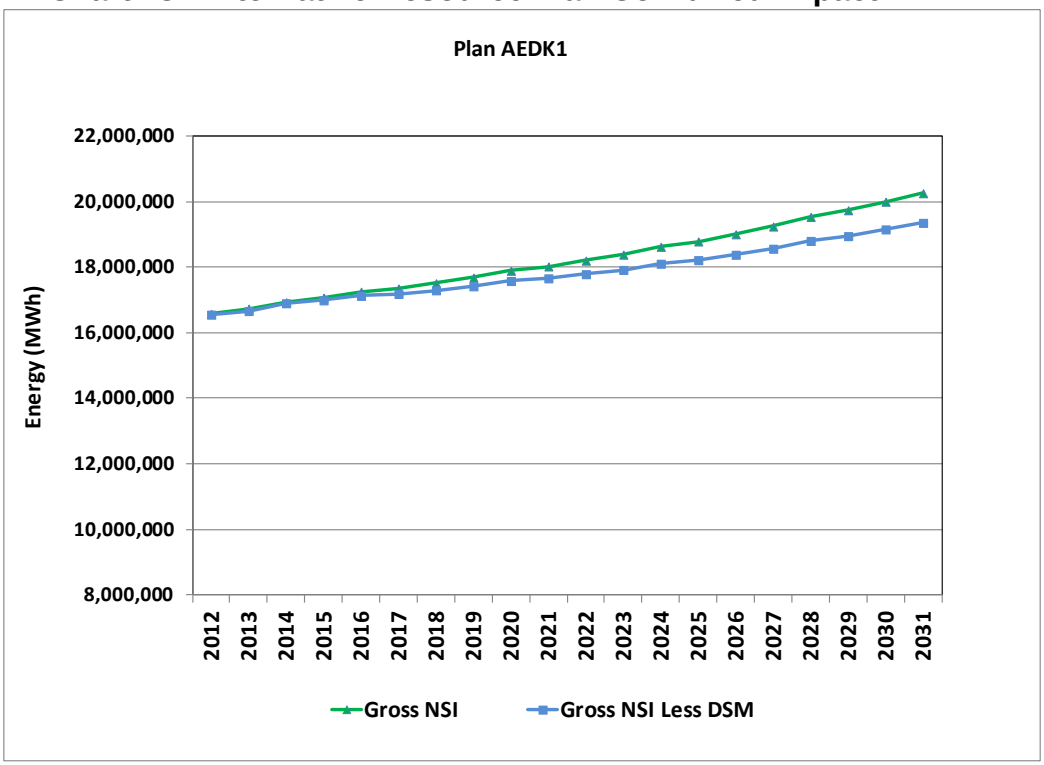


Chart 79: Alternative Resource Plan Combined Impact AFDK1

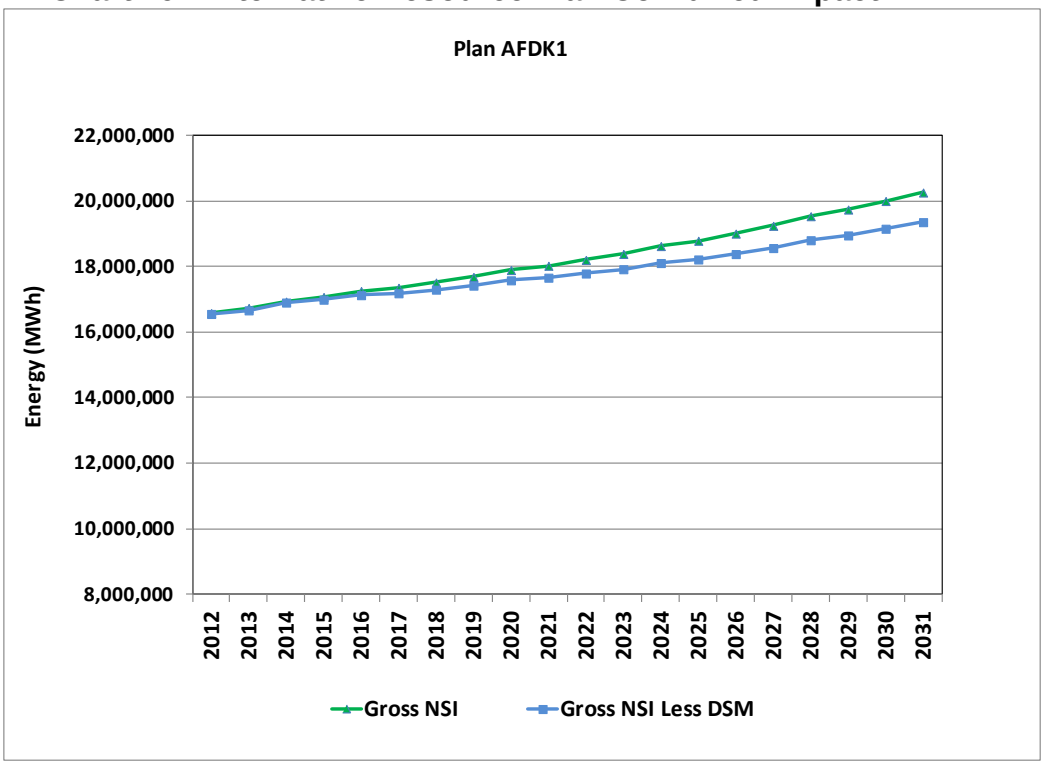


Chart 80: Alternative Resource Plan Combined Impact AGEK1

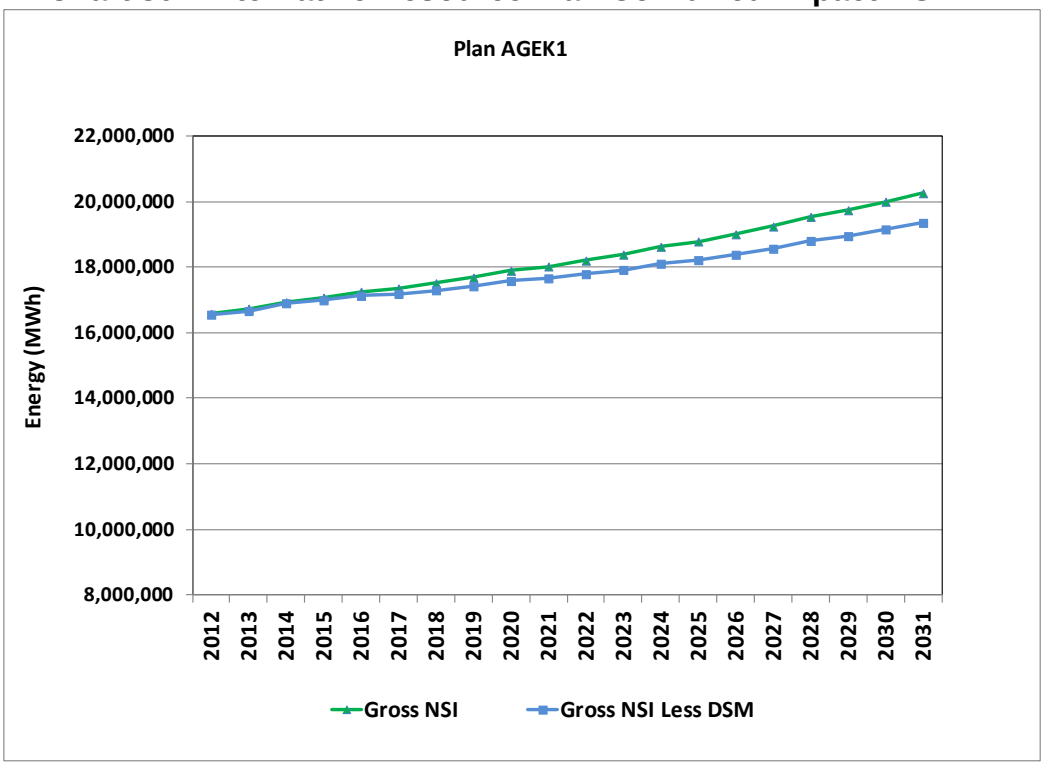


Chart 81: Alternative Resource Plan Combined Impact AGEK1

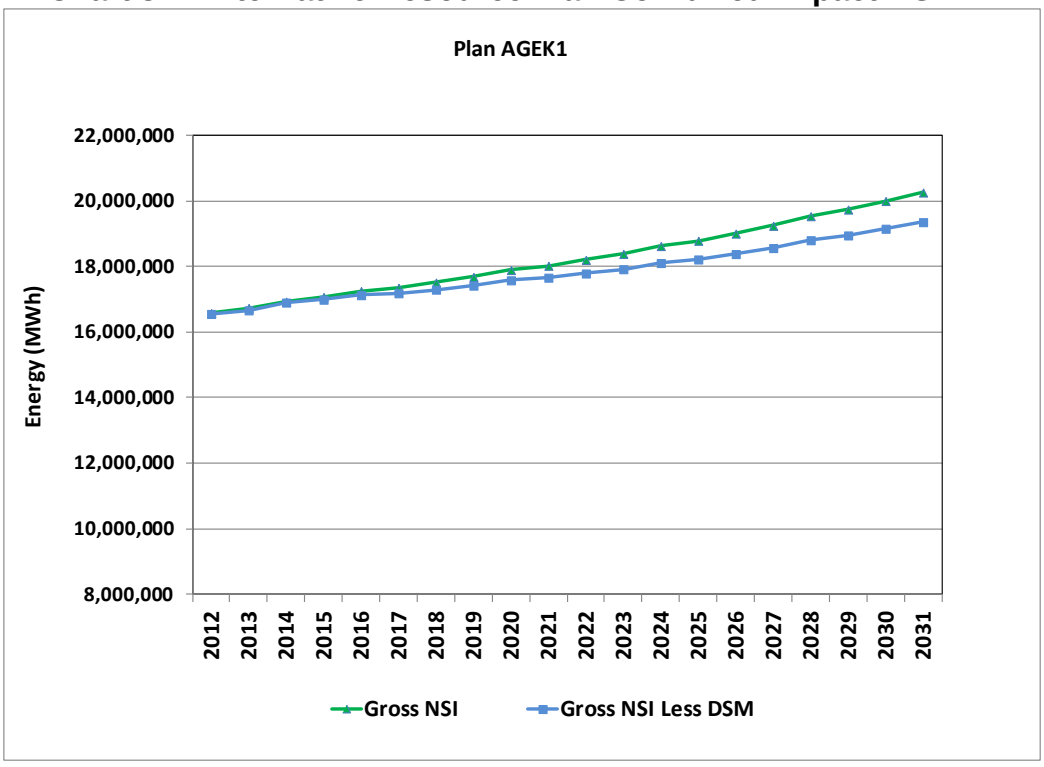


Chart 82: Alternative Resource Plan Combined Impact AIEK9

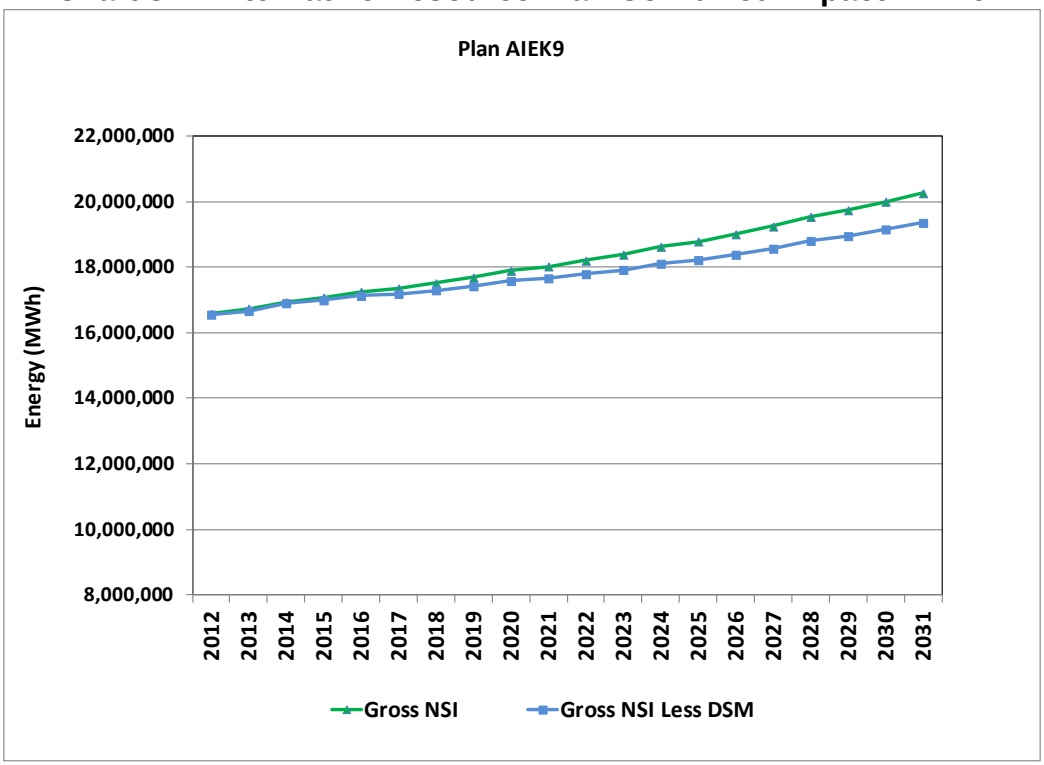


Chart 83: Alternative Resource Plan Combined Impact BBEK1

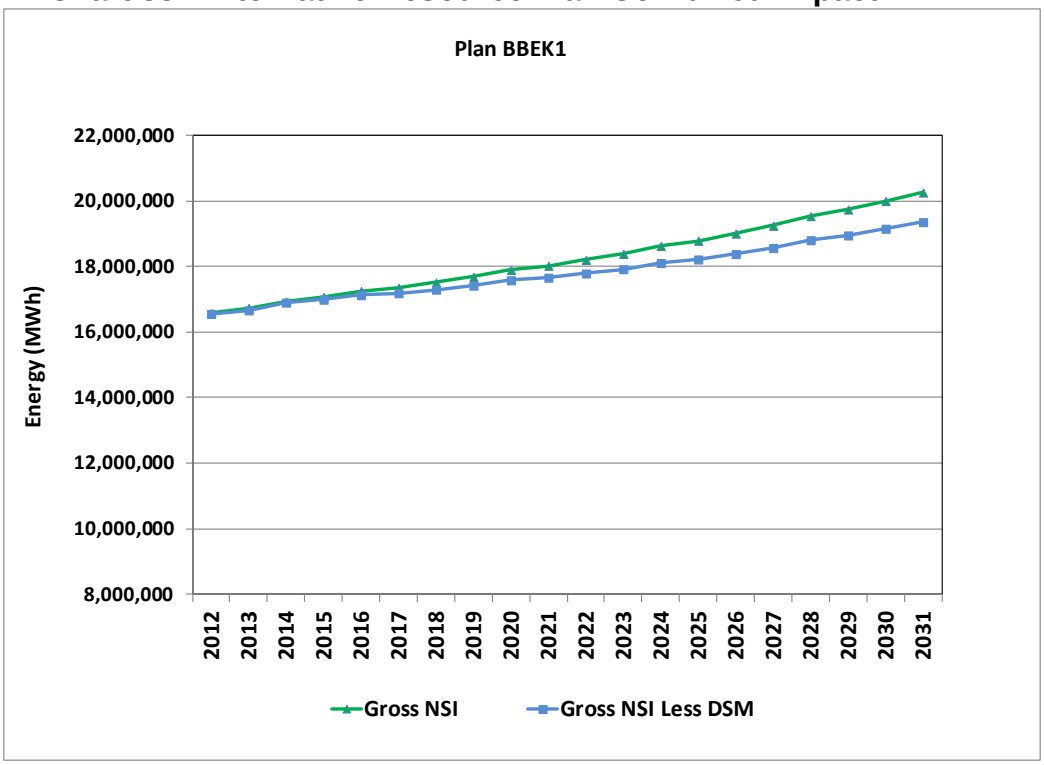


Chart 84: Alternative Resource Plan Combined Impact CBEK1

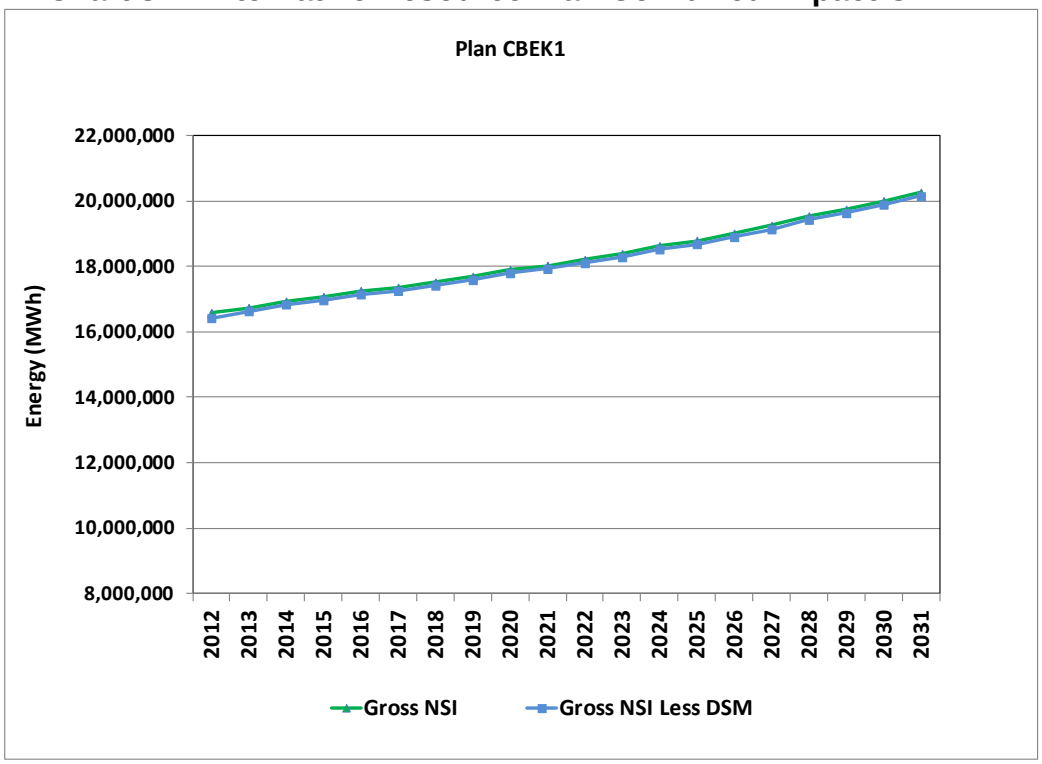


Chart 85: Alternative Resource Plan Combined Impact DBEK1

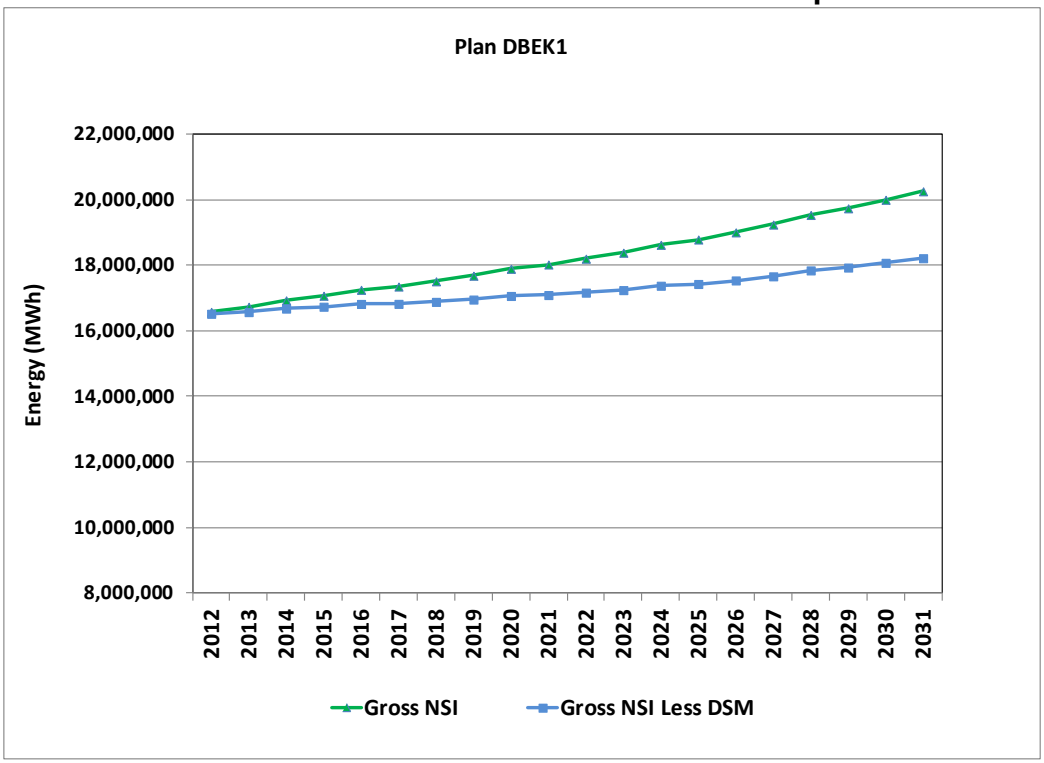


Chart 86: Alternative Resource Plan Combined Impact DCEK1

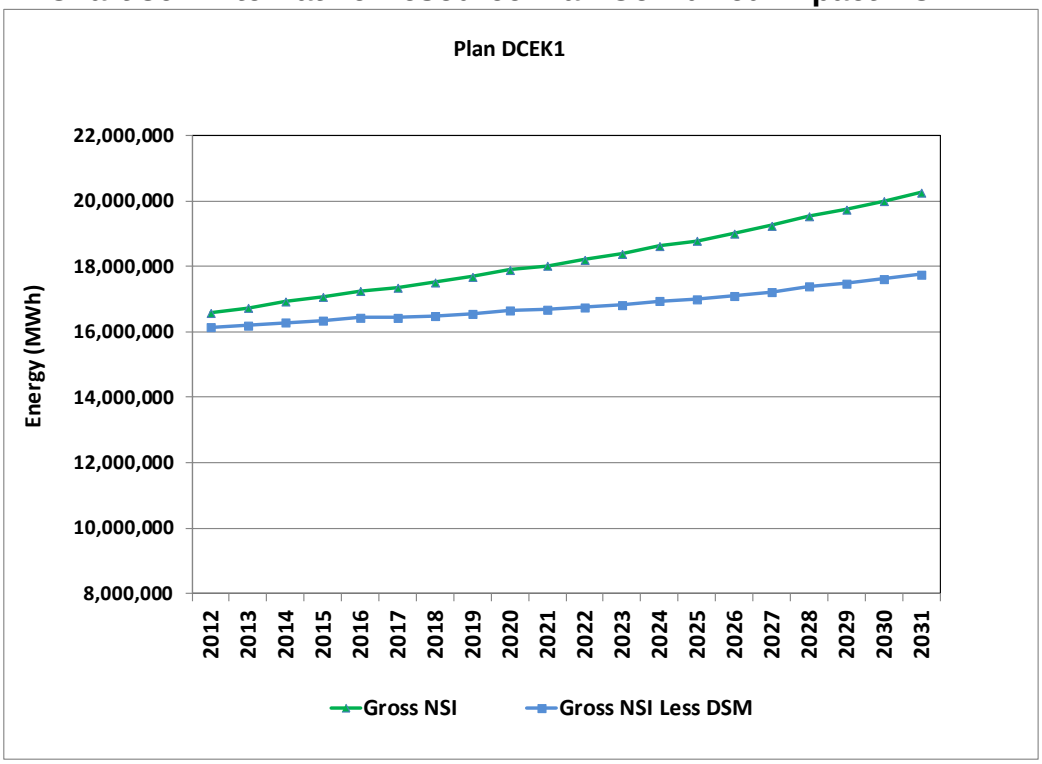


Chart 87: Alternative Resource Plan Combined Impact EBEK1

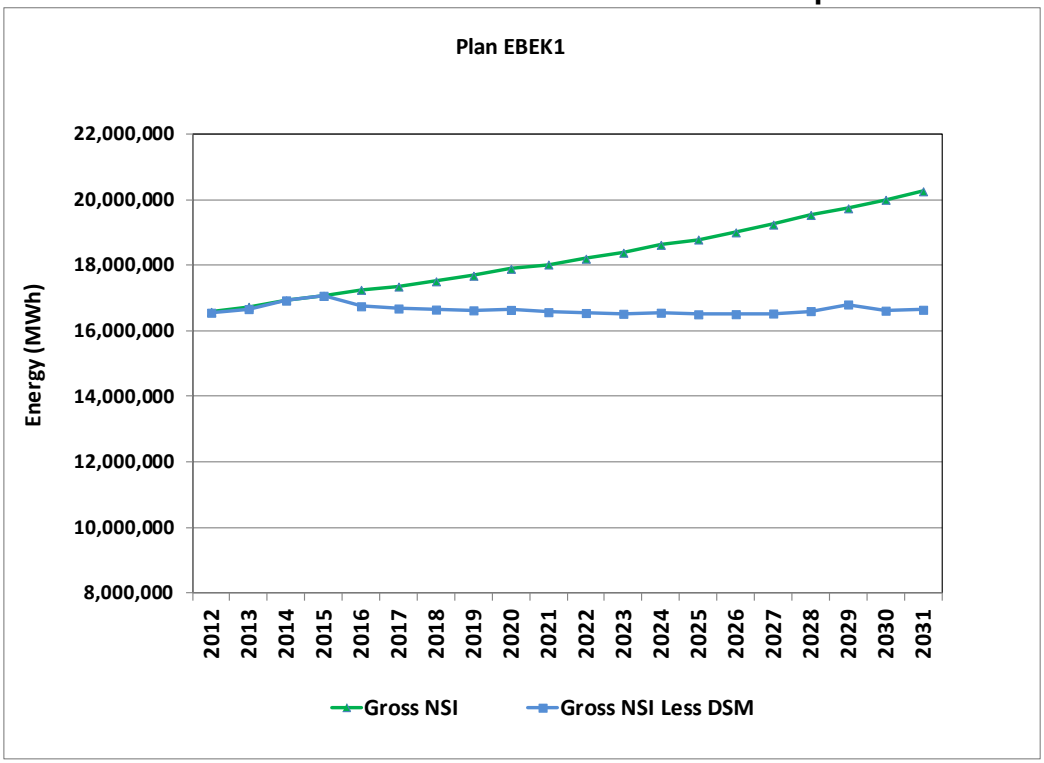
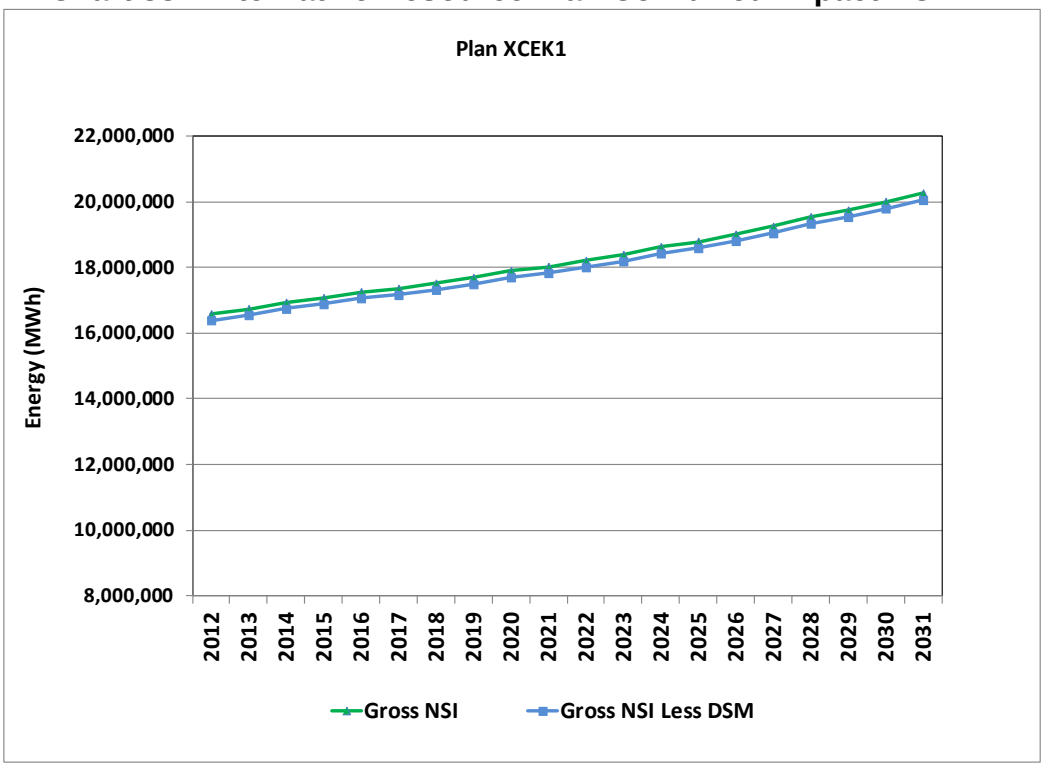


Chart 88: Alternative Resource Plan Combined Impact XCEK1



5. The composition, by program and demand-side rate, of the annual energy provided by demand-side resources;

The composition, by program and demand-side rate, of the annual energy provided by demand-side resources is shown in the following charts, Chart 89 through Chart 110.

