2015 KCP&L and GMO Triennial IRP Stakeholder Meeting

January 21, 2015

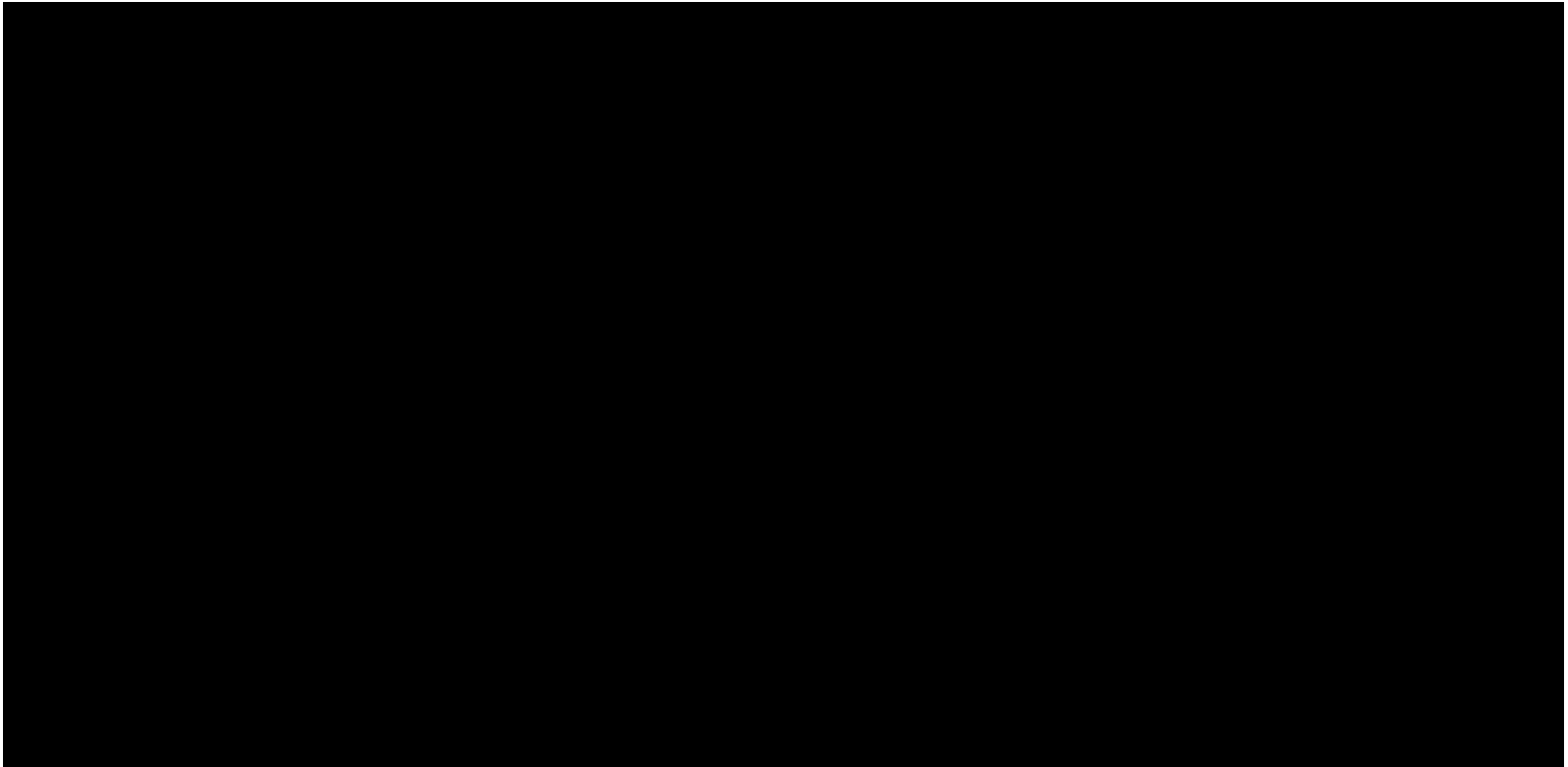**** Highly Confidential ****

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Load Forecast Analysis

Changes in Inputs to Load Forecasting Models

- Updated Moody's economic forecasts of the KC and SJ metro areas: July 2014 vs June 2013 used in last years update

- DOE forecasts of appliance and equipment saturations and kwh/unit: 2014 vs 2013

- Space heat model (Actuals through July 2014)

- Historical data for customers, kwh and $/kwh: July 2014 vs June 2013

- Price elasticities
  - % change of demand / % change in inflation adjusted price

- Class model changes: small commercial, big commercial, and industrial vs. small, medium, large, large power

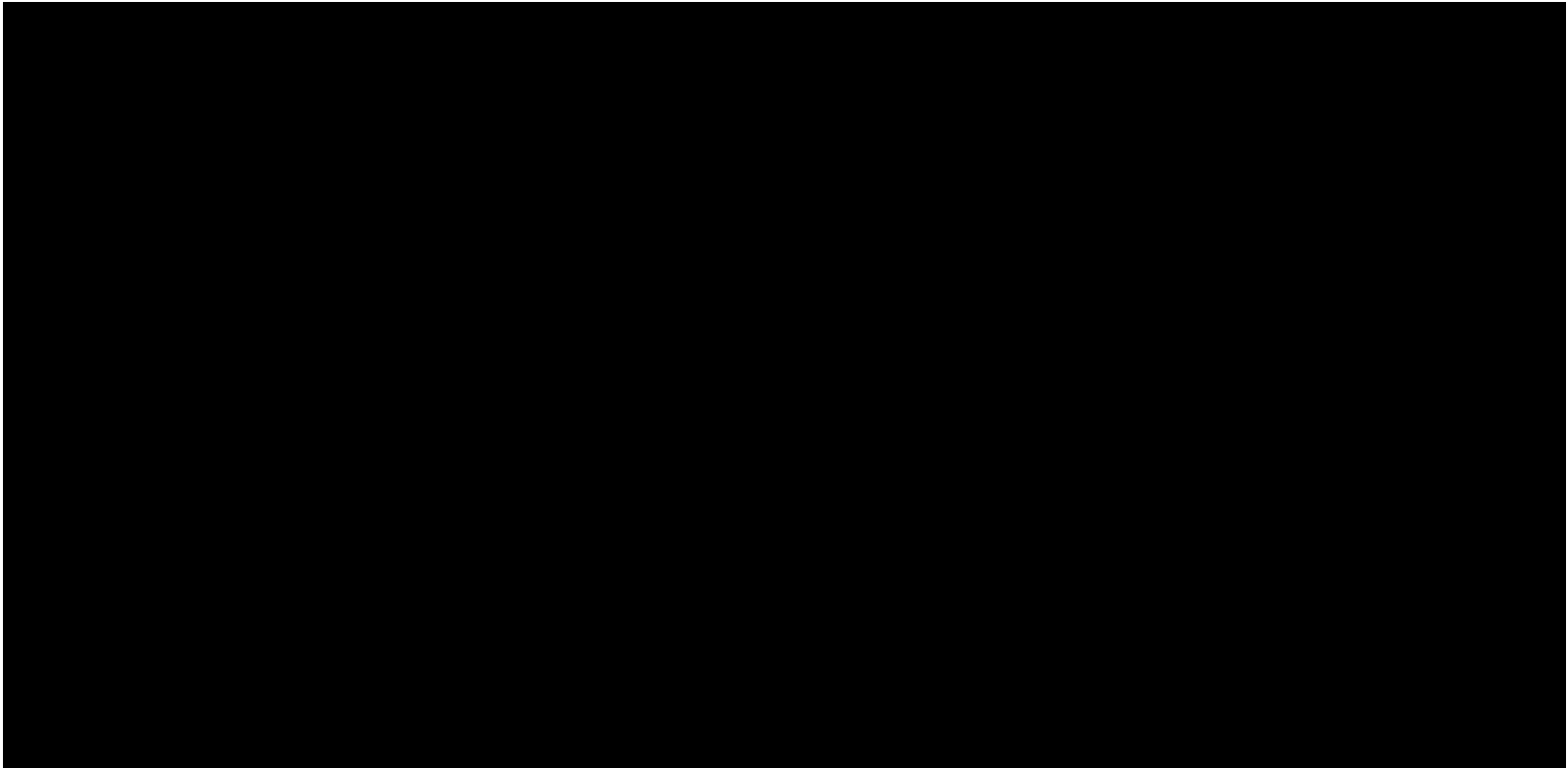- Historical data is no longer modified to include historical DSM

KCP&L Actual Historical and Comparison of Base Case Forecasts of Net System Input Excluding DSM Impacts
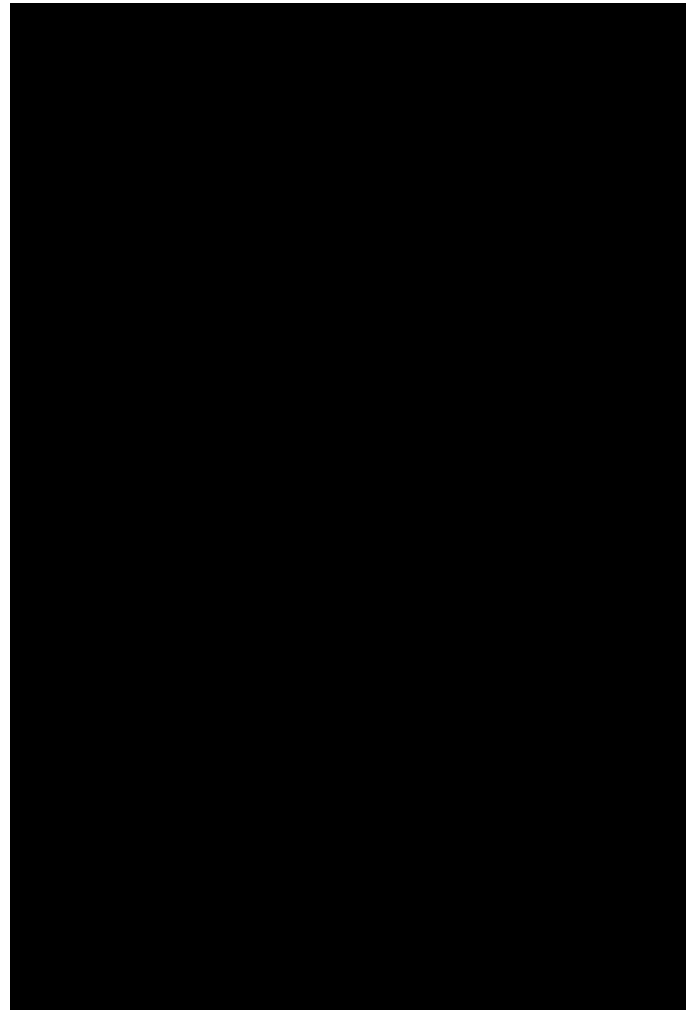## ** Highly Confidential **

KCP&L Actual Historical and Comparison of Base Case Forecasts of Demand Excluding DSM Impacts
** Highly Confidential **

