

Public Version

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Evergy Metro, Inc. d/b/a Evergy)
Missouri Metro’s 2021 Triennial Compliance Filing) File No. EO-2021-0035
Pursuant to 20 CSR 4240-22)

In the Matter of Evergy Missouri West, Inc. d/b/a)
Evergy Missouri West’s 2021 Triennial Compliance) File No. EO-2021-0036
Filing Pursuant to 20 CSR 4240-22)

NOTICE

COME NOW, Evergy Metro, Inc. d/b/a Evergy Missouri Metro (“Evergy MO Metro”) and Evergy Missouri West, Inc. d/b/a Evergy Missouri West (“Evergy MO West”) (collectively, the “Company”) and respectfully state as follows to the Missouri Public Service Commission (“Commission”):

1. On March 26, 2021, the Company held a meeting with stakeholders which included a presentation, attached hereto as **CONFIDENTIAL Exhibit A**.

WHEREFORE, the Company respectfully request the Commission take notice of the attached.

Respectfully submitted,

/s/ Robert J. Hack

Robert J. Hack, #36496
Roger W. Steiner, #39586
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**ATTORNEYS FOR EVERGY MISSOURI
METRO AND EVERGY MISSOURI
WEST**

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been mailed, hand-delivered, transmitted by facsimile or electronically mailed to all counsel of record this 29th day of March 2021.

Roger W. Steiner _____

Roger W. Steiner



IRP Stakeholder Meeting

March 26th, 2021





Agenda

- Update on IRP Development Progress
- Inputs & Assumptions Update
 - Documentation Provided
 - Load Forecast Summary
 - Updated Request for Proposal (RFP)
- Alternative Resource Plans Modeled To-Date
- Uncertain Factors & Scenarios Update
- Preliminary Revenue Requirement Results
- Preferred Plan Selection Framework
- Next Steps

Triennial IRP Development Timeline

Gathering Input

July: Stakeholder meeting to discuss modeling assumptions / inputs

Reviewing Results

Q1 2021: Review updated results and distribute draft volumes .030 to .050

Refining Assumptions and Inputs

Early April: 2020 Annual Update Stakeholder Meeting to introduce process

Conducting Analysis

Late Q3 – Early Q1: Stakeholder meeting(s) to discuss preliminary results

- **October 19th:** Initial review of preliminary results
- **December 16th:** Additional stakeholder meeting to review next round of results
- **January 21st:** Demand-Side (Electrification, DSM, Behind-the-Meter solar & storage) Focused Discussion
- **As Needed:** Topical meetings with specific stakeholders on comments received



Recap of Engagement To-Date

Gathering Input

July 2020
Reviewed key input assumptions and provided overview of analytical process

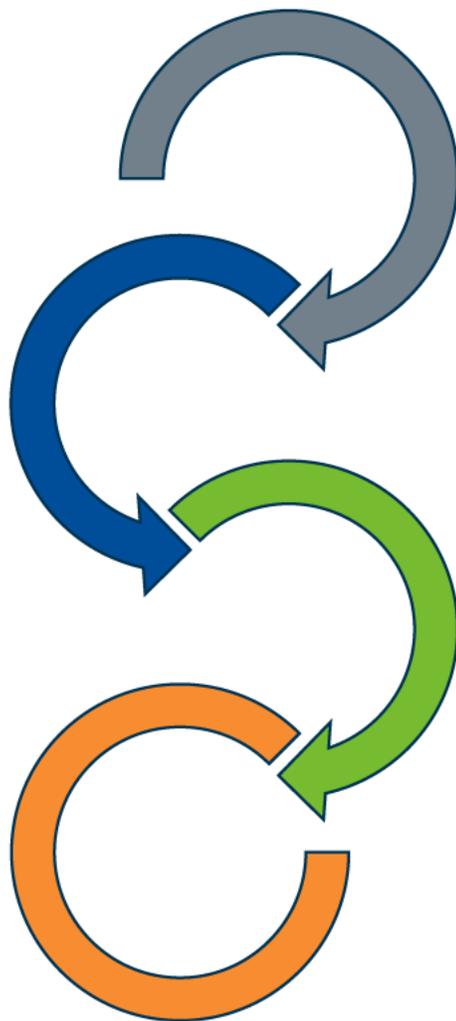
Received stakeholder feedback on assumptions and inputs