Chart 89: Alternative Resource Plan Energy Provided AAAK1

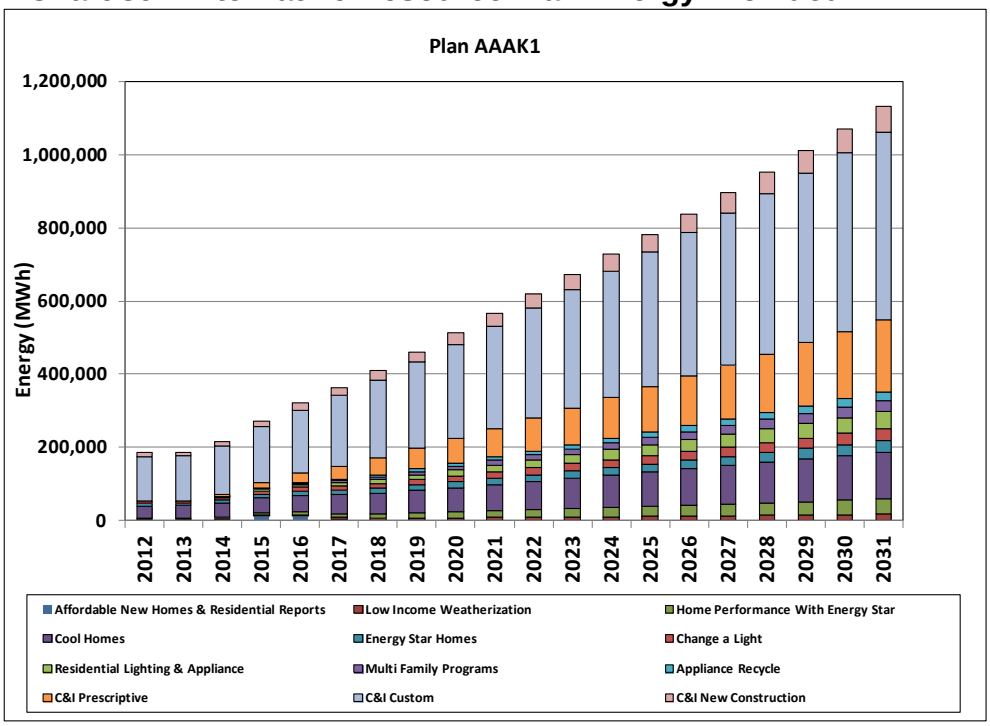


Chart 90: Alternative Resource Plan Energy Provided AAAK9

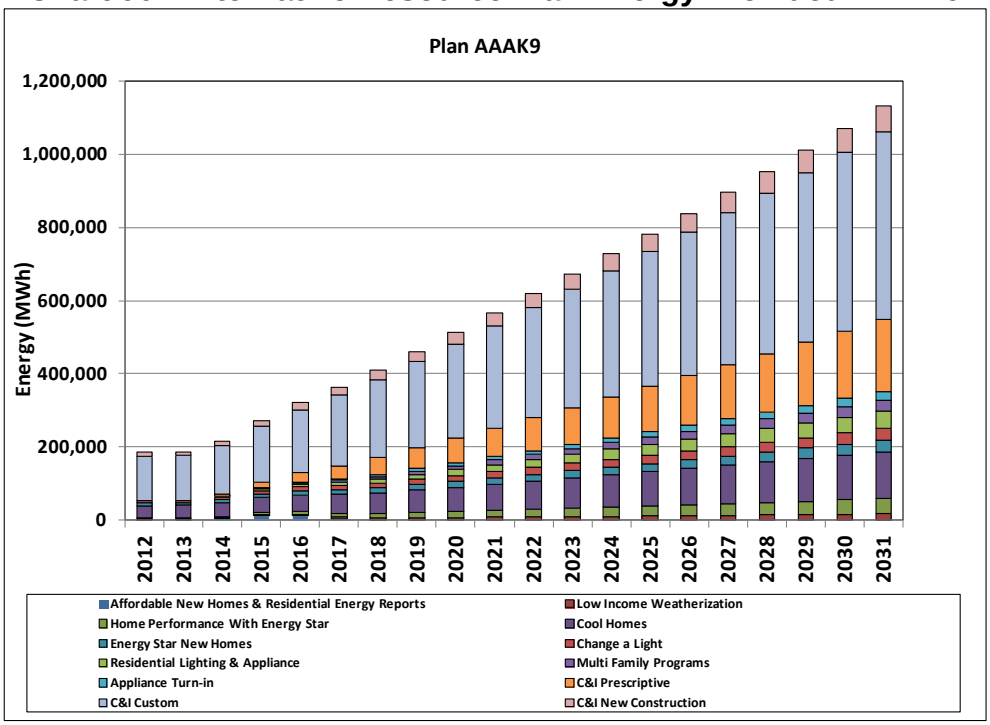


Chart 91: Alternative Resource Plan Energy Provided ABEK1

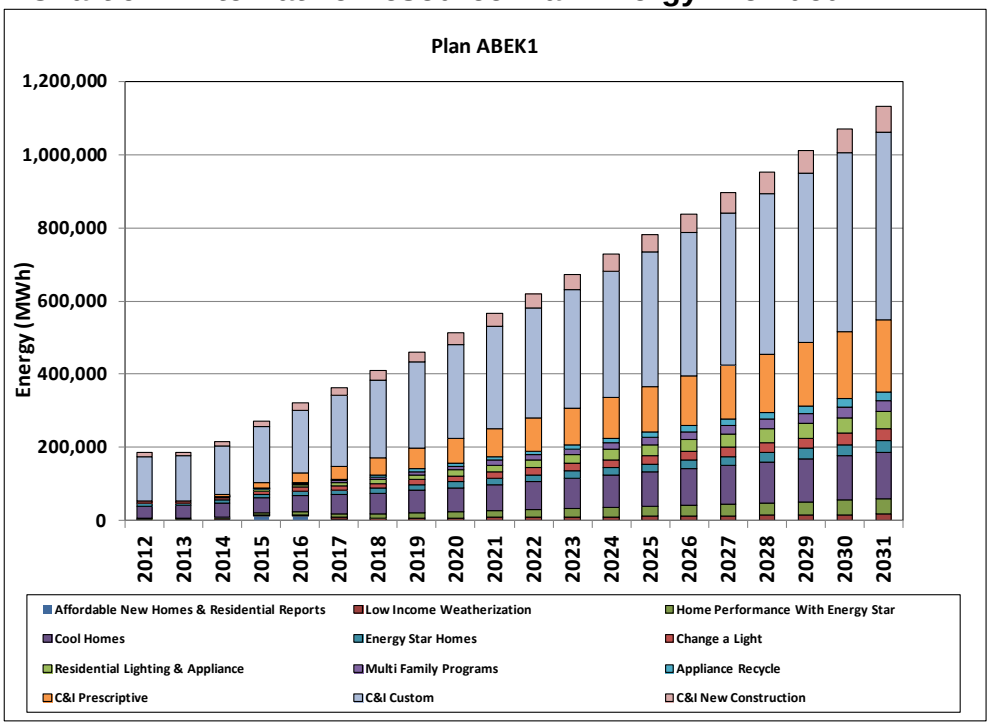


Chart 92: Alternative Resource Plan Energy Provided ABEK2

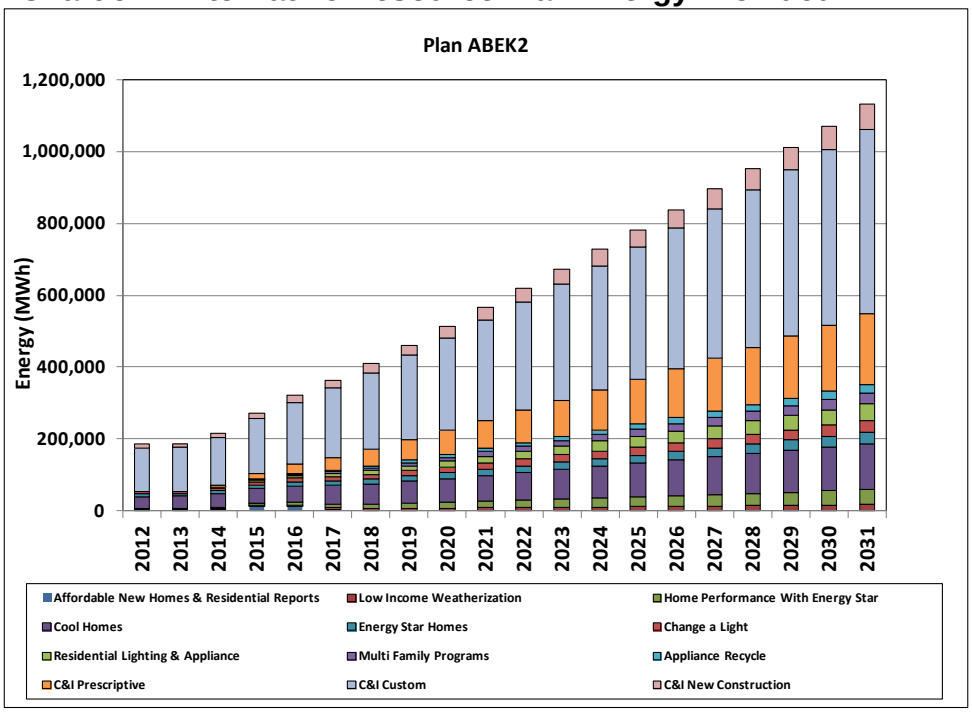


Chart 93: Alternative Resource Plan Energy Provided ABEK4

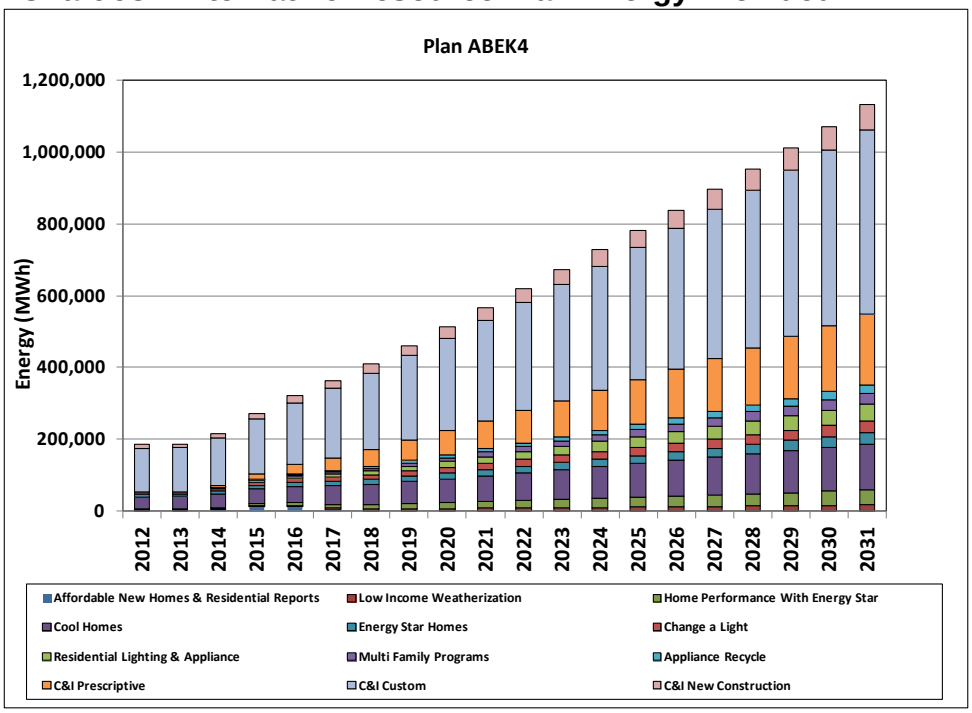


Chart 94: Alternative Resource Plan Energy Provided ABEK5

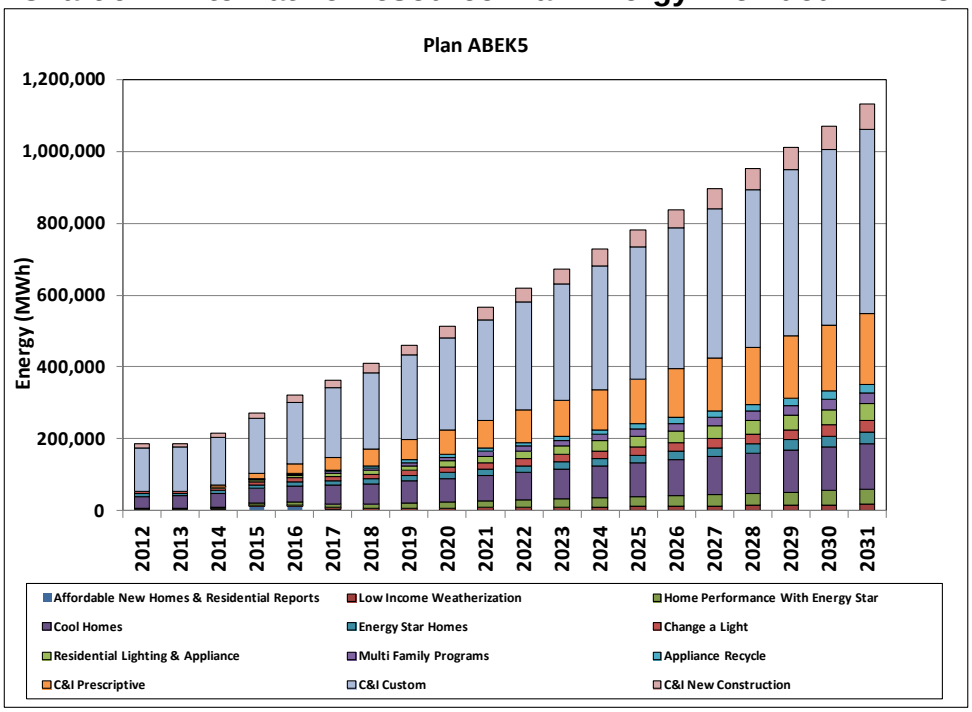


Chart 95: Alternative Resource Plan Energy Provided ABEK6

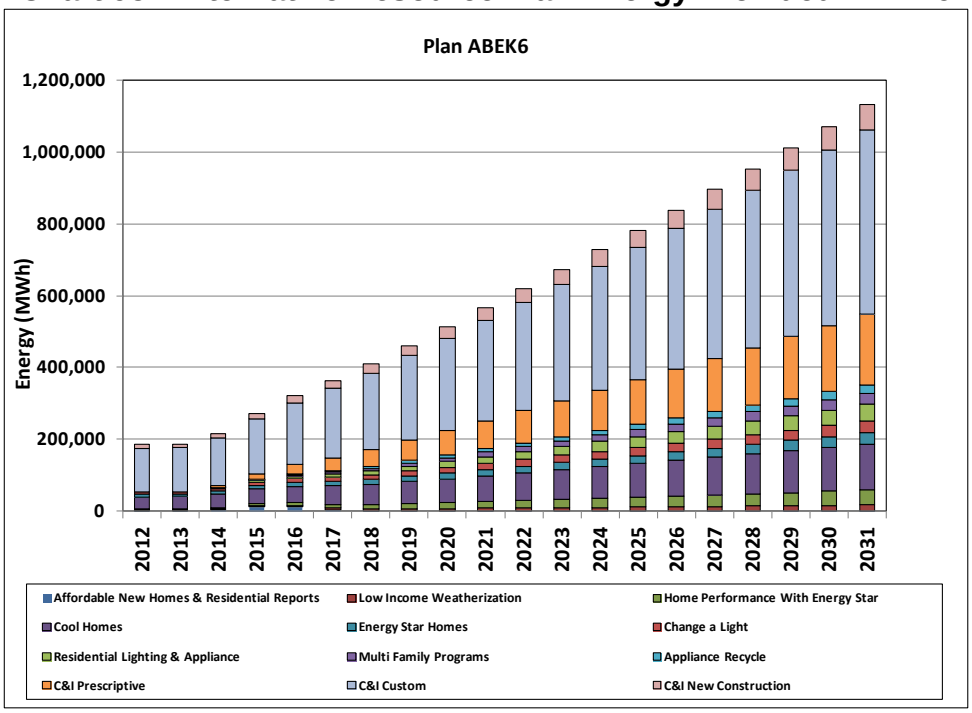


Chart 96: Alternative Resource Plan Energy Provided ABEK7

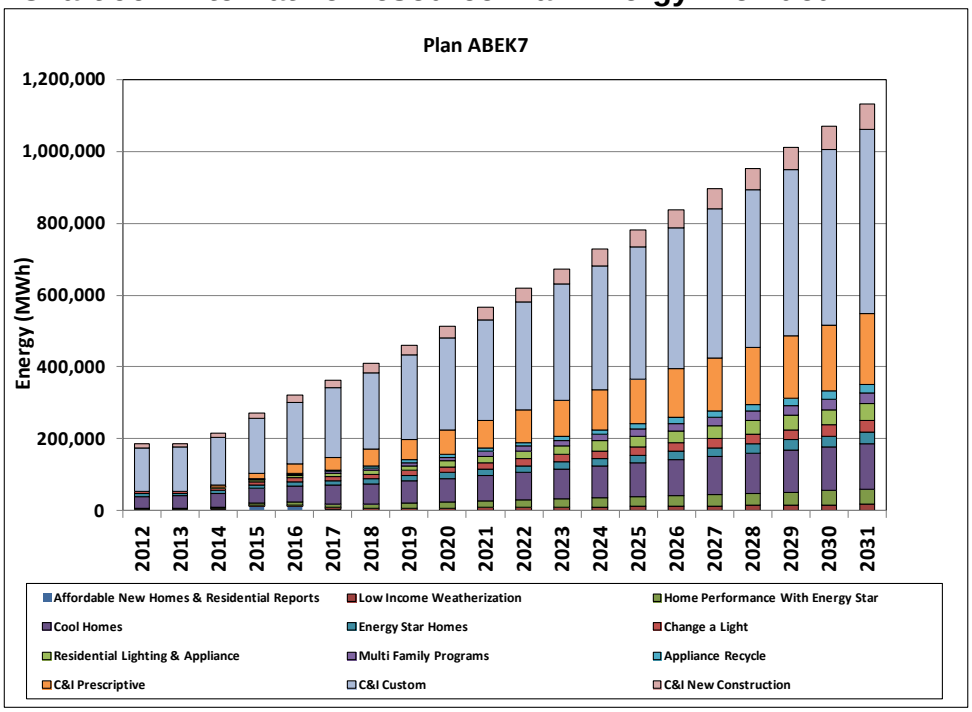


Chart 97: Alternative Resource Plan Energy Provided ACEK1

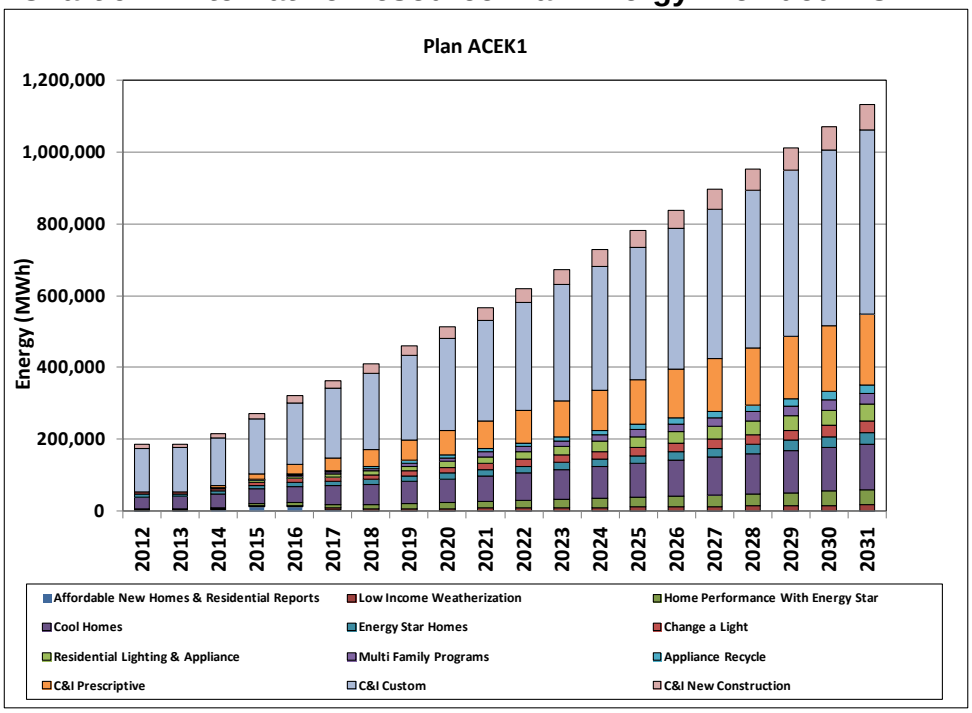


Chart 98: Alternative Resource Plan Energy Provided ACEK2

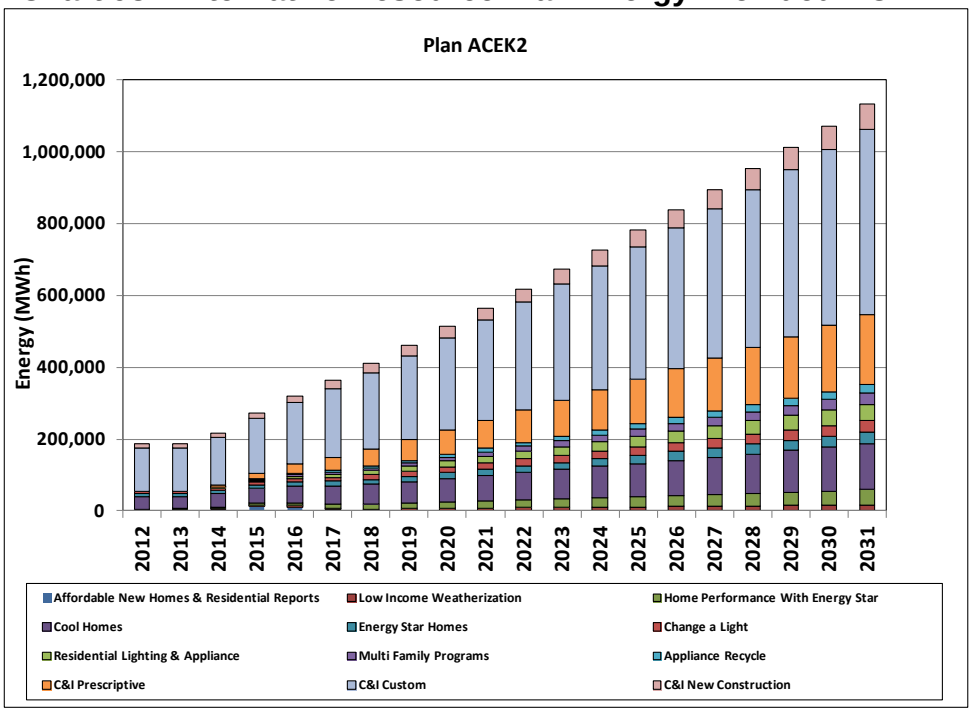


Chart 99: Alternative Resource Plan Energy Provided ADDK1

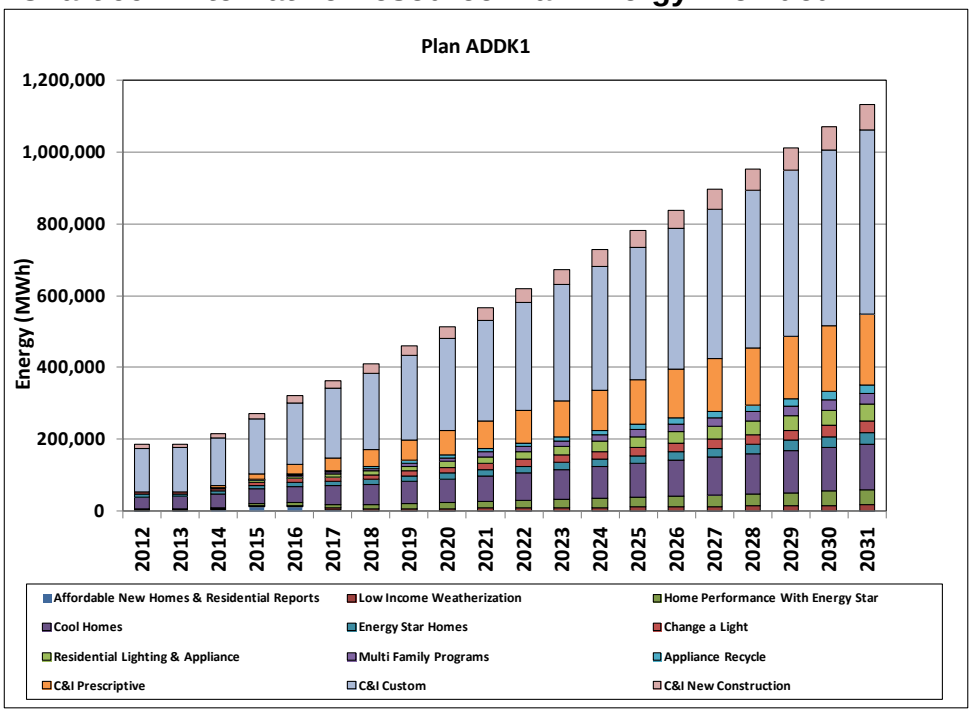


Chart 100: Alternative Resource Plan Energy Provided AEDK1

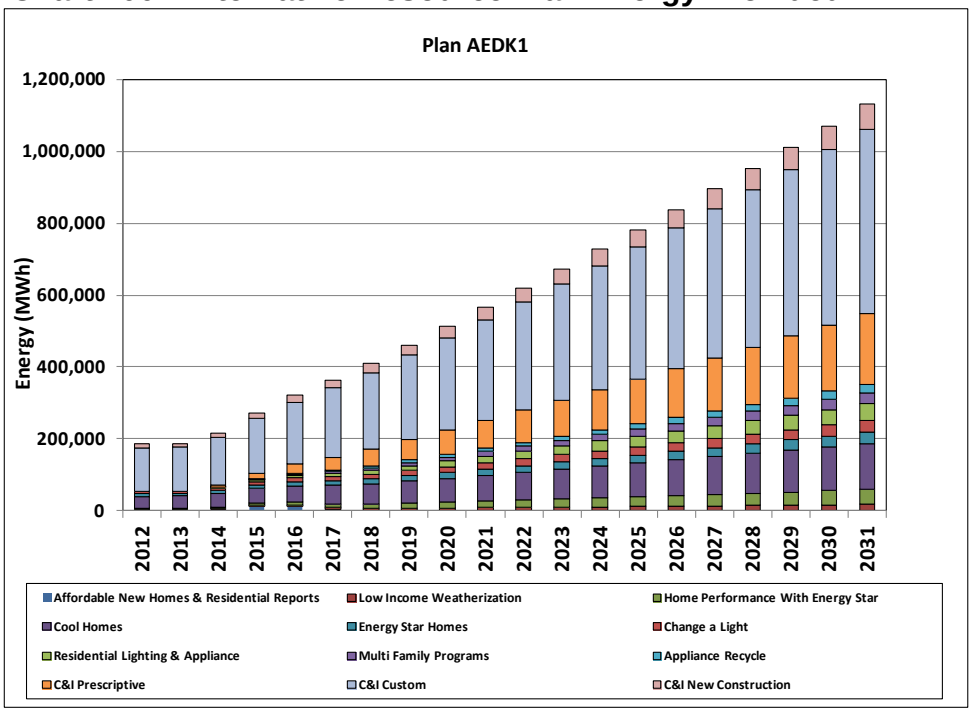


Chart 101: Alternative Resource Plan Energy Provided AFDK1

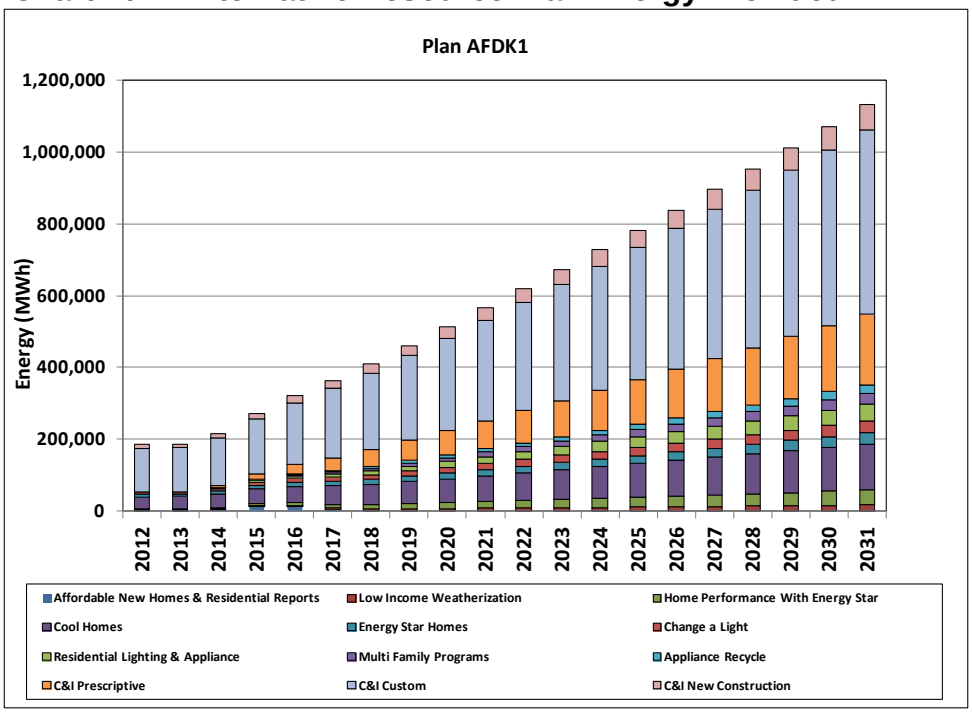


Chart 102: Alternative Resource Plan Energy Provided AGEK1

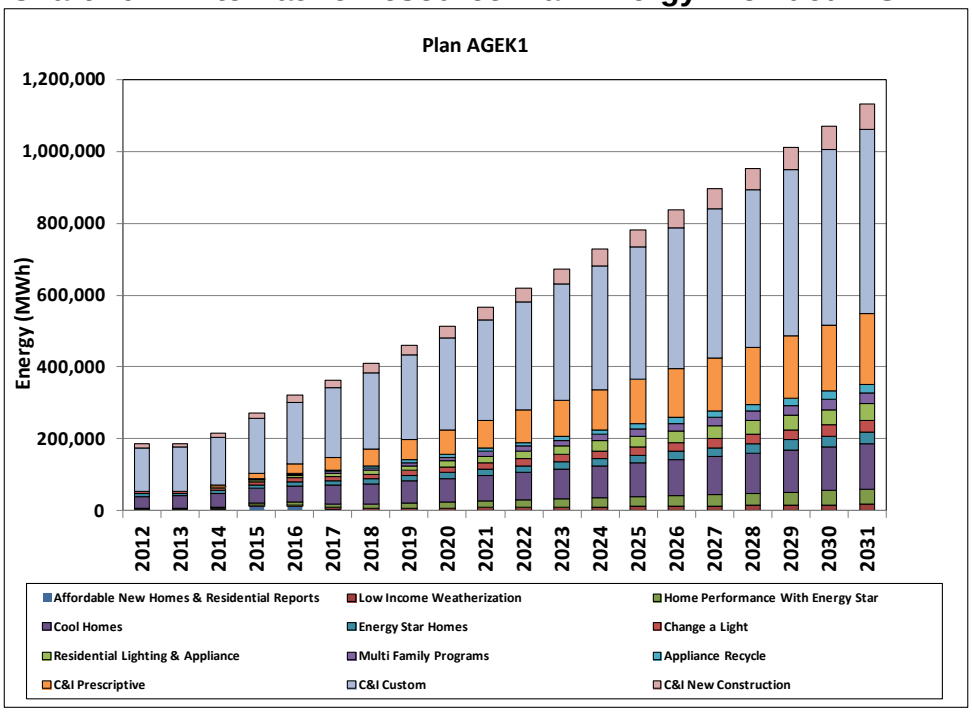


Chart 103: Alternative Resource Plan Energy Provided AGEK9

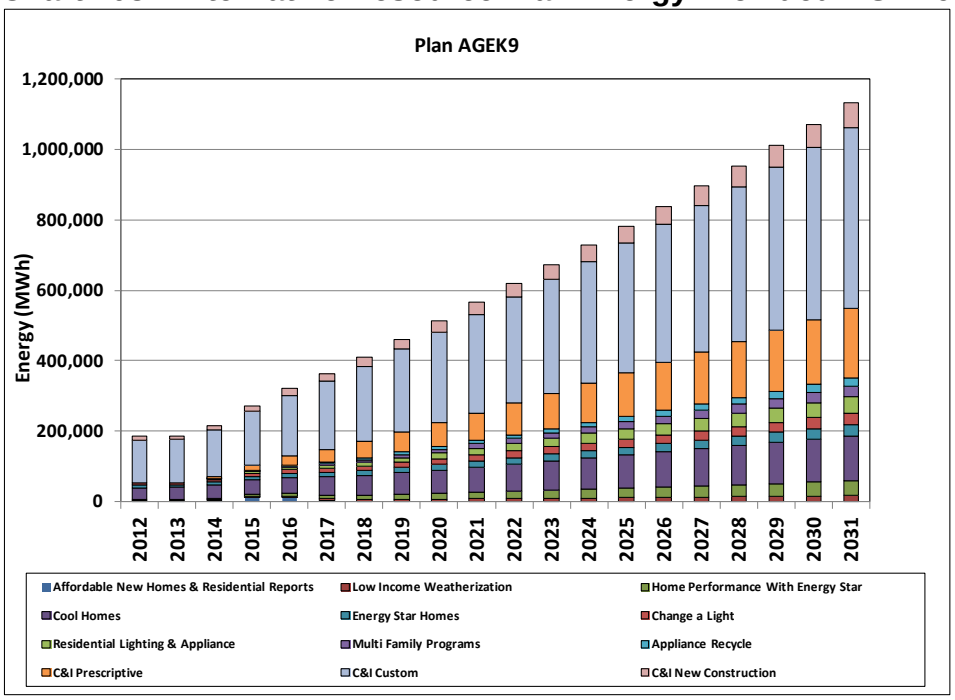


Chart 104: Alternative Resource Plan Energy Provided AIEK9

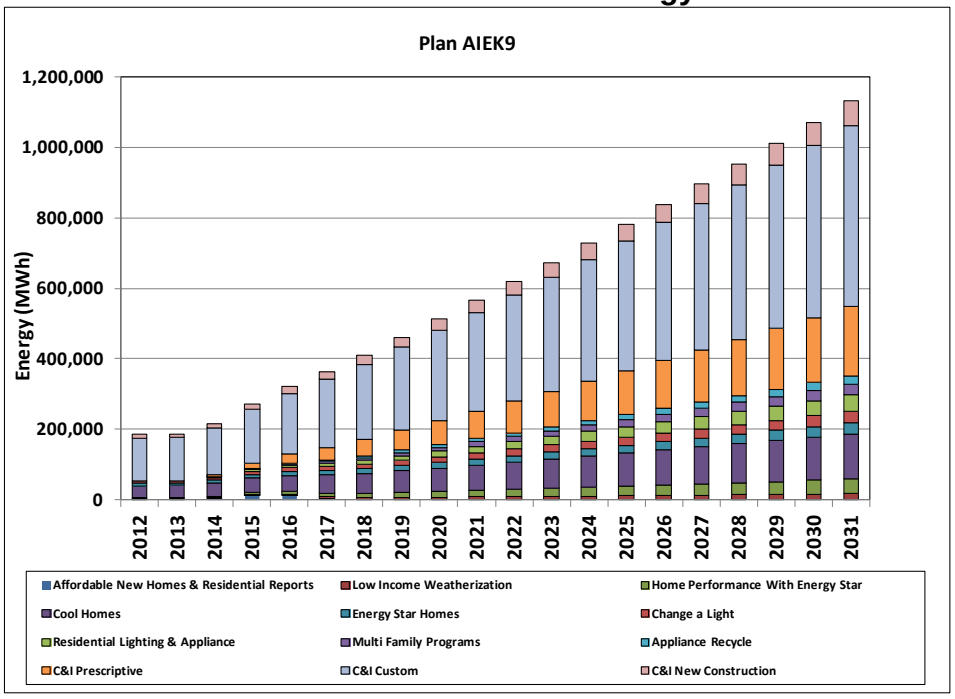


Chart 105: Alternative Resource Plan Energy Provided BBEK1

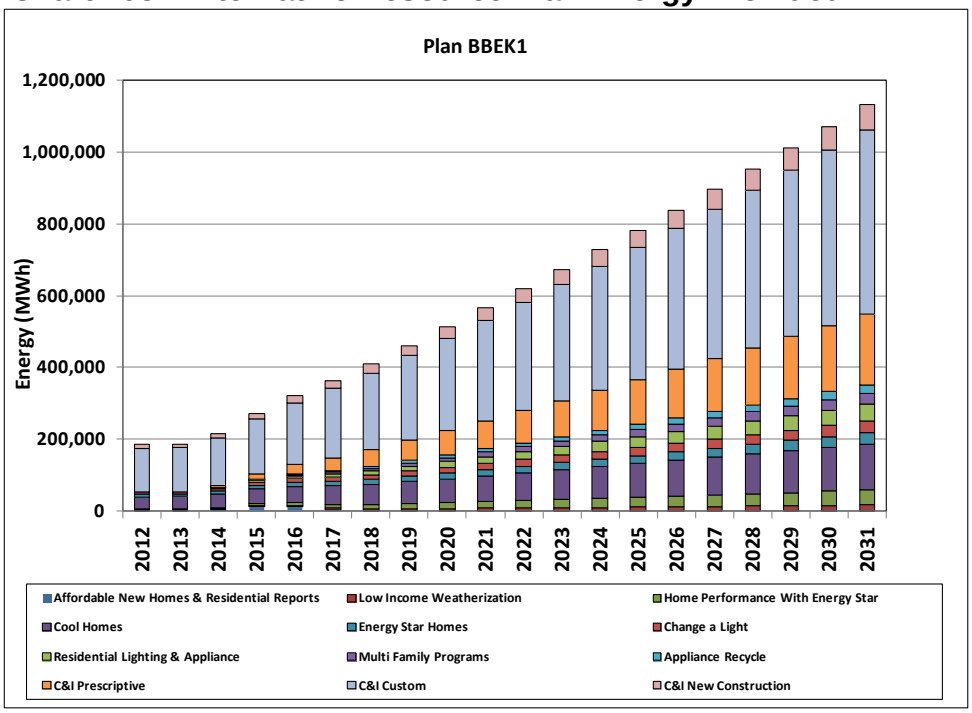
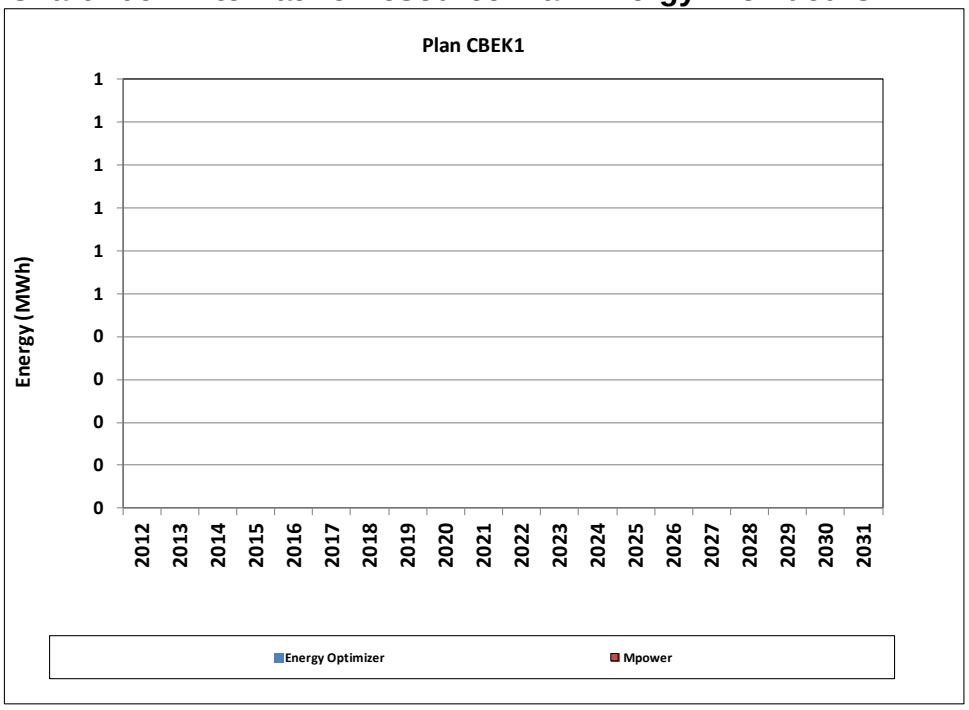


Chart 106: Alternative Resource Plan Energy Provided CBEK1



It should be noted that DSM Alternative “C” refers to Demand Response programs only. The Demand Response programs, Energy Optimizer and Mpower, do not have energy associated with them.

Chart 107: Alternative Resource Plan Energy Provided DBEK1

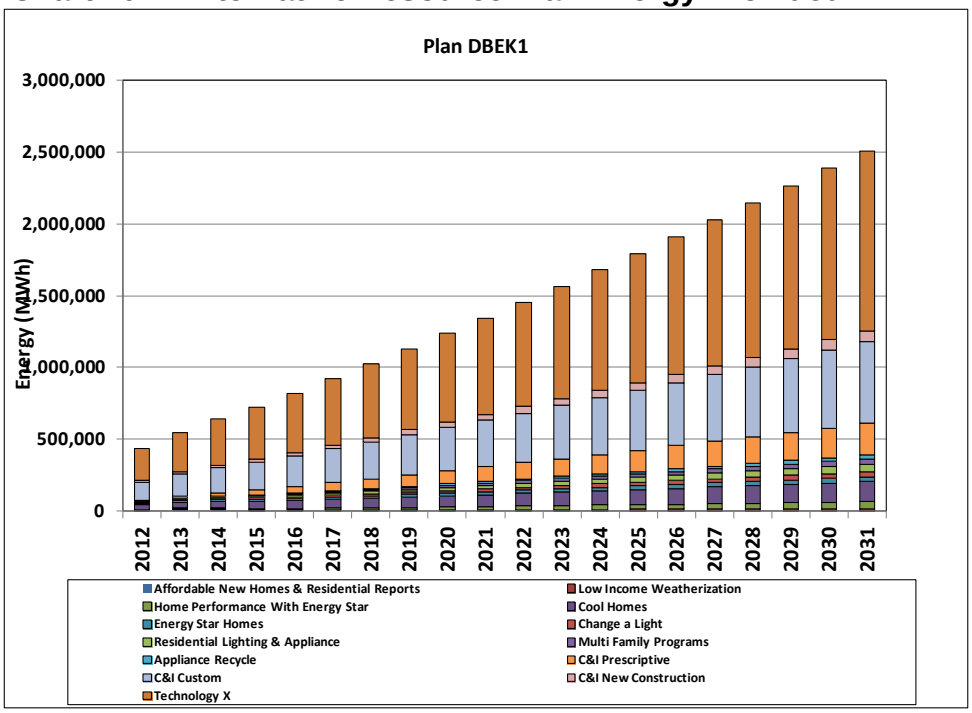


Chart 108: Alternative Resource Plan Energy Provided DCEK1

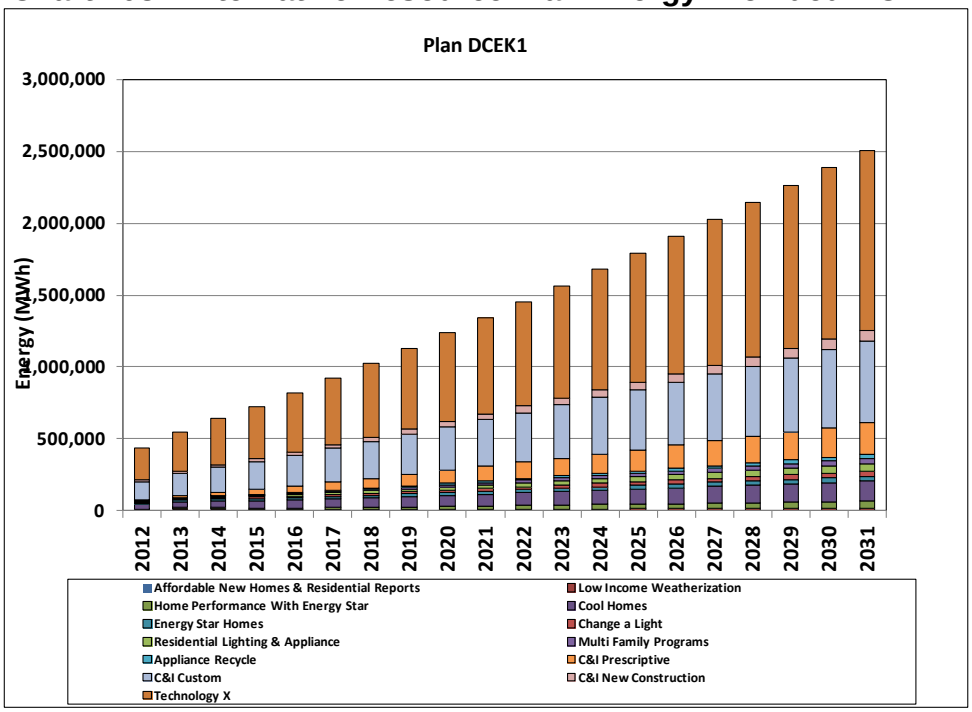


Chart 109: Alternative Resource Plan Energy Provided EBEK1

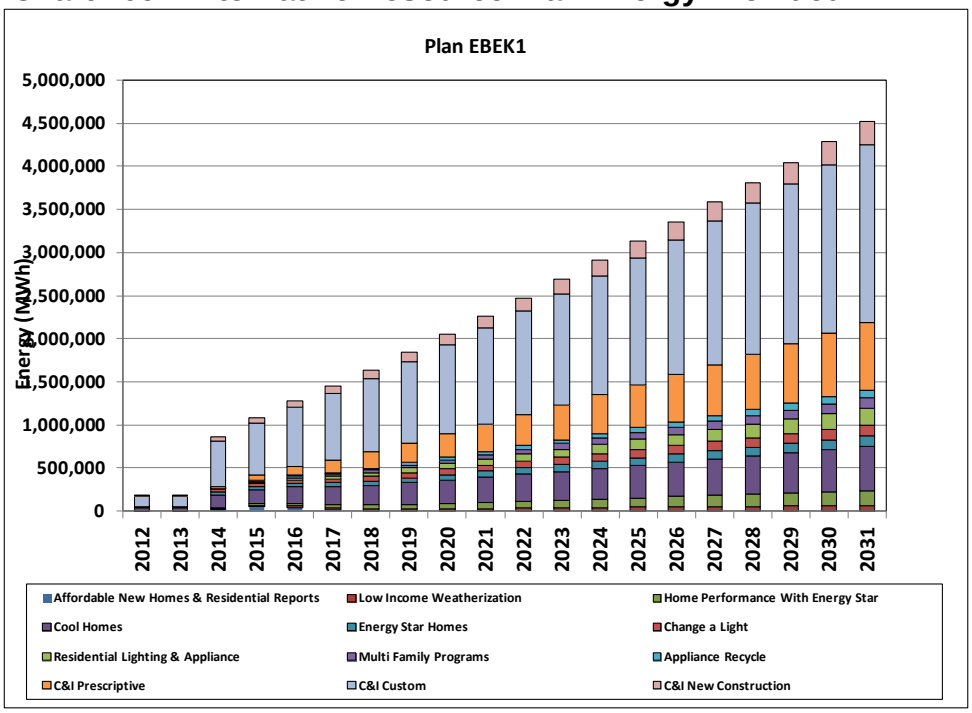
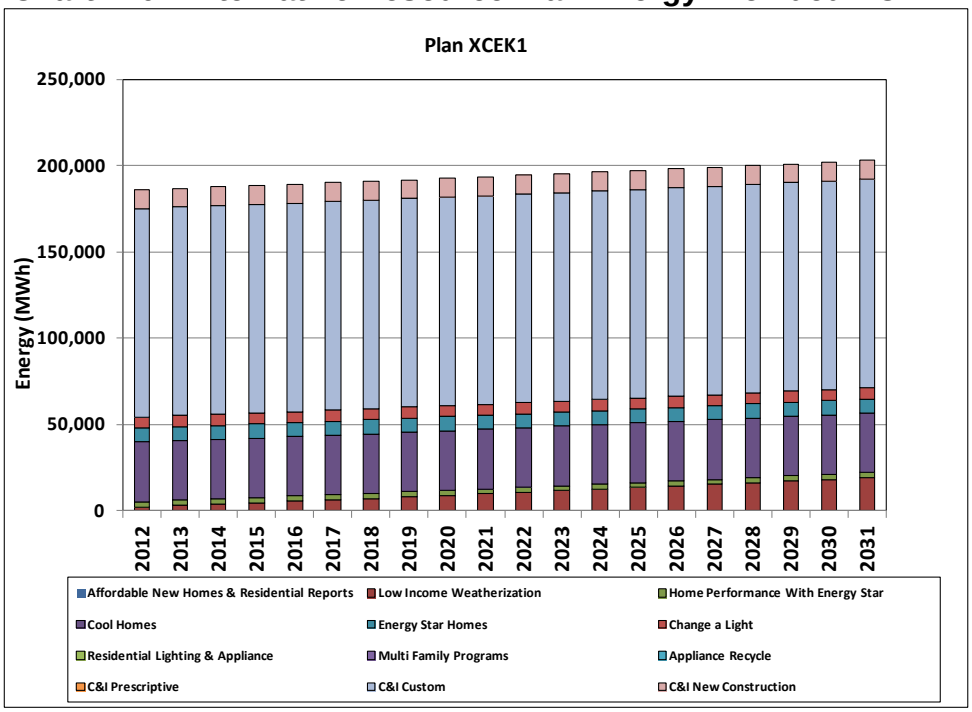


Chart 110: Alternative Resource Plan Energy Provided XCEK1



6. The composition, by supply-side resource, of the annual energy supplied to the transmission grid, less losses, provided by supply-side resources. Existing supply-side resources may be shown as a single resource;

The following charts detail the expected-value composition by supply-side resource of all energy generated by the assets included in each plan and supplied to the transmission grid. No allowances are developed for "losses" as it is not possible to determine the exact source of energy for a particular lost megawatt-hour of energy.