KCP&L Historical and Base Case Forecast of Demand
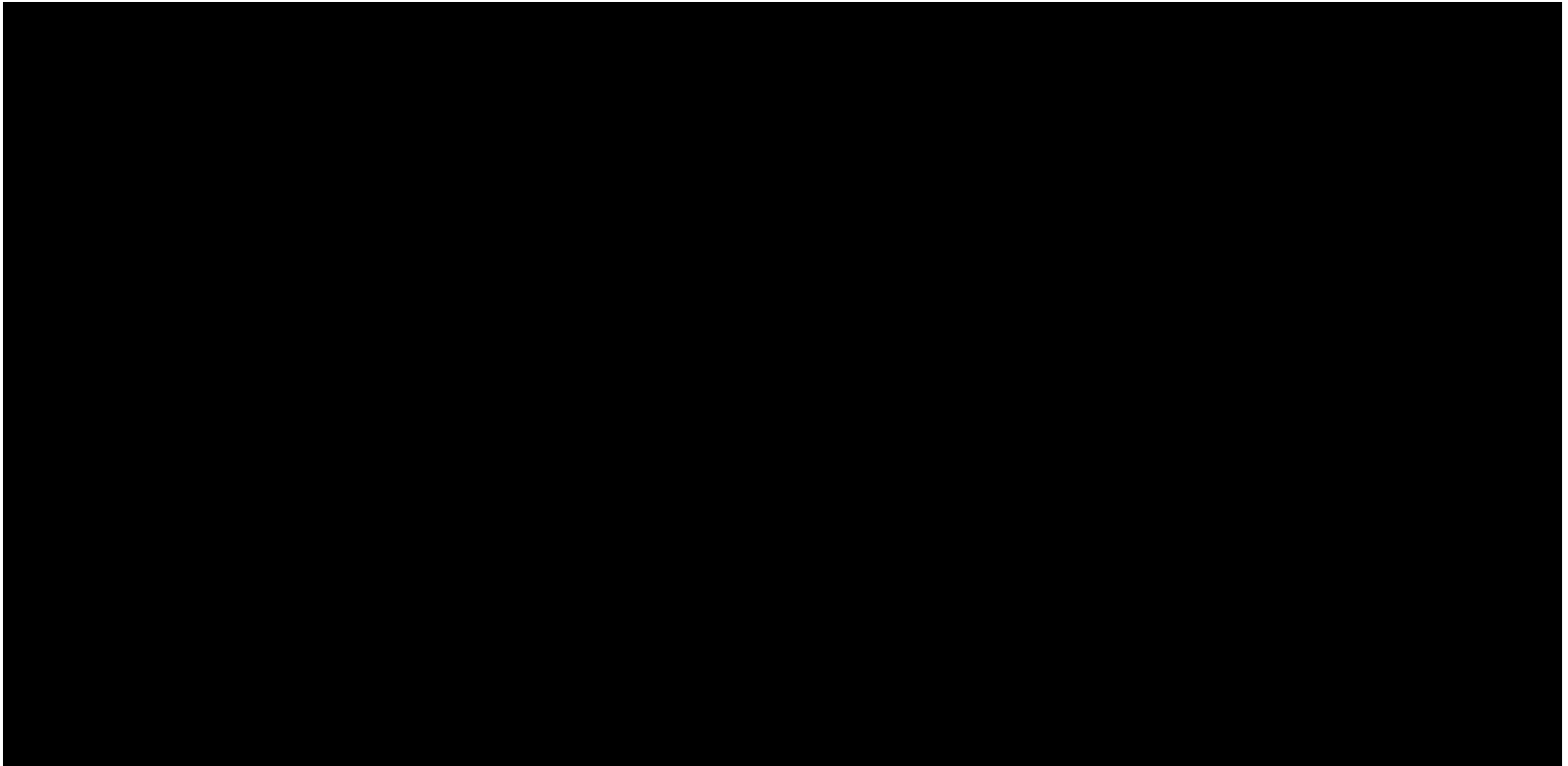## ** Highly Confidential **

DSM = Demand Side Management   LF = Load Factor
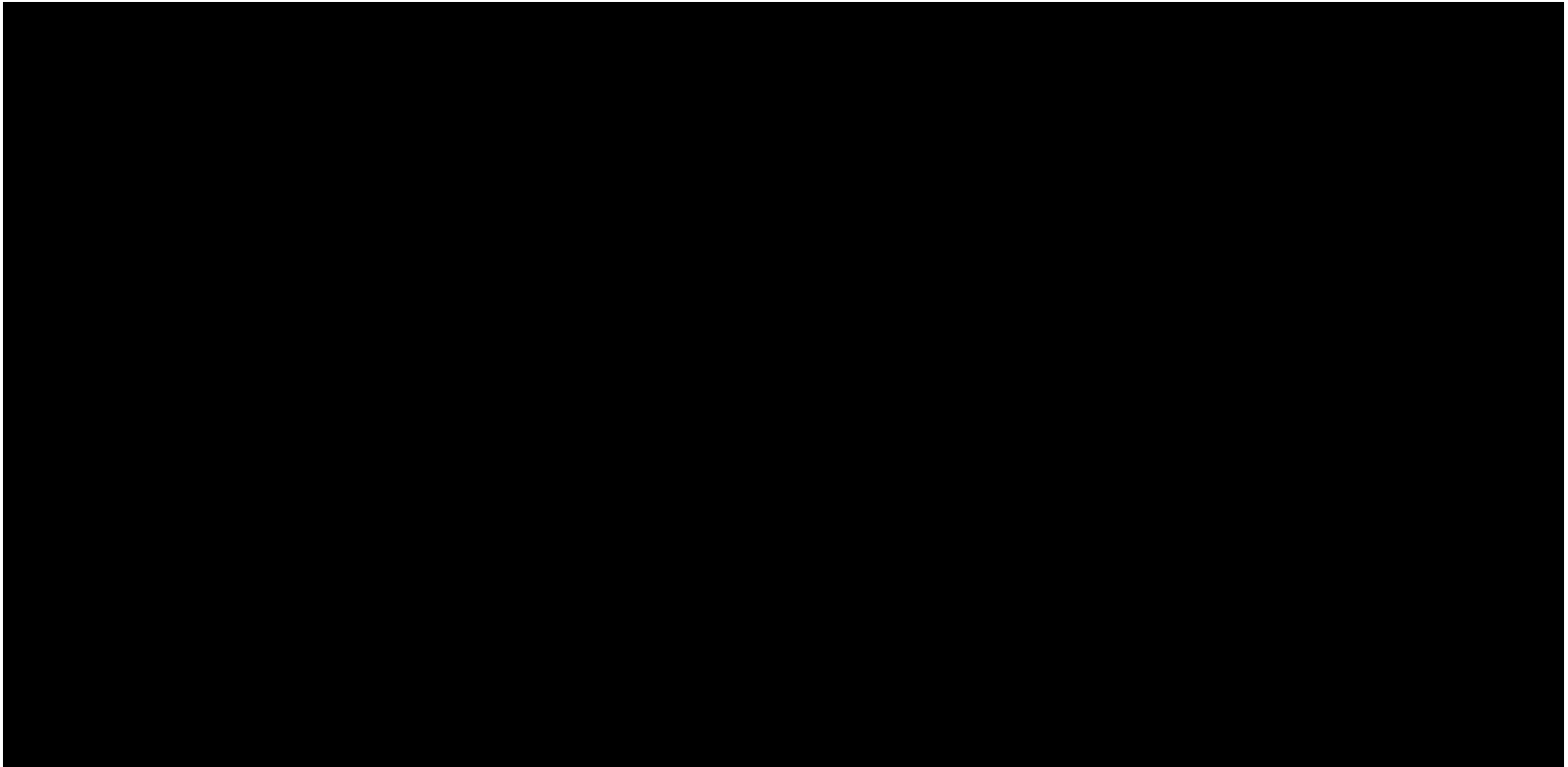*DVC = Dynamic Voltage Control (Peak Only)*

KCP&L WN Historical and Forecasted Net System Input
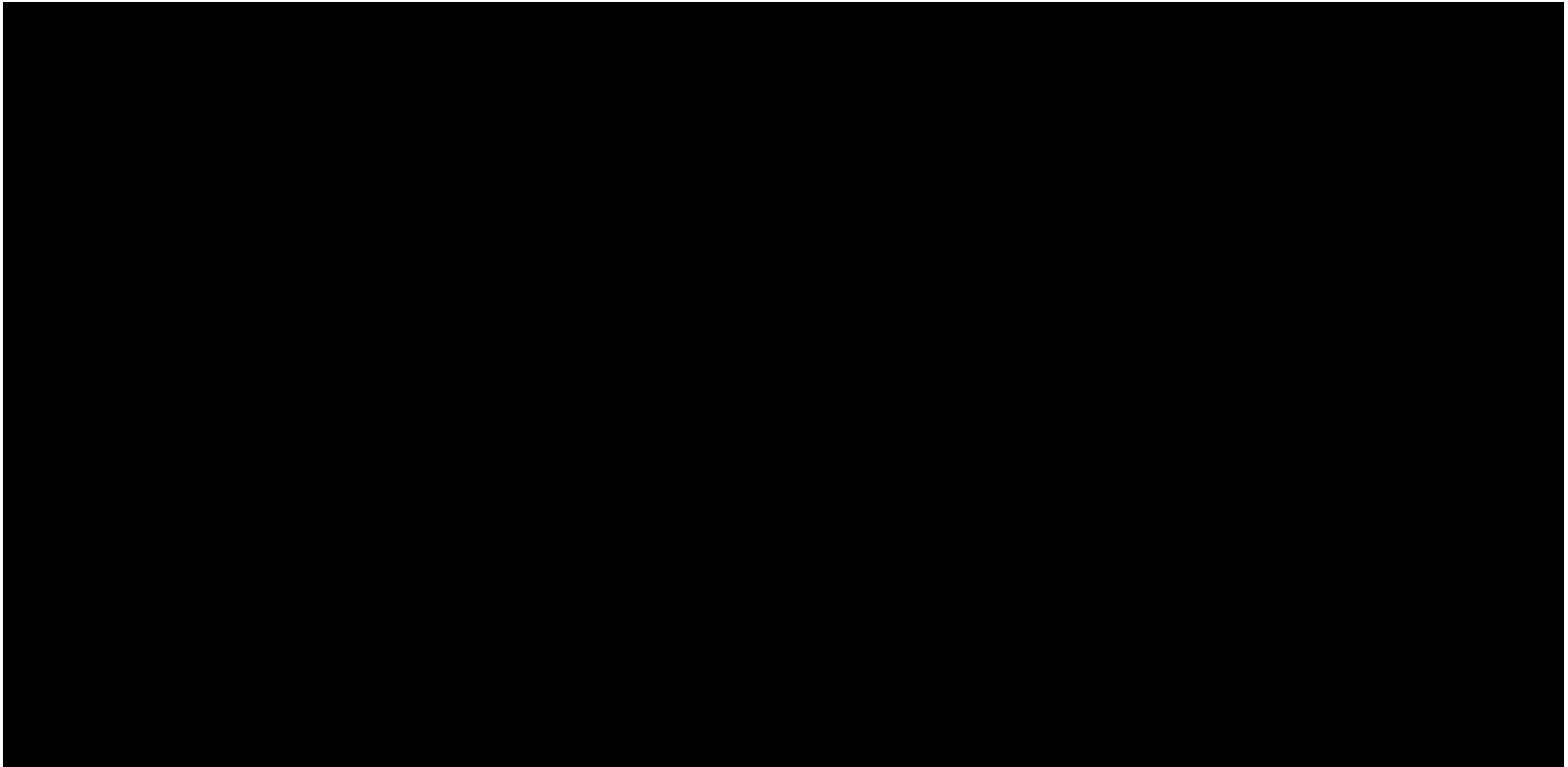## ** Highly Confidential **

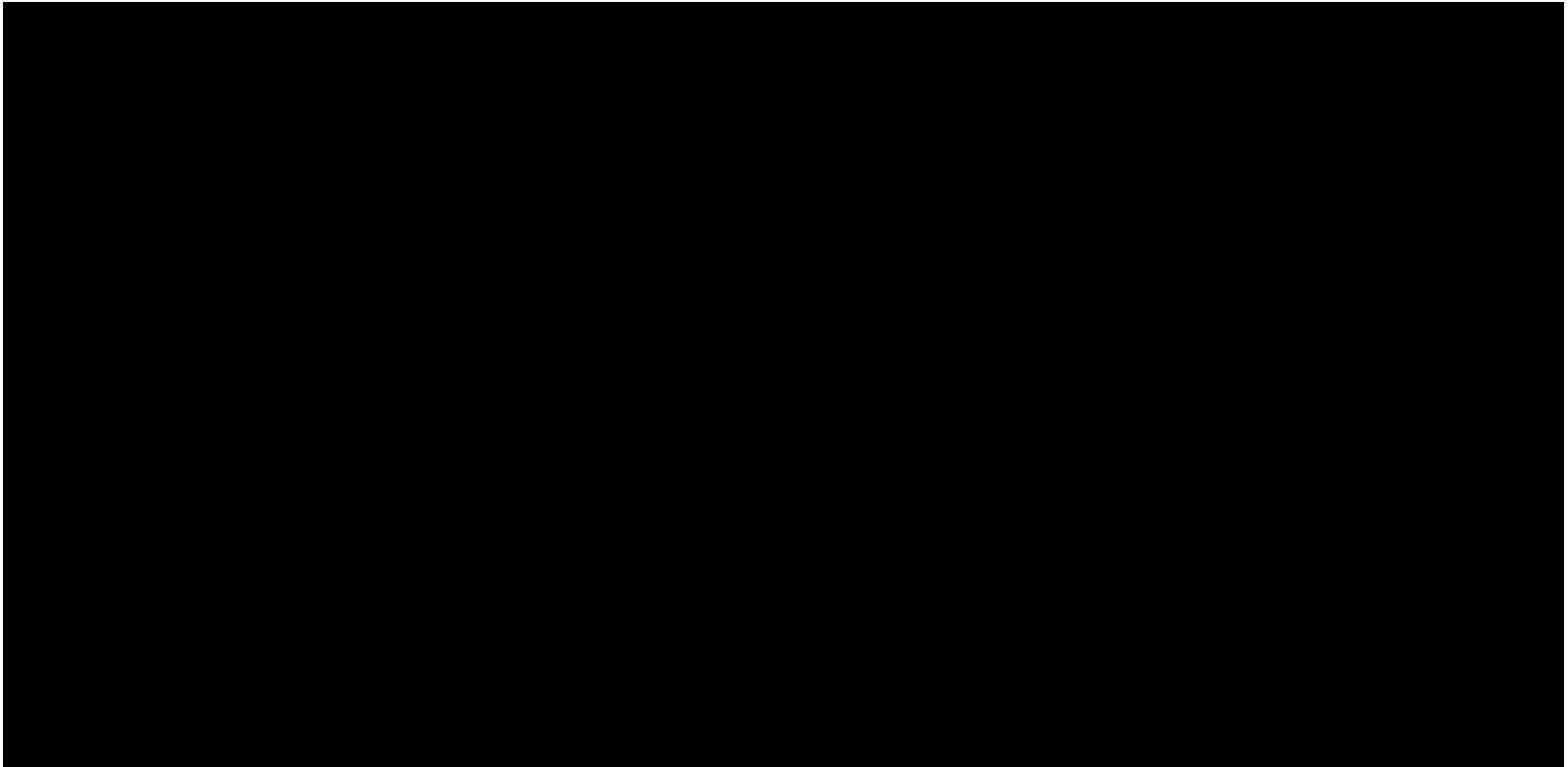# KCP&L WN Historical and Forecasted Demand
** Highly Confidential **

MPS Actual Historical and Comparison of Base Case Forecasts of Net System Input Excluding DSM Impacts
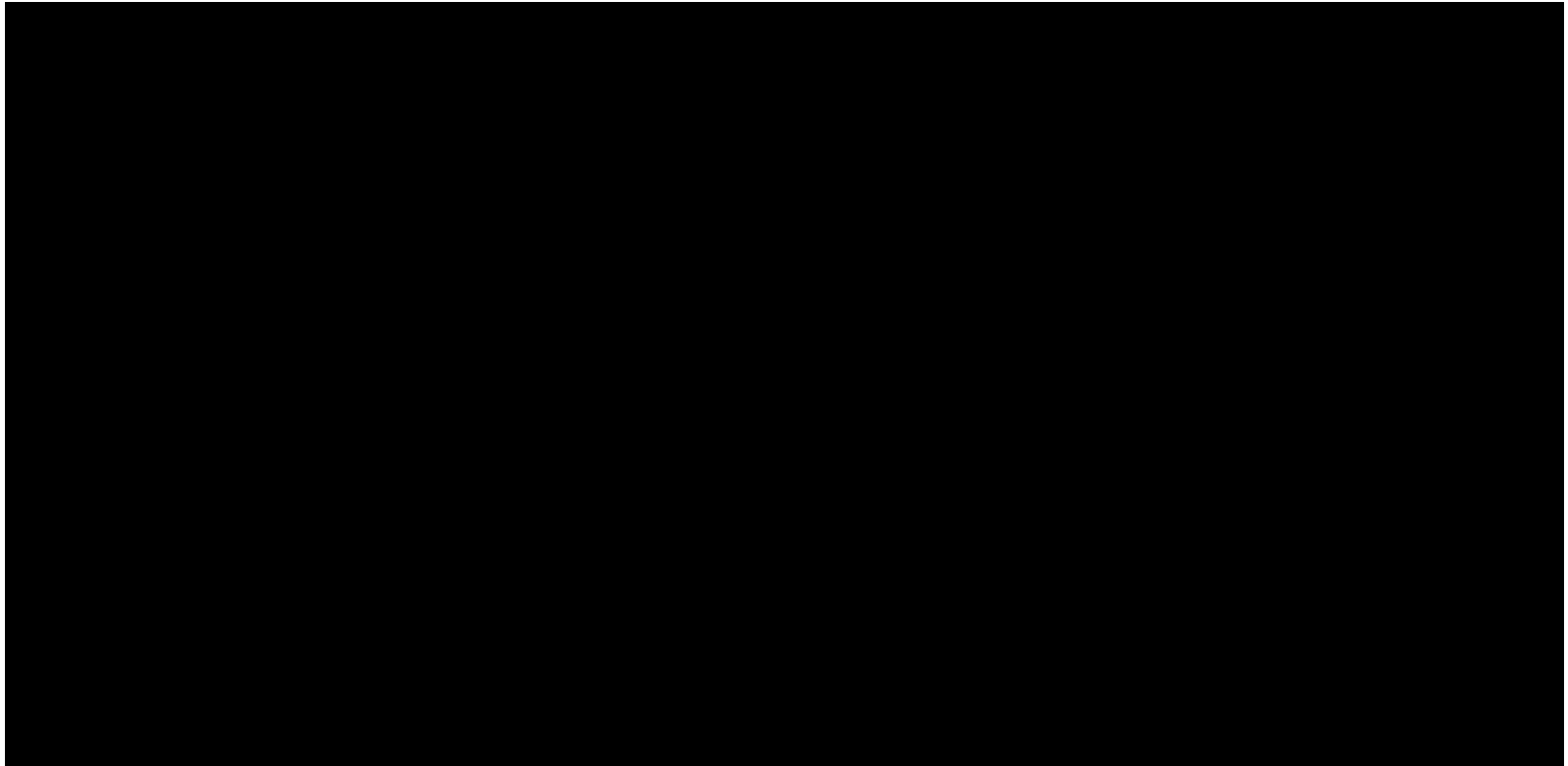## ** Highly Confidential **

MPS Actual Historical and Comparison of Base Case Forecasts of Demand Excluding DSM Impacts
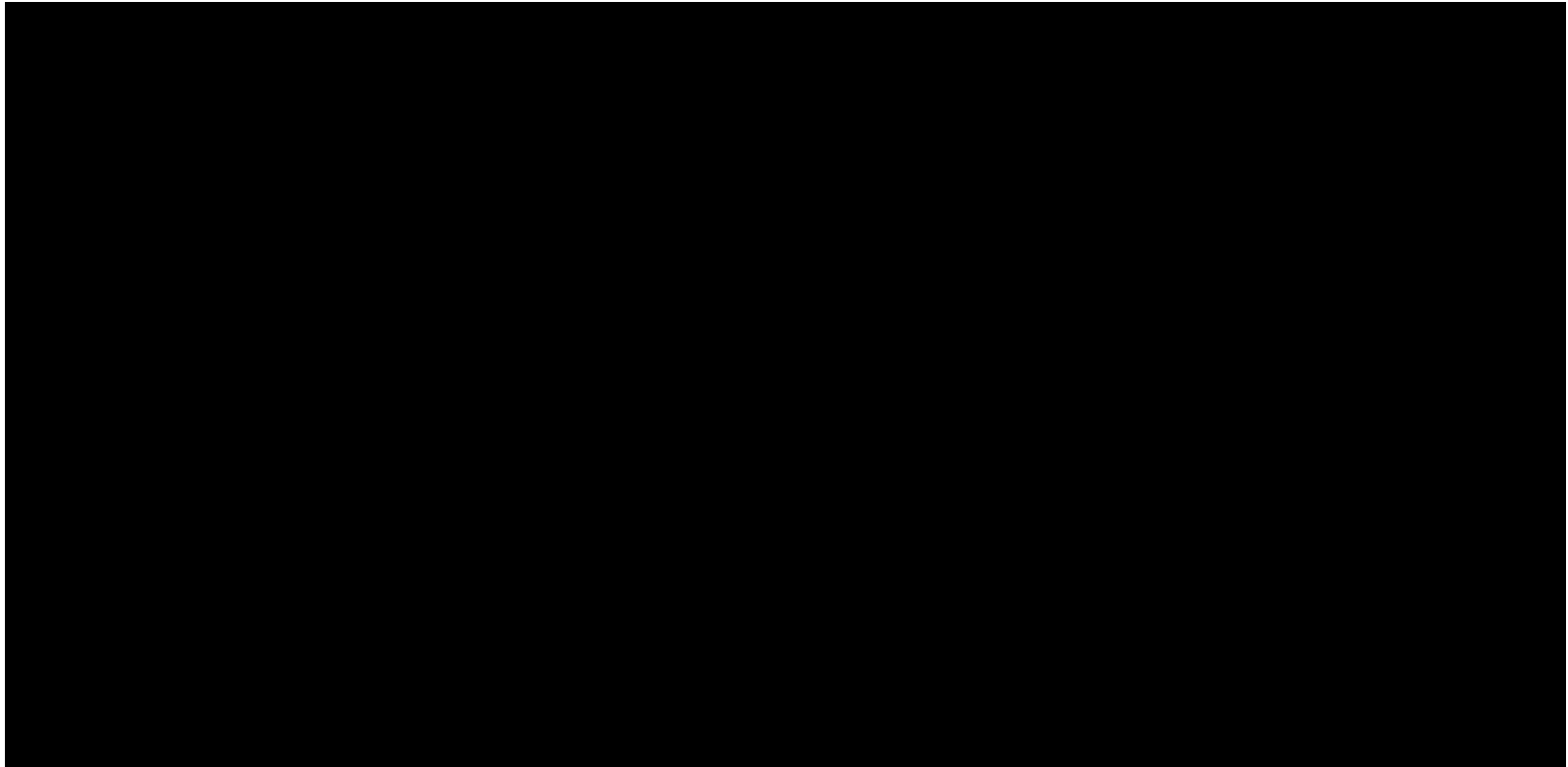## ** Highly Confidential **

SJLP Actual Historical and Comparison of Base Case Forecasts of Net System Input Excluding DSM Impacts
** Highly Confidential **

SJLP Actual Historical and Comparison of Base Case Forecasts of Demand Excluding DSM Impacts
** Highly Confidential **

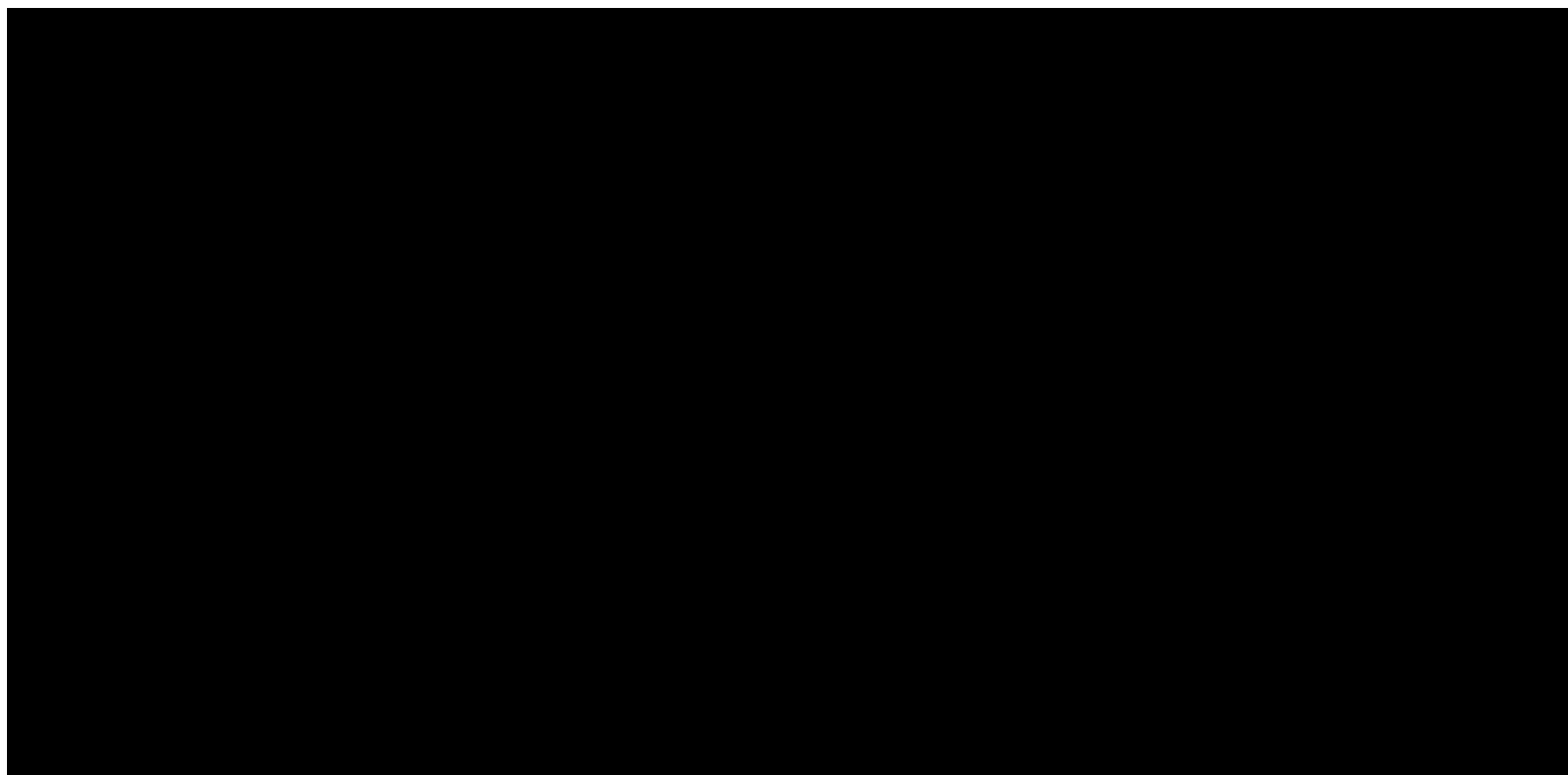# GMO Historical and Base Case Forecast of Demand
** Highly Confidential **