Chart 111: Annual Generation AAAK1

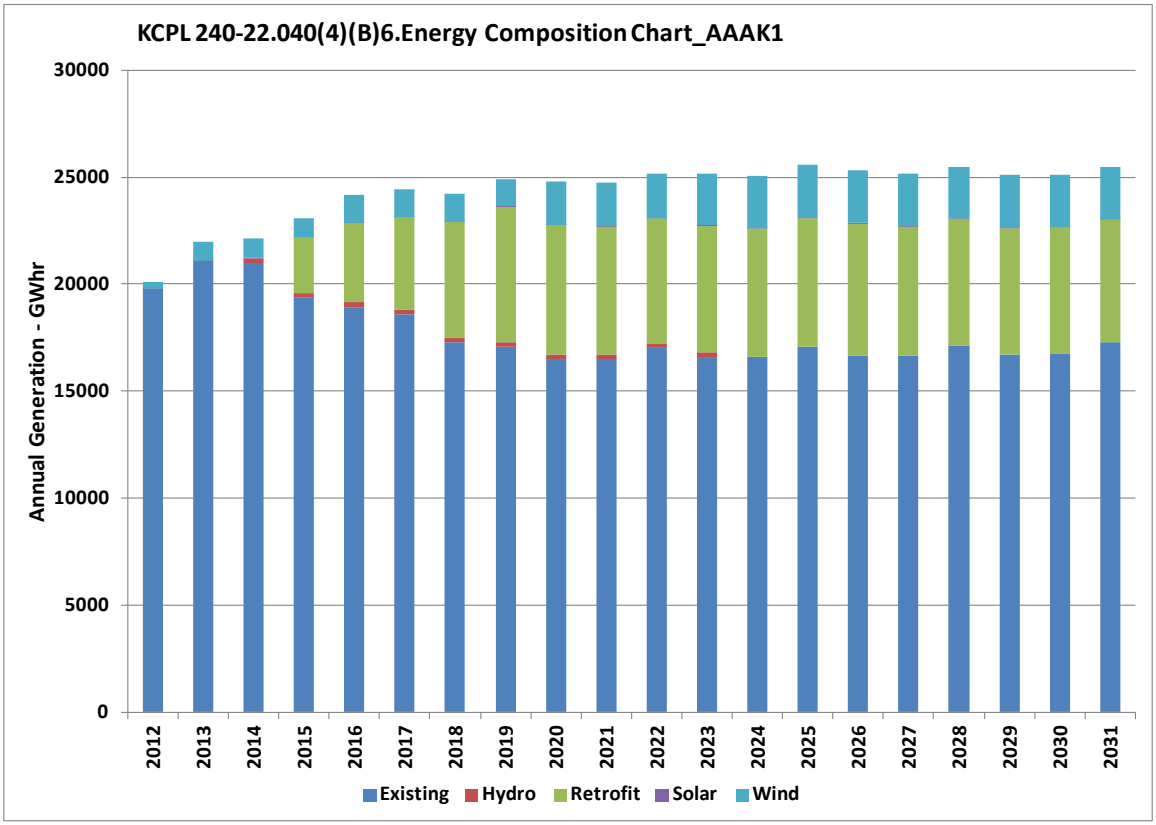


Chart 112: Annual Generation AAAK9

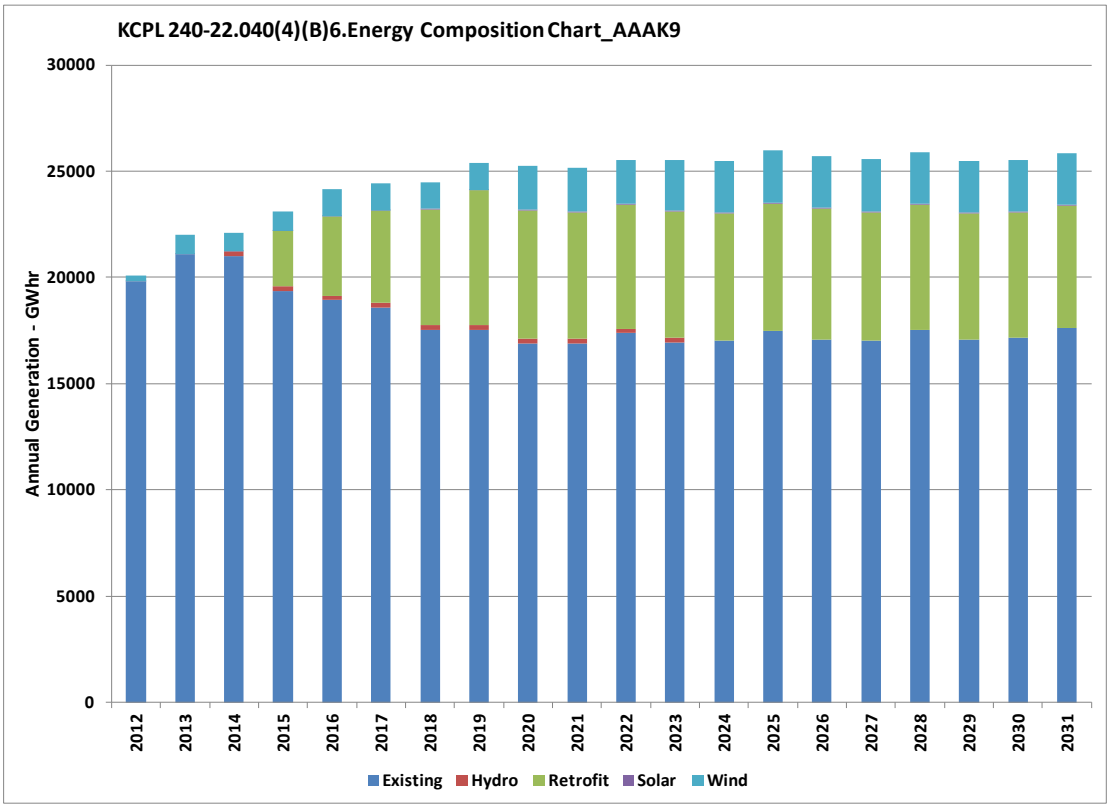


Chart 113: Annual Generation ABEK1

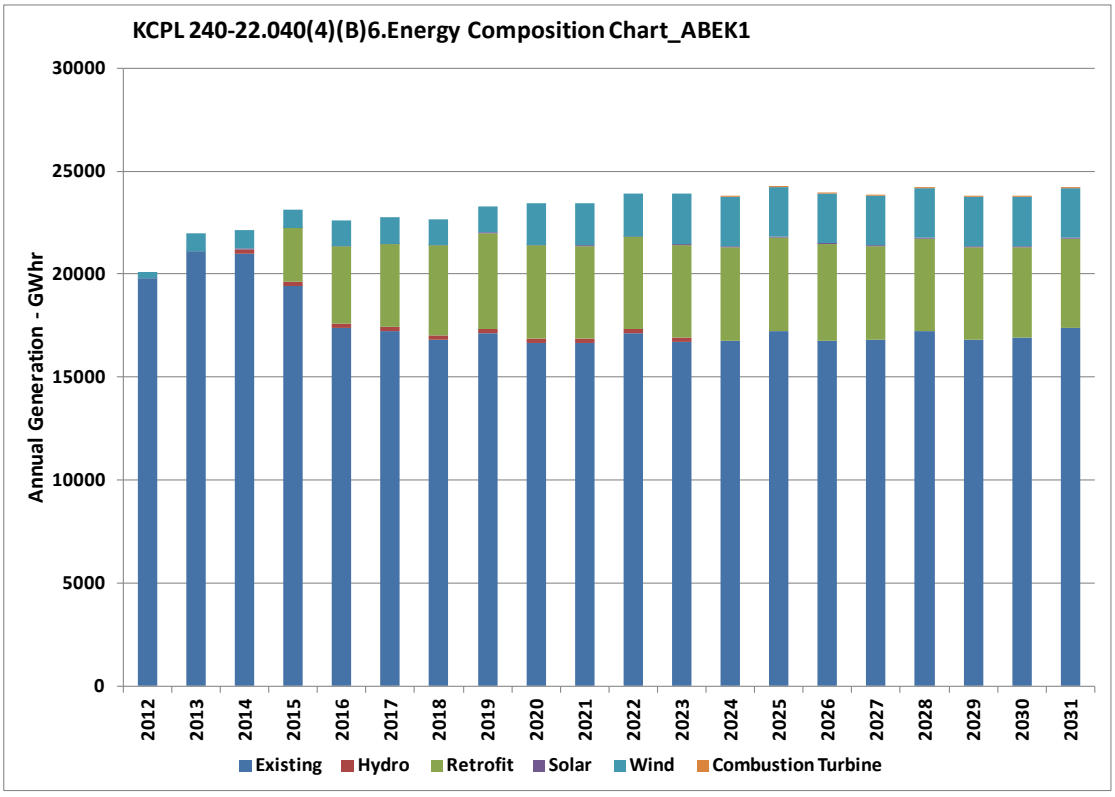


Chart 114: Annual Generation ABEK2

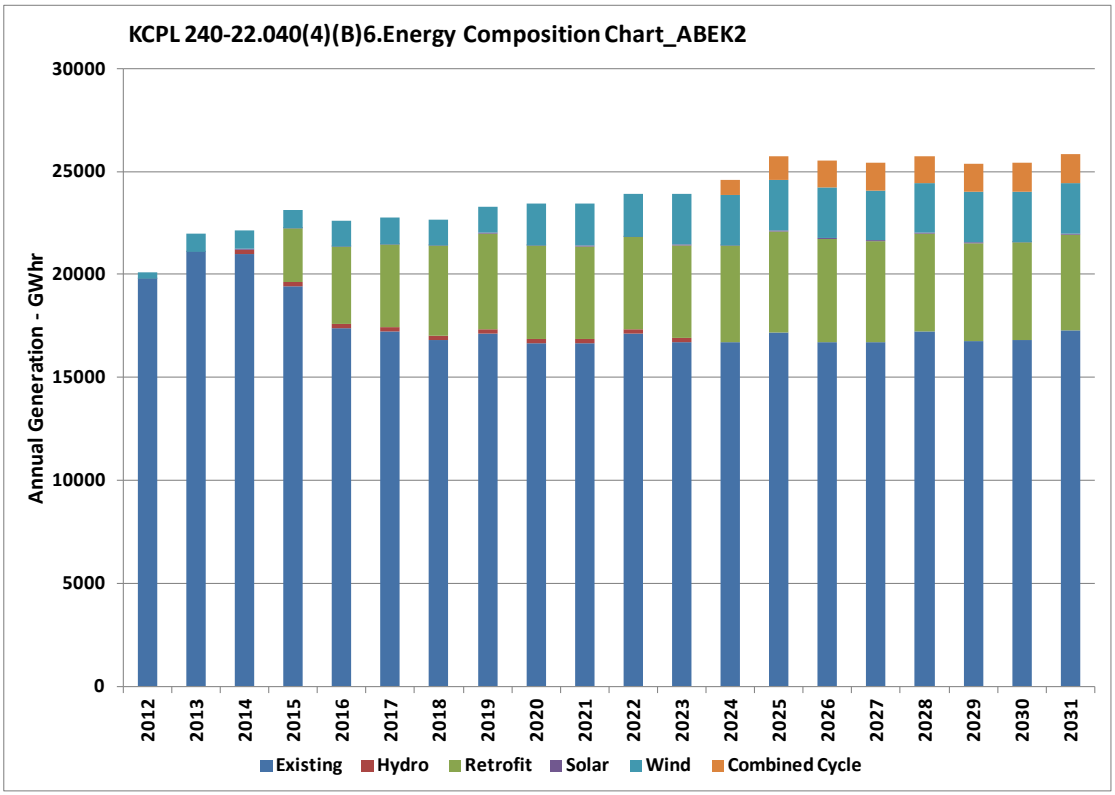


Chart 115: Annual Generation ABEK4

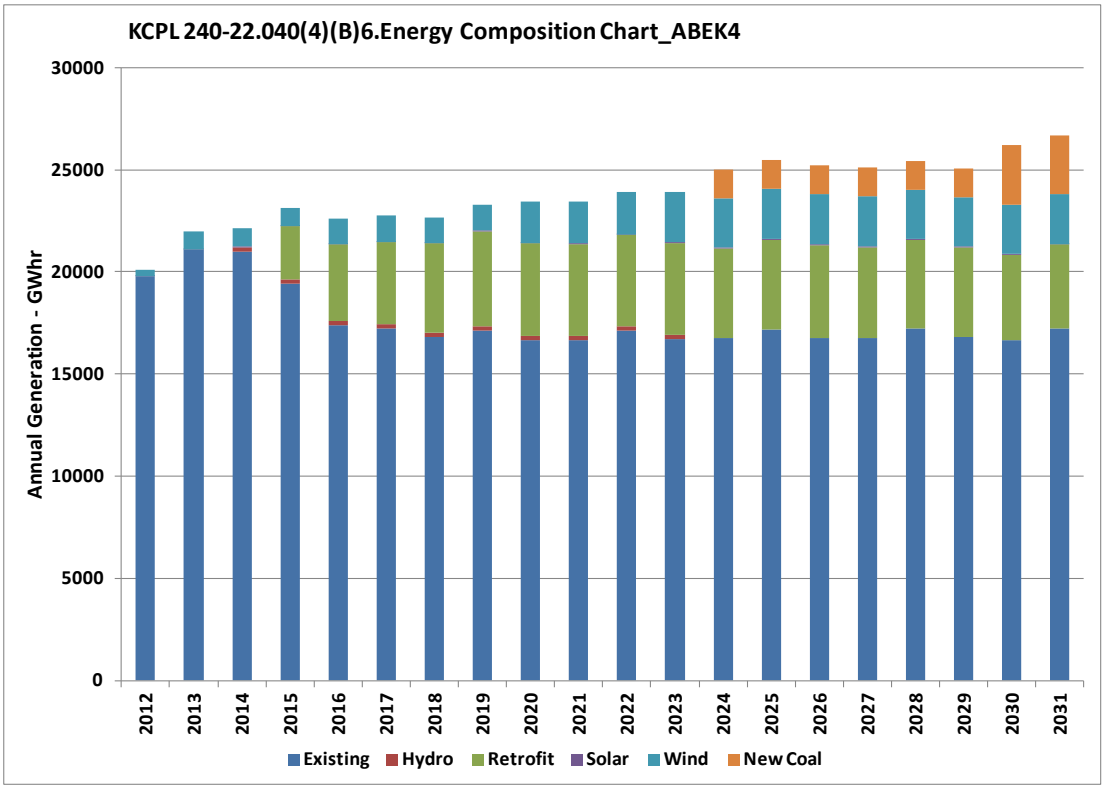


Chart 116: Annual Generation ABEK5

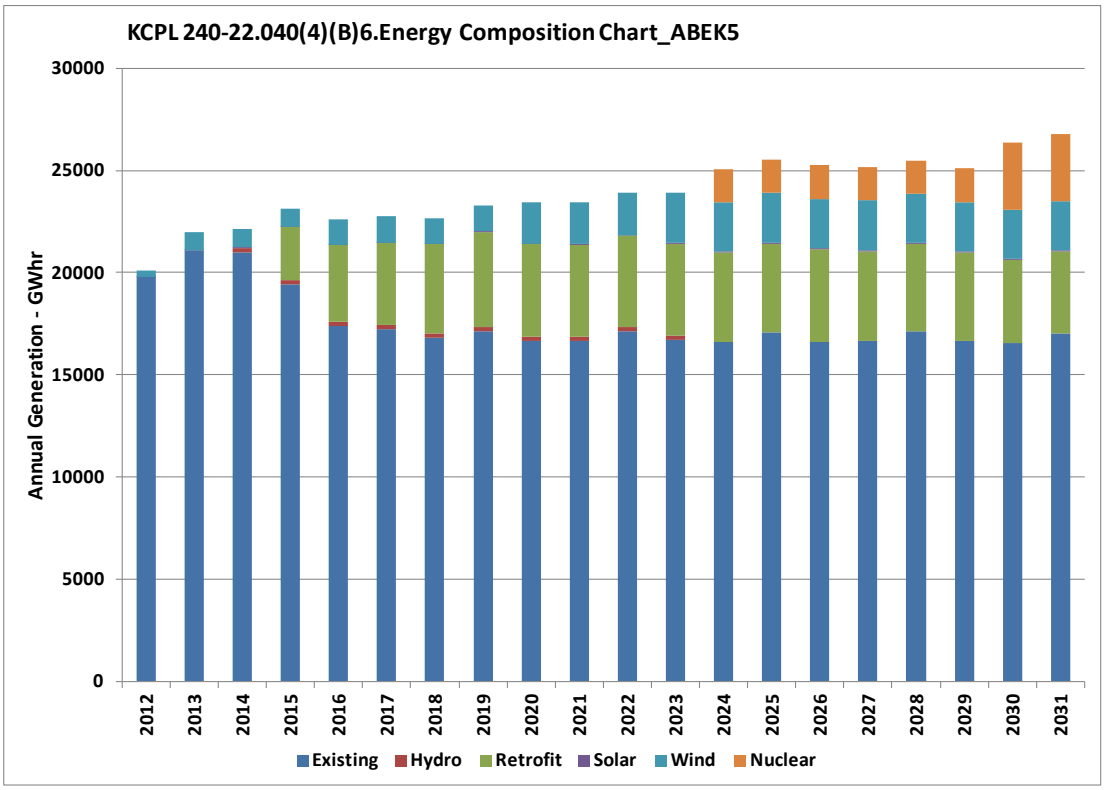


Chart 117: Annual Generation ABEK6

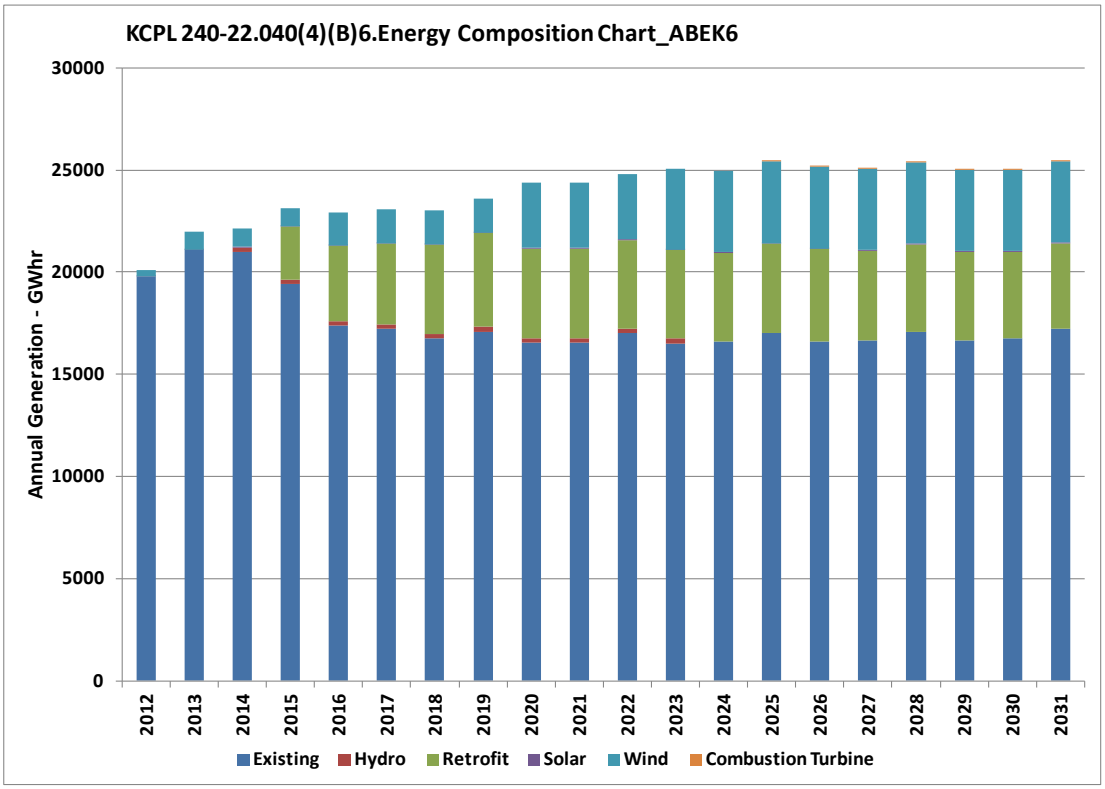


Chart 118: Annual Generation ABEK7

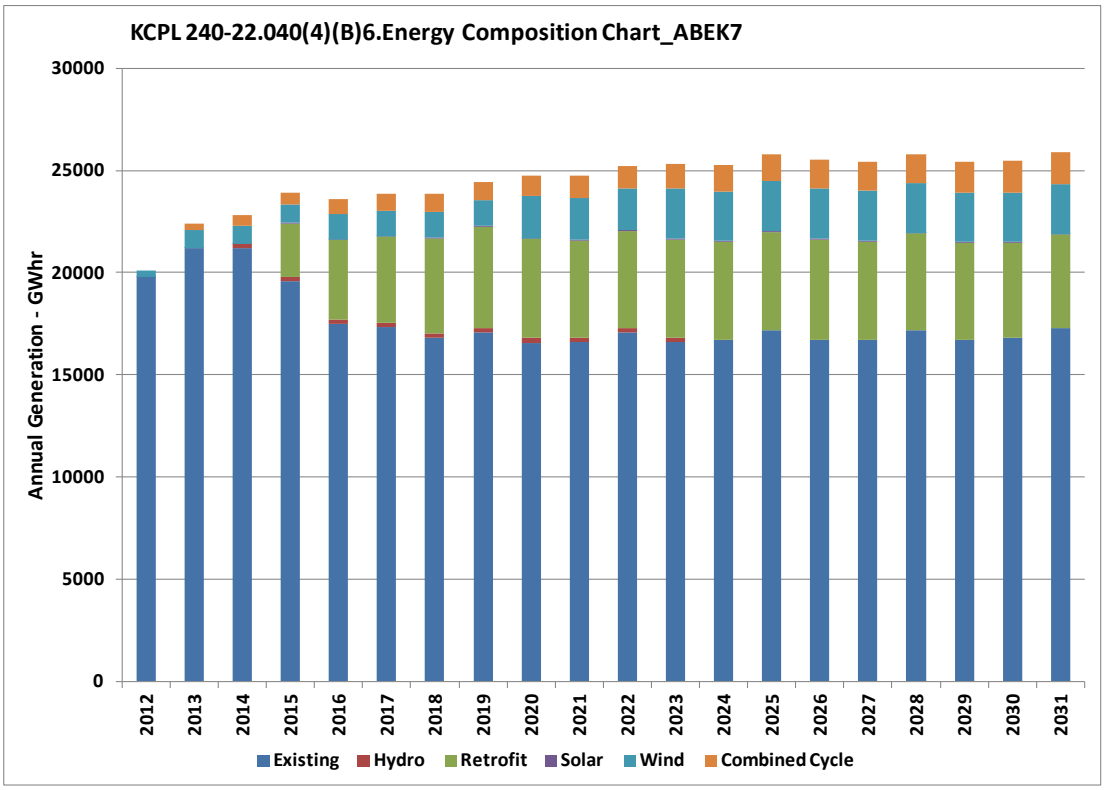


Chart 119: Annual Generation ACEK1

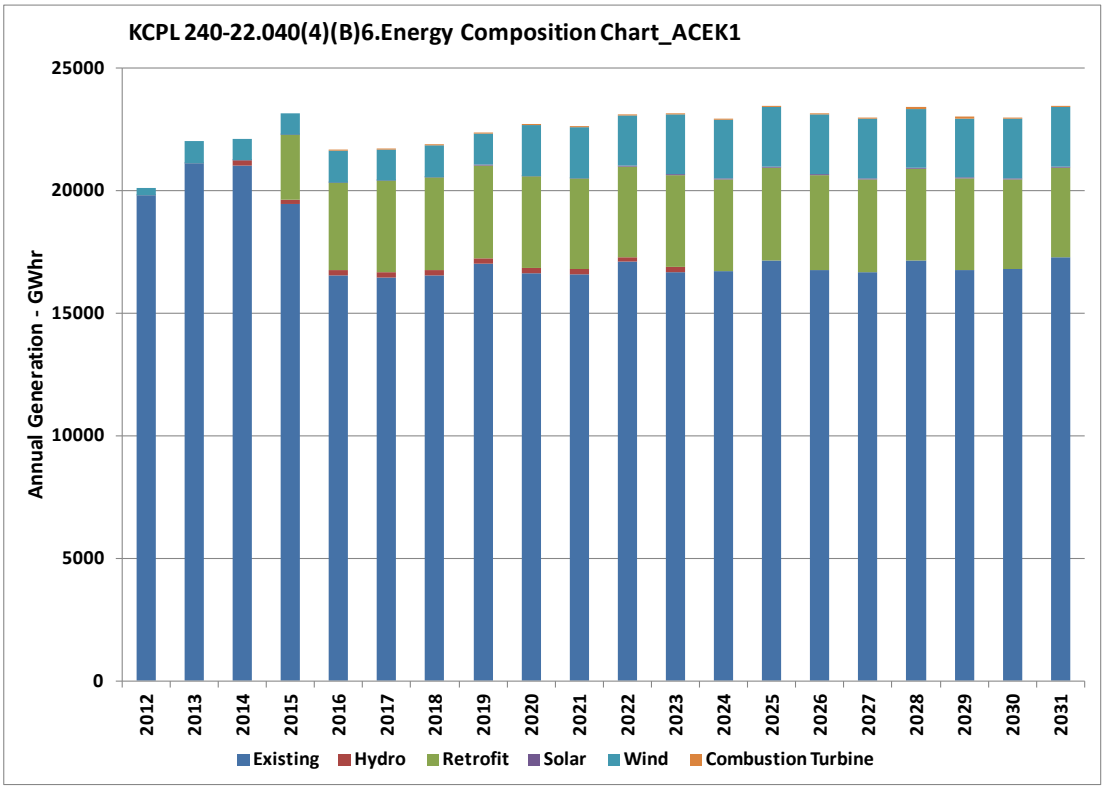


Chart 120: Annual Generation ACEK2

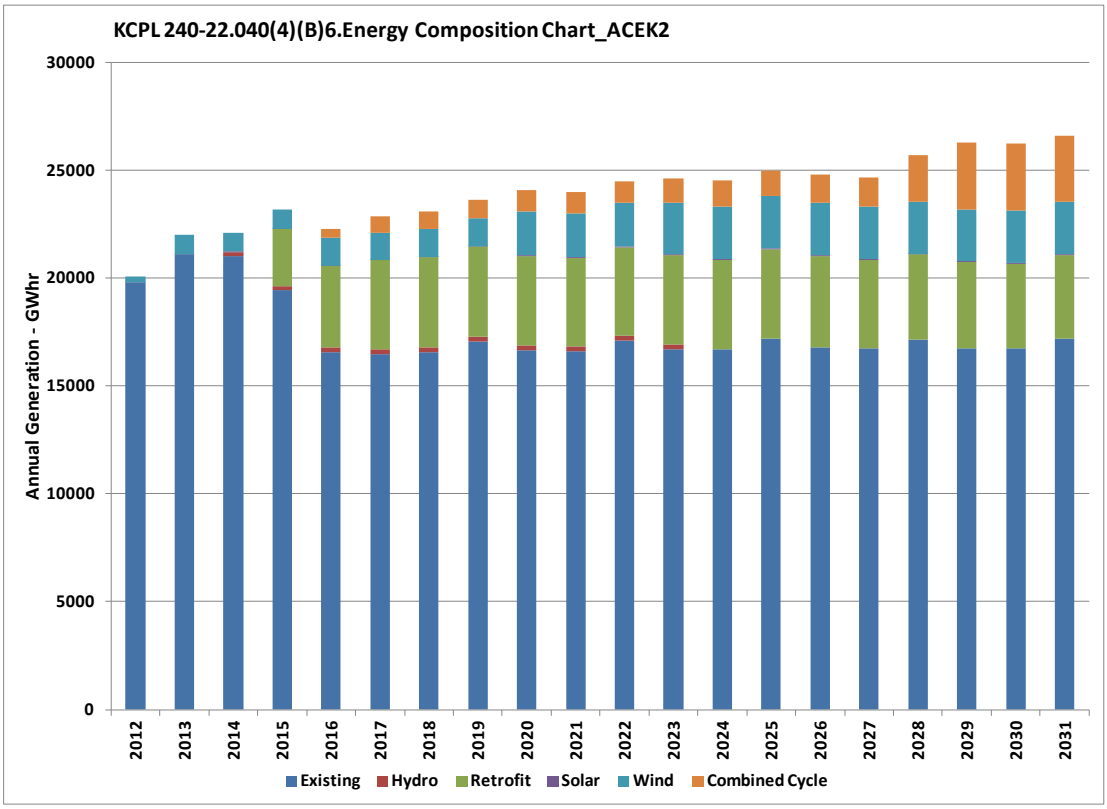


Chart 121: Annual Generation ADDK1

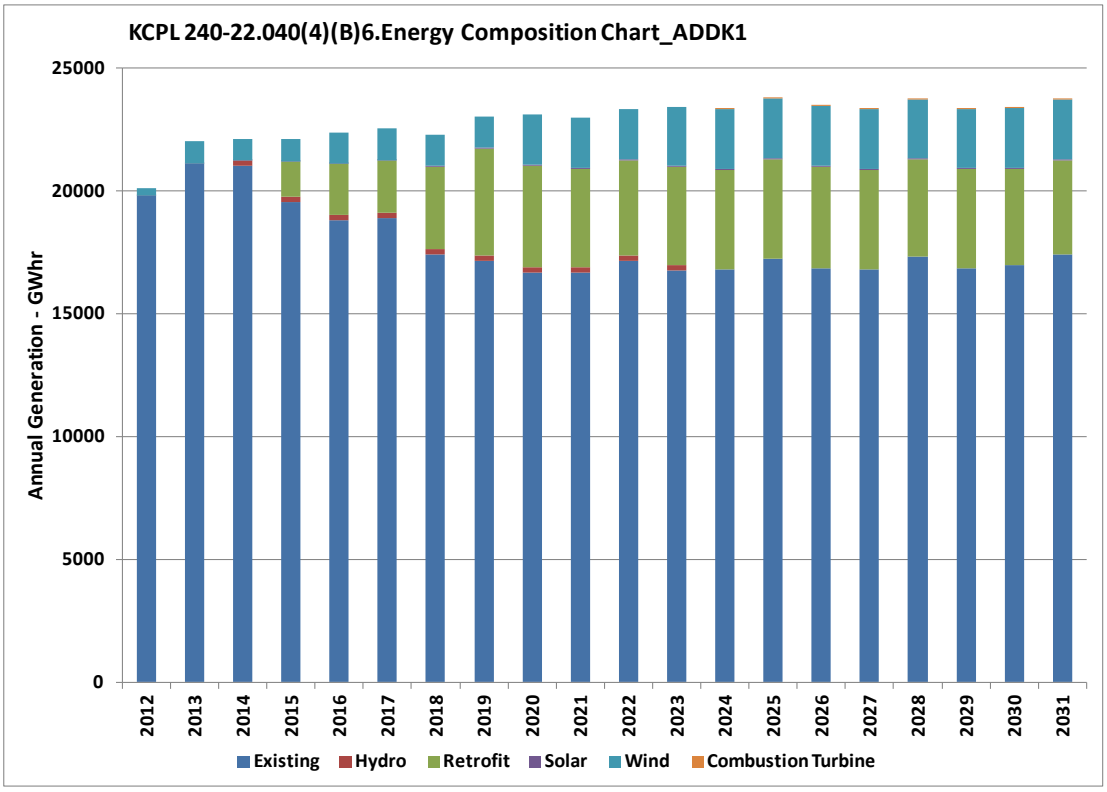


Chart 122: Annual Generation AEDK1

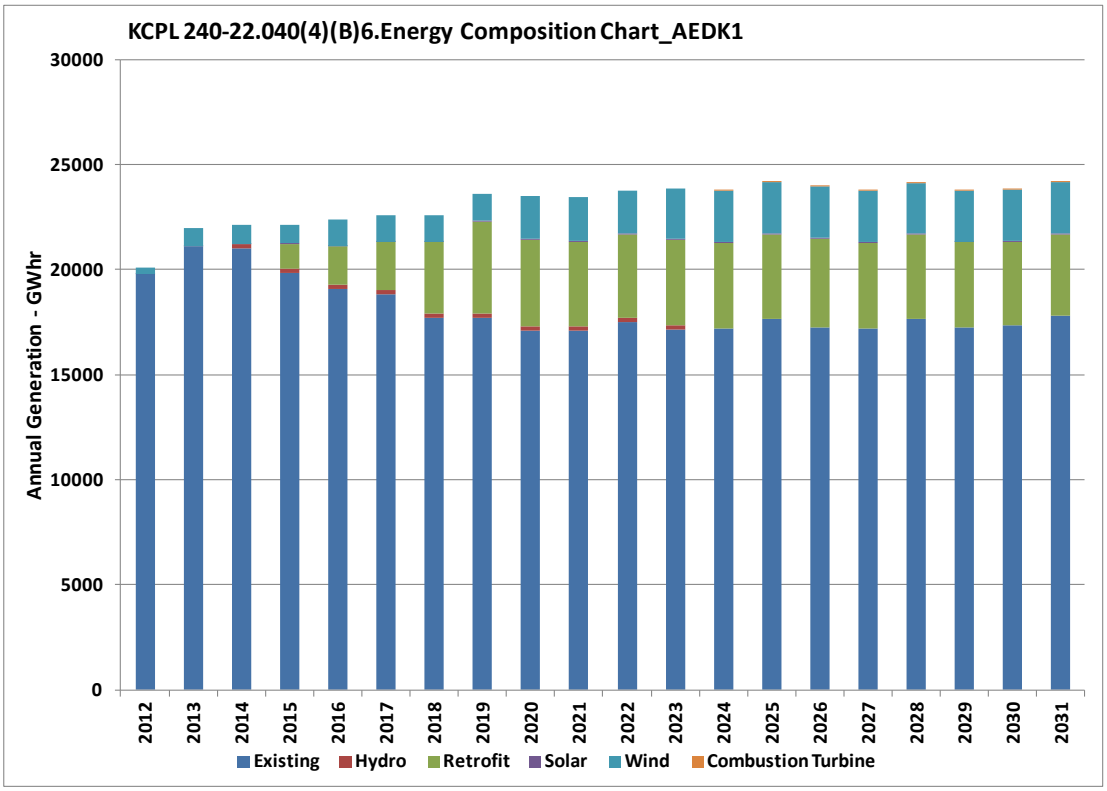


Chart 123: Annual Generation AFDK1

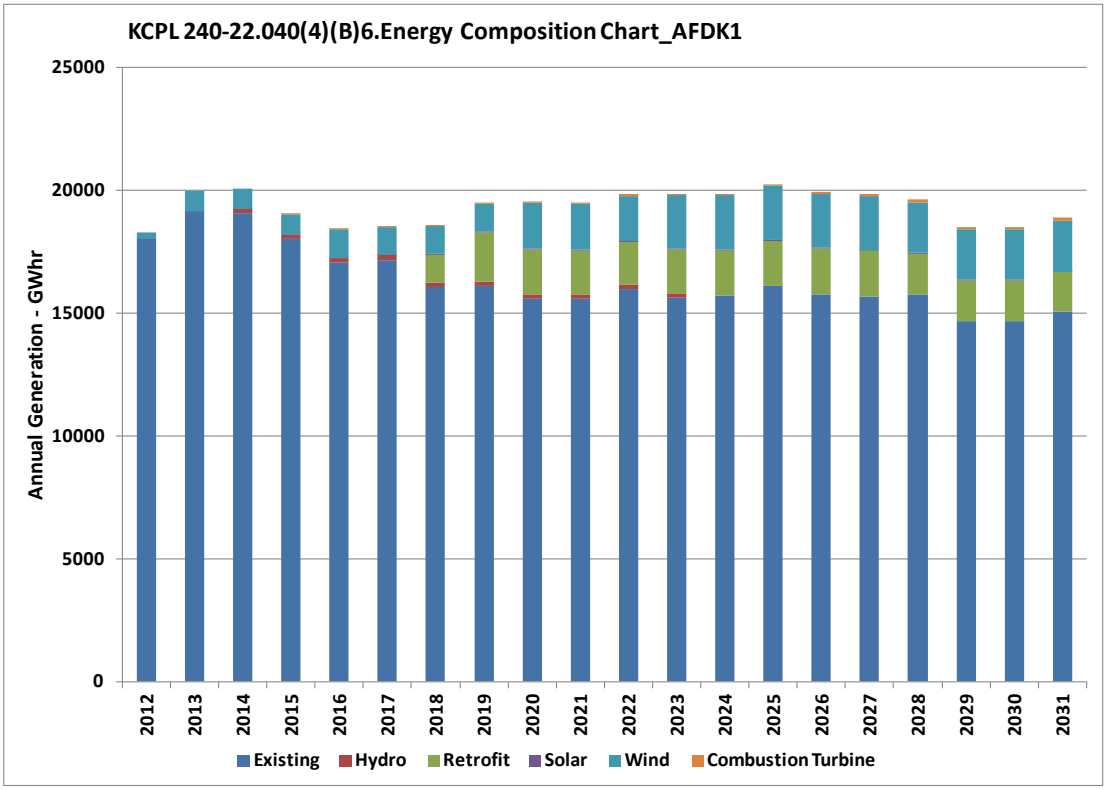


Chart 124: Annual Generation AGEK1

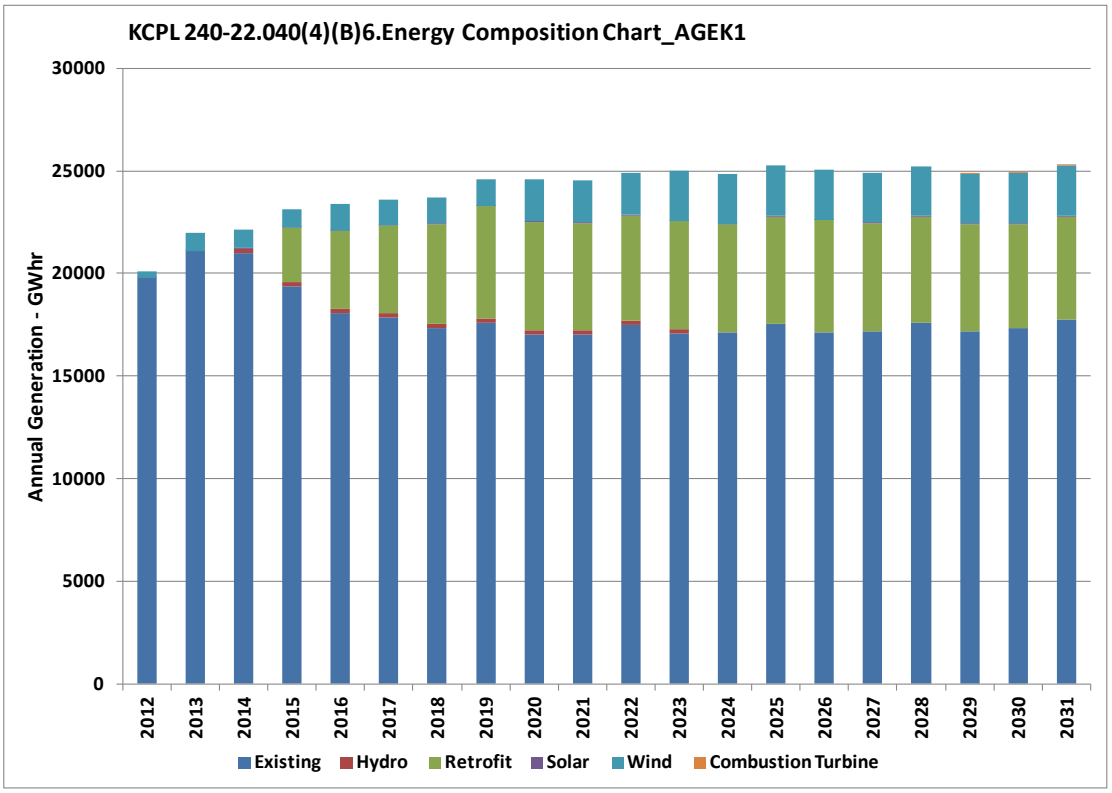


Chart 125: Annual Generation AGEK9

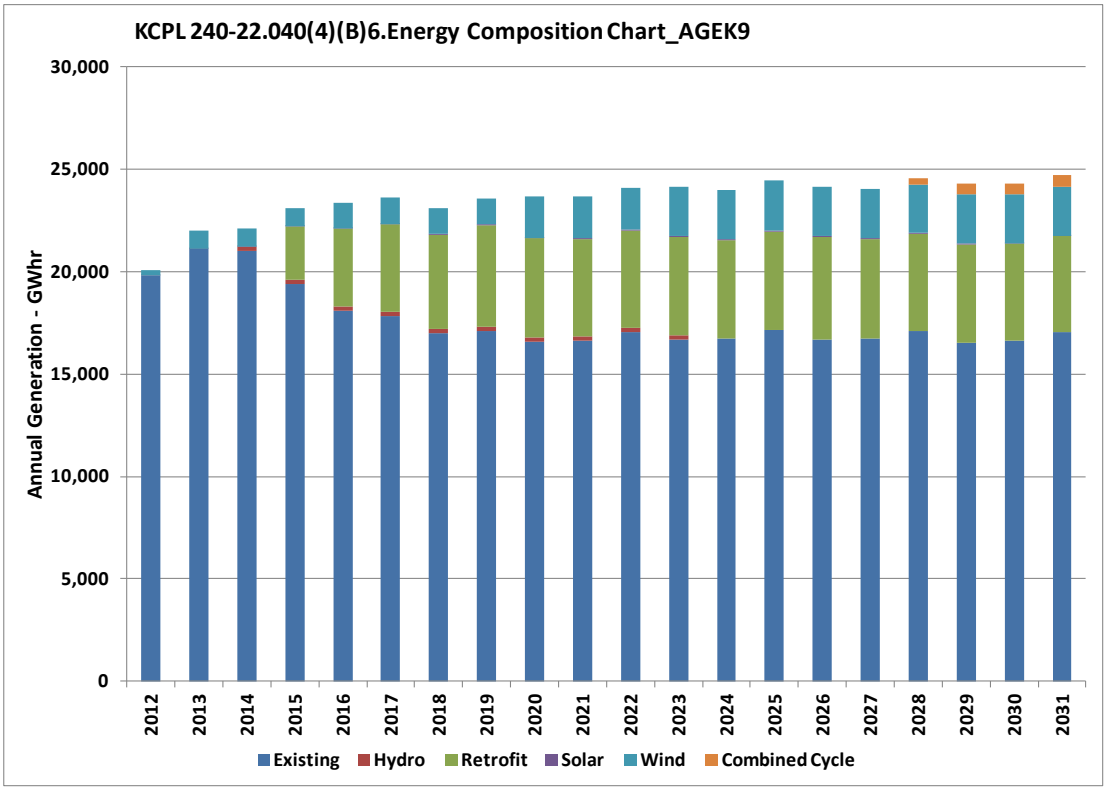


Chart 126: Annual Generation AIEK9

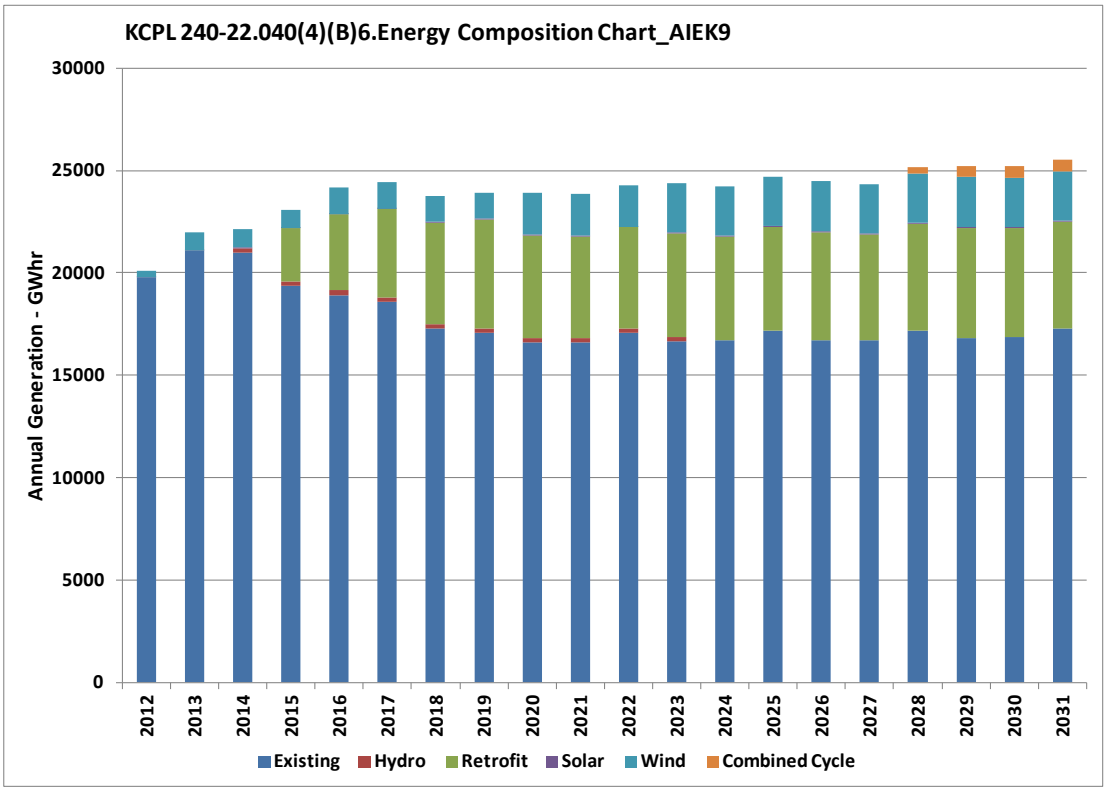


Chart 127: Annual Generation BBBK1

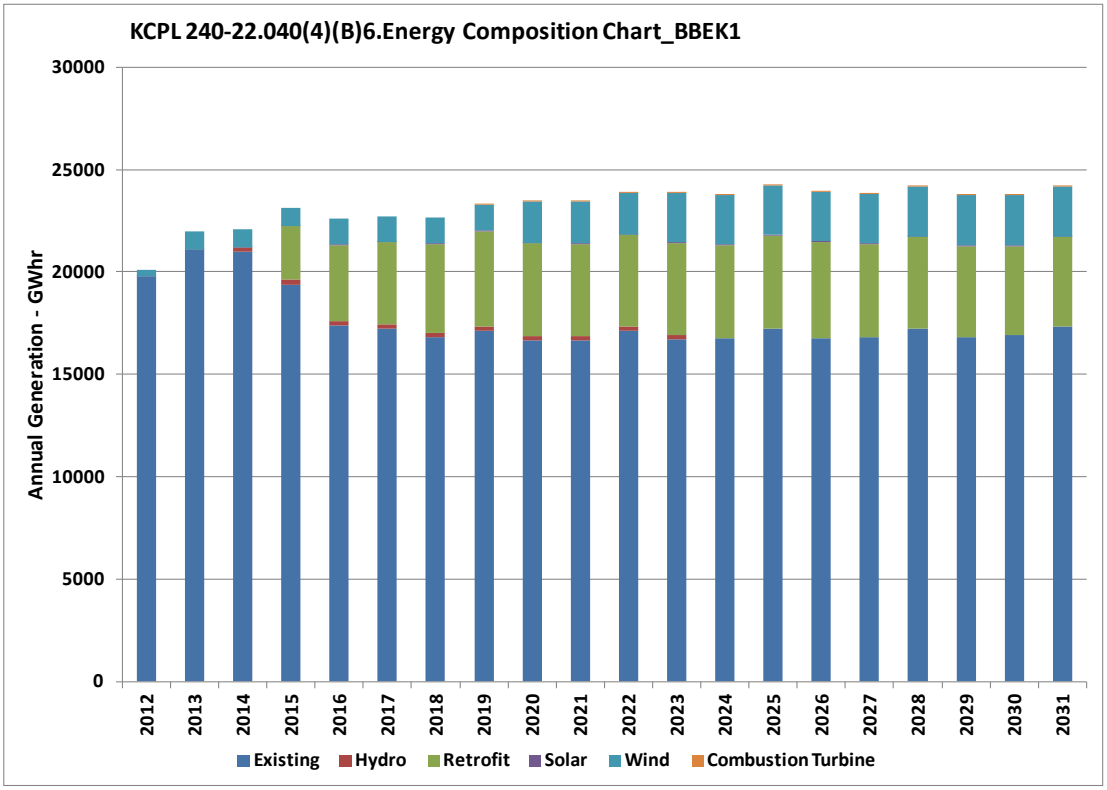


Chart 128: Annual Generation CBEK1

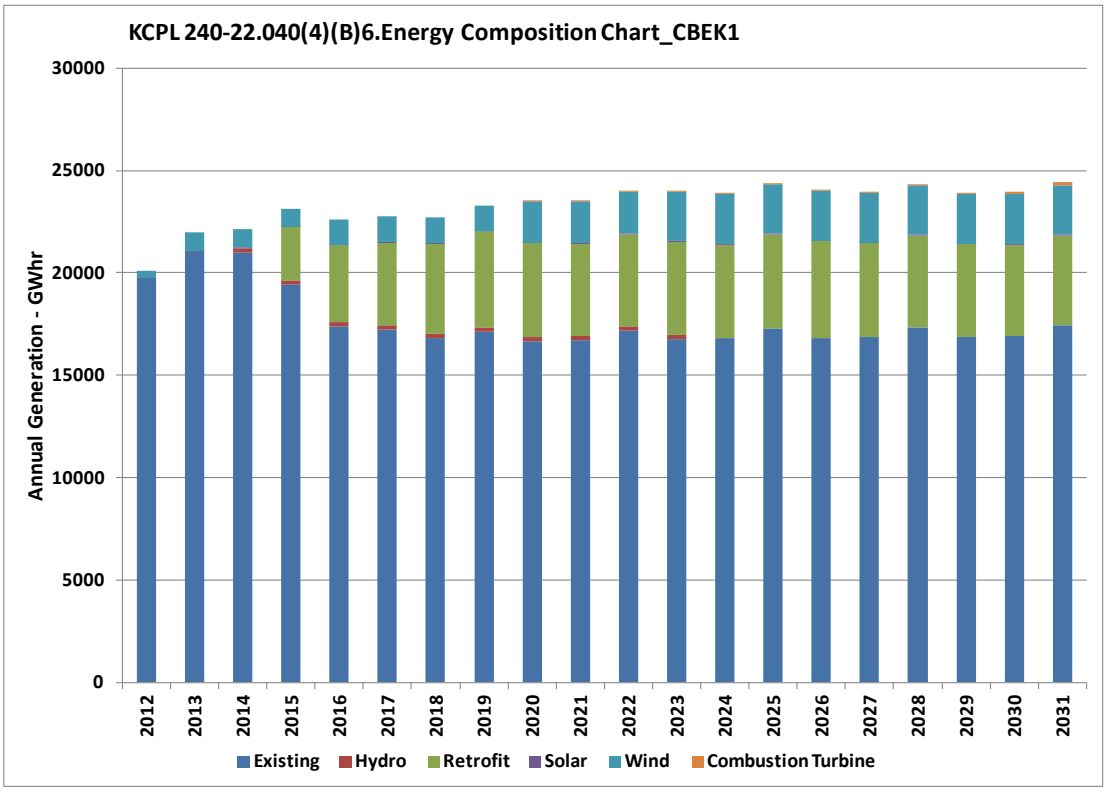


Chart 129: Annual Generation DBEK1

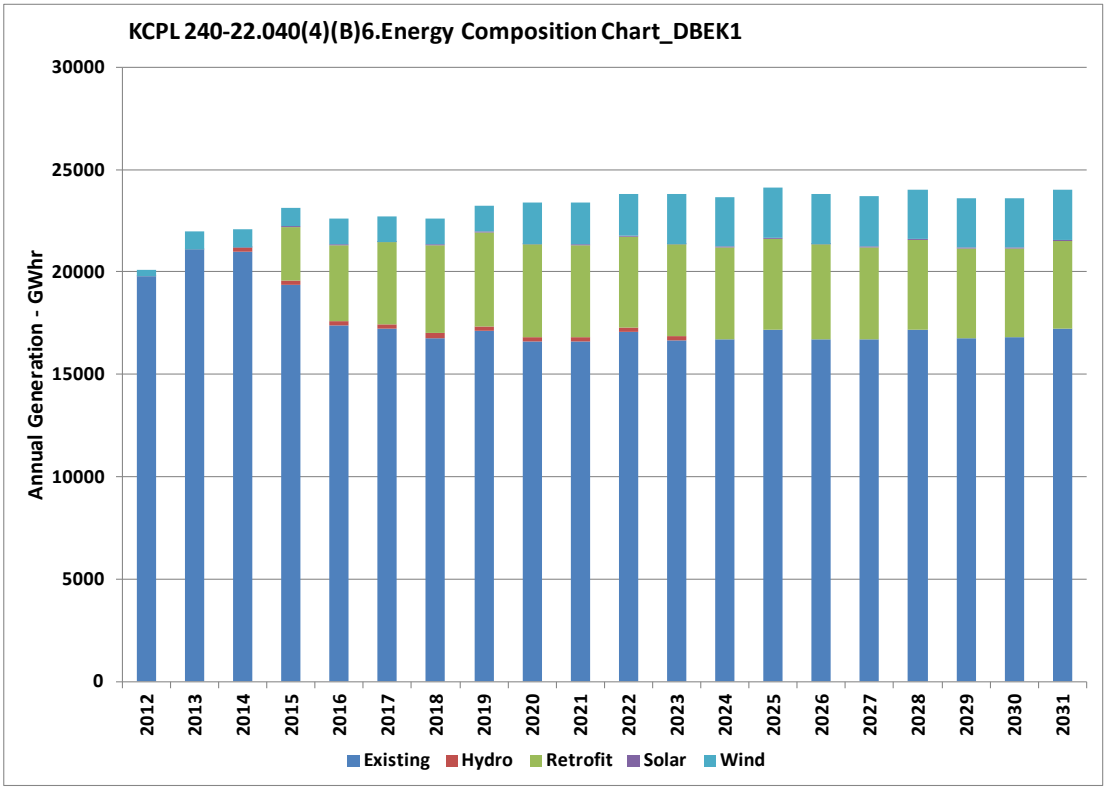


Chart 130: Annual Generation DCEK1

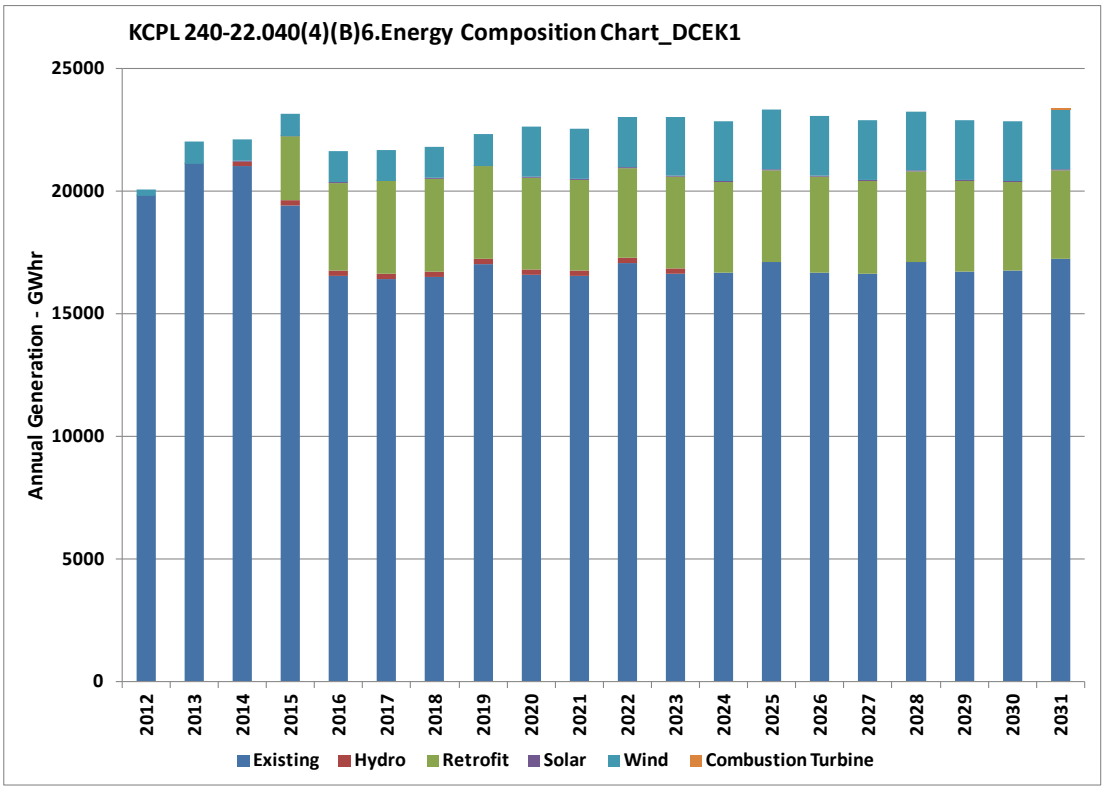


Chart 131: Annual Generation EBEK1

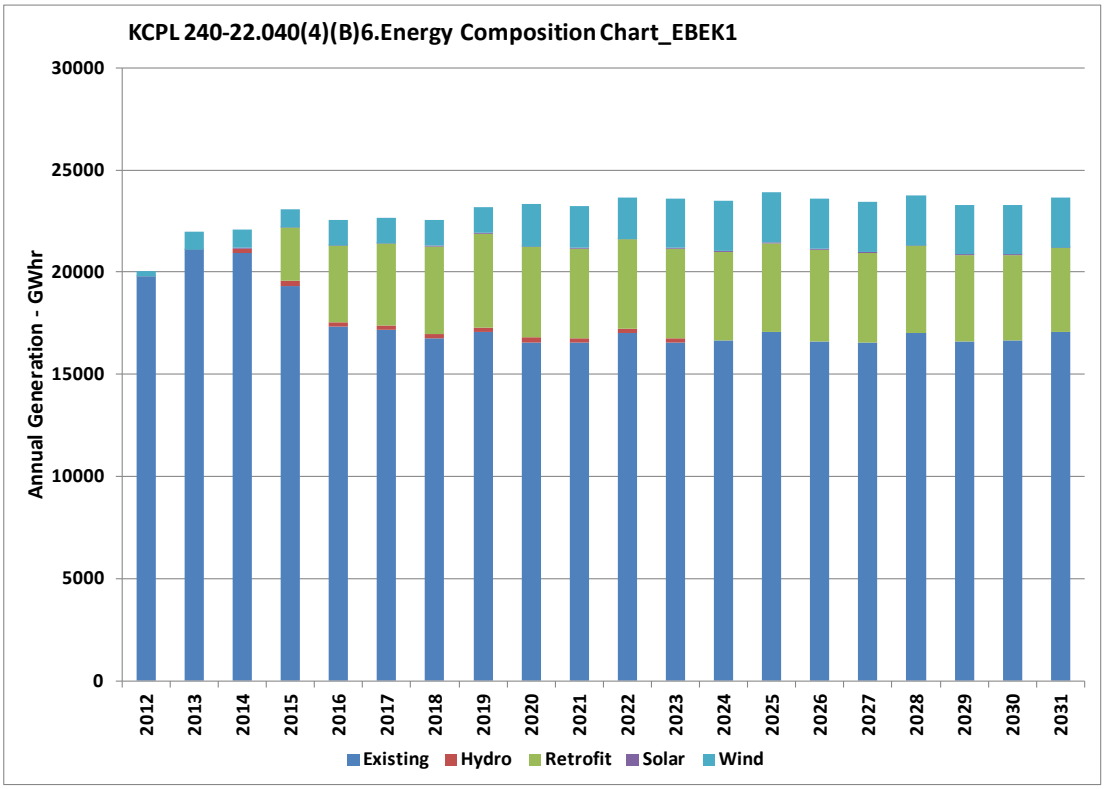
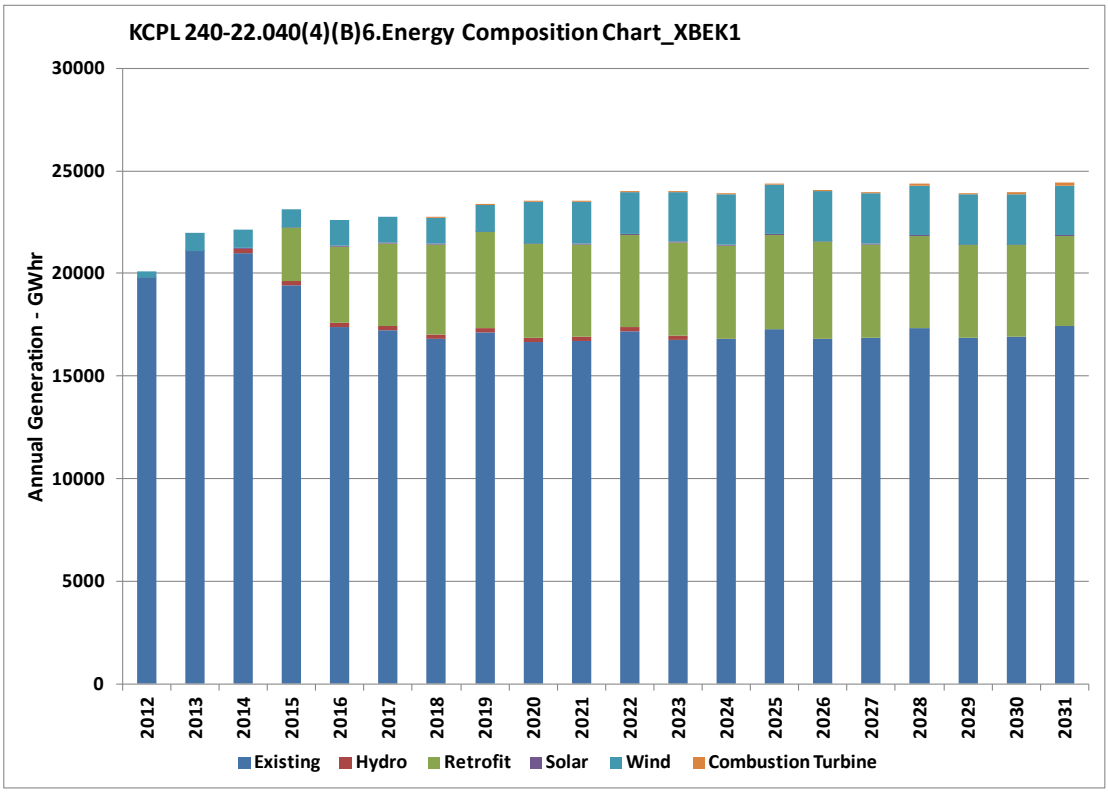


Chart 132: Annual Generation XBEK1



7. Annual emissions of each environmental pollutant identified pursuant to 4 CSR 240-22.040(2)(B);

The following charts detail the expected value of annual emissions in each alternative resource plan.