DSM = Demand Side Management　　　　　*LF = Load Factor*
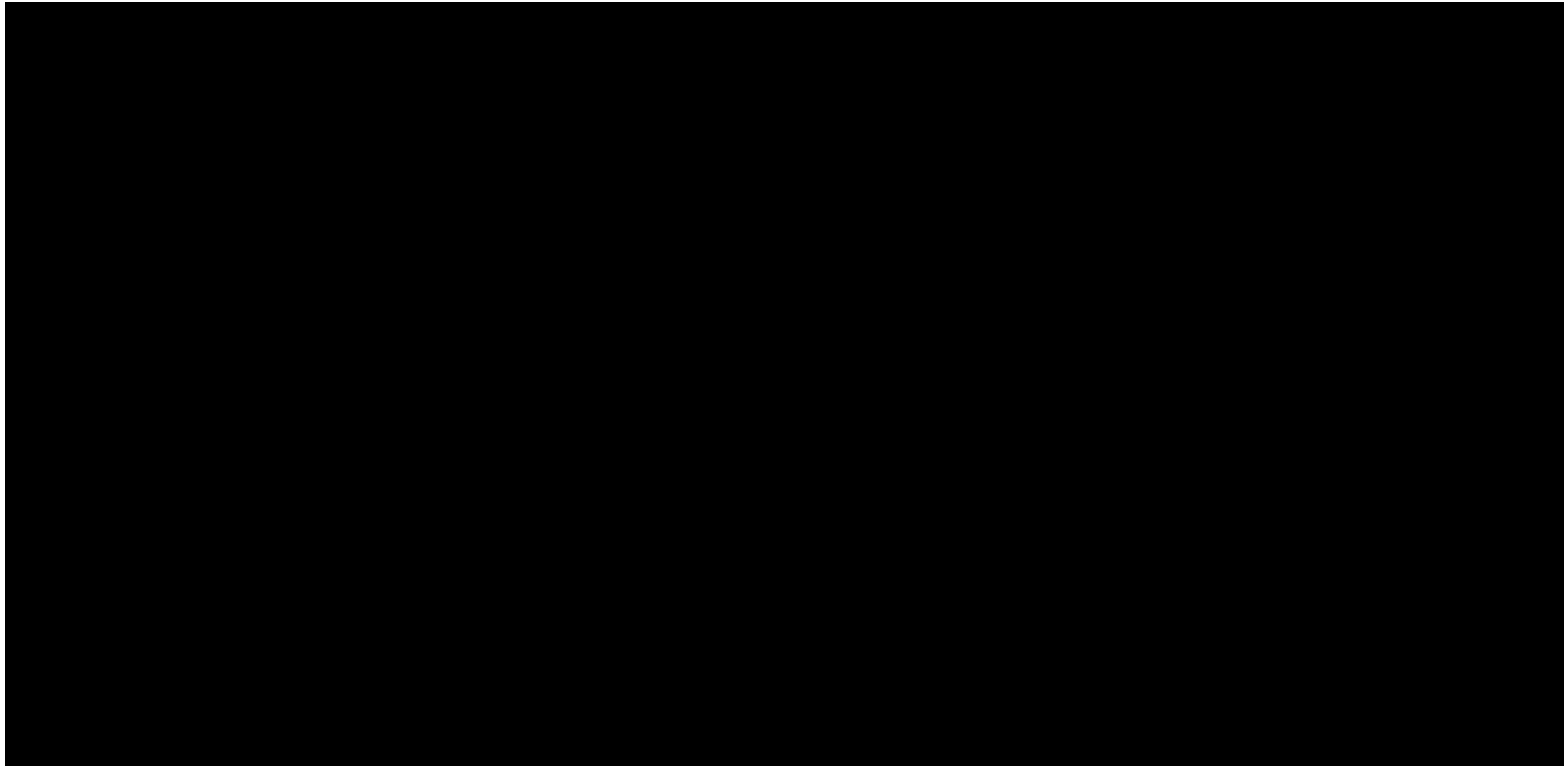*DVC = Dynamic Voltage Control (Peak Only)*

GMO WN Historical and Forecasted Net System Input
** Highly Confidential **
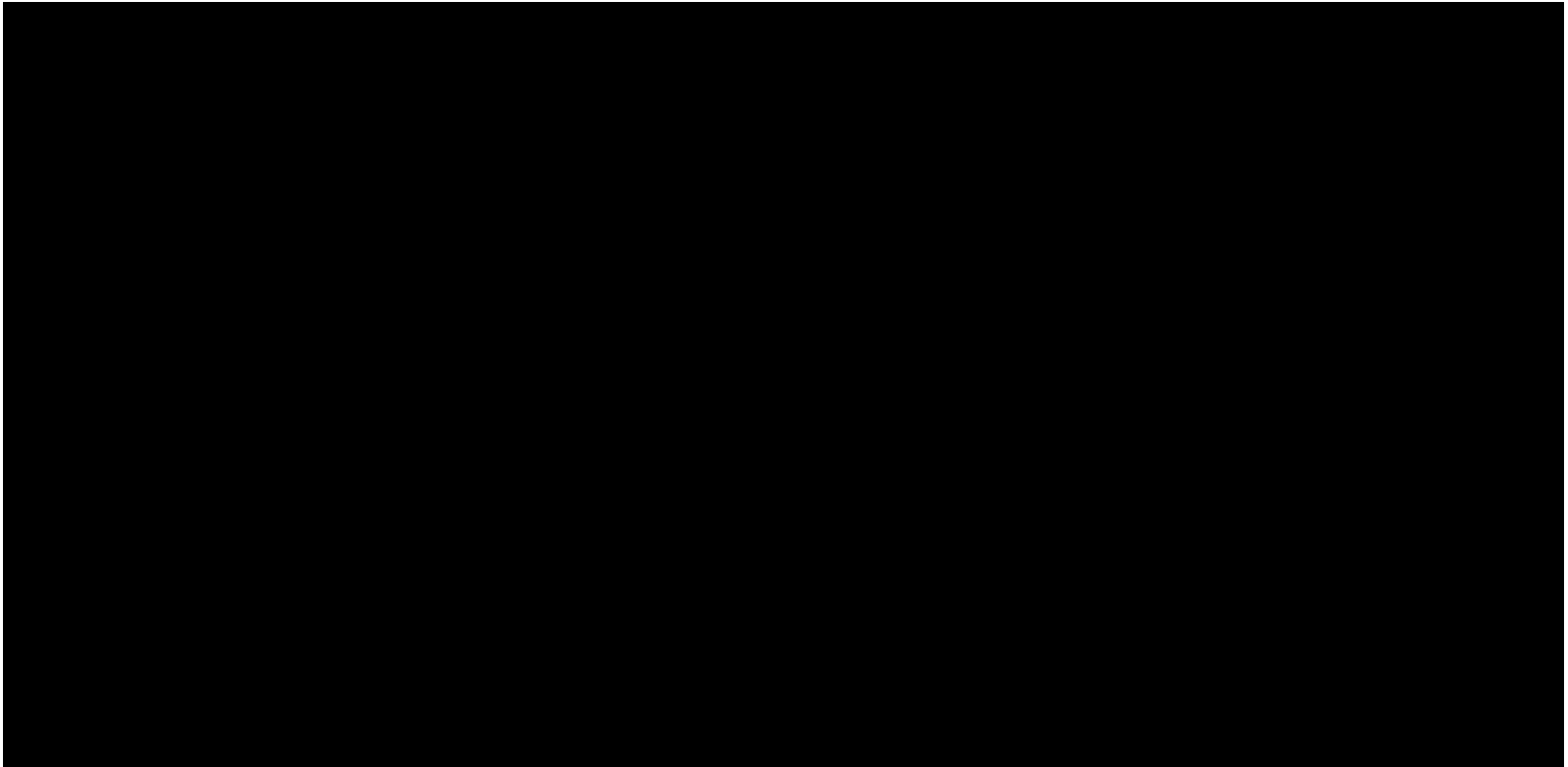
GMO WN Historical and Forecasted Peak Demand
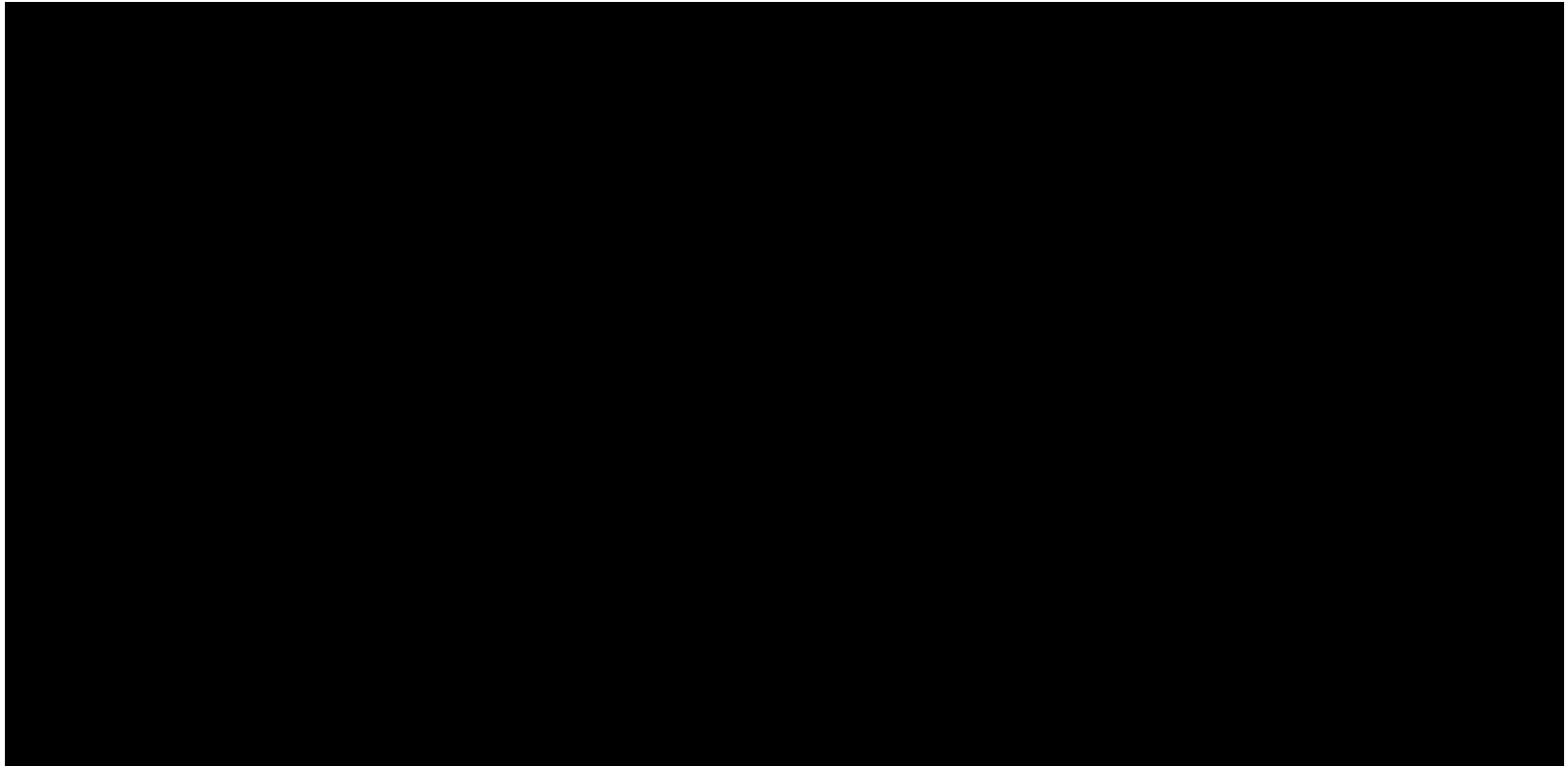## ** Highly Confidential **