Chart 133: Annual Emissions - AAAK1

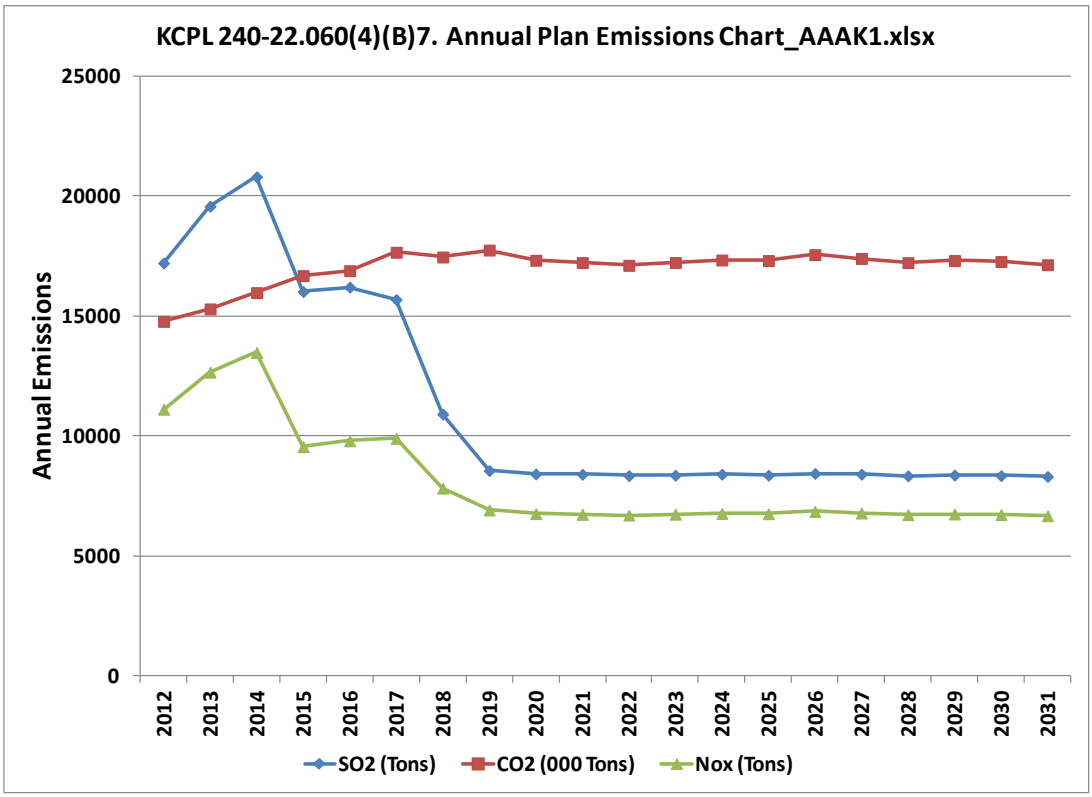


Chart 134: Annual Emissions AAAK9

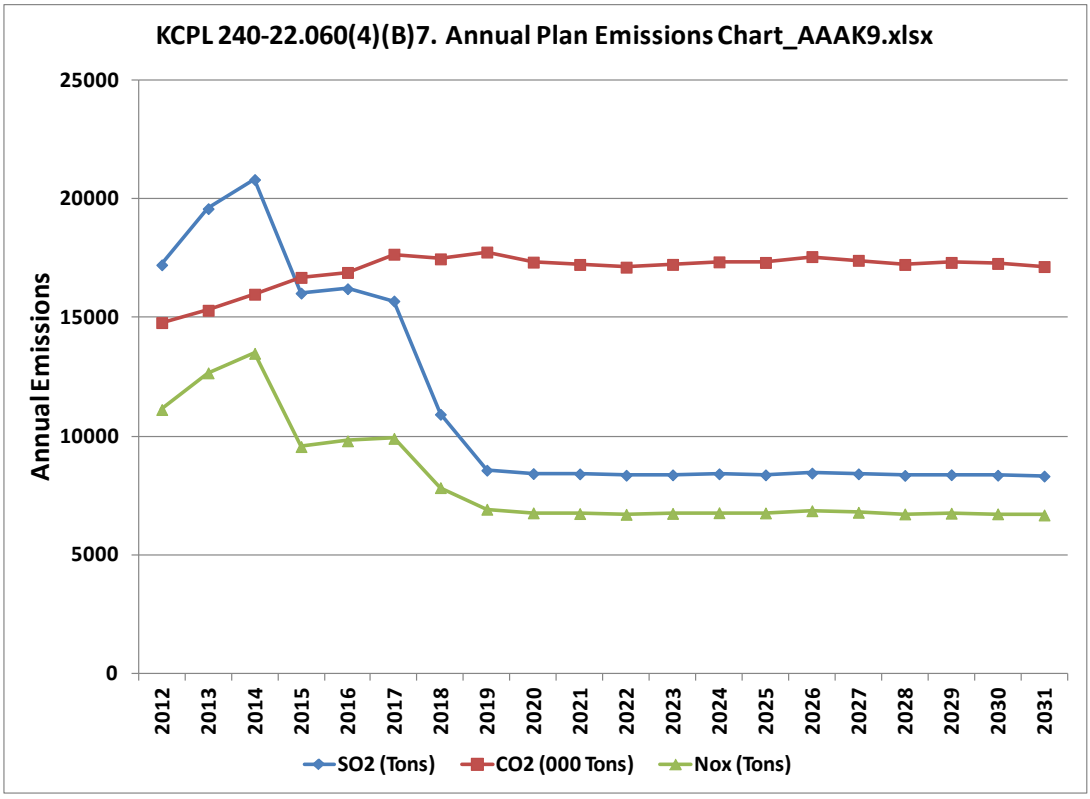


Chart 135: Annual Emissions ABEK1

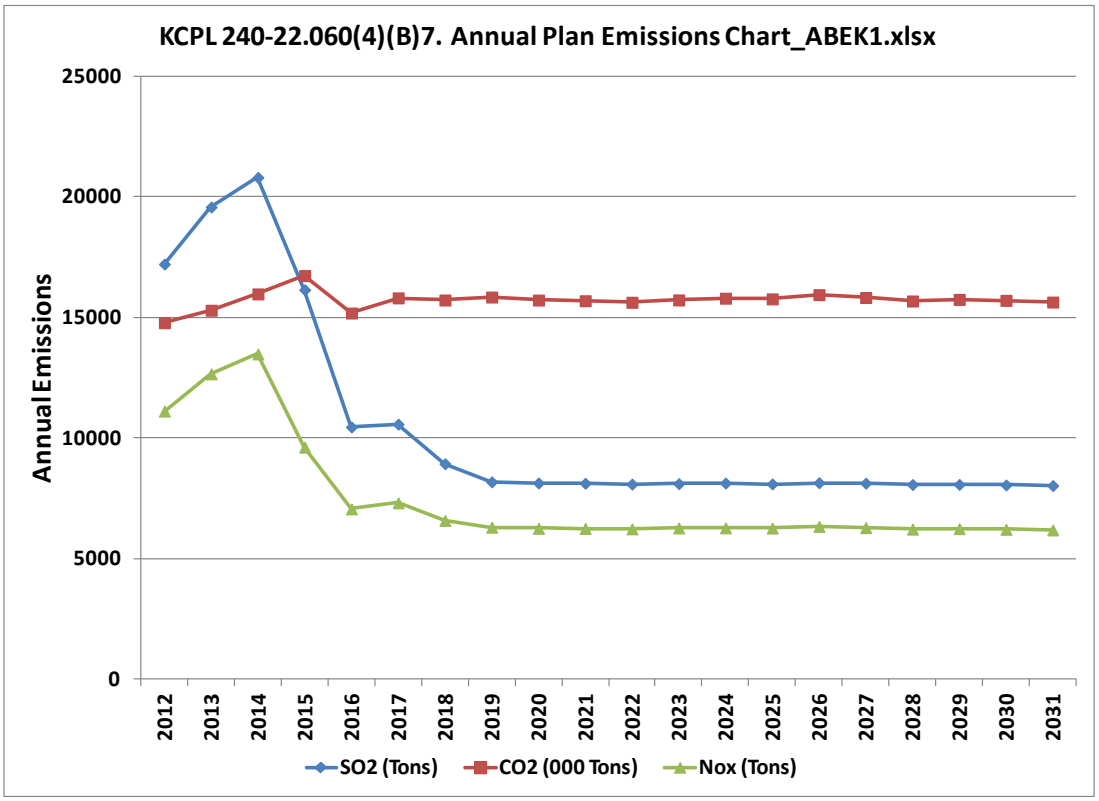


Chart 136: Annual Emissions ABEK2

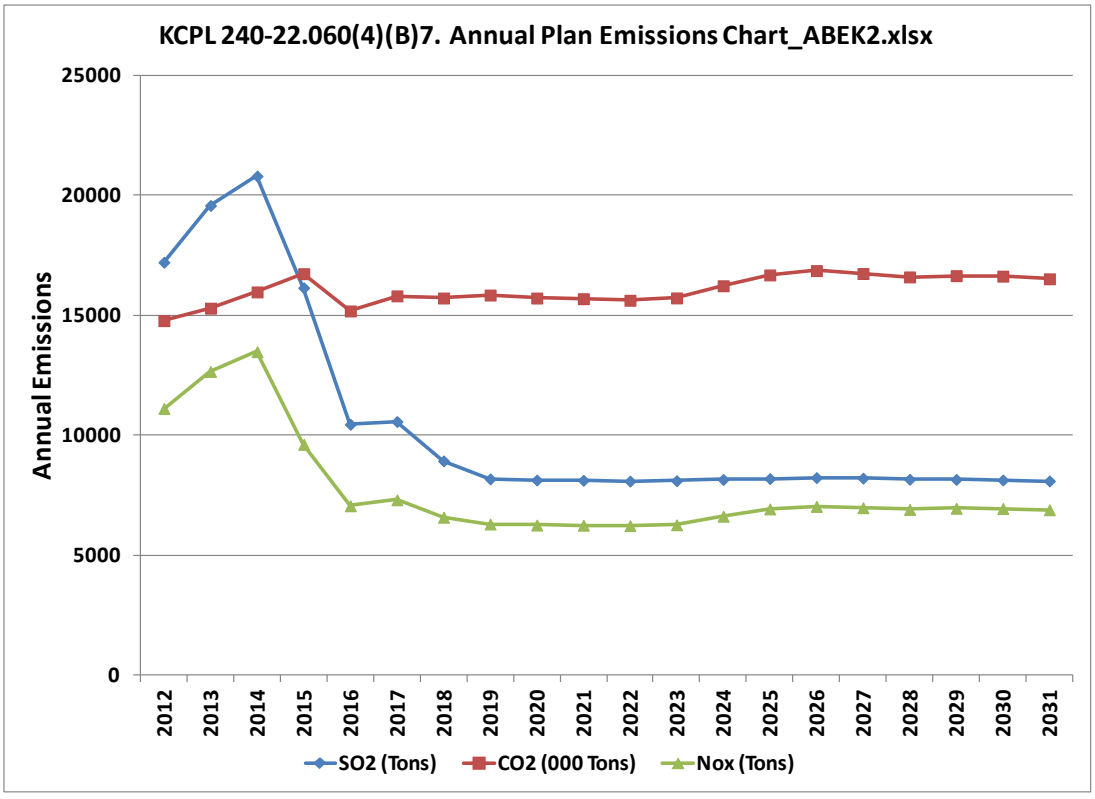


Chart 137: Annual Emissions ABEK4

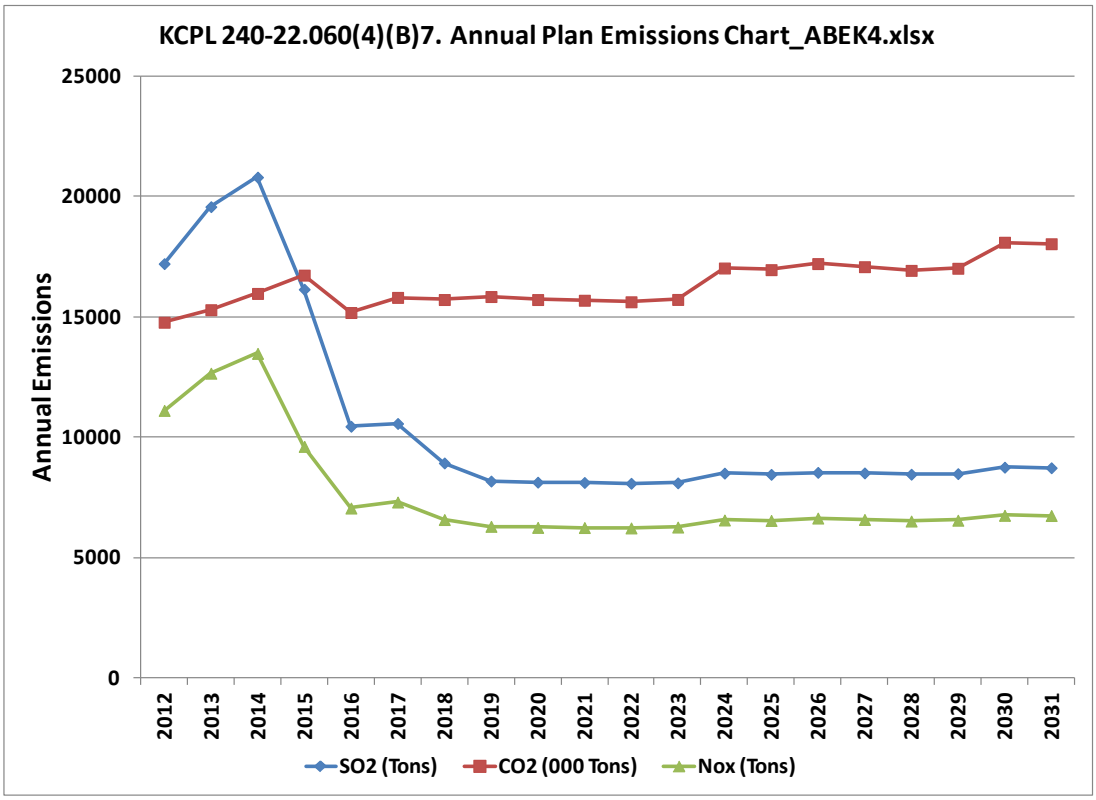


Chart 138: Annual Emissions ABEK5

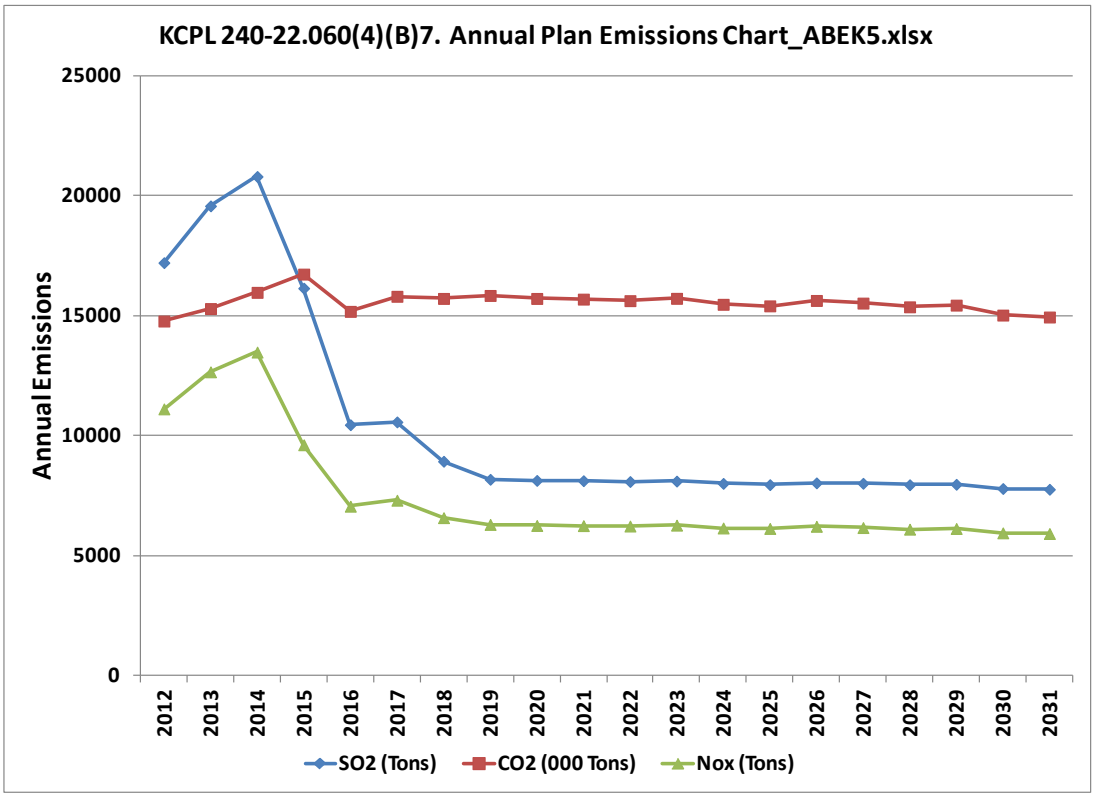


Chart 139: Annual Emissions ABEK6

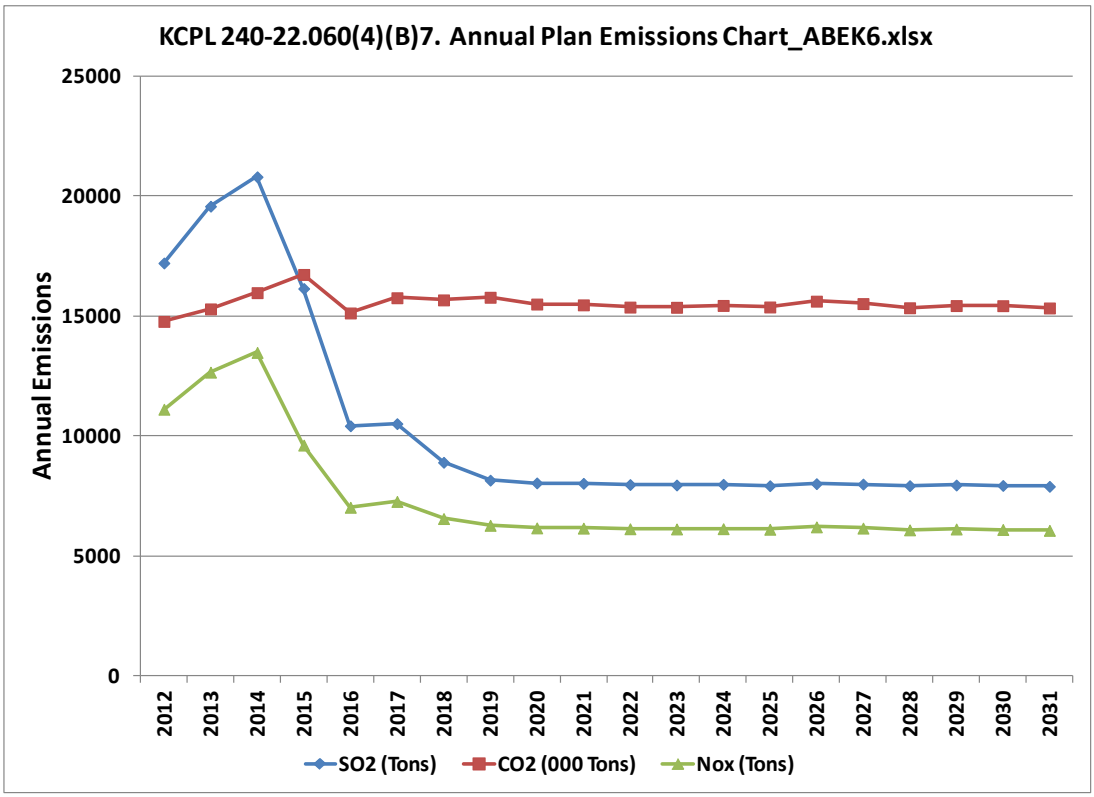


Chart 140: Annual Emissions ABEK7

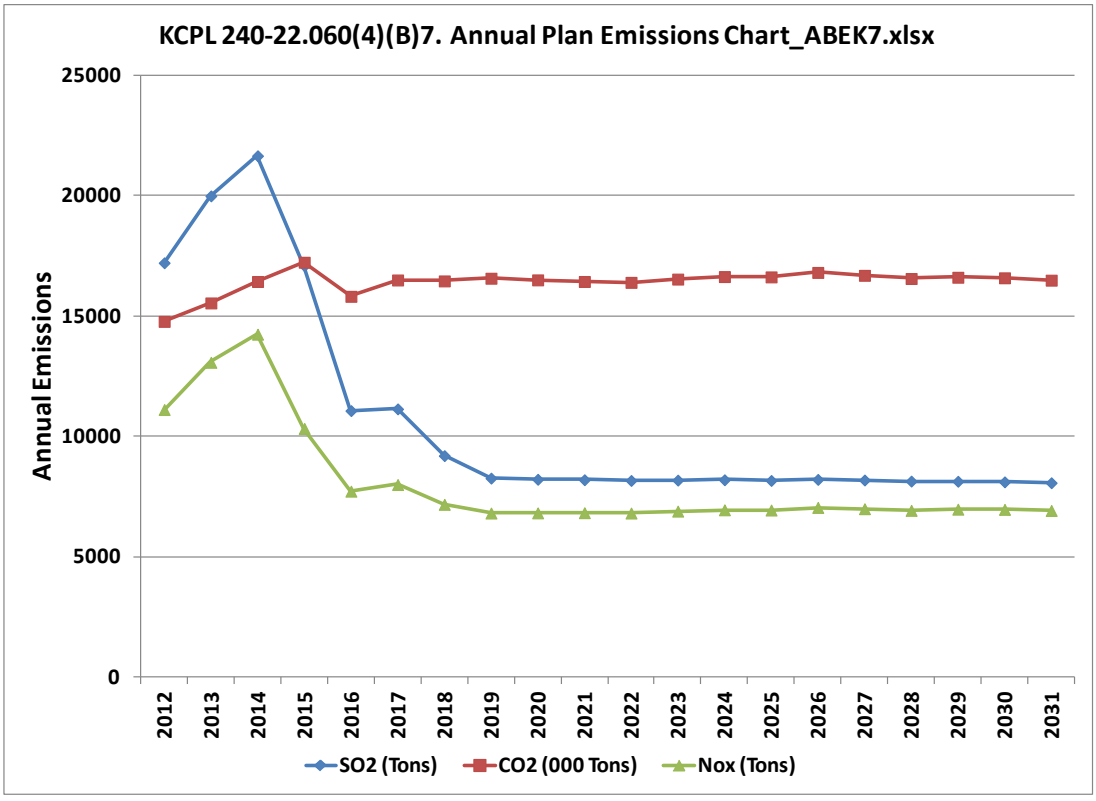


Chart 141: Annual Emissions ACEK1

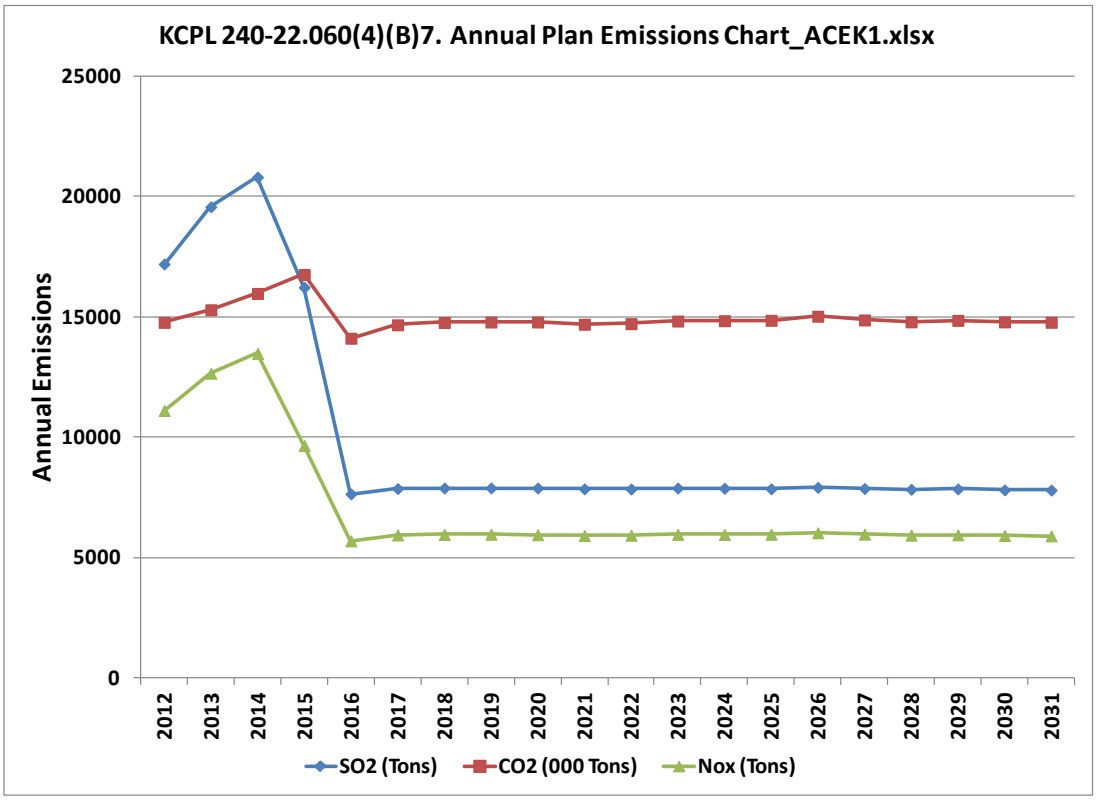


Chart 142: Annual Emissions ACEK2

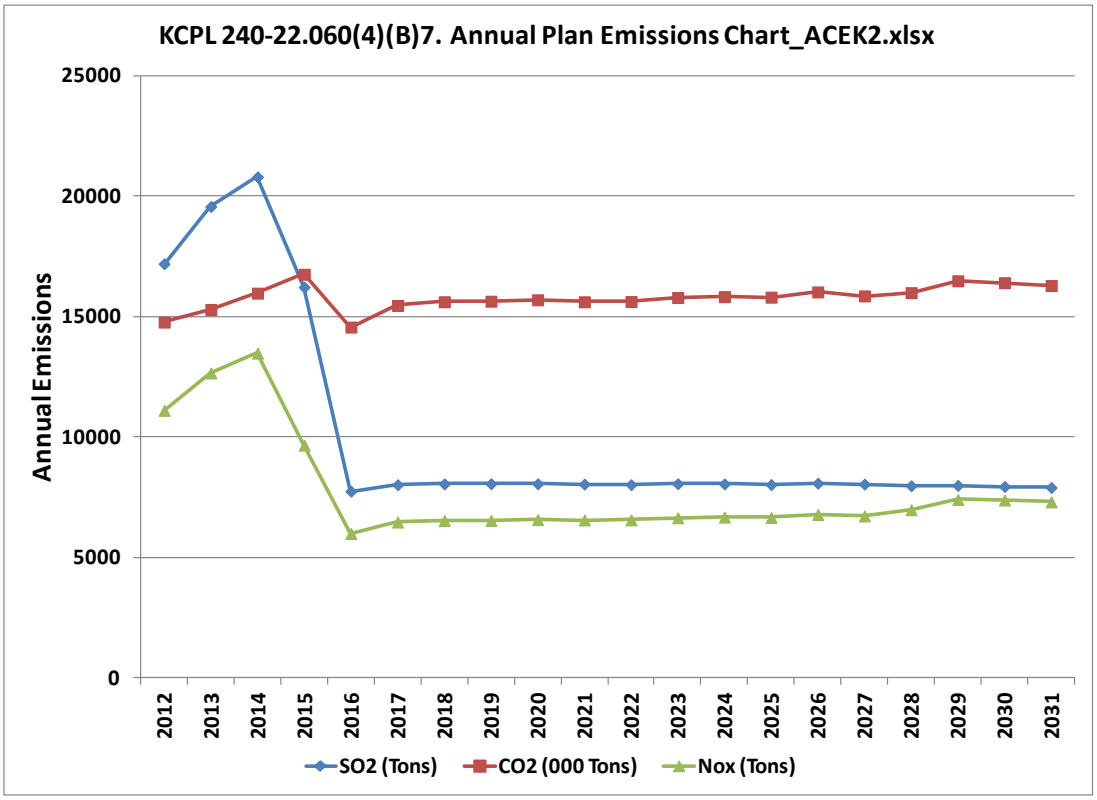


Chart 143: Annual Emissions ADDK1

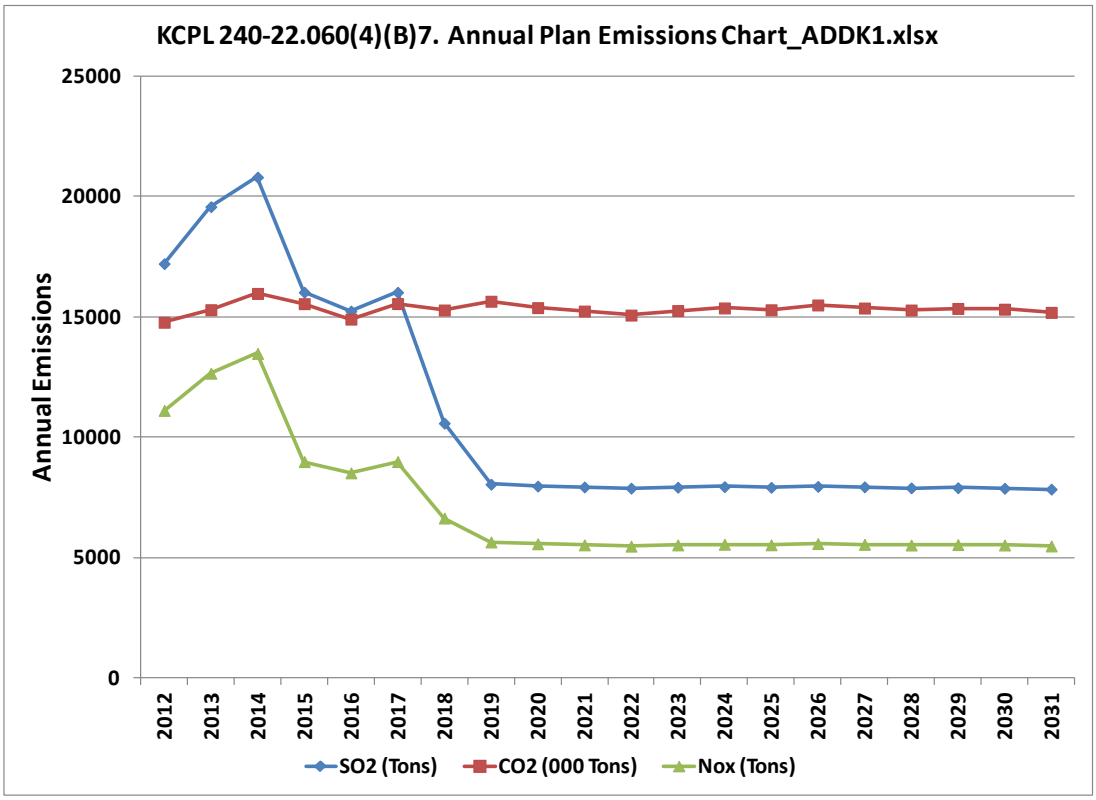


Chart 144: Annual Emissions AEDK1

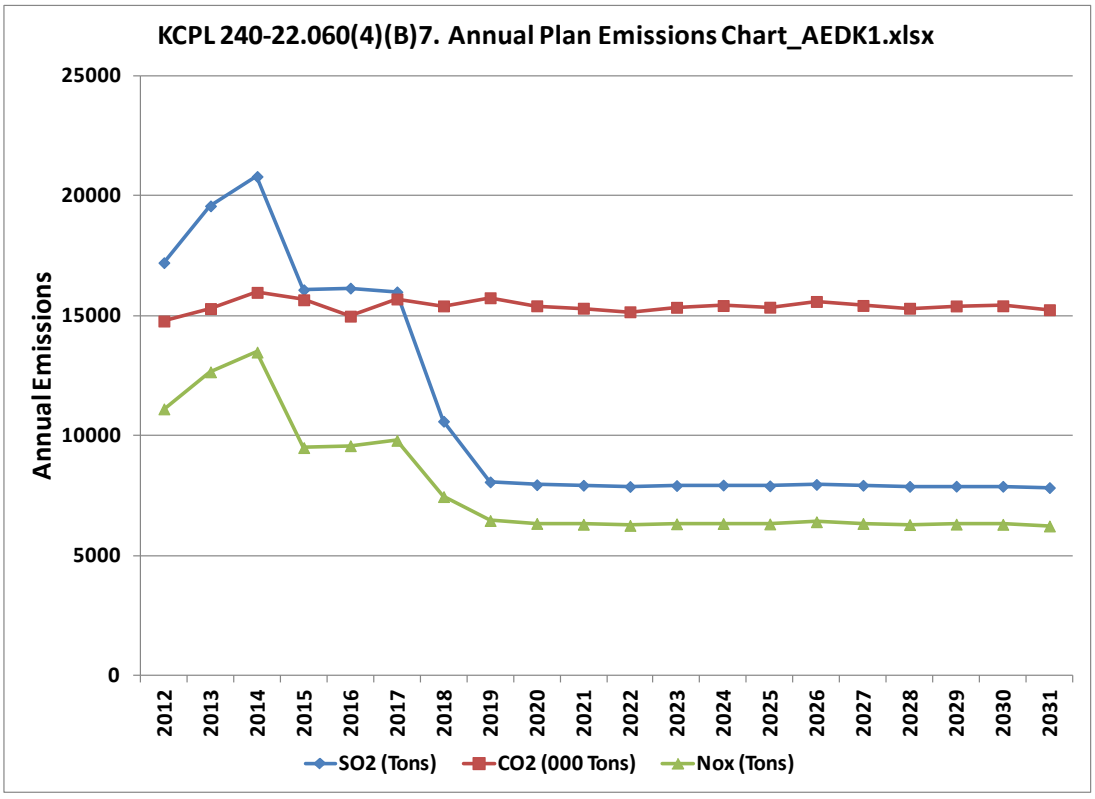


Chart 145: Annual Emissions AFDK1

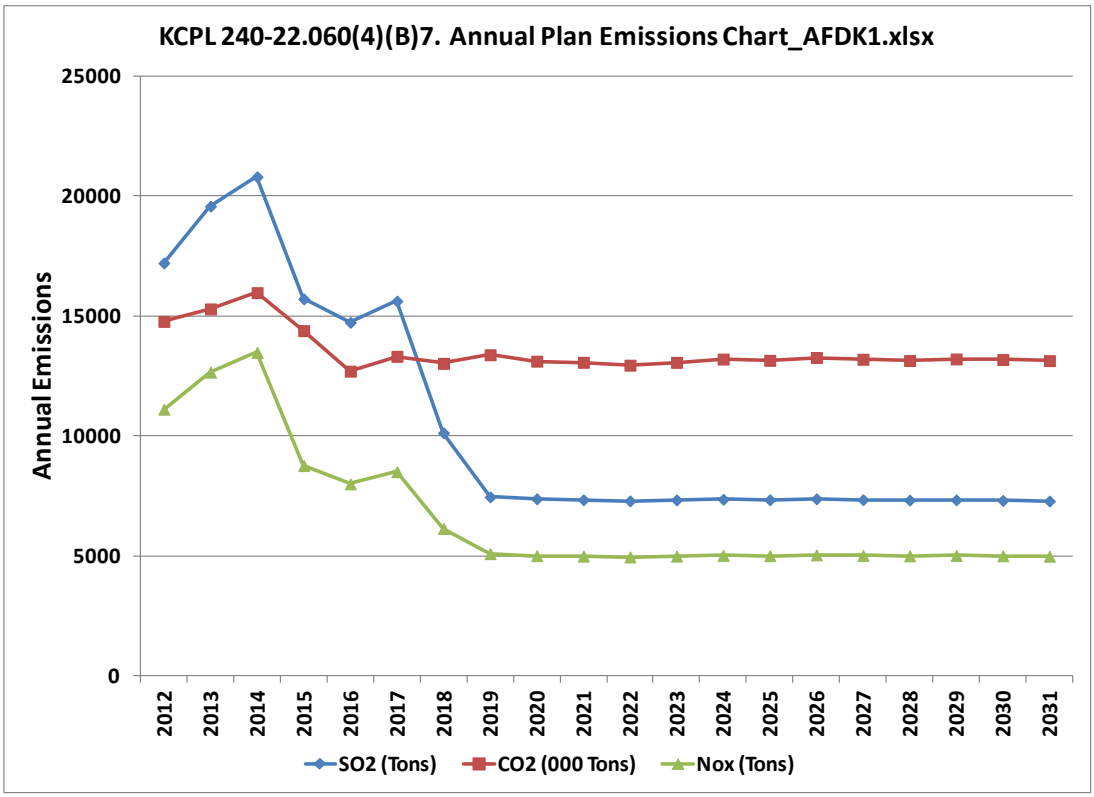


Chart 146: Annual Emissions AGEK1

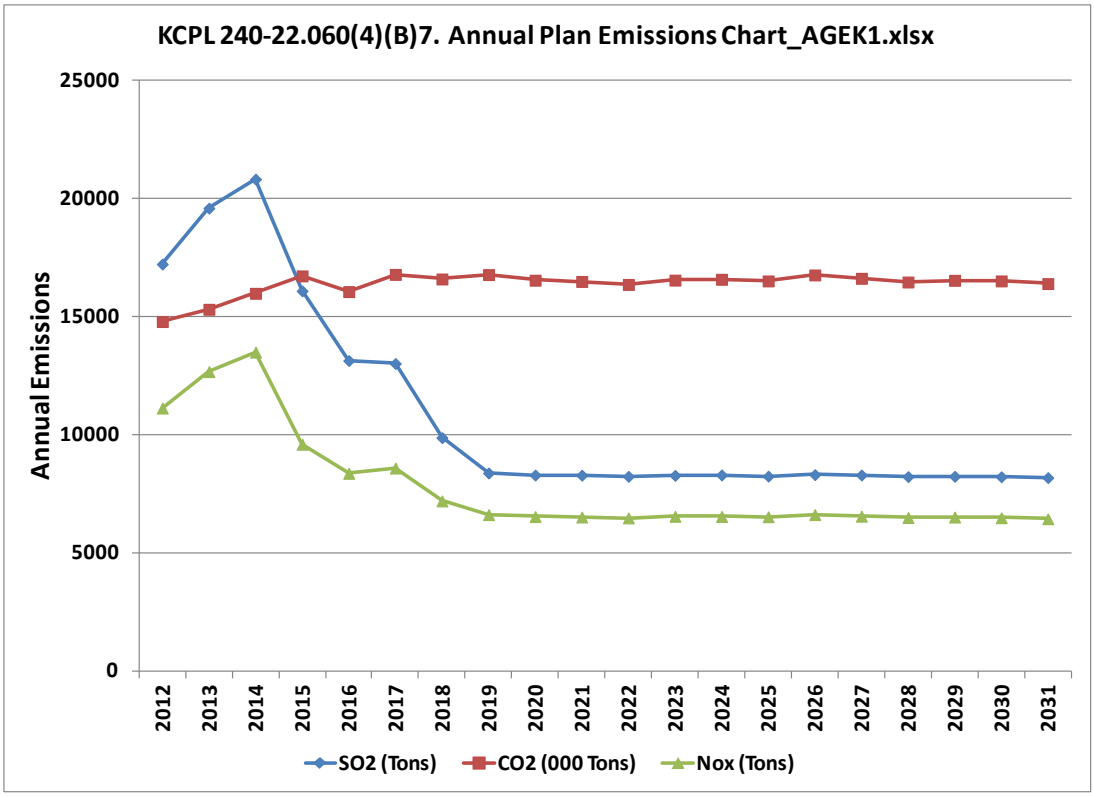


Chart 147: Annual Emissions AGEK9

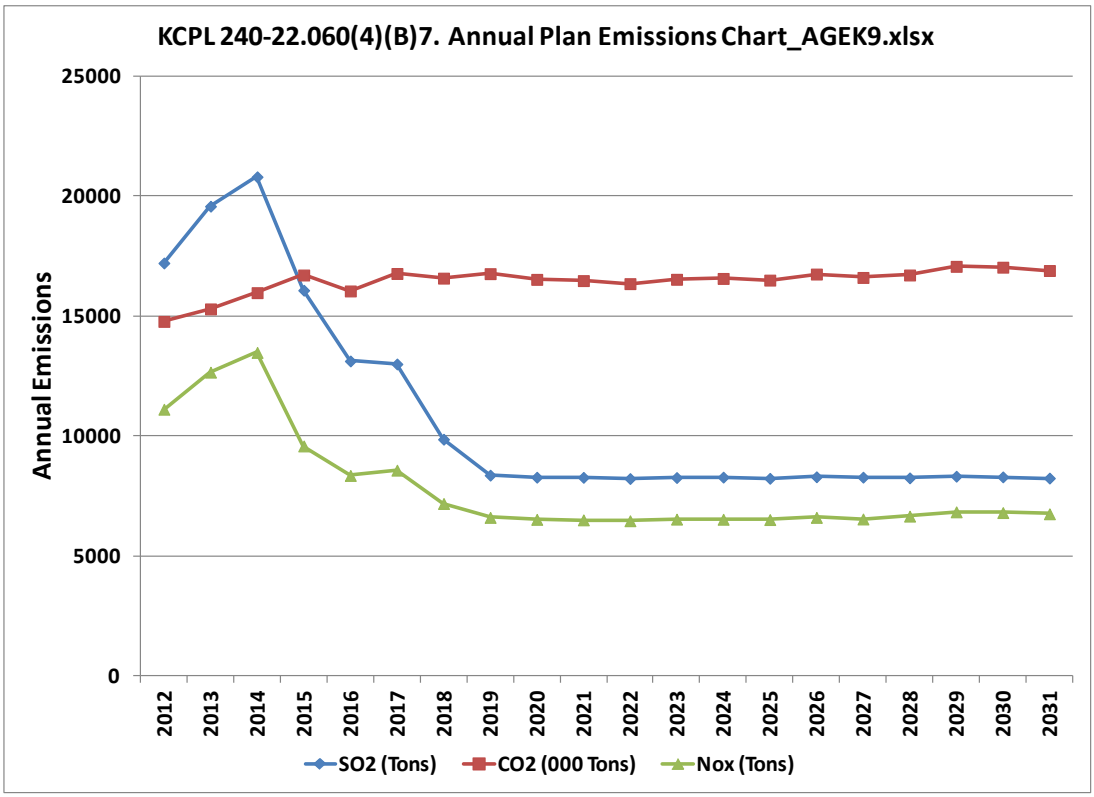


Chart 148: Annual Emissions AIEK9

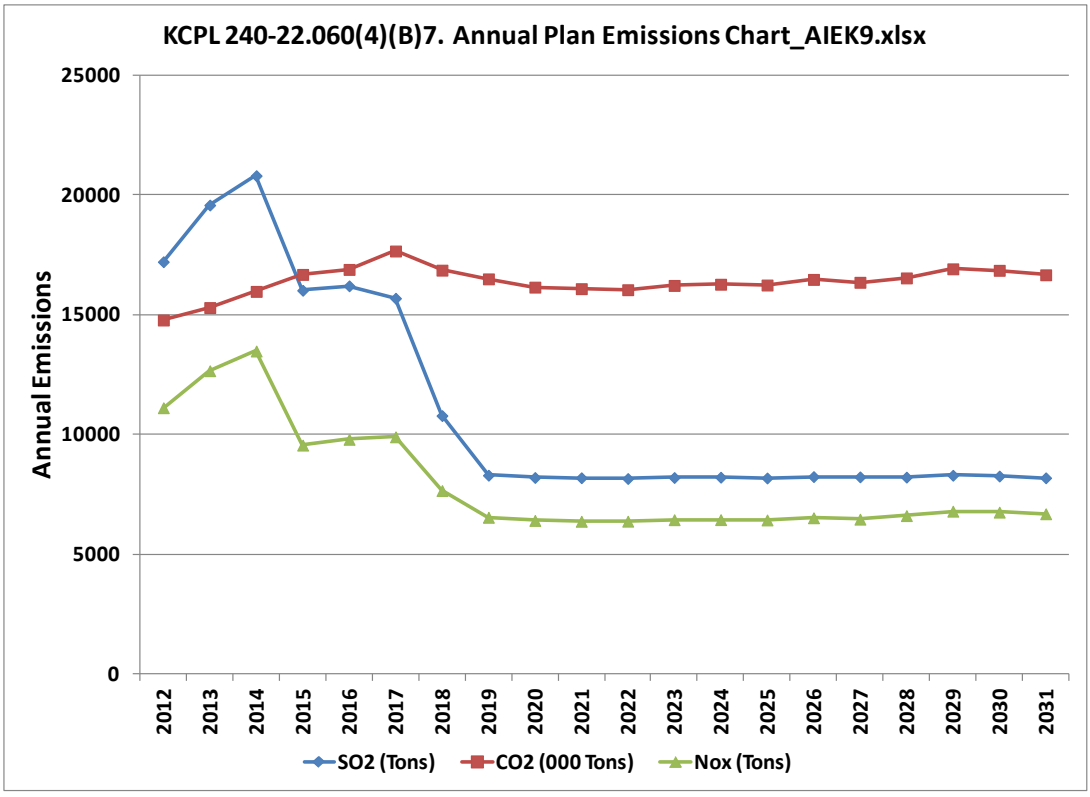


Chart 149: Annual Emissions BBEK1

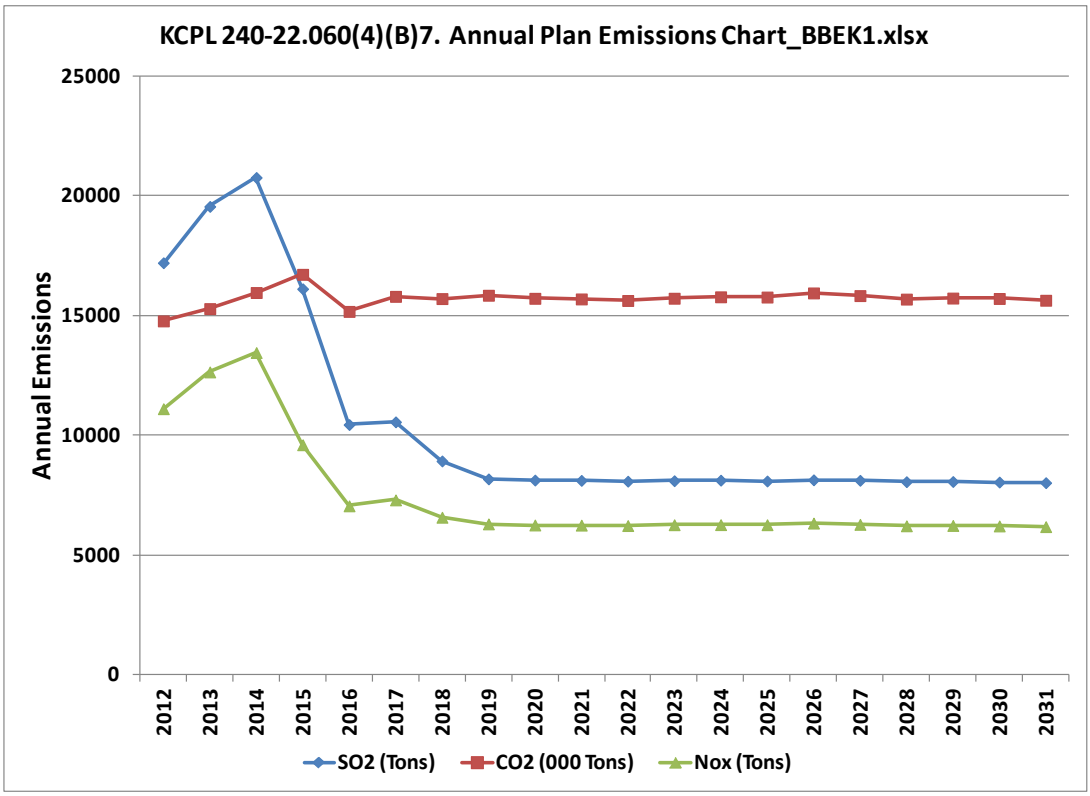


Chart 150: Annual Emissions CBEK1

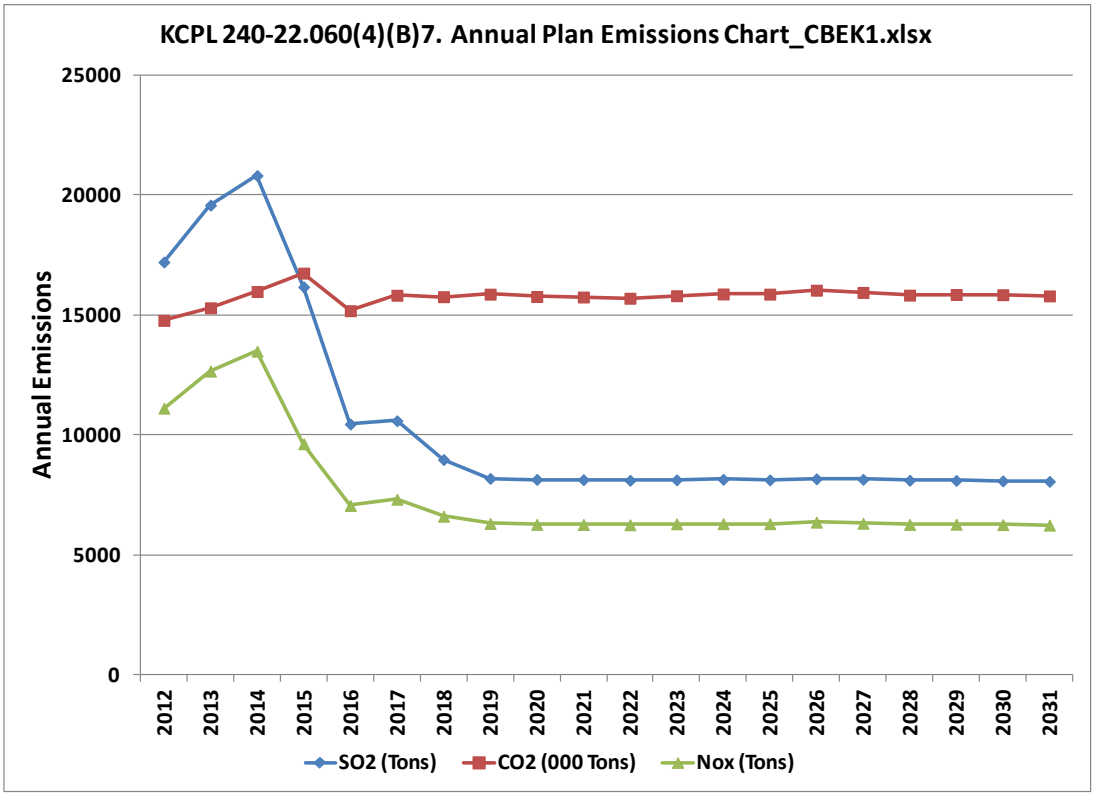


Chart 151: Annual Emissions DBEK1

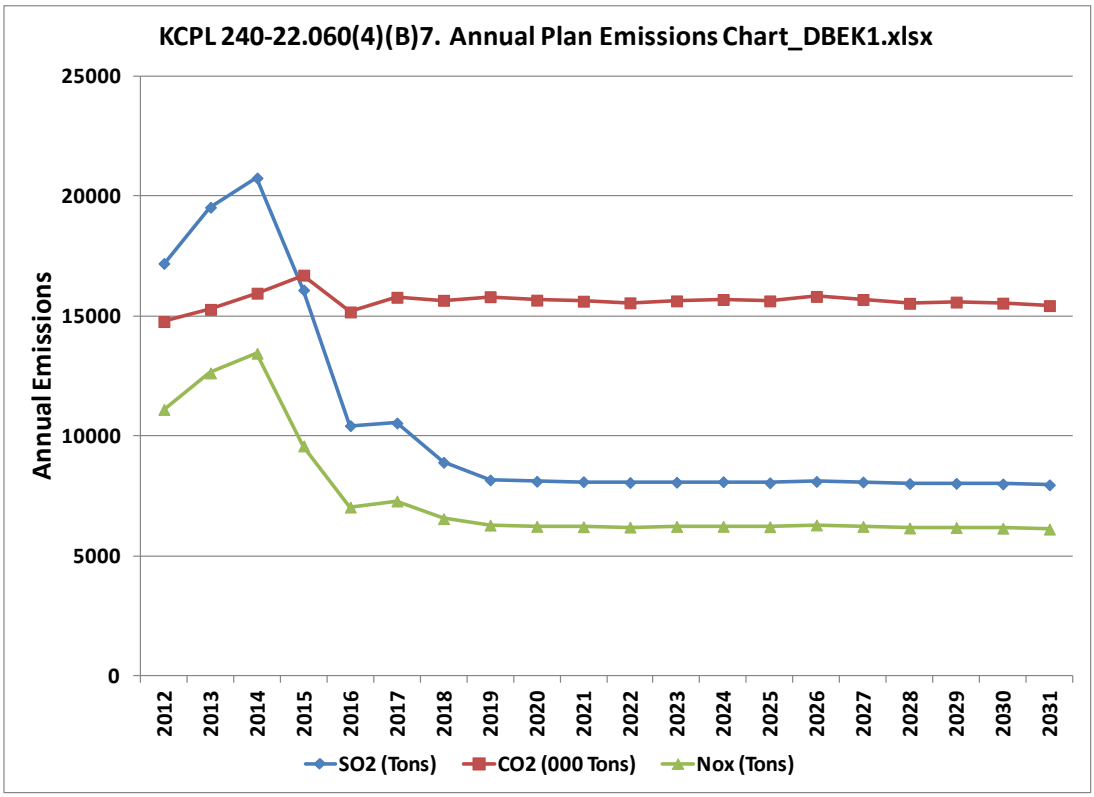


Chart 152: Annual Emissions DCEK1

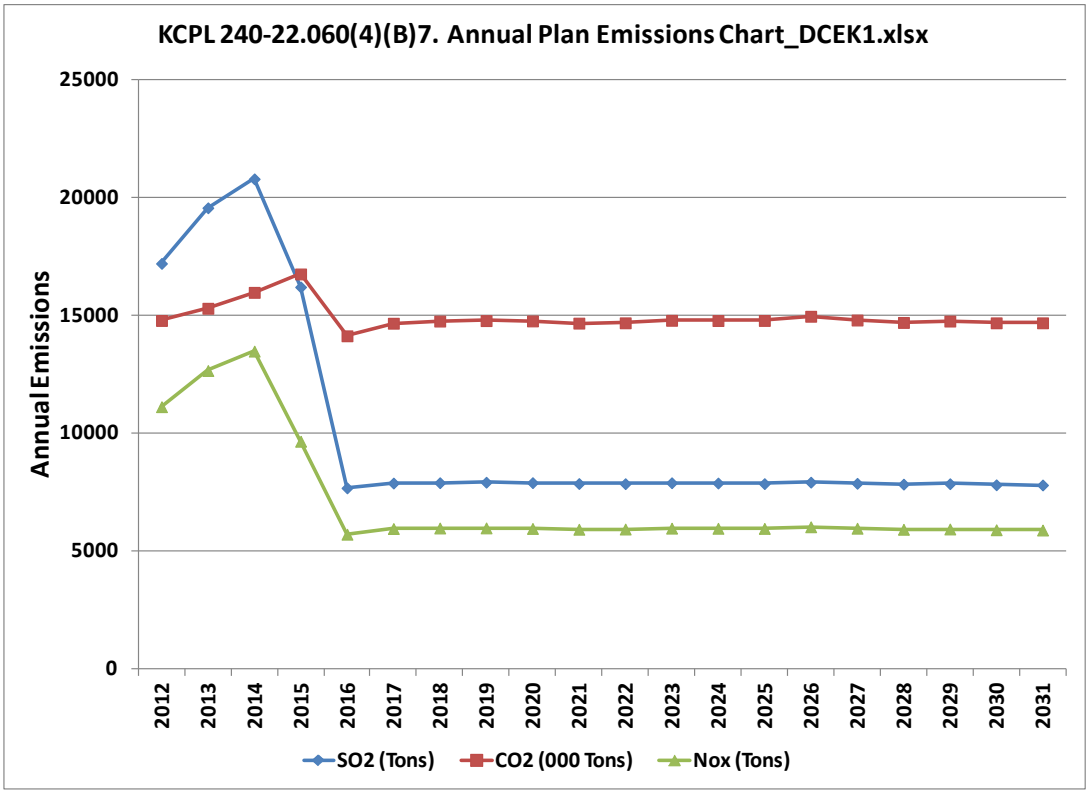


Chart 153: Annual Emissions EBEK1

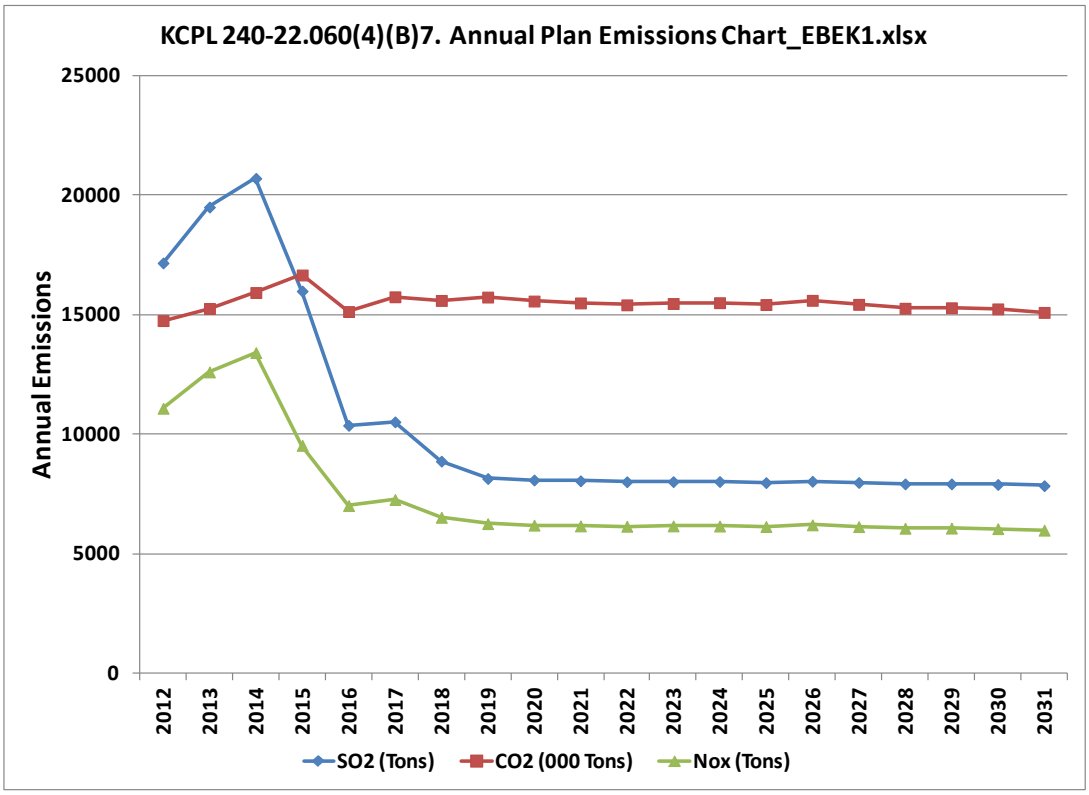
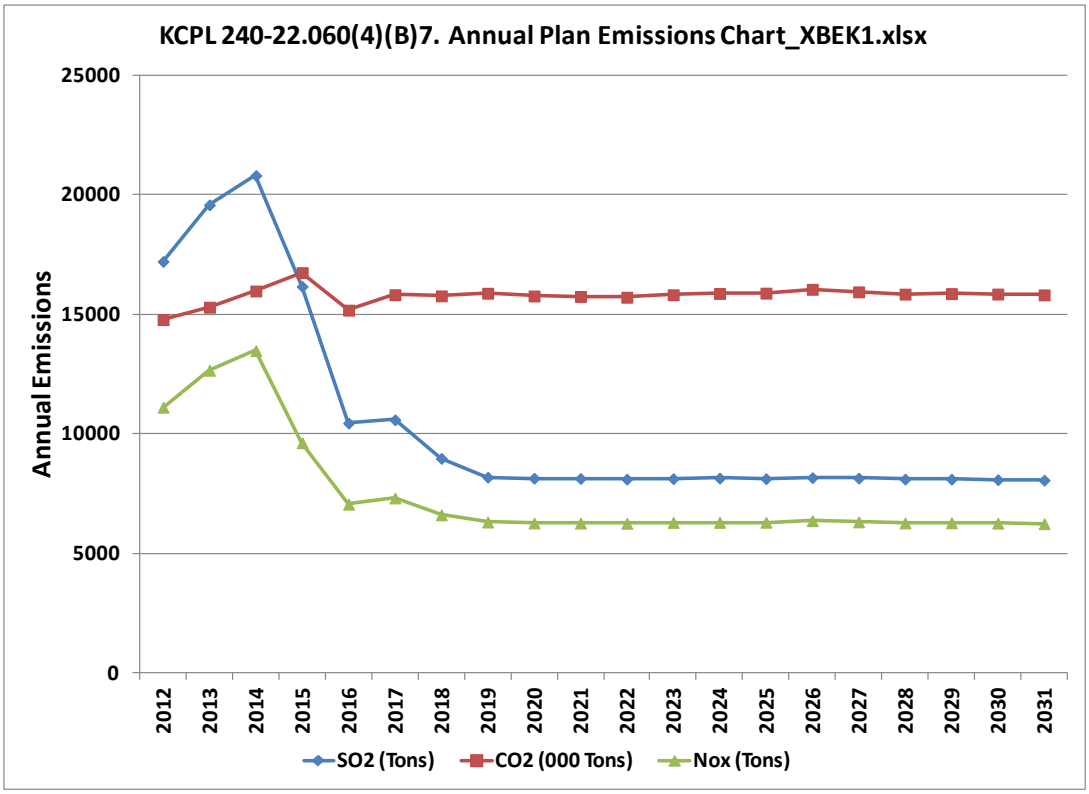


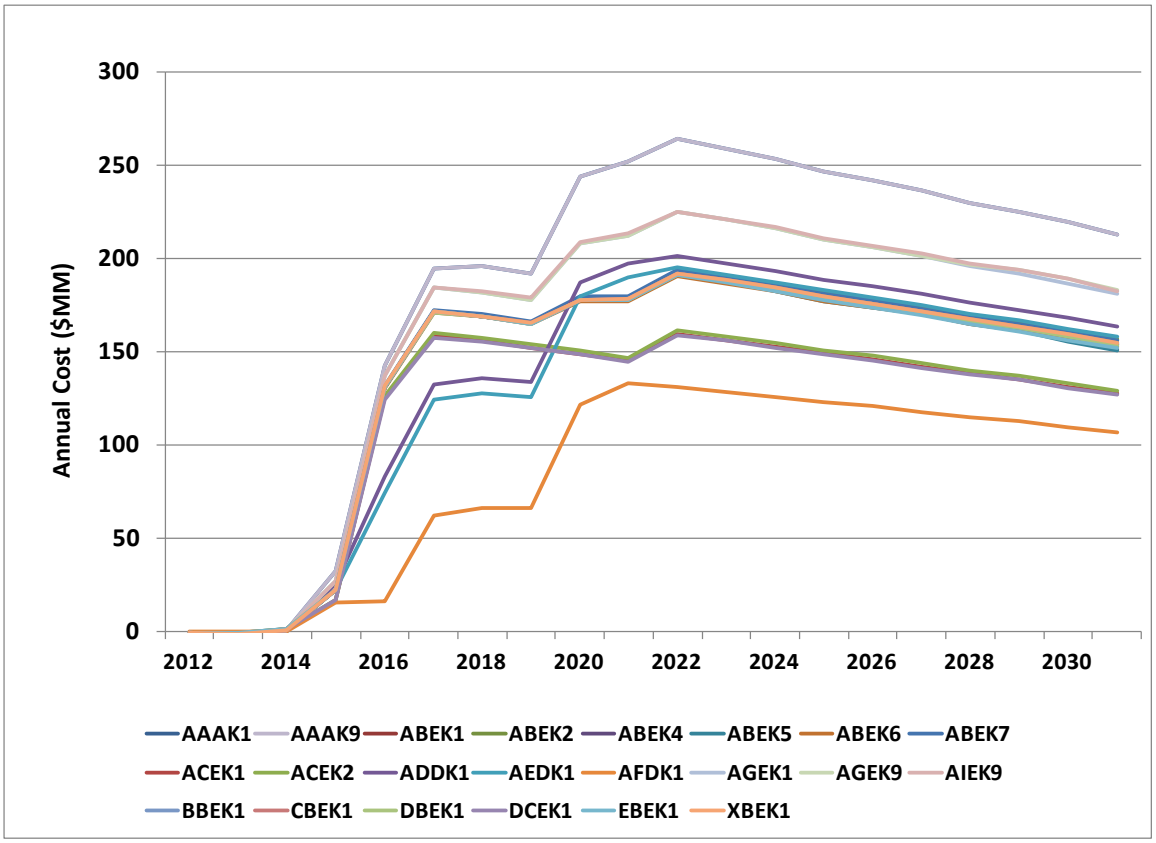
Chart 154: Annual Emissions XBEK1



8. Annual probable environmental costs; and

The following table shows the annual probable environmental cost of each plan on an expected value basis.

Chart 155: Probable Environmental Costs



9. Public and highly-confidential forms of the capacity balance spreadsheets completed in the specified format;

The following tables provide the KCP&L forecast of capacity balance for the next 20 years for each of the Alternative Resource Plans discussed elsewhere in this document.

Table 35: Capacity Forecast - Alternative Resource Plan AAAK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
Montrose 2	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,500	4,500	4,511	4,511	4,527	4,533	4,533	4,544	4,544	4,544	4,544	4,544	4,544	4,544	4,544	4,544
B. Capacity Transactions	[redacted]																			

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Table 36: Capacity Forecast - Alternative Resource Plan AAAK9 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
A. System Generating Capacity (KCPL share)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
Montrose 2	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,500	4,500	4,511	4,511	4,527	4,533	4,533	4,544	4,544	4,544	4,544	4,544	4,544	4,544	4,544	4,544
B. Capacity Transactions																				
[redacted]																				

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Table 37: Capacity Forecast - Alternative Resource Plan ABEK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Combustion Turbine Additions													154	154	154	154	154	308	308	308
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	1,102	1,102	1,102	1,102	1,102	1,256	1,256	1,256
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,166	4,166	4,177	4,177	4,193	4,199	4,199	4,210	4,364	4,364	4,364	4,364	4,364	4,518	4,518	4,518

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Table 38: Capacity Forecast - Alternative Resource Plan ABEK2 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Combined Cycle Additions													300	300	300	300	300	300	300	300
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	532	532	532	532	532	532	532	532
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,166	4,166	4,177	4,177	4,193	4,199	4,199	4,210	4,510	4,510	4,510	4,510	4,510	4,510	4,510	4,510
B. Capacity Transactions																				

[redacted]

HC

Table 39: Capacity Forecast - Alternative Resource Plan ABEK4 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Coal Additions													200	200	200	200	200	200	400	400
Total Base Capacity	3,307	3,307	3,307	3,300	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	3,166	3,166	3,166	3,166	3,166	3,166	3,366	3,366
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,166	4,166	4,177	4,177	4,193	4,199	4,199	4,210	4,410	4,410	4,410	4,410	4,410	4,410	4,610	4,610
B. Capacity Transactions																				

[redacted]

HC

Table 40: Capacity Forecast- Alternative Resource Plan ABEK5 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Nuclear Additions													200	200	200	200	200	200	400	400
Total Base Capacity	3,307	3,307	3,307	3,300	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	3,166	3,166	3,166	3,166	3,166	3,166	3,366	3,366
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,166	4,166	4,177	4,177	4,193	4,199	4,199	4,210	4,410	4,410	4,410	4,410	4,410	4,410	4,610	4,610

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Table 41: Capacity Forecast - Alternative Resource Plan ABEK6 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Combustion Turbine Additions														154	154	154	154	154	308	308
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	1,102	1,102	1,102	1,102	1,102	1,256	1,256
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					16	16	16	16	48	48	48	64	64	64	64	64	64	64	64	64
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	28.1	28.1	39.1	39.1	71.1	77.1	77.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,174	4,174	4,185	4,185	4,217	4,223	4,223	4,242	4,242	4,396	4,396	4,396	4,396	4,396	4,550	4,550

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Table 42: Capacity Forecast - Alternative Resource Plan ABEK7 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Combined Cycle		310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310
Total Intermediate Capacity	232	542	542	542	542	542	542	542	542	542	542	542	542	542	542	542	542	542	542	542
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,809	4,809	4,802	4,476	4,476	4,487	4,487	4,503	4,509	4,509	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520
B. Capacity Transactions																				

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Table 43: Capacity Forecast - Alternative Resource Plan ACEK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176																
Total Base Capacity	3,307	3,307	3,307	3,300	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Combustion Turbine Additions					154	154	154	154	154	154	154	154	308	308	308	308	462	462	462	462
Total Peaking Capacity	948	948	948	948	1,102	1,102	1,102	1,102	1,102	1,102	1,102	1,102	1,256	1,256	1,256	1,256	1,410	1,410	1,410	1,410
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,144	4,144	4,155	4,155	4,171	4,177	4,177	4,188	4,342	4,342	4,342	4,342	4,496	4,496	4,496	4,496

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Table 44: Capacity Forecast - Alternative Resource Plan ACEK2 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Fili	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176																
Total Base Capacity	3,307	3,307	3,307	3,300	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Combined Cycle Additions					300	300	300	300	300	300	300	300	300	300	300	300	600	600	600	600
Total Intermediate Capacity	232	232	232	232	532	532	532	532	532	532	532	532	532	532	532	532	832	832	832	832
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,290	4,290	4,301	4,301	4,317	4,323	4,323	4,334	4,334	4,334	4,334	4,334	4,634	4,634	4,634	4,634
B. Capacity Transactions																				

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HC

Table 45: Capacity Forecast - Alternative Resource Plan ADDK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
latan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
latan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368																	
La Cygne 2	343	343	343	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336
Montrose 1	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
Montrose 2	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	2,932	2,932	2,932	2,932	2,932	2,932	2,932	2,932	2,932	2,932	2,932	2,932	2,932	2,932	2,932	2,932	2,932
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Combustion Turbine Additions													154	154	154	154	308	308	308	308
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	1,102	1,102	1,102	1,102	1,256	1,256	1,256	1,256
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,124	4,132	4,132	4,143	4,143	4,159	4,165	4,165	4,176	4,330	4,330	4,330	4,330	4,484	4,484	4,484	4,484

[redacted]

HC

Table 46: Capacity Forecast - Alternative Resource Plan AEDK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360
La Cygne 2	343	343	343																	
Montrose 1	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
Montrose 2	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957	2,957
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Combustion Turbine Additions													154	154	154	154	154	308	308	308
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	1102	1102	1102	1102	1102	1256	1256	1256
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,149	4,157	4,157	4,168	4,168	4,184	4,190	4,190	4,201	4,355	4,355	4,355	4,355	4,355	4,509	4,509	4,509
B. Capacity Transactions																				

[redacted]

HC

Table 47: Capacity Forecast - Alternative Resource Plan AFDK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368																	
La Cygne 2	343	343	343																	
Montrose 1	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
Montrose 2	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Combustion Turbine Additions				308	308	308	308	308	308	462	462	462	462	462	462	616	616	616	616	770
Total Peaking Capacity	948	948	948	1,256	1,256	1,256	1,256	1,256	1,256	1,410	1,410	1,410	1,410	1,410	1,410	1,564	1,564	1,564	1,564	1,718
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,096	4,104	4,104	4,115	4,115	4,131	4,291	4,291	4,302	4,302	4,302	4,302	4,456	4,456	4,456	4,456	4,610
B. Capacity Transactions																				
[redacted]																				

HC

Table 48: Capacity Forecast - Alternative Resource Plan AGEK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12 2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Combustion Turbine Additions																		154	154	154
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	1,102	1,102	1,102
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions						8	8	8	8	24	24	24	32	32	32	32	32	32	32	32
Solar Additions								11	11	11	17	17	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,330	4,330	4,341	4,341	4,357	4,363	4,363	4,374	4,374	4,374	4,374	4,374	4,374	4,528	4,528	4,528
B. Capacity Transactions																				

[redacted]

HC

Table 49: Capacity Forecast - Alternative Resource Plan AGEK9 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Combined Cycle Additions																	150	150	150	150
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	382	382	382	382
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,482	4,330	4,330	4,341	4,341	4,367	4,363	4,363	4,374	4,374	4,374	4,374	4,374	4,524	4,524	4,524	4,524
B. Capacity Transactions																				
[redacted]																				

HC

Table 50: Capacity Forecast - Alternative Resource Plan AlEK9 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130	3,130
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Combined Cycle Additions																	150	150	150	150
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	382	382	382	382
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions						8	8	8	8	24	24	24	32	32	32	32	32	32	32	32
Solar Additions								11	11	11	17	17	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,330	4,330	4,341	4,341	4,357	4,363	4,363	4,374	4,374	4,374	4,374	4,374	4,524	4,524	4,524	4,524
B. Capacity Transactions																				
[redacted]																				

Table 51: Capacity Forecast - Alternative Resource Plan BBEK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Combustion Turbine Additions								154	154	154	154	154	154	308	308	308	308	308	462	462
Total Peaking Capacity	948	948	948	948	948	948	948	1,102	1,102	1,102	1,102	1,102	1,102	1,256	1,256	1,256	1,256	1,256	1,410	1,410
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,166	4,166	4,177	4,331	4,347	4,353	4,353	4,364	4,364	4,518	4,518	4,518	4,518	4,518	4,672	4,672
B. Capacity Transactions																				
[redacted]																				

HC

Table 52: Capacity Forecast - Alternative Resource Plan CBEK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2026	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Combustion Turbine Additions									154	154	154	154	308	308	308	462	462	462	616	616
Total Peaking Capacity	948	948	948	948	948	948	948	948	1102	1102	1102	1102	1256	1256	1256	1410	1410	1410	1564	1564
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,166	4,166	4,177	4,177	4,347	4,353	4,353	4,364	4,618	4,618	4,618	4,672	4,672	4,672	4,826	4,826

[redacted]

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Table 53: Capacity Forecast - Alternative Resource Plan DBEK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,166	4,166	4,177	4,177	4,193	4,199	4,199	4,210	4,210	4,210	4,210	4,210	4,210	4,210	4,210	4,210
B. Capacity Transactions																				

[redacted]

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Table 54: Capacity Forecast - Alternative Resource Plan DCEK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176																
Total Base Capacity	3,307	3,307	3,307	3,300	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790	2,790
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Combustion Turbine Additions																				154
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	1,102
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	3,990	3,990	4,001	4,001	4,017	4,023	4,023	4,034	4,034	4,034	4,034	4,034	4,034	4,034	4,034	4,188
B. Capacity Transactions	[redacted]																			

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Table 55: Capacity Forecast - Alternative Resource Plan EBEK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12 2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,956	2,966	2,966	2,966	2,966	2,966	2,966
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Peaking Capacity	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,166	4,166	4,177	4,177	4,193	4,199	4,199	4,210	4,210	4,210	4,210	4,210	4,210	4,210	4,210	4,210
B. Capacity Transactions																				
[redacted]																				

HC

Table 56: Capacity Forecast- Alternative Resource Plan XBEK1 **Highly Confidential**

Name of Utility	Kansas City Power & Light																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (KCPL share)																				
Base Capacity																				
Wolf Creek	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547	547
Iatan I	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
Iatan II	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482	482
Hawthorn 5	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564	564
La Cygne 1	368	368	368	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
La Cygne 2	343	343	343	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Montrose 1	170	170	170	170																
Montrose 2	164	164	164	164																
Montrose 3	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
Total Base Capacity	3,307	3,307	3,307	3,300	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966	2,966
Intermediate Capacity																				
Hawthorn 6 & 9	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Total Intermediate Capacity	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232	232
Peaking Capacity																				
Hawthorn 7	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Hawthorn 8	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Northeast 11	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Northeast 12	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 13	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Northeast 14	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 15	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northeast 16	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Northeast 17	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Northeast 18	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Northeast Black Start Generator	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
West Gardner Comb Turb 1	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 2	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
West Gardner Comb Turb 3	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
West Gardner Comb Turb 4	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Osawatomie Comb Turb 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Combustion Turbine Additions							154	154	154	154	308	308	308	462	462	462	616	616	616	770
Total Peaking Capacity	948	948	948	948	948	948	1,102	1,102	1,102	1,102	1,256	1,256	1,256	1,410	1,410	1,410	1,564	1,564	1,564	1,718
Intermittent Capacity (Nameplate)																				
Spearville I	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Spearville II	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total Intermittent Capacity	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149
Percent Accredited Intermittent Capacity	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%	8.15%
Total Accredited Intermittent Capacity	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
Wind Additions					8	8	8	8	24	24	24	32	32	32	32	32	32	32	32	32
Solar Additions							11	11	11	17	17	20	20	20	20	20	20	20	20	20
Total Intermittent Capacity with Additions	12.1	12.1	12.1	12.1	20.1	20.1	31.1	31.1	47.1	53.1	53.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
Total Generation Capacity	4,499	4,499	4,499	4,492	4,166	4,166	4,331	4,331	4,347	4,353	4,507	4,518	4,518	4,672	4,672	4,672	4,826	4,826	4,826	4,980
B. Capacity Transactions																				

[redacted]

HC

(C) The analysis of economic impact of alternative resource plans, calculated with and without utility financial incentives for demand-side resources, shall provide comparative estimates for each year of the planning horizon—

Each year of the planning period, all alternative plans are simulated with DSM expensed in the year spent as opposed to being capitalized with a six year amortization. This method of calculation is in compliance with rule 22.060(2)(A)1. Summary results for this analysis is provided in the following Section.

1. For the following performance measures for each year:

A. Estimated annual revenue requirement;

B. Estimated annual average rates and percentage increase in the average rate from the prior year; and

C. Estimated company financial ratios and credit metrics; and

The following tables detail performance measures of each alternative resource plan, both with and without rate of return and incentive payments for DSM expenditures on an expected value basis.

Table 57: Economic Impact of Alternative Resource Plan AAAK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,705	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,680	1,679	0.10	0.10	-2.53%	-2.47%	4.47	4.47	50.42	50.42	0.86	0.86
2014	1,756	1,741	0.11	0.11	3.46%	2.64%	4.39	4.40	50.40	50.40	0.67	0.65
2015	1,744	1,734	0.11	0.11	-1.24%	-0.96%	4.21	4.22	50.37	50.37	0.6	0.59
2016	1,865	1,858	0.11	0.11	6.08%	6.30%	4.53	4.53	50.37	50.37	1.29	1.28
2017	1,919	1,915	0.12	0.12	2.52%	2.69%	4.43	4.43	50.37	50.36	1.66	1.64
2018	1,991	1,989	0.12	0.12	3.05%	3.17%	4.53	4.53	50.36	50.35	0.95	0.94
2019	2,015	2,016	0.12	0.12	0.48%	0.64%	4.35	4.34	50.34	50.34	0.72	0.71
2020	2,189	2,192	0.13	0.13	7.57%	7.67%	4.48	4.47	50.35	50.35	1.73	1.73
2021	2,206	2,208	0.13	0.13	0.28%	0.24%	4.21	4.21	50.35	50.34	1.41	1.41
2022	2,237	2,240	0.13	0.13	0.68%	0.73%	4.35	4.35	50.35	50.35	1.15	1.15
2023	2,294	2,297	0.13	0.13	1.76%	1.75%	4.32	4.31	50.37	50.37	1.92	1.92
2024	2,307	2,310	0.13	0.13	-0.50%	-0.51%	4.32	4.32	50.38	50.37	2.24	2.24
2025	2,280	2,283	0.13	0.13	-1.81%	-1.81%	4.33	4.32	50.40	50.39	2.1	2.10
2026	2,318	2,321	0.13	0.13	0.72%	0.72%	4.34	4.33	50.42	50.41	1.97	1.97
2027	2,345	2,348	0.13	0.13	0.13%	0.13%	4.33	4.32	50.44	50.43	2.02	2.02
2028	2,269	2,273	0.12	0.13	-4.54%	-4.49%	4.12	4.11	50.46	50.46	1.75	1.75
2029	2,290	2,294	0.13	0.13	0.10%	0.10%	3.97	3.96	50.47	50.47	1.57	1.57
2030	2,335	2,339	0.13	0.13	0.82%	0.82%	3.96	3.96	50.48	50.48	1.59	1.59
2031	2,352	2,355	0.13	0.13	-0.36%	-0.40%	3.94	3.94	50.49	50.49	1.53	1.53

Table 58: Economic Impact of Alternative Resource Plan AAAK9

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,706	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,679	1,678	0.10	0.10	-2.56%	-2.56%	4.47	4.47	50.42	50.42	0.86	0.86
2014	1,754	1,740	0.11	0.11	3.41%	2.65%	4.39	4.39	50.40	50.40	0.67	0.63
2015	1,741	1,730	0.11	0.11	-1.26%	-1.09%	4.21	4.22	50.37	50.37	0.6	0.58
2016	1,863	1,855	0.11	0.11	6.07%	6.29%	4.53	4.53	50.37	50.37	1.29	1.28
2017	1,916	1,912	0.12	0.12	2.53%	2.75%	4.43	4.43	50.37	50.36	1.66	1.58
2018	1,989	1,988	0.12	0.12	3.08%	3.25%	4.53	4.51	50.36	50.35	0.95	0.85
2019	2,014	2,015	0.12	0.12	0.50%	0.60%	4.35	4.30	50.34	50.33	0.72	0.64
2020	2,187	2,189	0.13	0.13	7.59%	7.64%	4.48	4.48	50.35	50.33	1.73	1.58
2021	2,205	2,207	0.13	0.13	0.32%	0.31%	4.21	4.20	50.35	50.33	1.41	1.38
2022	2,236	2,238	0.13	0.13	0.69%	0.69%	4.35	4.33	50.35	50.33	1.15	1.16
2023	2,293	2,295	0.13	0.13	1.75%	1.75%	4.32	4.28	50.37	50.36	1.92	1.95
2024	2,307	2,310	0.13	0.13	-0.48%	-0.44%	4.32	4.29	50.38	50.36	2.24	2.28
2025	2,280	2,283	0.13	0.13	-1.78%	-1.78%	4.33	4.30	50.40	50.38	2.1	2.08
2026	2,318	2,321	0.13	0.13	0.72%	0.72%	4.34	4.30	50.42	50.40	1.97	2.01
2027	2,345	2,348	0.13	0.13	0.13%	0.13%	4.33	4.29	50.44	50.41	2.02	2.06
2028	2,269	2,273	0.12	0.13	-4.54%	-4.49%	4.12	4.09	50.46	50.44	1.75	1.79
2029	2,290	2,294	0.13	0.13	0.10%	0.10%	3.97	3.95	50.47	50.45	1.57	1.61
2030	2,335	2,339	0.13	0.13	0.82%	0.82%	3.96	3.95	50.48	50.46	1.59	1.64
2031	2,352	2,355	0.13	0.13	-0.36%	-0.40%	3.94	3.93	50.49	50.47	1.53	1.57

Table 59: Economic Impact of Alternative Resource Plan ABEK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,705	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,680	1,679	0.10	0.10	-2.52%	-2.46%	4.47	4.47	50.42	50.42	0.86	0.86
2014	1,756	1,742	0.11	0.11	3.44%	2.68%	4.40	4.41	50.40	50.40	0.71	0.69
2015	1,733	1,722	0.11	0.11	-1.82%	-1.66%	4.19	4.19	50.37	50.37	0.63	0.62
2016	1,875	1,867	0.11	0.11	7.27%	7.50%	4.55	4.55	50.37	50.37	1.32	1.30
2017	1,923	1,919	0.12	0.12	2.19%	2.42%	4.41	4.40	50.38	50.37	1.9	1.89
2018	1,986	1,985	0.12	0.12	2.57%	2.73%	4.56	4.56	50.38	50.38	1.16	1.15
2019	2,016	2,017	0.12	0.12	0.81%	0.91%	4.44	4.44	50.36	50.35	0.85	0.85
2020	2,143	2,145	0.13	0.13	5.26%	5.31%	4.47	4.46	50.38	50.38	2.05	2.05
2021	2,157	2,160	0.13	0.13	0.17%	0.22%	4.23	4.22	50.38	50.37	1.45	1.45
2022	2,188	2,190	0.13	0.13	0.69%	0.64%	4.39	4.38	50.38	50.38	1.15	1.15
2023	2,243	2,246	0.13	0.13	1.75%	1.79%	4.35	4.34	50.39	50.38	1.74	1.74
2024	2,301	2,304	0.13	0.13	1.47%	1.47%	4.47	4.46	50.40	50.39	1.44	1.44
2025	2,282	2,285	0.13	0.13	-1.46%	-1.46%	4.36	4.35	50.42	50.41	2.13	2.13
2026	2,319	2,322	0.13	0.13	0.67%	0.67%	4.37	4.36	50.44	50.43	1.93	1.93
2027	2,352	2,356	0.13	0.13	0.38%	0.42%	4.36	4.35	50.46	50.45	1.98	1.98
2028	2,277	2,280	0.13	0.13	-4.47%	-4.51%	4.13	4.13	50.47	50.46	1.44	1.44
2029	2,349	2,352	0.13	0.13	2.32%	2.31%	4.11	4.10	50.46	50.45	1.04	1.03
2030	2,399	2,403	0.13	0.13	1.00%	1.04%	3.95	3.95	50.47	50.46	1.6	1.60
2031	2,416	2,420	0.13	0.13	-0.37%	-0.37%	3.93	3.93	50.48	50.47	1.54	1.54

Table 60: Economic Impact of Alternative Resource Plan ABEK2

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,705	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,680	1,679	0.10	0.10	-2.52%	-2.46%	4.47	4.47	50.42	50.40	0.86	0.86
2014	1,756	1,742	0.11	0.11	3.44%	2.68%	4.40	4.41	50.40	50.39	0.71	0.69
2015	1,733	1,722	0.11	0.11	-1.82%	-1.66%	4.19	4.19	50.37	50.35	0.63	0.62
2016	1,875	1,867	0.11	0.11	7.27%	7.50%	4.55	4.55	50.37	50.36	1.32	1.30
2017	1,923	1,919	0.12	0.12	2.19%	2.42%	4.41	4.40	50.38	50.37	1.9	1.89
2018	1,986	1,985	0.12	0.12	2.57%	2.73%	4.56	4.56	50.38	50.38	1.16	1.15
2019	2,016	2,017	0.12	0.12	0.81%	0.91%	4.44	4.44	50.36	50.36	0.85	0.85
2020	2,143	2,145	0.13	0.13	5.26%	5.31%	4.47	4.46	50.38	50.38	2.05	2.05
2021	2,157	2,160	0.13	0.13	0.18%	0.23%	4.21	4.20	50.38	50.38	1.2	1.20
2022	2,189	2,191	0.13	0.13	0.73%	0.68%	4.30	4.30	50.36	50.36	0.85	0.84
2023	2,244	2,247	0.13	0.13	1.75%	1.80%	4.19	4.18	50.37	50.37	1.46	1.46
2024	2,324	2,327	0.13	0.13	2.45%	2.44%	4.45	4.44	50.38	50.38	1.82	1.82
2025	2,307	2,310	0.13	0.13	-1.39%	-1.39%	4.32	4.31	50.40	50.40	2.17	2.17
2026	2,340	2,343	0.13	0.13	0.49%	0.49%	4.34	4.34	50.42	50.42	1.97	1.97
2027	2,369	2,372	0.13	0.13	0.22%	0.22%	4.33	4.33	50.44	50.44	2.01	2.01
2028	2,293	2,297	0.13	0.13	-4.50%	-4.45%	4.12	4.12	50.45	50.44	1.75	1.75
2029	2,314	2,317	0.13	0.13	0.06%	0.02%	3.97	3.97	50.46	50.46	1.6	1.60
2030	2,361	2,364	0.13	0.13	0.93%	0.92%	3.96	3.96	50.47	50.47	1.58	1.58
2031	2,380	2,384	0.13	0.13	-0.32%	-0.28%	3.94	3.94	50.48	50.48	1.52	1.52

Table 61: Economic Impact of Alternative Resource Plan ABEK4

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,705	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,680	1,679	0.10	0.10	-2.52%	-2.46%	4.47	4.47	50.42	50.42	0.86	0.86
2014	1,756	1,742	0.11	0.11	3.44%	2.68%	4.40	4.41	50.40	50.40	0.71	0.69
2015	1,733	1,722	0.11	0.11	-1.82%	-1.66%	4.19	4.19	50.37	50.37	0.63	0.62
2016	1,875	1,867	0.11	0.11	7.27%	7.50%	4.55	4.55	50.37	50.37	1.32	1.30
2017	1,923	1,919	0.12	0.12	2.19%	2.42%	4.41	4.40	50.38	50.37	1.90	1.89
2018	1,986	1,985	0.12	0.12	2.57%	2.73%	4.56	4.56	50.38	50.38	1.16	1.15
2019	2,016	2,017	0.12	0.12	0.81%	0.91%	4.44	4.44	50.36	50.35	0.85	0.85
2020	2,143	2,146	0.13	0.13	5.27%	5.37%	4.46	4.45	50.37	50.36	1.79	1.79
2021	2,157	2,159	0.13	0.13	0.17%	0.13%	4.17	4.17	50.37	50.37	1.03	1.03
2022	2,190	2,193	0.13	0.13	0.75%	0.79%	4.20	4.19	50.35	50.35	0.73	0.73
2023	2,245	2,248	0.13	0.13	1.77%	1.77%	4.06	4.06	50.35	50.35	1.17	1.17
2024	2,343	2,346	0.13	0.13	3.24%	3.24%	4.45	4.45	50.36	50.36	1.89	1.89
2025	2,320	2,323	0.13	0.13	-1.62%	-1.62%	4.28	4.27	50.38	50.38	2.23	2.23
2026	2,350	2,353	0.13	0.13	0.34%	0.34%	4.28	4.27	50.39	50.39	1.75	1.75
2027	2,379	2,382	0.13	0.13	0.20%	0.20%	4.20	4.19	50.39	50.39	1.26	1.26
2028	2,302	2,305	0.13	0.13	-4.51%	-4.51%	3.88	3.88	50.37	50.36	0.87	0.87
2029	2,322	2,326	0.13	0.13	0.05%	0.09%	3.62	3.62	50.36	50.35	0.89	0.89
2030	2,460	2,463	0.13	0.13	4.77%	4.72%	4.09	4.09	50.37	50.37	1.44	1.44
2031	2,467	2,471	0.13	0.13	-0.80%	-0.76%	3.87	3.87	50.37	50.36	1.72	1.72

Table 62: Economic Impact of Alternative Resource Plan ABEK5

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,705	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,680	1,679	0.10	0.10	-2.52%	-2.46%	4.47	4.47	50.42	50.42	0.86	0.86
2014	1,756	1,742	0.11	0.11	3.45%	2.68%	4.40	4.41	50.40	50.40	0.71	0.70
2015	1,733	1,722	0.11	0.11	-1.82%	-1.66%	4.19	4.19	50.37	50.37	0.62	0.61
2016	1,875	1,868	0.11	0.11	7.29%	7.58%	4.54	4.54	50.37	50.37	1.26	1.24
2017	1,923	1,919	0.12	0.12	2.18%	2.34%	4.39	4.39	50.38	50.38	1.74	1.73
2018	1,986	1,985	0.12	0.12	2.58%	2.74%	4.49	4.49	50.37	50.37	0.94	0.93
2019	2,017	2,019	0.12	0.12	0.84%	0.99%	4.30	4.29	50.34	50.34	0.66	0.66
2020	2,145	2,147	0.13	0.13	5.30%	5.29%	4.23	4.23	50.34	50.34	1.07	1.07
2021	2,159	2,161	0.13	0.13	0.20%	0.20%	3.89	3.89	50.33	50.33	0.83	0.83
2022	2,191	2,193	0.13	0.13	0.73%	0.73%	3.88	3.88	50.31	50.31	0.66	0.66
2023	2,247	2,249	0.13	0.13	1.77%	1.77%	3.73	3.73	50.30	50.30	0.98	0.98
2024	2,406	2,409	0.14	0.14	5.93%	5.97%	4.40	4.39	50.30	50.29	1.44	1.44
2025	2,379	2,382	0.14	0.14	-1.75%	-1.75%	4.08	4.08	50.31	50.31	1.45	1.45
2026	2,404	2,407	0.14	0.14	0.12%	0.12%	3.98	3.97	50.30	50.29	1.09	1.08
2027	2,427	2,430	0.14	0.14	-0.07%	-0.07%	3.84	3.84	50.30	50.30	1.05	1.05
2028	2,345	2,348	0.13	0.13	-4.68%	-4.67%	3.56	3.56	50.29	50.29	0.85	0.85
2029	2,358	2,362	0.13	0.13	-0.27%	-0.23%	3.34	3.34	50.28	50.27	0.82	0.82
2030	2,543	2,547	0.14	0.14	6.67%	6.66%	4.11	4.10	50.28	50.27	1.57	1.57
2031	2,542	2,545	0.14	0.14	-1.14%	-1.18%	3.82	3.82	50.29	50.29	1.95	1.95