Supply-Side Resource Analysis

Natural Gas Price Forecast Comparison
** Highly Confidential **

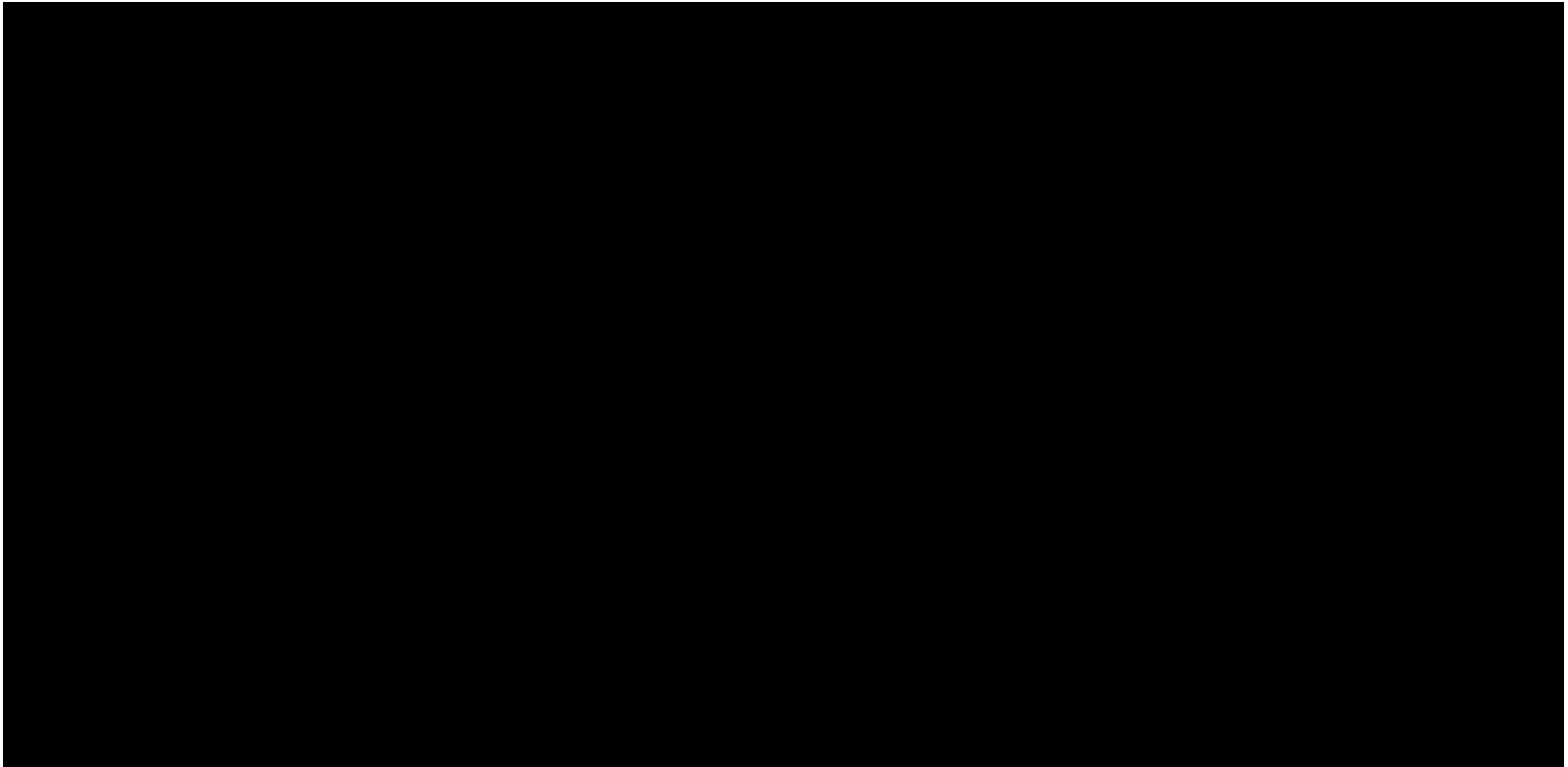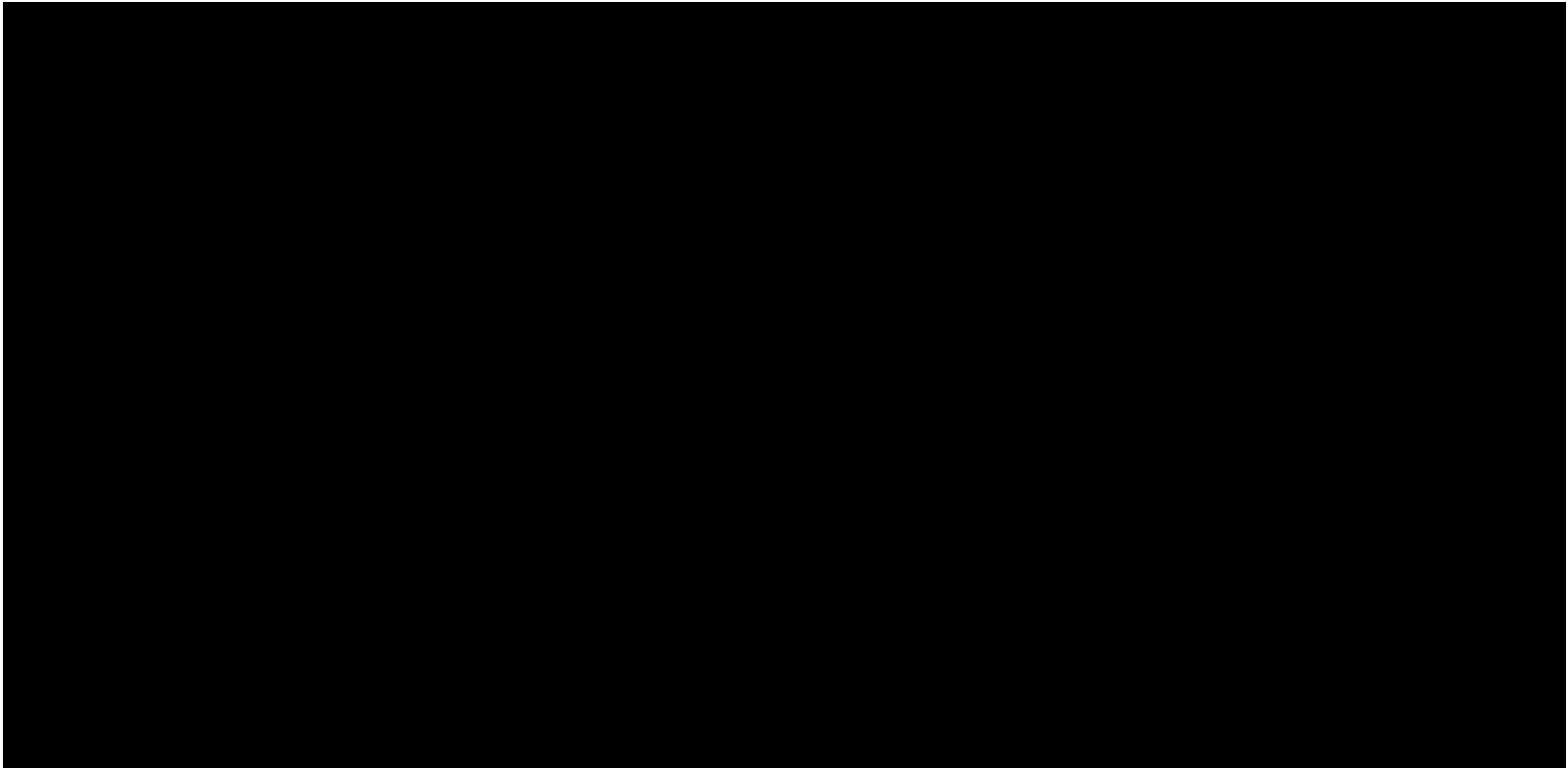# CO$_2$ Price Forecast
** Highly Confidential **

Coal Price Forecast Comparison
** Highly Confidential **

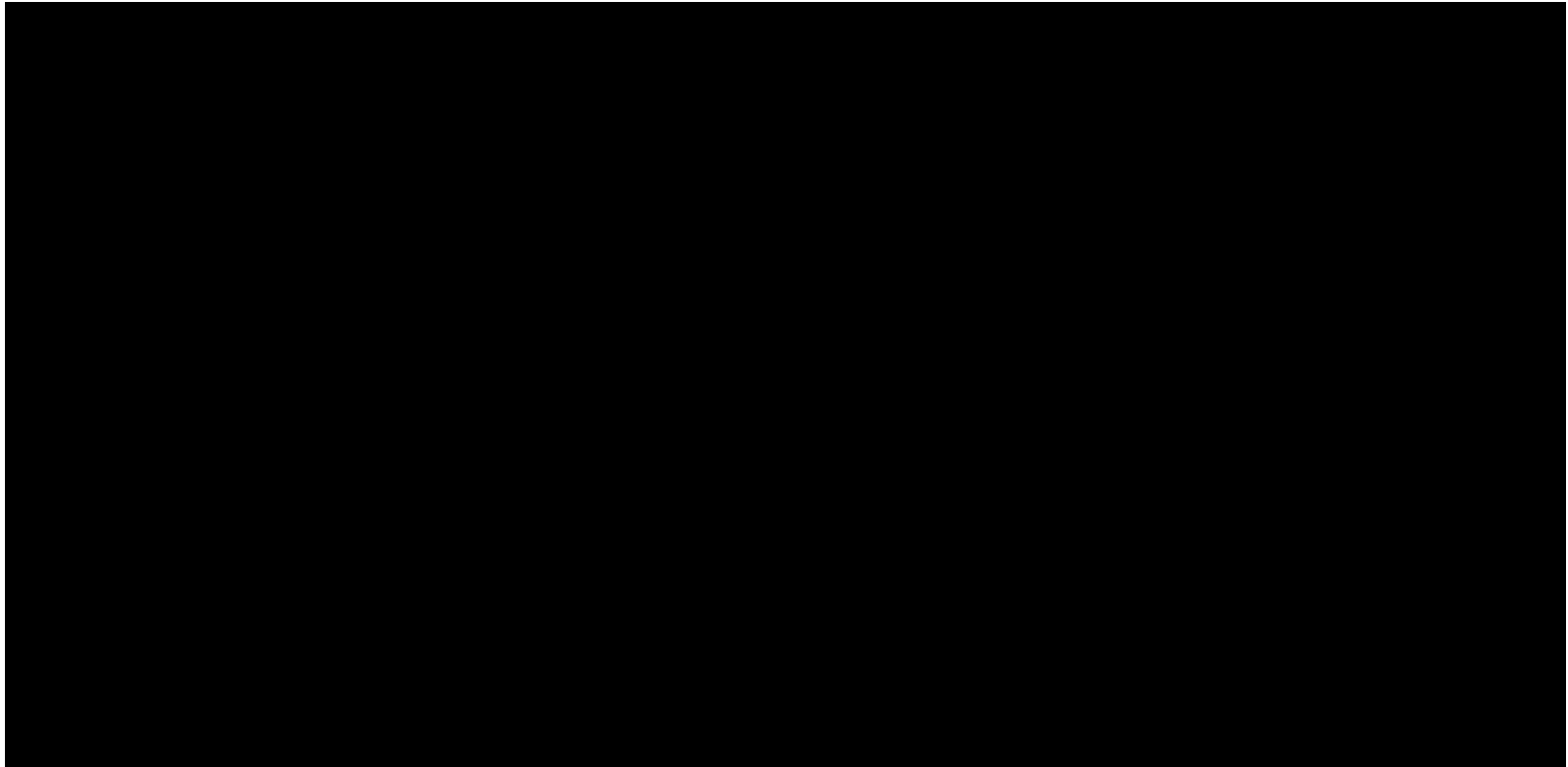# Fuel Oil Price Forecast Comparison
** Highly Confidential **