Table 63: Economic Impact of Alternative Resource Plan ABEK6

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,705	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,680	1,679	0.10	0.10	-2.52%	-2.46%	4.47	4.47	50.42	50.42	0.86	0.86
2014	1,756	1,741	0.11	0.11	3.45%	2.63%	4.38	4.38	50.39	50.38	0.65	0.63
2015	1,734	1,723	0.11	0.11	-1.77%	-1.56%	4.13	4.13	50.36	50.36	0.49	0.48
2016	1,904	1,896	0.12	0.11	8.84%	9.08%	4.53	4.53	50.36	50.36	1.39	1.37
2017	1,945	1,941	0.12	0.12	1.83%	2.05%	4.38	4.38	50.37	50.37	2.00	1.98
2018	2,004	2,003	0.12	0.12	2.31%	2.47%	4.49	4.49	50.36	50.36	0.97	0.96
2019	2,032	2,033	0.12	0.12	0.69%	0.79%	4.26	4.26	50.33	50.33	0.55	0.54
2020	2,206	2,208	0.13	0.13	7.54%	7.59%	4.43	4.43	50.34	50.34	2.30	2.29
2021	2,204	2,206	0.13	0.13	-0.60%	-0.60%	4.15	4.15	50.35	50.35	1.43	1.43
2022	2,226	2,229	0.13	0.13	0.25%	0.29%	4.24	4.24	50.34	50.34	0.92	0.92
2023	2,297	2,299	0.13	0.13	2.41%	2.36%	4.29	4.28	50.35	50.34	2.32	2.32
2024	2,295	2,298	0.13	0.13	-1.17%	-1.12%	4.27	4.27	50.37	50.36	2.08	2.08
2025	2,308	2,311	0.13	0.13	-0.06%	-0.06%	4.39	4.38	50.38	50.37	1.53	1.53
2026	2,332	2,335	0.13	0.13	0.09%	0.09%	4.30	4.30	50.40	50.39	2.10	2.10
2027	2,354	2,358	0.13	0.13	-0.10%	-0.05%	4.29	4.28	50.42	50.41	2.15	2.15
2028	2,272	2,275	0.13	0.13	-4.73%	-4.77%	4.10	4.10	50.44	50.43	1.85	1.85
2029	2,286	2,289	0.12	0.12	-0.21%	-0.21%	3.94	3.94	50.45	50.45	1.41	1.41
2030	2,376	2,380	0.13	0.13	2.78%	2.82%	4.07	4.07	50.44	50.44	1.10	1.10
2031	2,384	2,388	0.13	0.13	-0.79%	-0.79%	3.91	3.91	50.45	50.44	1.64	1.63

Table 64: Economic Impact of Alternative Resource Plan ABEK7

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,705	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,728	1,727	0.11	0.11	0.26%	0.32%	4.59	4.59	50.40	50.40	0.59	0.59
2014	1,813	1,798	0.11	0.11	3.85%	3.05%	4.36	4.37	50.38	50.38	0.74	0.72
2015	1,788	1,777	0.11	0.11	-1.95%	-1.74%	4.16	4.16	50.36	50.36	0.65	0.63
2016	1,923	1,915	0.12	0.12	6.66%	6.87%	4.51	4.51	50.36	50.36	1.36	1.34
2017	1,965	1,961	0.12	0.12	1.86%	2.08%	4.38	4.38	50.37	50.37	1.94	1.93
2018	2,026	2,025	0.12	0.12	2.41%	2.56%	4.52	4.52	50.37	50.37	1.19	1.19
2019	2,056	2,057	0.12	0.12	0.71%	0.81%	4.41	4.41	50.35	50.35	0.87	0.87
2020	2,179	2,181	0.13	0.13	4.99%	5.04%	4.44	4.43	50.37	50.37	2.08	2.08
2021	2,190	2,192	0.13	0.13	0.04%	0.04%	4.21	4.21	50.37	50.37	1.47	1.46
2022	2,220	2,222	0.13	0.13	0.60%	0.59%	4.36	4.35	50.37	50.37	1.18	1.18
2023	2,271	2,274	0.13	0.13	1.55%	1.59%	4.34	4.33	50.39	50.39	2.07	2.07
2024	2,284	2,287	0.13	0.13	-0.51%	-0.51%	4.36	4.36	50.41	50.41	2.18	2.18
2025	2,265	2,268	0.13	0.13	-1.48%	-1.47%	4.37	4.36	50.43	50.43	2.10	2.10
2026	2,300	2,303	0.13	0.13	0.60%	0.59%	4.38	4.37	50.45	50.45	1.91	1.91
2027	2,331	2,334	0.13	0.13	0.33%	0.32%	4.37	4.36	50.47	50.46	1.96	1.96
2028	2,257	2,260	0.12	0.12	-4.49%	-4.48%	4.15	4.14	50.48	50.47	1.69	1.69
2029	2,279	2,283	0.12	0.12	0.19%	0.23%	3.99	3.99	50.49	50.48	1.54	1.54
2030	2,329	2,333	0.13	0.13	1.04%	1.03%	3.98	3.98	50.50	50.49	1.52	1.52
2031	2,349	2,353	0.13	0.13	-0.25%	-0.25%	3.96	3.96	50.51	50.50	1.47	1.47

Table 65: Economic Impact of Alternative Resource Plan ACEK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,705	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,680	1,679	0.10	0.10	-2.52%	-2.46%	4.47	4.47	50.42	50.42	0.86	0.86
2014	1,756	1,742	0.11	0.11	3.44%	2.68%	4.40	4.40	50.40	50.40	0.74	0.72
2015	1,728	1,717	0.11	0.11	-2.11%	-1.95%	4.18	4.19	50.37	50.37	0.60	0.59
2016	1,914	1,888	0.12	0.11	9.79%	9.00%	4.62	4.62	50.36	50.35	1.03	1.01
2017	1,957	1,934	0.12	0.12	1.92%	2.11%	4.38	4.38	50.38	50.38	2.04	2.03
2018	2,016	1,995	0.12	0.12	2.32%	2.46%	4.54	4.54	50.38	50.38	1.32	1.32
2019	2,043	2,024	0.12	0.12	0.60%	0.72%	4.46	4.46	50.36	50.35	0.92	0.92
2020	2,157	2,138	0.13	0.13	4.56%	4.61%	4.45	4.44	50.38	50.38	2.27	2.27
2021	2,167	2,148	0.13	0.13	-0.01%	0.00%	4.23	4.23	50.39	50.39	1.50	1.50
2022	2,193	2,173	0.13	0.13	0.47%	0.43%	4.40	4.40	50.39	50.39	1.15	1.15
2023	2,252	2,232	0.13	0.13	1.89%	1.92%	4.36	4.36	50.40	50.40	1.77	1.76
2024	2,314	2,293	0.13	0.13	1.65%	1.63%	4.47	4.46	50.41	50.41	1.47	1.47
2025	2,288	2,268	0.13	0.13	-1.76%	-1.73%	4.37	4.37	50.43	50.43	2.18	2.18
2026	2,333	2,311	0.13	0.13	1.01%	0.94%	4.38	4.37	50.45	50.44	1.99	1.98
2027	2,364	2,342	0.13	0.13	0.28%	0.30%	4.36	4.35	50.47	50.47	1.65	1.65
2028	2,335	2,313	0.13	0.13	-2.51%	-2.52%	4.27	4.26	50.46	50.45	1.14	1.14
2029	2,361	2,338	0.13	0.13	0.28%	0.25%	3.97	3.97	50.47	50.46	1.62	1.62
2030	2,418	2,395	0.13	0.13	1.28%	1.30%	3.96	3.96	50.48	50.47	1.59	1.59
2031	2,432	2,408	0.13	0.13	-0.51%	-0.55%	3.94	3.94	50.49	50.48	1.52	1.51

Table 66: Economic Impact of Alternative Resource Plan ACEK2

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,705	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,680	1,679	0.10	0.10	-2.54%	-2.48%	4.44	4.44	50.41	50.41	0.75	0.75
2014	1,757	1,743	0.11	0.11	3.51%	2.75%	4.32	4.32	50.38	50.38	0.58	0.57
2015	1,730	1,719	0.11	0.11	-2.06%	-1.91%	4.07	4.07	50.35	50.34	0.53	0.52
2016	1,936	1,910	0.12	0.12	11.01%	10.22%	4.61	4.61	50.35	50.35	1.24	1.23
2017	1,986	1,962	0.12	0.12	2.17%	2.31%	4.35	4.35	50.36	50.36	2.08	2.06
2018	2,043	2,021	0.12	0.12	2.19%	2.33%	4.50	4.49	50.36	50.35	1.34	1.33
2019	2,068	2,049	0.12	0.12	0.50%	0.67%	4.43	4.43	50.35	50.34	0.94	0.94
2020	2,178	2,159	0.13	0.13	4.32%	4.36%	4.42	4.41	50.37	50.37	2.30	2.30
2021	2,187	2,168	0.13	0.13	-0.09%	-0.08%	4.21	4.21	50.38	50.38	1.53	1.53
2022	2,212	2,192	0.13	0.13	0.39%	0.35%	4.37	4.36	50.37	50.36	1.17	1.17
2023	2,266	2,246	0.13	0.13	1.68%	1.70%	4.35	4.35	50.39	50.38	2.11	2.11
2024	2,284	2,263	0.13	0.13	-0.29%	-0.32%	4.36	4.35	50.41	50.40	2.26	2.25
2025	2,258	2,237	0.13	0.13	-1.76%	-1.77%	4.35	4.34	50.43	50.43	1.63	1.63
2026	2,300	2,278	0.13	0.13	0.89%	0.86%	4.27	4.26	50.43	50.43	1.20	1.20
2027	2,330	2,308	0.13	0.13	0.27%	0.28%	4.16	4.15	50.43	50.42	1.34	1.33
2028	2,327	2,304	0.13	0.13	-1.43%	-1.48%	4.28	4.28	50.44	50.44	1.44	1.44
2029	2,353	2,330	0.13	0.13	0.27%	0.28%	3.95	3.95	50.45	50.44	1.65	1.65
2030	2,403	2,380	0.13	0.13	0.99%	1.02%	3.94	3.94	50.46	50.45	1.62	1.62
2031	2,415	2,391	0.13	0.13	-0.61%	-0.64%	3.93	3.93	50.47	50.46	1.55	1.55

Table 67: Economic Impact of Alternative Resource Plan ADDK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,705	0.11	0.11	0.00%	0.00%	4.49	4.49	50.44	50.44	1.29	1.29
2013	1,681	1,681	0.10	0.10	-2.49%	-2.38%	4.53	4.53	50.43	50.43	1.06	1.06
2014	1,756	1,742	0.11	0.11	3.39%	2.57%	4.49	4.49	50.42	50.42	0.82	0.80
2015	1,758	1,747	0.11	0.11	-0.43%	-0.26%	4.33	4.33	50.39	50.39	0.70	0.69
2016	1,826	1,818	0.11	0.11	3.02%	3.22%	4.49	4.49	50.39	50.39	1.34	1.32
2017	1,888	1,884	0.11	0.11	3.02%	3.25%	4.48	4.48	50.40	50.40	1.60	1.59
2018	1,962	1,960	0.12	0.12	3.25%	3.36%	4.58	4.57	50.39	50.39	0.93	0.93
2019	1,990	1,991	0.12	0.12	0.67%	0.83%	4.40	4.40	50.36	50.36	0.69	0.68
2020	2,153	2,156	0.13	0.13	7.19%	7.28%	4.52	4.51	50.37	50.37	1.72	1.72
2021	2,186	2,188	0.13	0.13	1.04%	0.99%	4.24	4.23	50.38	50.38	1.45	1.45
2022	2,206	2,208	0.13	0.13	0.14%	0.14%	4.36	4.35	50.37	50.36	1.18	1.18
2023	2,266	2,269	0.13	0.13	1.96%	2.00%	4.35	4.34	50.38	50.37	1.61	1.61
2024	2,329	2,332	0.13	0.13	1.66%	1.65%	4.44	4.43	50.39	50.39	1.45	1.45
2025	2,306	2,309	0.13	0.13	-1.59%	-1.59%	4.34	4.33	50.41	50.41	2.08	2.07
2026	2,349	2,352	0.13	0.13	0.91%	0.91%	4.35	4.34	50.43	50.43	1.95	1.95
2027	2,382	2,386	0.13	0.13	0.35%	0.39%	4.32	4.31	50.44	50.43	1.68	1.68
2028	2,350	2,353	0.13	0.13	-2.65%	-2.69%	4.24	4.24	50.44	50.43	1.18	1.18
2029	2,377	2,380	0.13	0.13	0.31%	0.31%	3.96	3.96	50.45	50.44	1.61	1.61
2030	2,424	2,427	0.13	0.13	0.86%	0.86%	3.94	3.94	50.46	50.45	1.62	1.62
2031	2,437	2,440	0.13	0.13	-0.55%	-0.55%	3.92	3.92	50.47	50.46	1.59	1.59

Table 68: Economic Impact of Alternative Resource Plan AEDK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,708	1,707	0.11	0.11	0.00%	0.00%	4.49	4.49	50.44	50.44	1.30	1.29
2013	1,681	1,681	0.10	0.10	-2.51%	-2.45%	4.54	4.54	50.43	50.43	1.09	1.09
2014	1,756	1,742	0.11	0.11	3.39%	2.56%	4.51	4.52	50.42	50.42	0.84	0.82
2015	1,755	1,744	0.11	0.11	-0.58%	-0.41%	4.35	4.35	50.39	50.38	0.71	0.70
2016	1,825	1,817	0.11	0.11	3.10%	3.30%	4.49	4.49	50.40	50.40	1.35	1.33
2017	1,884	1,880	0.11	0.11	2.89%	3.12%	4.49	4.49	50.40	50.40	1.59	1.58
2018	1,963	1,962	0.12	0.12	3.50%	3.67%	4.59	4.58	50.39	50.39	0.91	0.90
2019	1,990	1,991	0.12	0.12	0.65%	0.75%	4.40	4.39	50.36	50.35	0.69	0.68
2020	2,156	2,158	0.13	0.13	7.28%	7.33%	4.53	4.52	50.37	50.37	1.67	1.67
2021	2,187	2,189	0.13	0.13	0.97%	0.97%	4.24	4.23	50.38	50.38	1.44	1.44
2022	2,207	2,209	0.13	0.13	0.18%	0.17%	4.37	4.37	50.37	50.36	1.17	1.17
2023	2,267	2,269	0.13	0.13	1.92%	1.92%	4.35	4.34	50.39	50.39	1.64	1.64
2024	2,330	2,333	0.13	0.13	1.69%	1.73%	4.45	4.45	50.39	50.38	1.45	1.45
2025	2,307	2,310	0.13	0.13	-1.63%	-1.63%	4.35	4.35	50.41	50.40	2.08	2.08
2026	2,351	2,354	0.13	0.13	0.94%	0.94%	4.35	4.34	50.43	50.43	1.99	1.99
2027	2,381	2,385	0.13	0.13	0.24%	0.28%	4.34	4.33	50.45	50.44	1.99	1.98
2028	2,307	2,310	0.13	0.13	-4.40%	-4.43%	4.11	4.10	50.46	50.46	1.46	1.46
2029	2,381	2,384	0.13	0.13	2.37%	2.36%	4.10	4.09	50.45	50.45	1.04	1.04
2030	2,428	2,432	0.13	0.13	0.86%	0.90%	3.94	3.94	50.46	50.45	1.62	1.62
2031	2,443	2,447	0.13	0.13	-0.47%	-0.47%	3.92	3.92	50.47	50.46	1.56	1.56

Table 69: Economic Impact of Alternative Resource Plan AFDK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,708	1,706	0.11	0.11	0.00%	0.00%	4.51	4.51	50.44	50.44	1.46	1.46
2013	1,681	1,680	0.10	0.10	-2.49%	-2.43%	4.64	4.64	49.28	49.26	1.42	1.42
2014	1,756	1,742	0.11	0.11	3.35%	2.59%	4.62	4.62	50.43	50.43	0.88	0.86
2015	1,845	1,834	0.11	0.11	4.51%	4.72%	4.63	4.63	50.39	50.39	0.59	0.58
2016	1,860	1,853	0.11	0.11	-0.03%	0.19%	4.38	4.38	50.40	50.40	1.51	1.49
2017	1,916	1,912	0.12	0.12	2.68%	2.85%	4.49	4.49	50.40	50.39	1.61	1.60
2018	1,989	1,987	0.12	0.12	3.11%	3.22%	4.59	4.59	50.39	50.39	0.93	0.92
2019	2,022	2,023	0.12	0.12	0.90%	1.05%	4.40	4.39	50.37	50.37	0.70	0.70
2020	2,190	2,192	0.13	0.13	7.30%	7.34%	4.52	4.52	50.37	50.37	1.51	1.51
2021	2,255	2,257	0.13	0.13	2.48%	2.48%	4.33	4.33	50.37	50.37	1.15	1.15
2022	2,272	2,274	0.13	0.13	0.01%	0.01%	4.32	4.32	50.37	50.37	1.29	1.29
2023	2,335	2,337	0.14	0.14	2.00%	2.00%	4.35	4.35	50.39	50.39	1.94	1.94
2024	2,355	2,358	0.13	0.14	-0.24%	-0.19%	4.35	4.34	50.41	50.41	2.22	2.22
2025	2,342	2,345	0.13	0.13	-1.18%	-1.18%	4.37	4.37	50.43	50.43	2.07	2.06
2026	2,387	2,390	0.13	0.13	0.96%	0.95%	4.35	4.34	50.44	50.43	1.67	1.67
2027	2,468	2,472	0.14	0.14	2.32%	2.36%	4.47	4.46	50.44	50.43	1.31	1.31
2028	2,387	2,391	0.13	0.13	-4.54%	-4.54%	4.11	4.11	50.46	50.45	1.82	1.82
2029	2,420	2,423	0.13	0.13	0.57%	0.52%	3.97	3.97	50.47	50.46	1.59	1.59
2030	2,478	2,481	0.13	0.13	1.24%	1.23%	3.93	3.92	50.47	50.46	1.33	1.32
2031	2,543	2,547	0.14	0.14	1.52%	1.56%	4.06	4.05	50.46	50.45	1.03	1.02

Table 70: Economic Impact of Alternative Resource Plan AGEK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,705	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,680	1,679	0.10	0.10	-2.52%	-2.46%	4.47	4.47	50.42	50.42	0.86	0.86
2014	1,756	1,742	0.11	0.11	3.45%	2.69%	4.39	4.39	50.40	50.40	0.69	0.67
2015	1,738	1,727	0.11	0.11	-1.55%	-1.39%	4.20	4.20	50.37	50.37	0.61	0.60
2016	1,867	1,860	0.11	0.11	6.53%	6.80%	4.53	4.53	50.37	50.37	1.28	1.26
2017	1,921	1,917	0.12	0.12	2.49%	2.66%	4.43	4.43	50.38	50.38	1.72	1.70
2018	1,990	1,988	0.12	0.12	2.93%	3.04%	4.53	4.52	50.37	50.37	1.09	1.08
2019	2,016	2,017	0.12	0.12	0.58%	0.73%	4.40	4.40	50.35	50.34	0.8	0.80
2020	2,156	2,159	0.13	0.13	5.91%	6.01%	4.48	4.48	50.36	50.35	1.88	1.88
2021	2,179	2,182	0.13	0.13	0.58%	0.58%	4.22	4.22	50.37	50.37	1.44	1.44
2022	2,205	2,207	0.13	0.13	0.44%	0.39%	4.37	4.36	50.37	50.37	1.14	1.14
2023	2,262	2,265	0.13	0.13	1.84%	1.88%	4.35	4.34	50.38	50.38	1.88	1.88
2024	2,282	2,285	0.13	0.13	-0.24%	-0.24%	4.35	4.34	50.40	50.39	2.2	2.20
2025	2,258	2,261	0.13	0.13	-1.64%	-1.64%	4.36	4.35	50.42	50.41	2.11	2.10
2026	2,296	2,299	0.13	0.13	0.72%	0.71%	4.38	4.38	50.44	50.43	1.92	1.91
2027	2,327	2,330	0.13	0.13	0.32%	0.32%	4.36	4.35	50.46	50.45	1.97	1.97
2028	2,254	2,257	0.12	0.12	-4.45%	-4.45%	4.13	4.13	50.47	50.46	1.44	1.44
2029	2,324	2,328	0.13	0.13	2.27%	2.31%	4.12	4.12	50.46	50.46	1.03	1.03
2030	2,370	2,373	0.13	0.13	0.84%	0.79%	3.95	3.95	50.47	50.46	1.6	1.60
2031	2,383	2,387	0.13	0.13	-0.54%	-0.50%	3.93	3.93	50.48	50.47	1.54	1.54

Table 71: Economic Impact of Alternative Resource Plan AGEK9

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,706	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,679	1,678	0.10	0.10	-2.56%	-2.56%	4.47	4.47	50.42	50.42	0.86	0.86
2014	1,754	1,740	0.11	0.11	3.41%	2.65%	4.39	4.40	50.40	50.40	0.69	0.69
2015	1,736	1,725	0.11	0.11	-1.59%	-1.43%	4.20	4.20	50.37	50.37	0.61	0.61
2016	1,866	1,859	0.11	0.11	6.64%	6.91%	4.53	4.53	50.37	50.37	1.28	1.26
2017	1,921	1,917	0.12	0.12	2.55%	2.72%	4.43	4.43	50.38	50.38	1.72	1.76
2018	1,990	1,988	0.12	0.12	2.93%	3.04%	4.53	4.53	50.37	50.37	1.09	1.22
2019	2,016	2,017	0.12	0.12	0.58%	0.73%	4.40	4.44	50.35	50.36	0.8	0.87
2020	2,156	2,159	0.13	0.13	5.91%	6.01%	4.48	4.47	50.36	50.37	1.88	2.03
2021	2,179	2,182	0.13	0.13	0.58%	0.58%	4.22	4.23	50.37	50.38	1.44	1.47
2022	2,205	2,207	0.13	0.13	0.44%	0.39%	4.37	4.39	50.37	50.39	1.14	1.13
2023	2,262	2,265	0.13	0.13	1.84%	1.88%	4.35	4.37	50.38	50.39	1.88	1.84
2024	2,282	2,285	0.13	0.13	-0.24%	-0.24%	4.35	4.38	50.40	50.41	2.2	2.16
2025	2,258	2,261	0.13	0.13	-1.64%	-1.64%	4.35	4.36	50.42	50.43	1.83	1.56
2026	2,296	2,299	0.13	0.13	0.74%	0.73%	4.32	4.29	50.43	50.43	1.47	0.97
2027	2,328	2,331	0.13	0.13	0.34%	0.34%	4.25	4.16	50.44	50.43	1.62	1.22
2028	2,286	2,289	0.13	0.13	-3.10%	-3.10%	4.20	4.27	50.45	50.44	1.57	1.39
2029	2,307	2,311	0.13	0.13	0.10%	0.14%	3.97	3.96	50.46	50.45	1.58	1.59
2030	2,354	2,358	0.13	0.13	0.87%	0.87%	3.95	3.94	50.47	50.46	1.59	1.59
2031	2,367	2,371	0.13	0.13	-0.54%	-0.54%	3.93	3.92	50.48	50.47	1.54	1.55

Table 72: Economic Impact of Alternative Resource Plan AIEK9

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,706	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,679	1,678	0.10	0.10	-2.56%	-2.56%	4.47	4.47	50.42	50.42	0.86	0.86
2014	1,754	1,740	0.11	0.11	3.41%	2.65%	4.39	4.39	50.40	50.40	0.69	0.67
2015	1,736	1,725	0.11	0.11	-1.59%	-1.43%	4.20	4.20	50.37	50.37	0.61	0.60
2016	1,866	1,859	0.11	0.11	6.64%	6.91%	4.53	4.53	50.37	50.37	1.28	1.26
2017	1,921	1,917	0.12	0.12	2.55%	2.72%	4.43	4.43	50.38	50.38	1.72	1.70
2018	1,997	1,996	0.12	0.12	3.26%	3.42%	4.54	4.54	50.37	50.37	1.04	0.98
2019	2,023	2,024	0.12	0.12	0.60%	0.70%	4.39	4.38	50.35	50.34	0.8	0.80
2020	2,167	2,169	0.13	0.13	6.10%	6.14%	4.47	4.46	50.36	50.35	1.88	1.88
2021	2,188	2,190	0.13	0.13	0.49%	0.49%	4.22	4.22	50.37	50.37	1.44	1.44
2022	2,217	2,219	0.13	0.13	0.55%	0.55%	4.37	4.36	50.37	50.37	1.14	1.14
2023	2,274	2,277	0.13	0.13	1.83%	1.87%	4.35	4.34	50.38	50.38	1.89	1.90
2024	2,292	2,294	0.13	0.13	-0.32%	-0.37%	4.35	4.34	50.40	50.39	2.2	2.20
2025	2,267	2,270	0.13	0.13	-1.68%	-1.63%	4.36	4.37	50.42	50.42	2.12	2.41
2026	2,309	2,313	0.13	0.13	0.87%	0.91%	4.37	4.42	50.44	50.45	1.93	2.39
2027	2,338	2,342	0.13	0.13	0.23%	0.23%	4.36	4.46	50.46	50.48	1.98	2.34
2028	2,256	2,259	0.12	0.12	-4.78%	-4.82%	4.14	4.07	50.47	50.49	1.71	1.85
2029	2,280	2,283	0.12	0.12	0.21%	0.21%	3.99	4.01	50.48	50.50	1.53	1.47
2030	2,325	2,328	0.13	0.13	0.84%	0.84%	3.97	3.99	50.49	50.51	1.54	1.48
2031	2,342	2,346	0.13	0.13	-0.37%	-0.33%	3.95	3.97	50.50	50.51	1.49	1.44

Table 73: Economic Impact of Alternative Resource Plan BBEK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,708	1,698	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.18	1.16
2013	1,681	1,674	0.10	0.10	-2.17%	-2.00%	4.47	4.47	50.42	50.42	0.87	0.86
2014	1,757	1,753	0.11	0.11	3.50%	3.70%	4.39	4.39	50.40	50.40	0.71	0.70
2015	1,732	1,730	0.11	0.11	-1.98%	-1.87%	4.19	4.19	50.37	50.37	0.62	0.61
2016	1,872	1,872	0.11	0.11	7.21%	7.34%	4.55	4.55	50.37	50.37	1.32	1.32
2017	1,919	1,920	0.12	0.12	2.17%	2.23%	4.41	4.40	50.38	50.37	1.88	1.88
2018	1,979	1,981	0.12	0.12	2.42%	2.47%	4.54	4.53	50.38	50.38	1.04	1.04
2019	2,043	2,044	0.12	0.12	2.49%	2.44%	4.51	4.51	50.35	50.35	0.70	0.70
2020	2,165	2,167	0.13	0.13	4.98%	5.03%	4.44	4.43	50.37	50.37	2.07	2.07
2021	2,177	2,178	0.13	0.13	0.07%	0.03%	4.21	4.20	50.37	50.37	1.46	1.46
2022	2,207	2,209	0.13	0.13	0.61%	0.65%	4.37	4.37	50.37	50.37	1.16	1.16
2023	2,260	2,262	0.13	0.13	1.66%	1.66%	4.34	4.33	50.39	50.39	2.05	2.05
2024	2,276	2,278	0.13	0.13	-0.41%	-0.41%	4.35	4.35	50.40	50.39	1.82	1.82
2025	2,299	2,301	0.13	0.13	0.39%	0.39%	4.46	4.45	50.41	50.41	1.38	1.38
2026	2,333	2,335	0.13	0.13	0.56%	0.56%	4.35	4.34	50.43	50.43	1.93	1.93
2027	2,364	2,366	0.13	0.13	0.29%	0.29%	4.34	4.33	50.45	50.45	1.98	1.98
2028	2,287	2,288	0.13	0.13	-4.52%	-4.56%	4.13	4.13	50.47	50.47	1.71	1.71
2029	2,311	2,313	0.13	0.13	0.22%	0.27%	3.96	3.96	50.47	50.47	1.31	1.31
2030	2,410	2,412	0.13	0.13	3.10%	3.10%	4.09	4.09	50.46	50.46	1.03	1.03
2031	2,424	2,426	0.13	0.13	-0.52%	-0.53%	3.92	3.92	50.47	50.47	1.54	1.54

Table 74: Economic Impact of Alternative Resource Plan CBEK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,708	1,701	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.18	1.17
2013	1,682	1,677	0.10	0.10	-2.44%	-2.32%	4.47	4.47	50.42	50.42	0.87	0.86
2014	1,759	1,756	0.11	0.11	3.28%	3.41%	4.39	4.39	50.40	50.40	0.71	0.71
2015	1,735	1,733	0.11	0.11	-2.17%	-2.11%	4.19	4.19	50.37	50.37	0.62	0.62
2016	1,878	1,878	0.11	0.11	7.03%	7.15%	4.55	4.55	50.37	50.37	1.31	1.31
2017	1,926	1,927	0.12	0.12	1.97%	2.02%	4.41	4.40	50.38	50.37	1.87	1.87
2018	1,989	1,990	0.12	0.12	2.30%	2.30%	4.56	4.56	50.38	50.38	1.14	1.14
2019	2,021	2,022	0.12	0.12	0.57%	0.56%	4.43	4.43	50.36	50.36	0.77	0.77
2020	2,188	2,189	0.13	0.13	6.93%	6.92%	4.54	4.53	50.37	50.37	1.38	1.38
2021	2,202	2,203	0.13	0.13	-0.10%	-0.10%	4.21	4.21	50.37	50.37	1.45	1.45
2022	2,237	2,238	0.13	0.13	0.55%	0.55%	4.37	4.37	50.37	50.37	1.15	1.15
2023	2,297	2,299	0.13	0.13	1.64%	1.68%	4.33	4.33	50.38	50.37	1.74	1.74
2024	2,360	2,361	0.13	0.13	1.37%	1.32%	4.44	4.43	50.39	50.39	1.43	1.43
2025	2,346	2,347	0.13	0.13	-1.49%	-1.49%	4.34	4.34	50.41	50.41	2.12	2.12
2026	2,389	2,390	0.13	0.13	0.62%	0.62%	4.34	4.34	50.42	50.41	1.62	1.62
2027	2,471	2,472	0.13	0.13	2.13%	2.13%	4.44	4.43	50.43	50.43	1.3	1.30
2028	2,400	2,402	0.13	0.13	-4.39%	-4.35%	4.10	4.10	50.44	50.43	1.75	1.75
2029	2,434	2,435	0.13	0.13	0.32%	0.28%	3.94	3.94	50.45	50.45	1.34	1.34
2030	2,542	2,544	0.13	0.13	3.02%	3.06%	4.07	4.07	50.44	50.44	1.04	1.03
2031	2,565	2,567	0.13	0.13	-0.46%	-0.46%	3.91	3.91	50.45	50.45	1.56	1.56

Table 75: Economic Impact of Alternative Resource Plan DBEK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,712	1,673	0.11	0.11	0.00%	0.00%	4.48	4.49	50.43	50.43	1.23	1.15
2013	1,691	1,660	0.11	0.10	-1.49%	-1.04%	4.47	4.47	50.42	50.42	0.92	0.87
2014	1,773	1,750	0.11	0.11	4.12%	4.69%	4.39	4.39	50.39	50.38	0.76	0.73
2015	1,755	1,741	0.11	0.11	-1.38%	-0.89%	4.19	4.19	50.37	50.37	0.68	0.66
2016	1,898	1,892	0.12	0.12	7.61%	8.13%	4.54	4.53	50.37	50.37	1.42	1.40
2017	1,948	1,950	0.12	0.12	2.60%	3.03%	4.40	4.38	50.38	50.37	2.04	2.03
2018	2,009	2,015	0.12	0.12	2.74%	2.94%	4.54	4.52	50.37	50.36	1.25	1.25
2019	2,034	2,040	0.12	0.13	0.83%	0.83%	4.43	4.42	50.36	50.35	0.92	0.92
2020	2,155	2,161	0.13	0.13	5.24%	5.22%	4.46	4.44	50.37	50.36	2.2	2.20
2021	2,164	2,171	0.13	0.13	0.26%	0.31%	4.23	4.22	50.38	50.37	1.55	1.54
2022	2,191	2,199	0.13	0.13	0.77%	0.81%	4.38	4.36	50.38	50.38	1.24	1.24
2023	2,242	2,250	0.14	0.14	1.85%	1.84%	4.36	4.35	50.39	50.38	2.2	2.20
2024	2,253	2,261	0.13	0.14	-0.31%	-0.31%	4.37	4.35	50.41	50.40	2.32	2.31
2025	2,230	2,238	0.13	0.13	-1.32%	-1.32%	4.38	4.36	50.43	50.41	2.25	2.25
2026	2,261	2,270	0.13	0.13	0.73%	0.77%	4.40	4.38	50.45	50.43	2.05	2.04
2027	2,289	2,298	0.13	0.13	0.47%	0.47%	4.38	4.35	50.47	50.45	2.11	2.10
2028	2,208	2,218	0.13	0.13	-4.54%	-4.48%	4.16	4.14	50.48	50.46	1.85	1.84
2029	2,225	2,235	0.13	0.13	0.22%	0.21%	4.00	3.99	50.49	50.47	1.72	1.72
2030	2,269	2,279	0.13	0.13	1.15%	1.14%	3.98	3.97	50.50	50.48	1.7	1.70
2031	2,280	2,291	0.13	0.13	-0.37%	-0.33%	3.96	3.95	50.51	50.49	1.64	1.63

Table 76: Economic Impact of Alternative Resource Plan DCEK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,712	1,673	0.11	0.11	0.00%	0.00%	4.48	4.48	50.43	50.43	1.23	1.15
2013	1,691	1,660	0.11	0.10	-1.49%	-1.04%	4.47	4.47	50.42	50.42	0.92	0.87
2014	1,773	1,751	0.11	0.11	4.12%	4.75%	4.40	4.40	50.40	50.40	0.79	0.76
2015	1,749	1,735	0.11	0.11	-1.68%	-1.24%	4.18	4.17	50.37	50.36	0.7	0.68
2016	1,902	1,896	0.12	0.12	8.15%	8.68%	4.55	4.54	50.37	50.36	1.47	1.45
2017	1,950	1,952	0.12	0.12	2.52%	2.95%	4.40	4.39	50.38	50.37	2.14	2.13
2018	2,008	2,014	0.12	0.12	2.57%	2.77%	4.56	4.55	50.38	50.37	1.39	1.39
2019	2,030	2,036	0.12	0.12	0.69%	0.69%	4.47	4.46	50.37	50.36	0.97	0.96
2020	2,139	2,145	0.13	0.13	4.67%	4.66%	4.46	4.46	50.39	50.39	2.39	2.38
2021	2,146	2,153	0.13	0.13	0.15%	0.20%	4.24	4.23	50.39	50.38	1.59	1.59
2022	2,168	2,175	0.13	0.13	0.58%	0.58%	4.41	4.40	50.39	50.38	1.22	1.22
2023	2,223	2,231	0.13	0.13	2.04%	2.07%	4.38	4.37	50.41	50.40	2.21	2.20
2024	2,240	2,248	0.13	0.13	-0.04%	-0.05%	4.39	4.38	50.43	50.42	2.38	2.37
2025	2,211	2,220	0.13	0.13	-1.61%	-1.57%	4.41	4.39	50.45	50.43	2.27	2.27
2026	2,250	2,259	0.13	0.13	1.12%	1.11%	4.42	4.40	50.47	50.45	2.09	2.08
2027	2,277	2,286	0.13	0.13	0.44%	0.44%	4.42	4.40	50.49	50.47	2.07	2.06
2028	2,197	2,206	0.13	0.13	-4.53%	-4.51%	4.19	4.16	50.50	50.47	1.81	1.80
2029	2,218	2,228	0.13	0.13	0.43%	0.47%	4.01	3.98	50.51	50.48	1.68	1.67
2030	2,270	2,280	0.13	0.13	1.48%	1.47%	3.98	3.95	50.51	50.48	1.4	1.40
2031	2,324	2,335	0.13	0.13	1.56%	1.59%	4.12	4.09	50.49	50.46	1.08	1.08

Table 77: Economic Impact of Alternative Resource Plan EBEK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,718	1,628	0.11	0.10	0.00%	0.00%	4.49	4.51	50.43	50.43	1.31	1.13
2013	1,708	1,636	0.11	0.10	-0.24%	0.83%	4.48	4.49	50.41	50.40	1	0.89
2014	1,800	1,748	0.11	0.11	5.26%	6.71%	4.39	4.39	50.39	50.38	0.84	0.77
2015	1,792	1,760	0.11	0.11	-0.31%	0.82%	4.19	4.19	50.36	50.35	0.77	0.72
2016	1,943	1,928	0.12	0.12	8.51%	9.63%	4.52	4.49	50.36	50.35	1.59	1.54
2017	1,999	2,003	0.13	0.13	3.51%	4.53%	4.39	4.36	50.37	50.35	2.3	2.27
2018	2,060	2,073	0.13	0.13	3.33%	3.77%	4.52	4.48	50.36	50.34	1.42	1.41
2019	2,082	2,096	0.13	0.13	1.23%	1.27%	4.41	4.38	50.35	50.33	1.05	1.05
2020	2,197	2,212	0.14	0.14	5.48%	5.49%	4.44	4.40	50.36	50.34	2.49	2.48
2021	2,202	2,219	0.14	0.14	0.73%	0.82%	4.21	4.18	50.37	50.35	1.77	1.76
2022	2,221	2,239	0.14	0.14	1.03%	1.06%	4.36	4.32	50.36	50.34	1.42	1.41
2023	2,265	2,283	0.15	0.15	2.18%	2.17%	4.34	4.31	50.38	50.36	2.51	2.50
2024	2,266	2,285	0.15	0.15	-0.11%	-0.07%	4.35	4.31	50.40	50.38	2.66	2.65
2025	2,232	2,252	0.14	0.15	-1.15%	-1.10%	4.36	4.32	50.41	50.37	2.59	2.57
2026	2,254	2,274	0.15	0.15	0.99%	0.98%	4.37	4.32	50.43	50.39	2.39	2.38
2027	2,270	2,291	0.15	0.15	0.63%	0.66%	4.36	4.31	50.45	50.41	2.48	2.47
2028	2,177	2,199	0.14	0.14	-4.51%	-4.43%	4.14	4.10	50.46	50.42	2.21	2.19
2029	2,181	2,203	0.14	0.14	0.32%	0.32%	3.98	3.95	50.47	50.43	2.09	2.07
2030	2,206	2,229	0.14	0.14	0.97%	1.01%	3.97	3.95	50.47	50.42	2.08	2.07
2031	2,201	2,227	0.14	0.14	-0.38%	-0.24%	3.95	3.93	50.48	50.43	2.02	2.01

Table 78: Economic Impact of Alternative Resource Plan XBEK1

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	1,707	1,707	0.11	0.11	0.00%	0.00%	4.47	4.47	50.43	50.43	1.17	1.17
2013	1,680	1,680	0.10	0.10	-2.55%	-2.55%	4.47	4.47	50.42	50.42	0.86	0.86
2014	1,754	1,754	0.11	0.11	3.19%	3.19%	4.39	4.39	50.40	50.40	0.7	0.70
2015	1,730	1,730	0.11	0.11	-2.25%	-2.25%	4.19	4.19	50.37	50.37	0.61	0.61
2016	1,871	1,871	0.11	0.11	7.00%	7.00%	4.55	4.55	50.37	50.37	1.29	1.29
2017	1,919	1,919	0.11	0.11	1.96%	1.96%	4.40	4.40	50.38	50.38	1.58	1.58
2018	2,017	2,017	0.12	0.12	4.12%	4.12%	4.63	4.63	50.37	50.37	0.89	0.89
2019	2,046	2,046	0.12	0.12	0.41%	0.41%	4.41	4.41	50.36	50.36	0.84	0.84
2020	2,175	2,175	0.13	0.13	4.99%	4.99%	4.45	4.45	50.37	50.37	2.02	2.02
2021	2,191	2,191	0.13	0.13	-0.02%	-0.02%	4.21	4.21	50.37	50.37	1.27	1.27
2022	2,265	2,265	0.13	0.13	2.33%	2.33%	4.45	4.45	50.36	50.36	0.9	0.90
2023	2,323	2,323	0.13	0.13	1.49%	1.49%	4.32	4.32	50.38	50.38	2.05	2.05
2024	2,343	2,343	0.13	0.13	-0.45%	-0.45%	4.32	4.32	50.39	50.39	1.82	1.82
2025	2,372	2,372	0.13	0.13	0.32%	0.32%	4.44	4.44	50.40	50.40	1.37	1.37
2026	2,413	2,413	0.13	0.13	0.52%	0.52%	4.33	4.33	50.42	50.42	1.92	1.92
2027	2,450	2,450	0.13	0.13	0.22%	0.22%	4.30	4.30	50.43	50.43	1.65	1.65
2028	2,426	2,426	0.13	0.13	-2.53%	-2.53%	4.23	4.23	50.43	50.43	1.13	1.13
2029	2,457	2,457	0.13	0.13	0.20%	0.20%	3.94	3.94	50.44	50.44	1.6	1.60
2030	2,516	2,516	0.13	0.13	1.00%	1.00%	3.91	3.91	50.45	50.45	1.31	1.31
2031	2,589	2,589	0.13	0.13	1.54%	1.54%	4.04	4.04	50.44	50.44	1.01	1.01

2. If the estimated company financial ratios in subparagraph (4)(C)1.C. are below investment grade in any year of the planning horizon, a description of any changes in legal mandates and cost recovery mechanisms necessary for the utility to maintain an investment grade credit rating in each year of the planning horizon and the resulting performance measures in subparagraphs (4)(C)1.A.–(4)(C)1.C. of the alternative resource plans that are associated with the necessary changes in legal mandates and cost recovery mechanisms.

The expected values of alternative plan performance ratios do not materially change below current conditions. The expectations would be that the investment rating of the company is not at risk from the choice of any particular alternative resource plan.

(D) A discussion of how the impacts of rate changes on future electric loads were modeled and how the appropriate estimates of price elasticity were obtained;

Rate calculation is performed in this analysis on a perfect rate making basis. Total revenue requirement is calculated which requires exogenous load

forecast(s) as an input. In other words, rates are an output of the perfect rate making process.

Where rate elasticity is used in the IRP process is in the development of the load forecast. This is documented in the response to rule 22.030(7)(A)1. in Volume 3 of this filing.

(E) A discussion of the incremental costs of implementing more renewable energy resources than required to comply with renewable energy legal mandates;

Rule 060 (3) (A) 2. and Contemporary Issue Order 1 b. require the company to study a larger build of renewable resources beyond the current Missouri RPS standard requirement. To meet both of the above mentioned items and to review the potential impact of a proposal to increase RPS requirements in Missouri, the company included a plan which doubled the renewable portfolio for the company and his described in detail in Section 3 of this Volume.

The results of this study are detailed throughout this Volume and in Volume 7. A summary review shows that increasing the amount of wind in the current company portfolio generally increases the NPVRR of the alternative resource plan.

(F) A discussion of the incremental costs of implementing more energy efficiency resources than required to comply with energy efficiency legal mandates;

At the current time, there is no specifically target legal mandate for energy efficiency. However this analysis reviews different levels of energy efficiency. They constitute an aggressive plan with a 1% target and a very aggressive plan with a 2% target. These alternative plans are included in the integrated analysis results presented elsewhere in this Volume.

(G) A discussion of the incremental costs of implementing more energy resources than required to comply with any other energy resource legal mandates; and

At this time no other legal resource mandates exist. None are contemplated in this analysis.

(H) A description of the computer models used in the analysis of alternative resource plans.

The MIDAS™ model provides hourly chronological dispatch of all system generating assets including unit commitment logic that simulation the actual operation of the utility system resources. The model contains all unit operating variables required to simulate the units. These variables include but are not limited to, heat rates, fuel costs, variable operation and maintenance costs, sulfur dioxide emission allowance costs, scheduled maintenance outages, forced and derate outages rates each on a per unit basis.

The model can also simulate capacity and energy purchases from or sales to a market in either a firm transaction or as a spot market transaction. In the case of market based transactions, all can be conducted with the impact of environmental credits factored in. The level of purchases or sales can also be limited to any range desired. For this IRP, the Company has limited the ability to purchase firm sales to a level consistent with the company's current operating methods and market conditions.

This model met all conditions of previous rule 22.070 (7) (B), and was used for all previous IRP integrated analysis filings.

SECTION 5: UNCERTAIN FACTORS

(5) The utility shall describe and document its selection of the uncertain factors that are critical to the performance of the alternative resource plans. The utility shall consider at least the following uncertain factors:

The company began the analysis of uncertain factors by compiling a list of factors and issues to address from four sources. The first source is Rule 4 CSR 240-22.060(5) which details the uncertain factors must be included in a analysis of potential risks. The second source is the stipulations and agreements from previously filed IRPs. The third source is company management concerns. The final source is the resulting order from the Contemporary Issues process in Case EO-2012-0041.

Table 79: Uncertain Factors

UNCERTAIN FACTOR	RULE	DEFAULT STATE	TEST STATES
Load growth	060(5)(A)	MID	HIGH, LOW
Interest rates/Credit market conditions	060(5)(B)	MID	HIGH, LOW
Changes in legal mandates	060(5)(C)		
Federal Renewable Standard		NO STANDARD	STANDARD
Federal EE Standard		NO STANDARD	STANDARD
Relative fuel prices	060(5)(D)		
Natural Gas		MID	HIGH, LOW
PRB Coal		MID	HIGH, LOW
Siting and permitting costs	060(5)(E)	MID	HIGH, LOW
Construction costs	060(5)(F)	MID	HIGH, LOW
Purchased power availability	060(5)(G)	MID	HIGH, LOW
Emission allowances	060(5)(H)		
CO_2		MID	HIGH, LOW
SO_2		MID	HIGH, LOW
NO_X		MID	HIGH, LOW
Fixed O&M	060(5)(I)	MID	HIGH, LOW
EFOR	060(5)(J)	MID	HIGH, LOW
DSM load impacts	060(5)(K)	MID	HIGH, LOW
DSM Utility marketing and delivery costs	060(5)(L)	MID	HIGH, LOW
Other factors	060(5)(M)		
Smart Grid		NO IMPACT	HIGH IMPACT

The Company compiled information concerning the risks listed in 22.070 (5) from subject matter experts within the company. The experts were requested to provide mid, high and low scenario forecasts for their particular risk. The mid, high and low scenarios were also assigned a subjective probability by the subject matter experts.

This information was collected and presented to management to solicit management input into the drivers of the eventual model process.

The company utilized ABB-Ventyx's System Optimizer Model™[CapEx™] to provide a preliminary test of each sensitivity listed in 22.070 (5) along with additional sensitivities chosen by the Company to complete its risk assessment.

CapEx™ is a linear program based model that chooses a lowest-cost expansion plan given a known load growth and other fixed market factors. Once a load growth forecast and market is defined, the model is allowed to pick from among all supply, DSM and retirement options available to arrive at the lowest possible cost expansion plan.

The company executed test runs for each sensitivity to determine if the resulting lowest cost expansion plan constituted different choices of DSM, supply or retirements. If the model did not materially change its expansion plan by changing sensitivity, that factor was not deemed to be a Critical Uncertain Factor. However, if the model chose different options, such as different technologies or foregoing DSM programs, then that factor would be deemed a Critical Uncertain Factor and was incorporated within the Risk Analysis Decision Tree.

The results of the CapEx™ studies are included in detail in the working papers attached to this filing.

(A) The range of future load growth represented by the low-case and high-case load forecasts;

The high, mid and low load growth cases compliant with and described in Rule 22.030 (7)&(8)were used in the CapEx™ model. The CapEx™ results demonstrated that load growth is a critical uncertain factor. Load growth sensitivity was passed onto the integrated analysis.

(B) Future interest rate levels and other credit market conditions that can affect the utility's cost of capital and access to capital;

The company compiled a family of interest rate impacted model determinants, such as cost of capital, AFUDC, etc. Three scenarios of these determinants were calculated assuming a high and low long term interest rate risk.

This information was used to model the sensitivity of CapEx™ plan to changes in these factors. The company discovered that the plans were sensitive to the high case but insensitive to the low case. The results of this sensitivity run were identical to the results for the high construction cost risk detailed below. Therefore these two risks were modeled as correlated risks and the preferred plan was subjected to these risks to test its response to this combined risk.

(C) Future changes in legal mandates;

FEDERAL RENEWABLE PORTFOLIO STANDARD

The Federal Renewable Standard was modeled using the Bingaman bill. The requirements of the proposed bill were similar to the Missouri standard requirements except that they were on a national level and not on a state only level. The Federal standard would not require The company to acquire additional renewable resources beyond the requirements of the Missouri rules. However, the entire country will be required to acquire additional renewable resources causing an adjustment to power market prices. When adjusted market prices were input into the CapEx™ model, no change to the optimal expansion plan occurred. Therefore the Federal renewable standard was not deemed to be a critical uncertain factor and not included in the integrated analysis.

FEDERAL ENERGY EFFICIENCY STANDARD

At the June, 2010 Stakeholder Meeting, Staff proposed using the Save American Energy Act, HR 889 bill to use as a basis for analysis. The bill proposes to amend Title VI of the Public Utility Regulatory Policies Act of 1978 to establish a Federal energy efficiency resource standard for retail electricity and natural gas distributors.

This bill is in the first step in the legislative process. Introduced bills and resolutions first go to committees that deliberate, investigate, and revise them before they go to general debate. It was introduced on February 4, 2009 and referred to the House Energy and Commerce Committee.

The Company agreed to use H.R.889 and its energy efficiency targets and alternative payment structure to simulate the effect of a Federal Energy Standard on the IRP alternative plan selection.

Due to the large upheavals this law makes to the power markets, a separate Integrated Analysis was built to analyze the best plan under this risk. The separate analysis assumes the same Risk Tree, yet the wholesale market prices and system load forecasts are adjusted to accommodate the reductions in native load that will accompany the new law. The results of those runs are detailed in Section 7 of Volume 6.

(D) Relative real fuel prices;

NATURAL GAS PRICES

High and low natural gas price forecast scenarios were developed as inputs into the CapEx™ model. The optimized expansion plans for the high and low cases are sufficiently different to require adding natural gas price risk as a critical uncertain factor. Natural gas price forecast development is detailed in Volume 4, Supply-Side Analysis.

COAL PRICES

High and low delivered coal price forecast scenario was modeled in CapEx™. No material changes were identified in the model's optimal expansion plans. Purchased power availability was not identified as a critical uncertain factor. This risk was not included in the integrated analysis. Coal price forecast development is detailed in Volume 4, Supply-Side Analysis.

(E) Siting and permitting costs and schedules for new generation and generation-related transmission facilities for the utility, for a regional transmission organization, and/or other transmission systems;

Siting and permitting costs are incorporated into the cost of construction risk detailed in 22.060 (5) (F).

(F) Construction costs and schedules for new generation and generation-related transmission facilities for the utility, for a regional transmission organization, and/or other transmission systems;

The company determined high and low construction cost estimates for each supply technology evaluated. The supply options forwarded from the preliminary screen conducted in compliance with Rule 22.040 (2). High and low construction costs scenarios were modeled in CapEx™. The resulting optimal expansion plans displayed material changes only in the presence of high construction costs. The results were identical to the risk exhibited from high financing costs. Therefore, construction cost risk and high financing cost risks were combined and tested against the preferred plan.

Construction costs risks vary by technology. Detailed information for each of the resource options identified can be viewed in Volume 4.

(G) Purchased power availability, terms, cost, optionality, and other benefits;

High and low purchased power availability was simulated with a high and low cost for the capacity terms of the contracts. High and low purchased power

availability scenarios were modeled in CapEx™. No material changes were identified in the model's optimal expansion plans. Purchased power availability was not identified as a critical uncertain factor. This risk was not included in the integrated analysis.

(H) Price of emission allowances, including at a minimum sulfur dioxide, carbon dioxide, and nitrogen oxides;

SO_2 credit price forecast development is detailed in Volume 4, Supply-Side Analysis. High and low SO_2 credit price forecasts were simulated in the CapEx™ model. Resulting optimal expansion plans did not change as this cost was varied. SO_2 credit prices are not considered a critical resource factor and were not used as part of the integrated analysis.

NO_X credit price forecast development is detailed in Volume 4, Supply-Side Analysis. High and low NO_X credit price forecasts were simulated in the CapEx™ model. Resulting optimal expansion plans did not change as this cost was varied. NO_X credit prices are not considered a critical resource factor and were not used as part of the integrated analysis.

The company assumed a market for CO_2 emission credits will form. The costs of this market were not planned to be included as a part of the integrated analysis probable environmental costs but instead handled as a sensitivity which may of may not become a critical uncertain factor.

High, mid and low CO_2 credit price forecasts were developed, and their effects modeled in CapEx™. The resulting optimal expansion plans showed sensitivity to CO_2 prices. Therefore, CO_2 credit prices were included in the integrated analysis as a critical uncertain factor. CO_2 credit price forecast development is detailed in Volume 4, Supply-Side Analysis.

(I) Fixed operation and maintenance costs for new and existing generation facilities;

High and low Fixed O&M costs were simulated in the CapEx™ model. Resulting optimal expansion plans did not change as this cost was varied. Therefore, fixed O&M costs were not considered a critical resource factor and were not used as part of the integrated analysis.

(J) Equivalent or full- and partial-forced outage rates for new and existing generation facilities;

High and low equivalent forced outage rates were simulated in the CapEx™ model. Resulting optimal expansion plans did not change as this factor was varied. Therefore, equivalent forced outage rates were not considered a critical resource factor and were not used as part of the integrated analysis.

(K) Future load impacts of demand-side programs and demand-side rates:

High and low load impacts of DSM were simulated in the CapEx™ model. Resulting optimal expansion plans did not change as this factor was varied. Therefore, load impacts of DSM were not considered a critical resource factor and were not used as part of the integrated analysis.

(L) Utility marketing and delivery costs for demand-side programs and demand-side rates; and

High and low marketing costs of DSM were simulated in the CapEx™ model. Resulting optimal expansion plans did not change as this factor was varied. Therefore, marketing costs of DSM were not considered a critical resource factor and were not used as part of the integrated analysis.

(M) Any other uncertain factors that the utility determines may be critical to the performance of alternative resource plans.

SMART GRID

The Company referred to the July 2009 “Smart Grid System Report” published by the U.S. Department of Energy. The study appendix lists 20 metrics that are used to determine the effectiveness of Smart Grid activities.

Many of these metrics do not lend themselves to production cost based analysis. Others have no direct cost but provide indirect benefit such as consumer acceptance, data sharing measures or reductions in customer complaints. Only one metric can be modeled in such a way to demonstrate an impact on system production costs. Dynamic line rating improvement has a direct impact on the assumptions used to develop national market clearing prices for wholesale power. The MIDAS ™ Model assumes interregional transfers of power are possible and power is allowed to flow in the model to help lower overall system costs and reduce the resultant market clearing price for wholesale power.

Dynamic line rating improvement was simulated in the CapEx™ model. Resulting optimal expansion plans did not change as this factor was varied. Therefore, marketing costs of DSM were not considered a critical resource factor and were not used as part of the integrated analysis.

SECTION 6: CRITICAL UNCERTAIN FACTORS ASSESSMENT

(6) The utility shall describe and document its assessment of the impacts and interrelationships of critical uncertain factors on the expected performance of each of the alternative resource plans developed pursuant to 4 CSR 240-22.060(3) and analyze the risks associated with alternative resource plans. This assessment shall explicitly describe and document the probabilities that utility decision makers assign to each critical uncertain factor.

To summarize the results described in Section 5 above, the company determined three risks to be critical uncertain factors that would be used in the risk sensitivities of the integrated analysis; load growth, natural gas prices and CO2 credit prices.

In order to asses the full range of risks, each possible combination of covariant risk is simulated. Subject matter experts within the company have assigned risk distributions to each of the three drivers. These risks are used to develop an overall distribution of risk using every combination of risk factors. A cumulative risk distribution is then derived from the joint probability calculation of each scenario component risk that defines the scenario.

The Company has used all combinations of identified risk drivers in its analysis. This includes scenarios that exhibited both strong positive and strong negative correlations among risk drivers. By using regression methods, the Company tested the effects of all extreme risk drivers and the cases of strong positive and strong negative correlations. The results of the regression studies are conclusive. Even if strong correlations existed in the long run [either positive or negative], they have no statistically significant impact on plan performance results.

Results of the company correlation study are presented in the following table of regression results.

Table 80: Regression Study Results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.98
R Square	0.97
Adjusted R Square	0.97
Standard Error	190.24
Observations	594.00

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	8.00	598,543,487.89	74,817,935.99	2,067.25	-
Residual	585.00	21,172,305.25	36,191.97		
Total	593.00	619,715,793.14			

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	20,807.69	25.89	803.74	-
HCO2	1,391.32	30.23	46.02	0.00
LCO2	(788.97)	30.23	(26.10)	0.00
HGas	(404.71)	30.23	(13.39)	0.00
LGas	419.74	30.23	13.88	0.00
HLoad	367.38	19.12	19.21	0.00
LLoad	(337.54)	19.12	(17.65)	0.00
NG-CO2 (+Cor)	(5.32)	37.03	(0.14)	0.89
NG-CO2 (-Cor)	(16.35)	37.03	(0.44)	0.66

SECTION 7: CRITICAL UNCERTAIN FACTOR PROBABILITIES

(7) The utility decision-makers shall assign a probability pursuant to section (5) of this rule to each uncertain factor deemed critical by the utility. The utility shall compute the cumulative probability distribution of the values of each performance measure specified pursuant to 4 CSR 240-22.060(2). Both the expected performance and the risks of each alternative resource plan shall be quantified. The utility shall describe and document its risk assessment of each alternative resource plan.

Each risk factor has a probability distribution developed by the company subject matter expert. These probability distributions have been combined to produce overall joint probabilities for critical factor combinations.

(A) The expected performance of each resource plan shall be measured by the statistical expectation of the value of each performance measure.

Table 81: Expected Value Plan Performance Measures

Plan	NPVRR ($MM)	Probable Environmenal Costs ($MM)	DSM Costs ($MM)	Levelized Annual Rates ($/kw-hr)	Maximum Rate Increase	Times Interest Earned	Total Debt to Capital	Cap Ex to FFO
AAAK1	20,910	1,569	198	0.122	7.54%	4.30	50.40	1.45
AAAK9	20,896	1,569	198	0.122	7.56%	4.30	50.40	1.45
ABEK1	20,869	1,207	198	0.122	7.27%	4.33	50.41	1.40
ABEK2	20,877	1,213	198	0.122	7.27%	4.30	50.41	1.43
ABEK4	20,950	1,203	198	0.123	7.27%	4.25	50.38	1.27
ABEK5	21,100	1,202	198	0.124	7.29%	4.11	50.34	1.09
ABEK6	21,000	1,200	198	0.123	8.84%	4.27	50.39	1.45
ABEK7	21,081	1,218	198	0.123	6.66%	4.32	50.41	1.48
ACEK1	21,013	1,039	198	0.123	9.79%	4.33	50.42	1.43
ACEK2	21,056	1,053	198	0.123	11.01%	4.29	50.40	1.42
ADDK1	20,920	1,159	198	0.123	7.16%	4.34	50.41	1.38
AEDK1	20,909	1,107	198	0.123	7.25%	4.35	50.41	1.38
AFDK1	21,307	689	198	0.125	7.28%	4.37	50.36	1.40
AGEK1	20,839	1,377	198	0.122	6.53%	4.32	50.41	1.42
AGEK9	20,830	1,378	198	0.122	6.63%	4.31	50.41	1.40
AIEK9	20,843	1,382	198	0.122	6.63%	4.32	50.41	1.45
BBEK1	20,916	1,207	138	0.123	7.21%	4.32	50.41	1.39
CBEK1	21,222	1,209	102	0.122	7.03%	4.33	50.40	1.32
DBEK1	20,774	1,205	662	0.125	7.61%	4.33	50.42	1.60
DCEK1	20,722	1,037	662	0.125	8.15%	4.35	50.43	1.59
EBEK1	20,975	1,201	1,533	0.134	8.51%	4.31	50.40	1.85
XBEK1	21,263	1,209	-	0.122	7.00%	4.32	50.40	1.30

(B) The risk associated with each resource plan shall be characterized by some measure of the dispersion of the probability distribution for each performance measure, such as the standard deviation or the values associated with specified percentiles of the distribution.

Table 82: Standard Deviation Plan Performance Measures

Plan	NPVRR ($MM)	Probable Environmenal Costs ($MM)	DSM Costs ($MM)	Levelized Annual Rates ($/kw-hr)	Maximum Rate Increase	Times Interest Earned	Total Debt to Capital	Cap Ex to FFO
AAAK1	510	39	-	0.009	2.78%	-	-	-
AAAK9	510	39	-	0.010	2.78%	-	-	-
ABEK1	509	30	-	0.009	2.63%	-	-	-
ABEK2	510	30	-	0.010	2.64%	-	-	-
ABEK4	511	30	-	0.010	2.83%	-	-	-
ABEK5	515	30	-	0.011	3.21%	-	-	-
ABEK6	513	29	-	0.010	3.15%	-	-	-
ABEK7	515	30	-	0.008	2.43%	-	-	-
ACEK1	513	26	-	0.010	2.79%	-	-	-
ACEK2	514	26	-	0.009	2.95%	-	-	-
ADDK1	511	29	-	0.010	2.28%	-	-	-
AEDK1	510	27	-	0.010	2.50%	-	-	-
AFDK1	520	17	-	0.011	2.54%	-	-	-
AGEK1	509	34	-	0.009	2.63%	-	-	-
AGEK9	509	34	-	0.009	2.51%	-	-	-
AIEK9	509	34	-	0.009	2.70%	-	-	-
BBEK1	511	30	-	0.010	2.61%	-	-	-
CBEK1	518	30	-	0.010	2.80%	-	-	-
DBEK1	507	30	-	0.010	2.65%	-	-	-
DCEK1	506	25	-	0.010	2.68%	-	-	-
EBEK1	512	29	-	0.013	2.71%	-	-	-
XBEK1	519	30	-	0.010	2.43%	-	-	-

Note: Several performance measures are not affected by the individual scenario risk and therefore exhibits no standard deviation.

(C) The utility shall provide—

1. A discussion of the method the utility used to determine the cumulative probability—

For the overall risk analysis, the company assumed independence of the three critical uncertain factors for this long term analysis. The individual scenarios utilized a joint probability of the probabilistic occurrence of each risk component that defined the scenario. This method and its statistical performance is described in Section 6 of this Volume.

A. An explanation of how the critical uncertain factors were identified, how the ranges of potential outcomes for each uncertain factor were determined, and how the probabilities for each outcome were derived; and

The method for determining whether or not a risk was an uncertain factor is detailed in Section 5 of this Volume. The risk distribution of each driver was determined by the company subject matter expert.

B. Analyses supporting the utility's choice of ranges and probabilities for the uncertain factors;

Supporting documentation for the choice of probabilistic range is in Volume 3 for the load growth risk and Volume 4 for Natural Gas and CO2 credit price risk.

2. Plots of the cumulative probability distribution of each distinct performance measure for each alternative resource plan;

Chart 156: Cumulative Probability - NPVRR

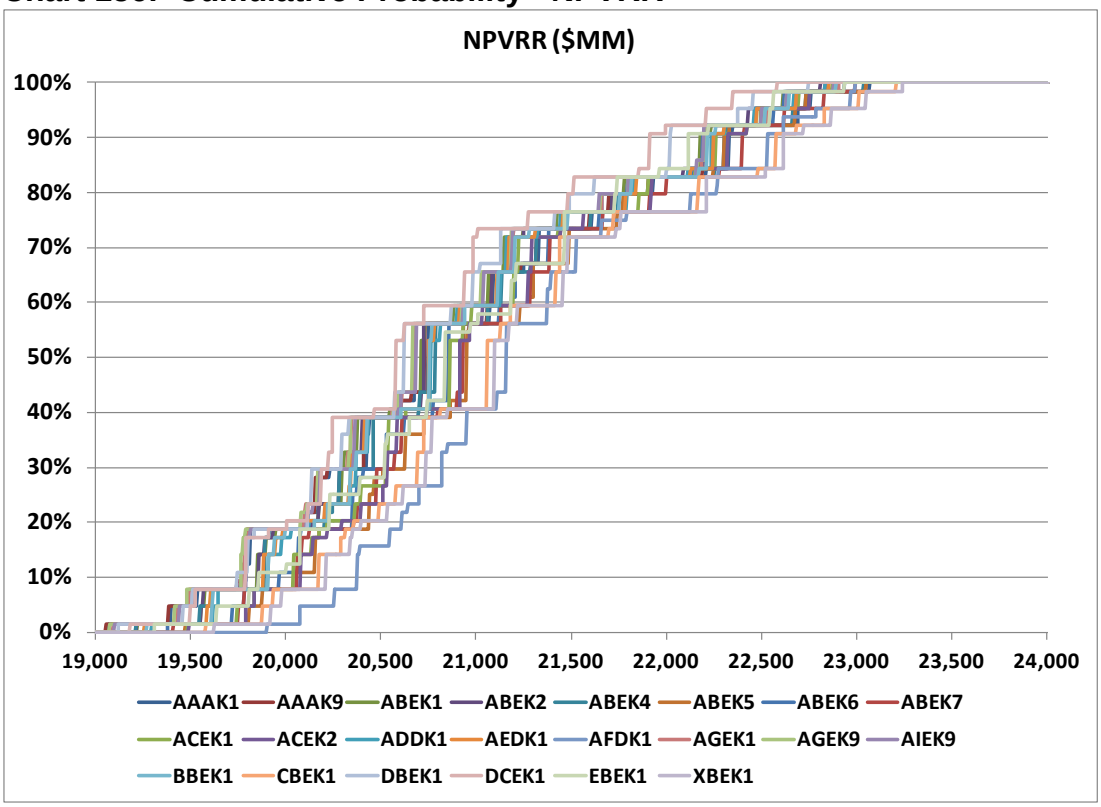


Chart 157: Cumulative Probability - PEC

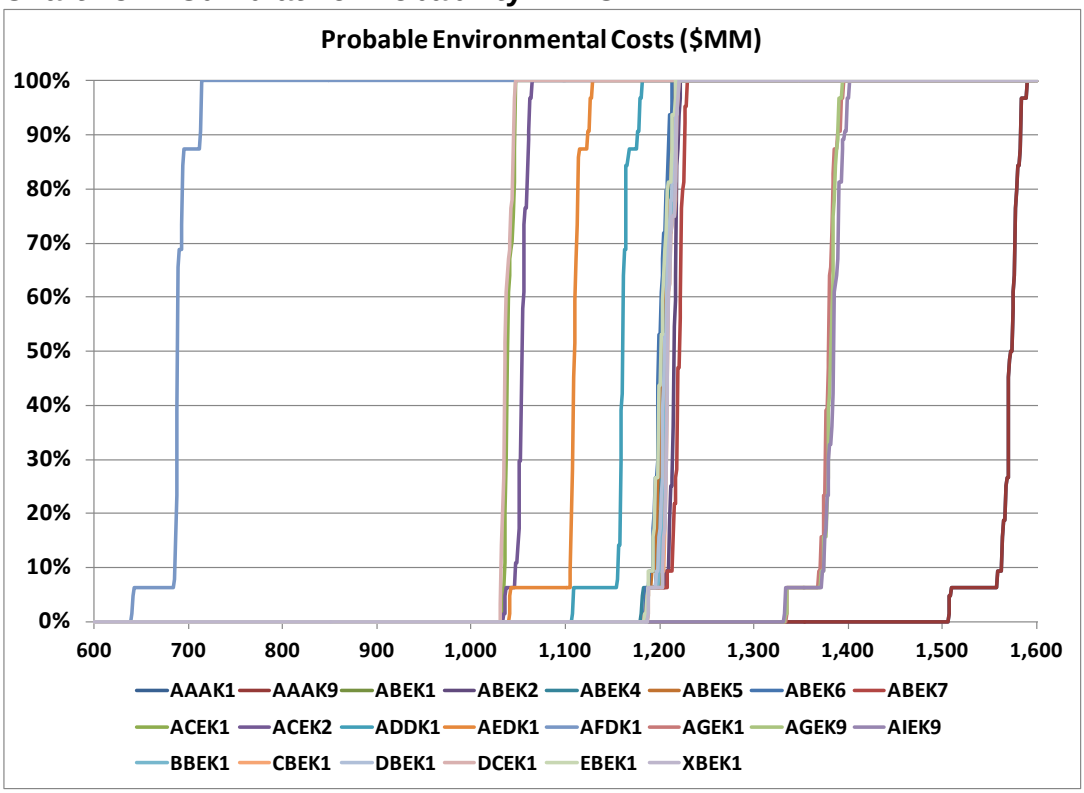


Chart 158: Cumulative Probability - Average Rates

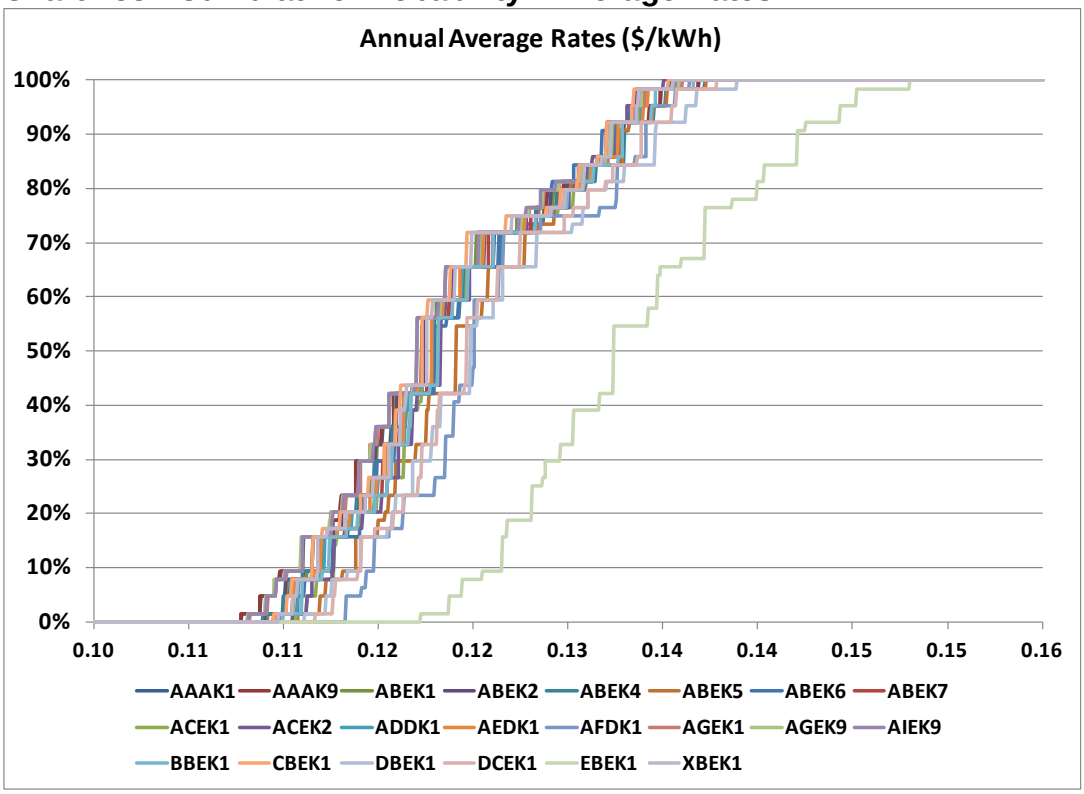
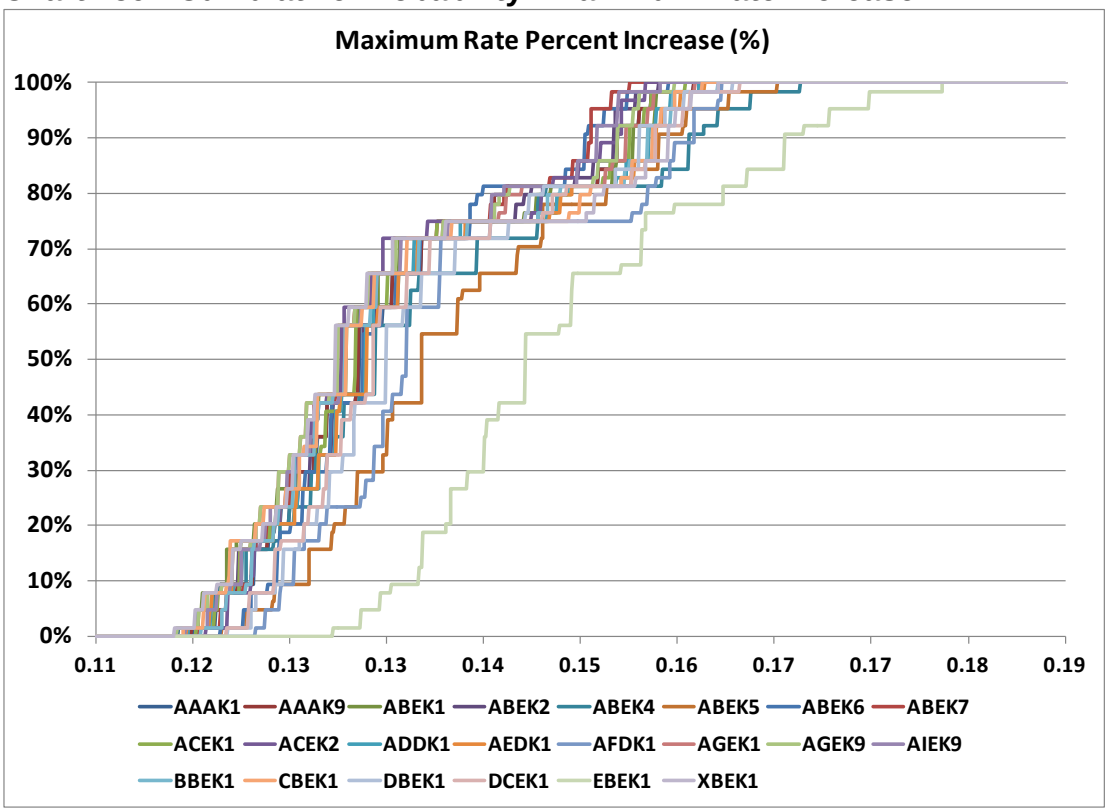


Chart 159: Cumulative Probability - Maximum Rate Increase



Values for all other performance measures do not vary enough over the range of scenarios to allow for graphical display.

3. For each performance measure, a table that shows the expected value and the risk of each alternative resource plan; and

Table 83: Expected Value Plan Performance Measures

Plan	NPVRR ($MM)	Probable Environmenal Costs ($MM)	DSM Costs ($MM)	Levelized Annual Rates ($/kw-hr)	Maximum Rate Increase	Times Interest Earned	Total Debt to Capital	Cap Ex to FFO
AAAK1	20,910	1,569	198	0.122	7.54%	4.30	50.40	1.45
AAAK9	20,896	1,569	198	0.122	7.56%	4.30	50.40	1.45
ABEK1	20,869	1,207	198	0.122	7.27%	4.33	50.41	1.40
ABEK2	20,877	1,213	198	0.122	7.27%	4.30	50.41	1.43
ABEK4	20,950	1,203	198	0.123	7.27%	4.25	50.38	1.27
ABEK5	21,100	1,202	198	0.124	7.29%	4.11	50.34	1.09
ABEK6	21,000	1,200	198	0.123	8.84%	4.27	50.39	1.45
ABEK7	21,081	1,218	198	0.123	6.66%	4.32	50.41	1.48
ACEK1	21,013	1,039	198	0.123	9.79%	4.33	50.42	1.43
ACEK2	21,056	1,053	198	0.123	11.01%	4.29	50.40	1.42
ADDK1	20,920	1,159	198	0.123	7.16%	4.34	50.41	1.38
AEDK1	20,909	1,107	198	0.123	7.25%	4.35	50.41	1.38
AFDK1	21,307	689	198	0.125	7.28%	4.37	50.36	1.40
AGEK1	20,839	1,377	198	0.122	6.53%	4.32	50.41	1.42
AGEK9	20,830	1,378	198	0.122	6.63%	4.31	50.41	1.40
AIEK9	20,843	1,382	198	0.122	6.63%	4.32	50.41	1.45
BBEK1	20,916	1,207	138	0.123	7.21%	4.32	50.41	1.39
CBEK1	21,222	1,209	102	0.122	7.03%	4.33	50.40	1.32
DBEK1	20,774	1,205	662	0.125	7.61%	4.33	50.42	1.60
DCEK1	20,722	1,037	662	0.125	8.15%	4.35	50.43	1.59
EBEK1	20,975	1,201	1,533	0.134	8.51%	4.31	50.40	1.85
XBEK1	21,263	1,209	-	0.122	7.00%	4.32	50.40	1.30

Table 84: Standard Deviation Plan Performance Measures

Plan	NPVRR ($MM)	Probable Environmenal Costs ($MM)	DSM Costs ($MM)	Levelized Annual Rates ($/kw-hr)	Maximum Rate Increase	Times Interest Earned	Total Debt to Capital	Cap Ex to FFO
AAAK1	510	39	-	0.009	2.78%	-	-	-
AAAK9	510	39	-	0.010	2.78%	-	-	-
ABEK1	509	30	-	0.009	2.63%	-	-	-
ABEK2	510	30	-	0.010	2.64%	-	-	-
ABEK4	511	30	-	0.010	2.83%	-	-	-
ABEK5	515	30	-	0.011	3.21%	-	-	-
ABEK6	513	29	-	0.010	3.15%	-	-	-
ABEK7	515	30	-	0.008	2.43%	-	-	-
ACEK1	513	26	-	0.010	2.79%	-	-	-
ACEK2	514	26	-	0.009	2.95%	-	-	-
ADDK1	511	29	-	0.010	2.28%	-	-	-
AEDK1	510	27	-	0.010	2.50%	-	-	-
AFDK1	520	17	-	0.011	2.54%	-	-	-
AGEK1	509	34	-	0.009	2.63%	-	-	-
AGEK9	509	34	-	0.009	2.51%	-	-	-
AIEK9	509	34	-	0.009	2.70%	-	-	-
BBEK1	511	30	-	0.010	2.61%	-	-	-
CBEK1	518	30	-	0.010	2.80%	-	-	-
DBEK1	507	30	-	0.010	2.65%	-	-	-
DCEK1	506	25	-	0.010	2.68%	-	-	-
EBEK1	512	29	-	0.013	2.71%	-	-	-
XBEK1	519	30	-	0.010	2.43%	-	-	-

Note: Several performance measures are not affected by the individual scenario risk and therefore exhibits no standard deviation.

4. A plot of the expected level of annual unserved hours for each alternative resource plan over the planning horizon.

Chart 160: Unserved Energy