CAIR SO$_2$ Group 1 Price Forecast
** Highly Confidential **

CAIR SO$_2$ Group 2 Price Forecast
** Highly Confidential **
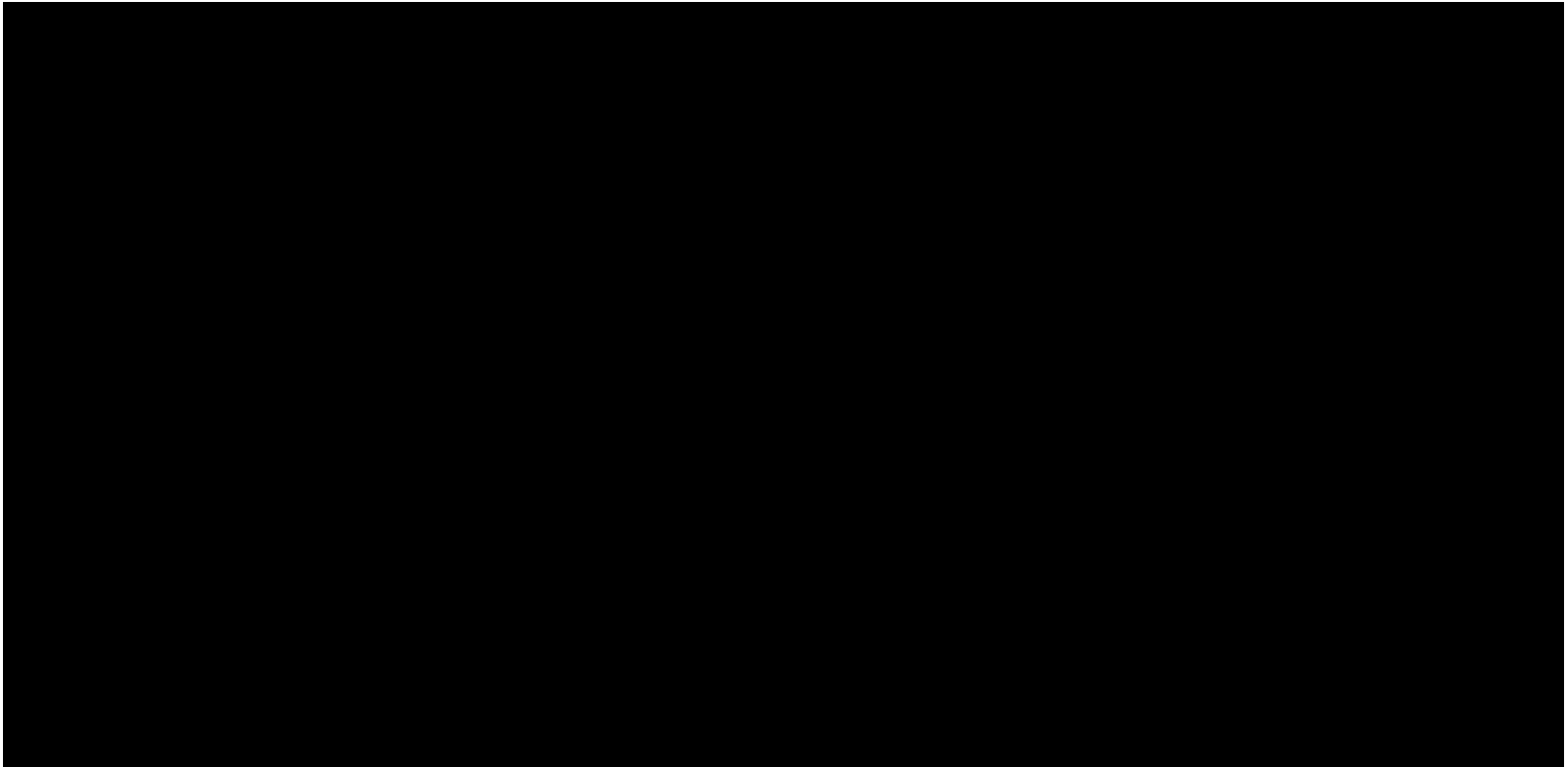
NO$_x$ Annual Price Forecast
** Highly Confidential **
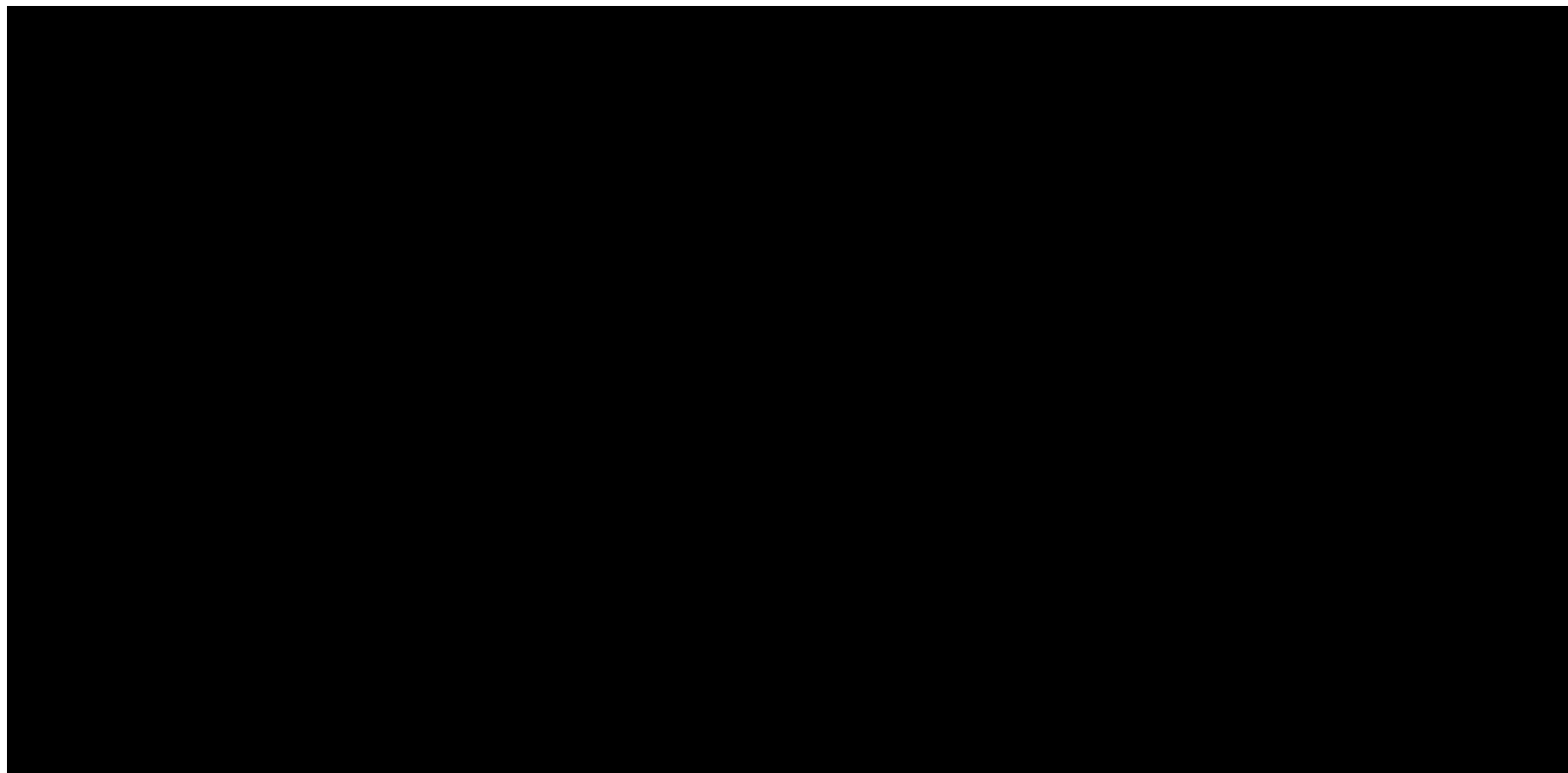
NO$_x$ Seasonal Price Forecast
** Highly Confidential **
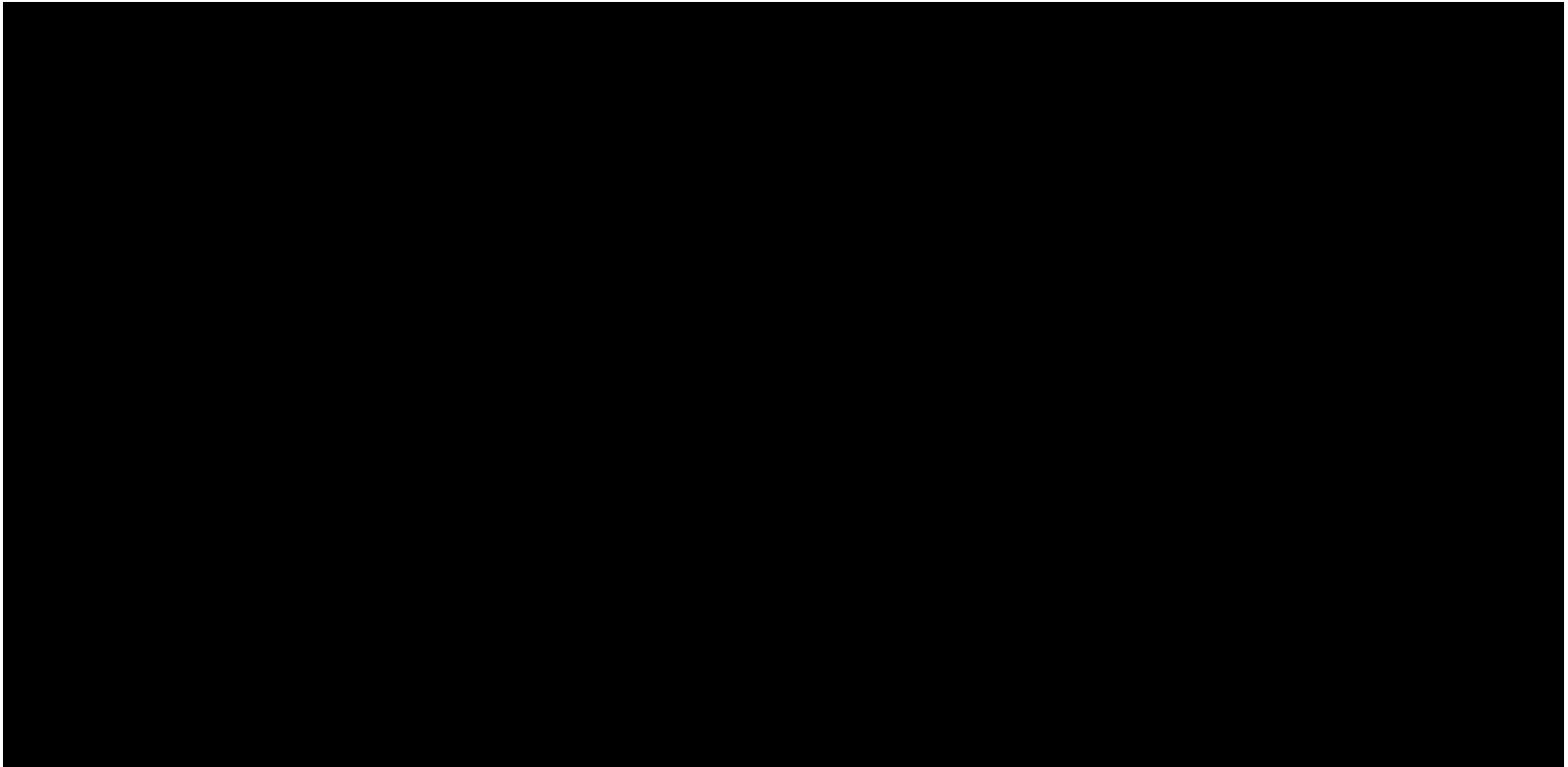
Environmental Drivers and Expected Retrofits
** Highly Confidential **
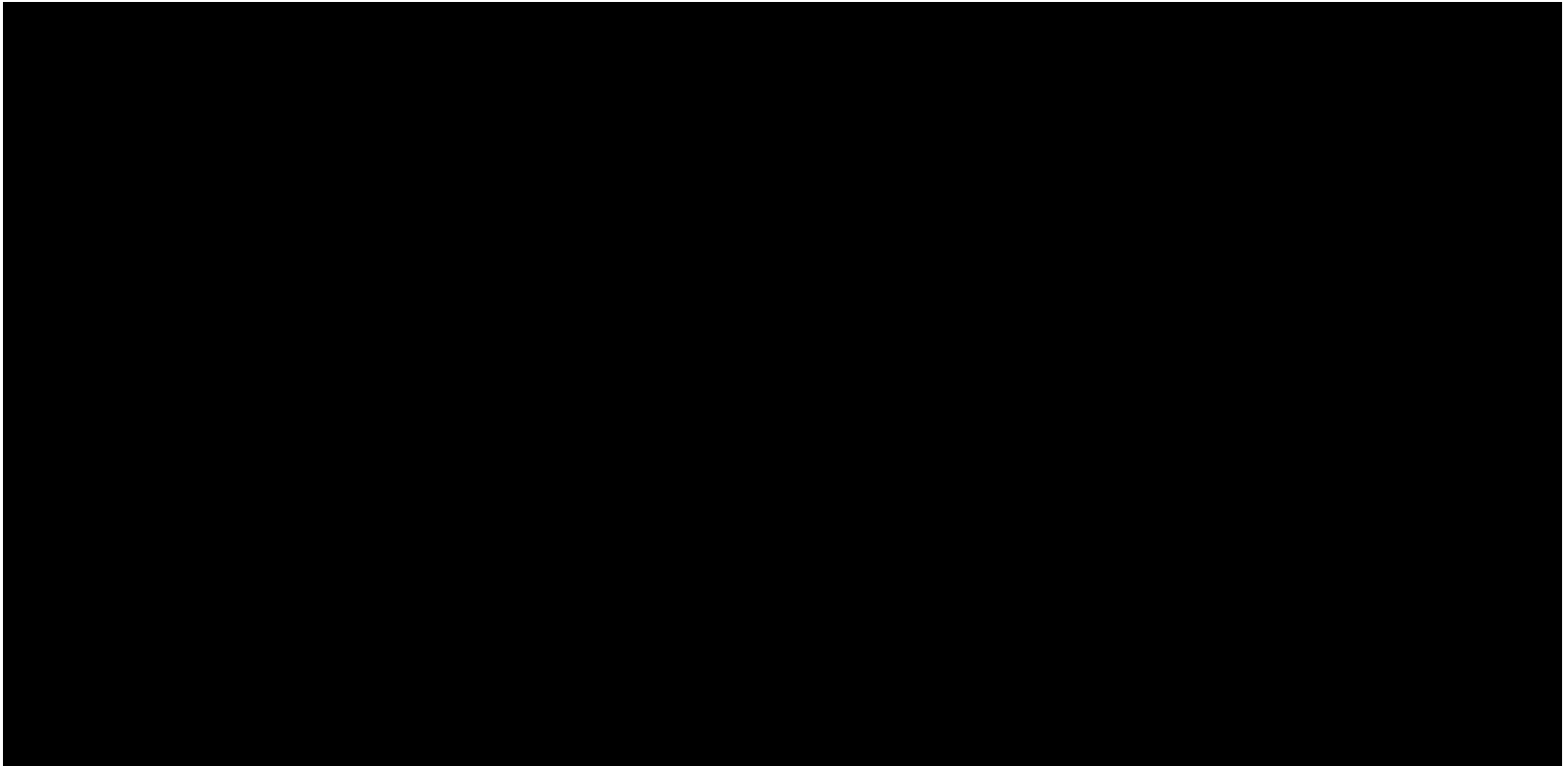
Technologies for Integrated Resource Analysis
** Highly Confidential **
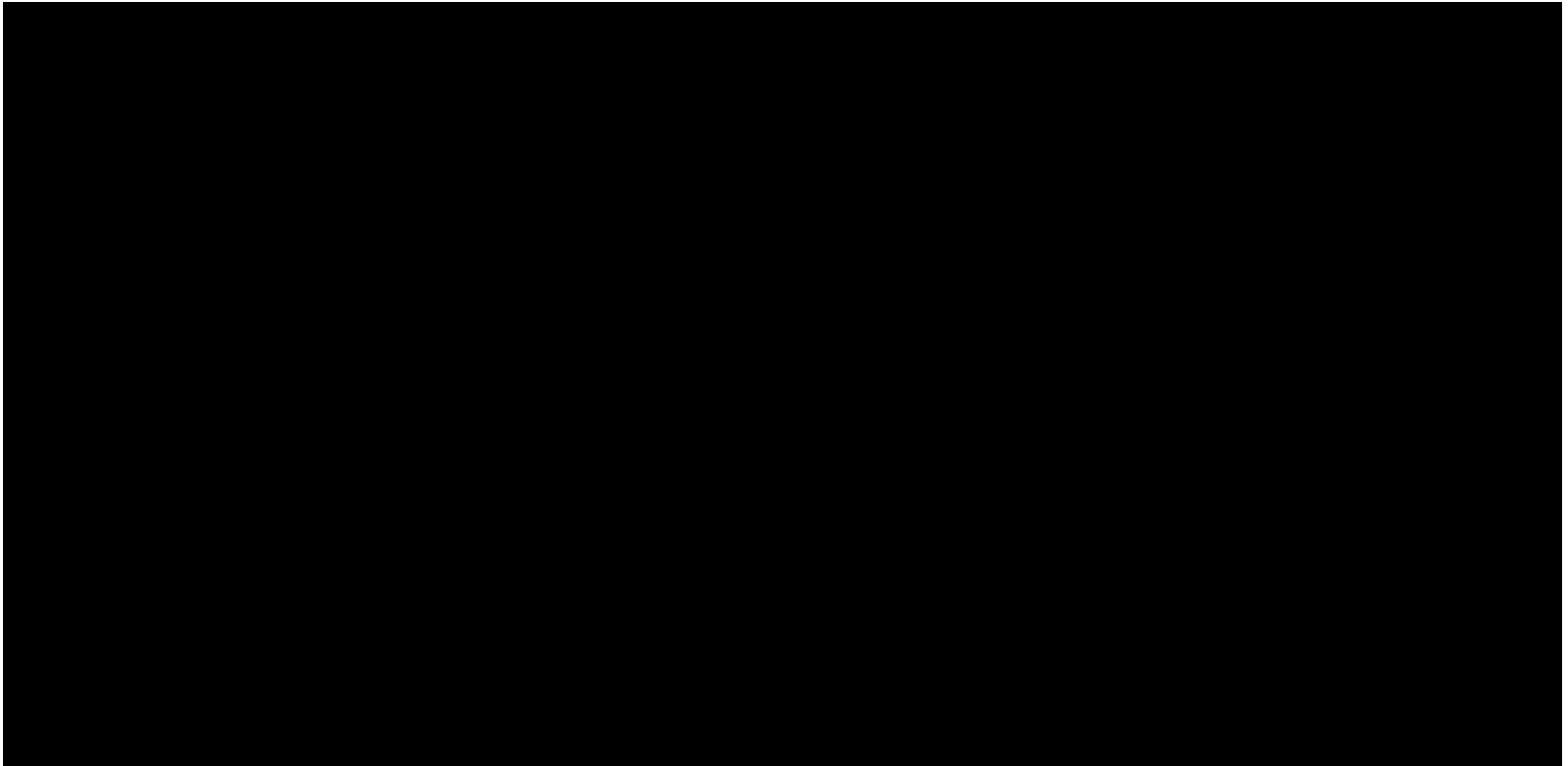
Demand-Side Resource Analysis

KCP&L-MO Energy Savings
** Highly Confidential **

* Note: The RAP and MAP estimates do not reflect C&I opt outs.
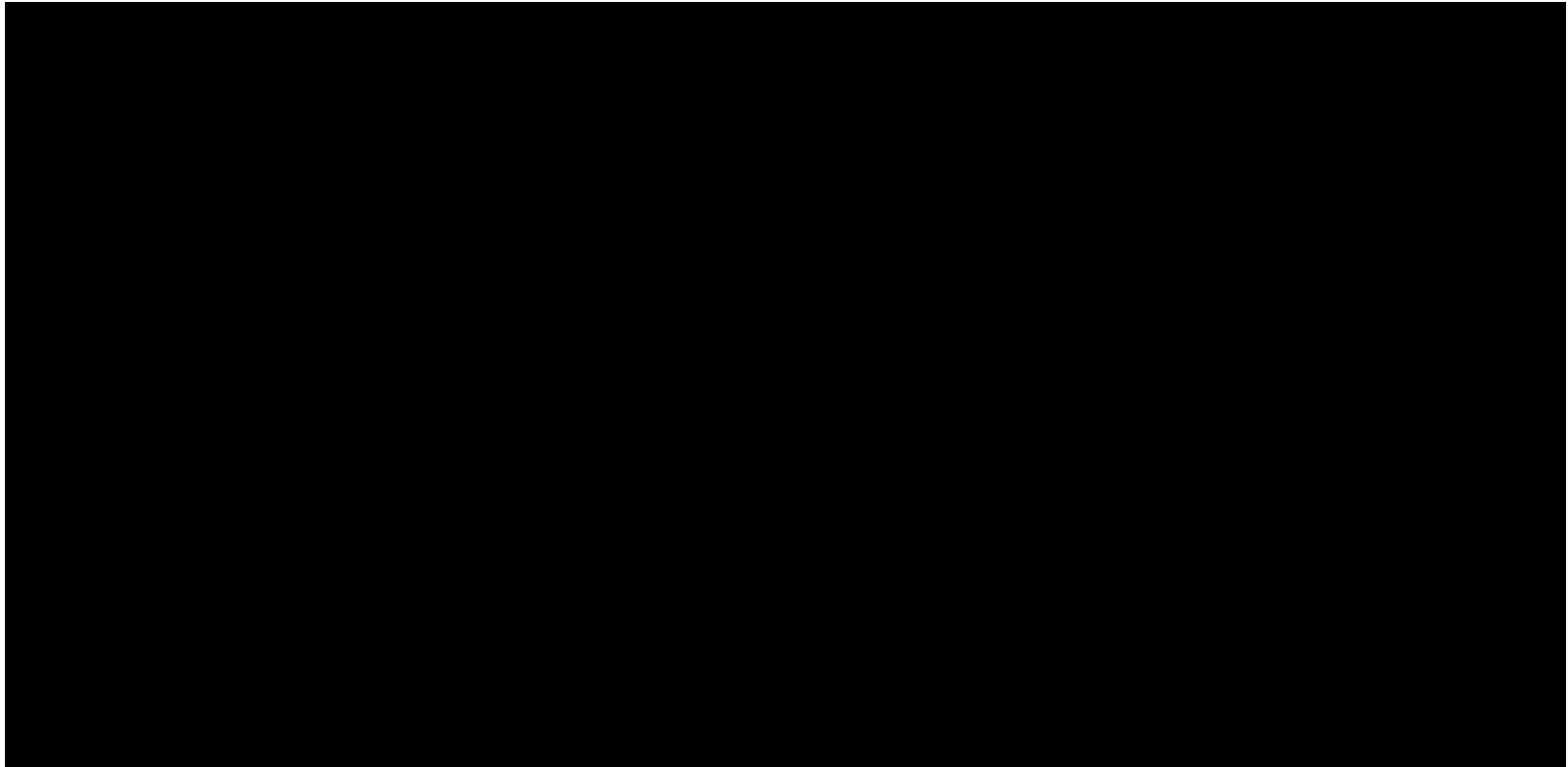
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KCP&L-MO Demand Savings
** Highly Confidential **

* Note: The RAP and MAP estimates do not reflect C&I opt outs.

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GMO Energy Savings
** Highly Confidential **

* Note: The RAP and MAP estimates do not reflect C&I opt outs.

GMO Demand Savings
** Highly Confidential **

* Note: The RAP and MAP estimates do not reflect C&I opt outs.

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Integrated Resource Planning

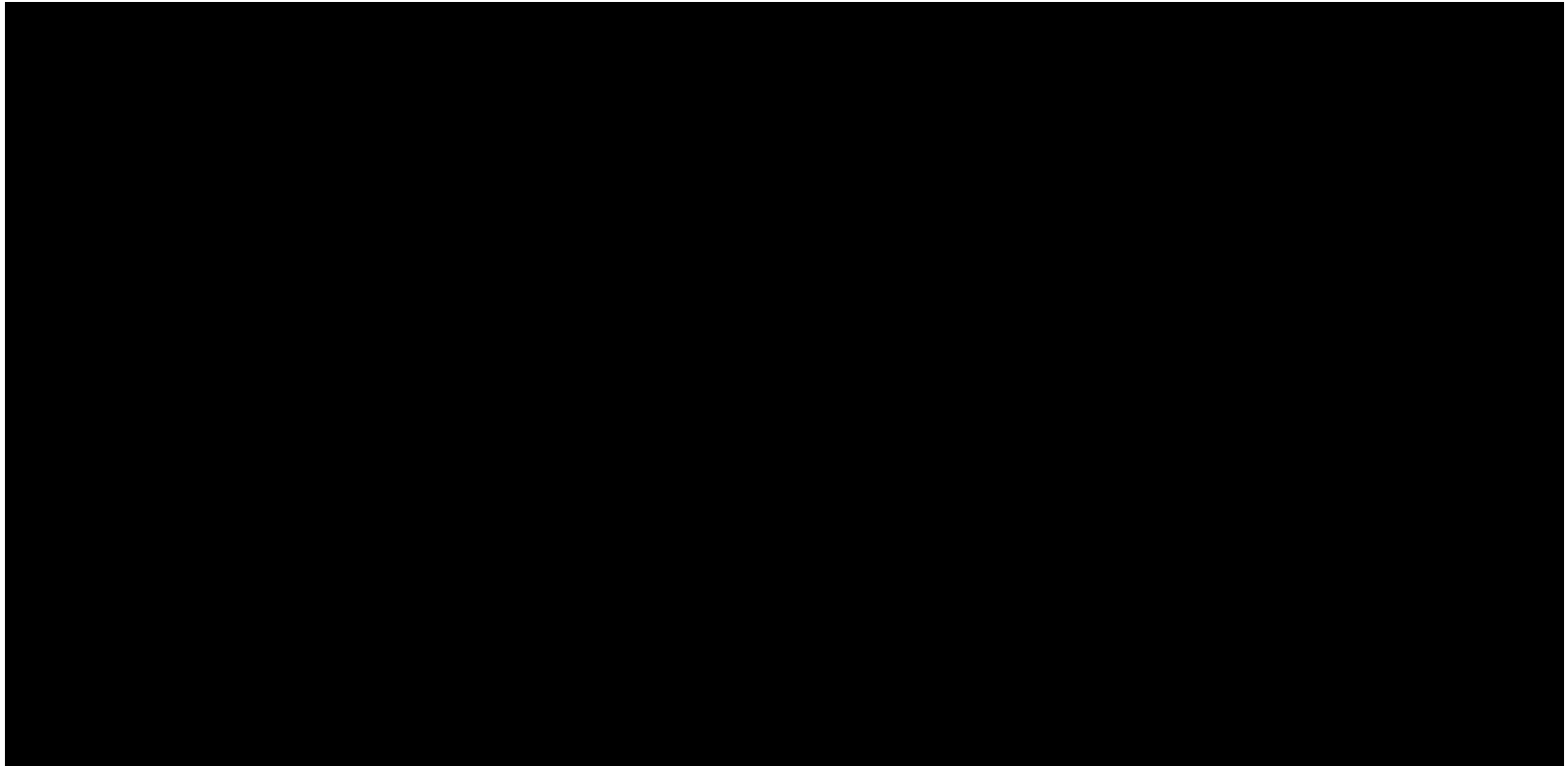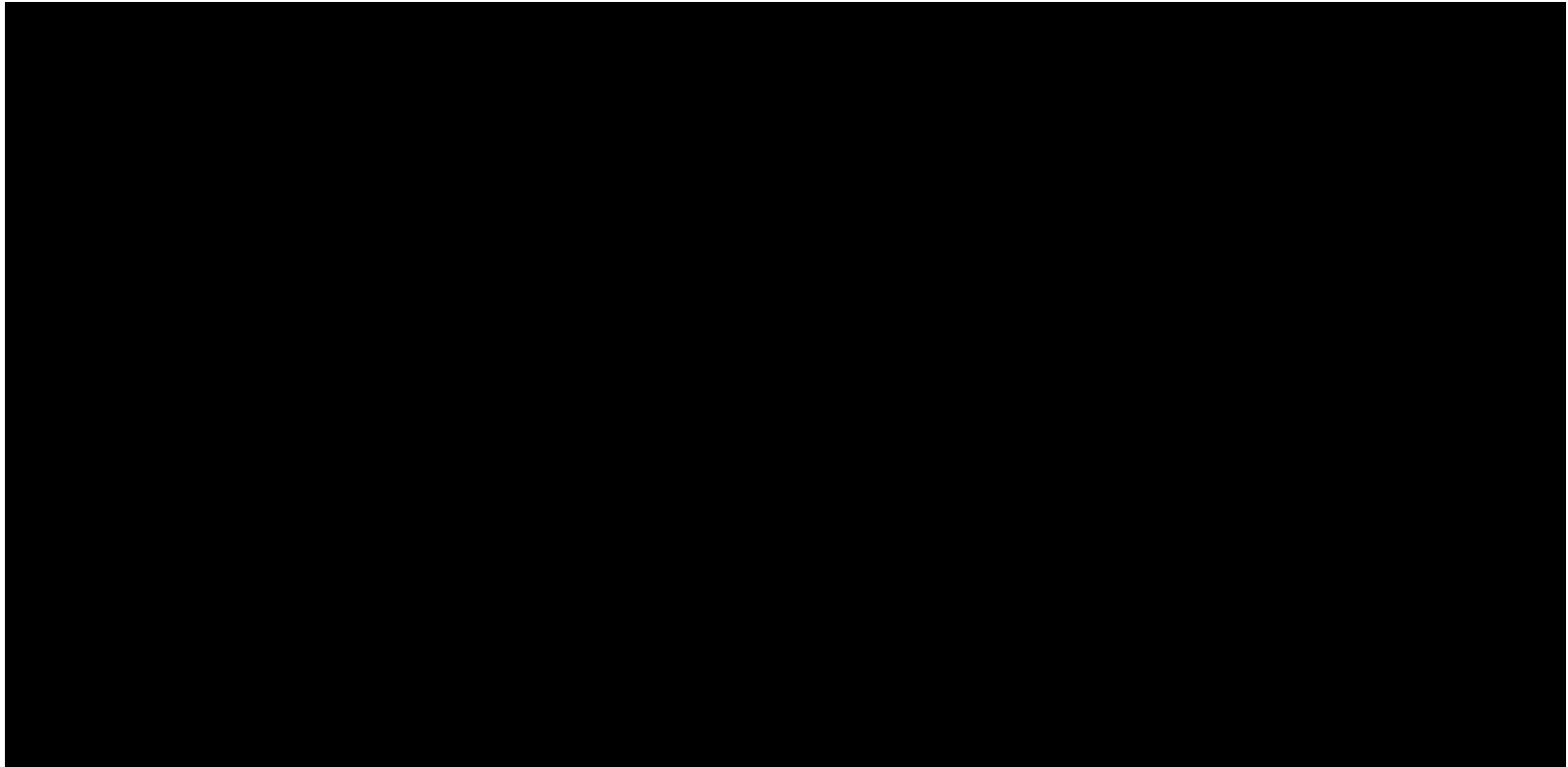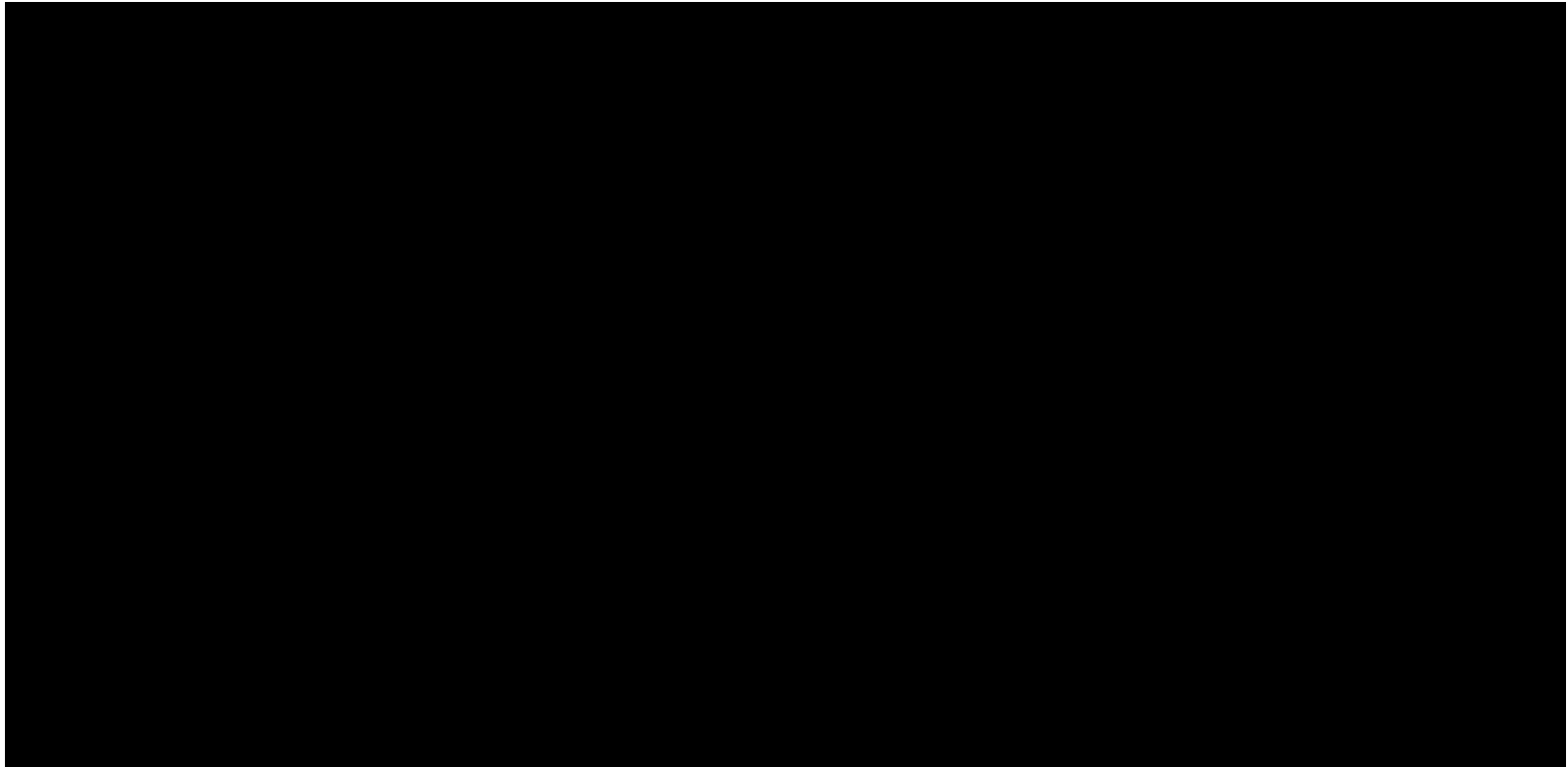# Potential Alternative Resource Plans – KCP&L

**NAMING CONVENTION FOR ALTERNATIVE RESOURCE PLANS
IN THE 2015 KCP&L IRP UPDATE**

K	A	A	A	A

UTILITY
K = KCP&L

RETIREMENT DATES
A = No Retirements
B = Jan 1, 2021

GENERATION ADDITIONS
A = CT
B = CC
C = Additional Wind
D = M-2 /M-3 on NG

RETIREMENT UNITS
A = No Retirements

DEMAND-SIDE MANAGEMENT
Option A = MAP
Option B = RAP
Option C
Option D = Persistence DSM
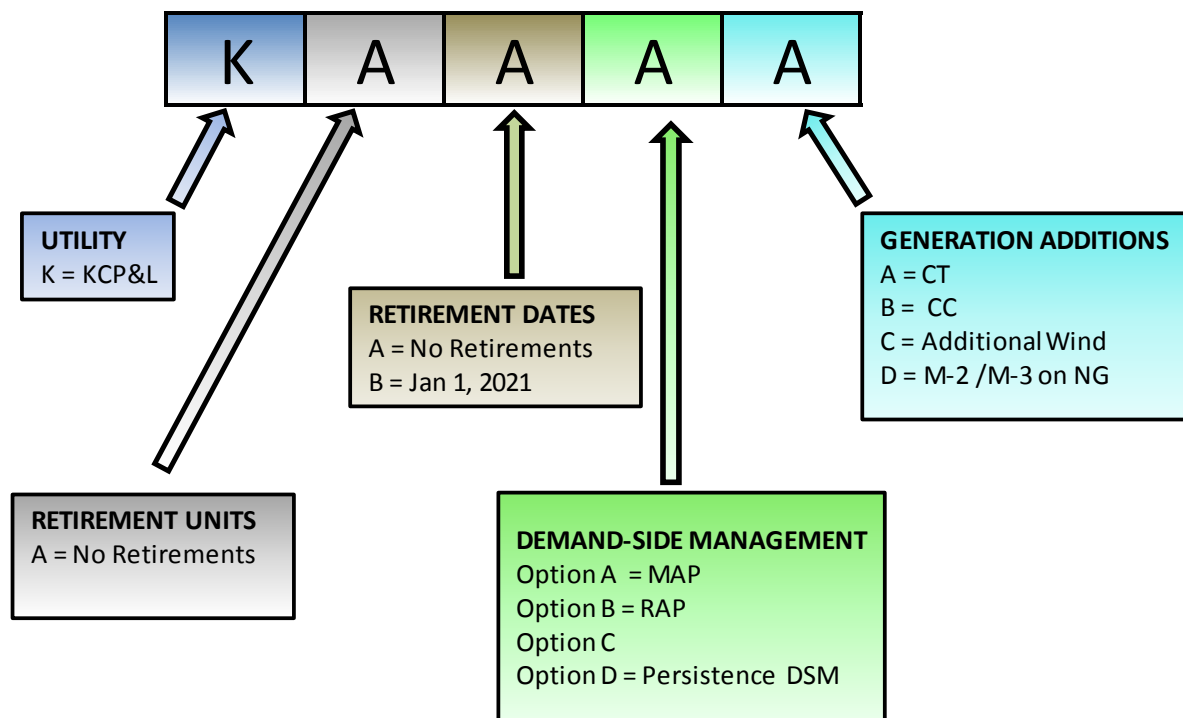
Definitions:

RAP - Realistic Achievable Potential	M-2 - Montrose-2	CT - Combustion Turbine
MAP - Maximum Achievable Potential	M-3 - Montrose-3	CC - Combined Cycle

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Potential Alternative Resource Plans – GMO

**NAMING CONVENTION FOR ALTERNATIVE RESOURCE PLANS
IN THE 2015 GMO IRP UPDATE**

G	A	A	A	A

UTILITY
G = GMO

RETIREMENT UNITS
A = No Retirements
B = LR 4/6
C = LR 4/6, S-3

RETIREMENT DATES
A = No Retirements
B = Jan 1, 2019

DEMAND-SIDE MANAGEMENT
Option A = MAP
Option B = RAP
Option C
Option D = Persistence DSM

GENERATION ADDITIONS
A = CT
B = Existing CC (207 MW)
C = CC
D = Additional Wind
E = S-1/S-2 on NG

Definitions:

RAP - Realistic Achievable Potential	LR 4/6 - Lake Road 4/6	CT - Combustion Turbine
MAP - Maximum Achievable Potential	S-2 - Sibley-2	CC - Combined Cycle
S-1 - Sibley-1	S-3 - Sibley-3	