Reviewing Results

March 2021¹
Providing additional preliminary modeling results

Submitting draft documentation for key inputs

Receiving final pre-filing stakeholder feedback



Refining Assumptions and Inputs

April 2020

Reviewed 2020 Annual Update findings

Provided overview of stakeholder process for 2021 Triennial

Conducting Analysis

October, December 2020 January 2021

Provided confidential input assumptions and expected modeling scenarios

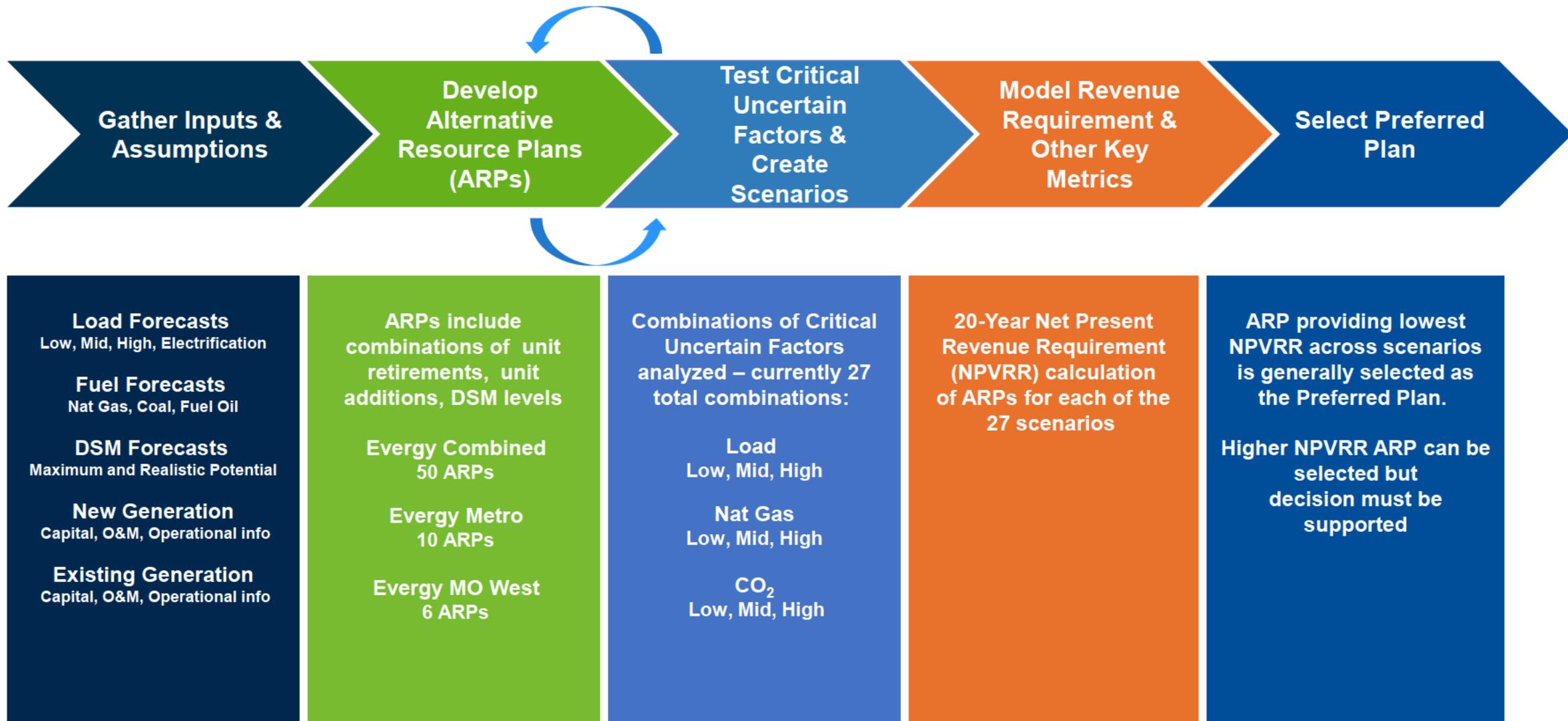
Reviewed 2 rounds of early ARP results

Provided details on electrification, behind-the-meter solar and storage, and DSM studies

Received stakeholder feedback on inputs, scenarios, and ARPs

1) Meeting structured to comply with 20 CSR 4240-22.080(5)(A) requirements plus additional round of preliminary modeling results

Overall Analytical Process



Gather Inputs & Assumptions

Laura Becker
Al Bass





Draft Documentation Provided

- 4 CSR 240-22.030: Load Analysis and Load Forecasting
- 4 CSR 240-22.040: Supply-Side Resource Analysis
- 4 CSR 240-22.045: Transmission and Distribution Analysis
- 4 CSR 240-22.050: Demand-Side Resource Analysis

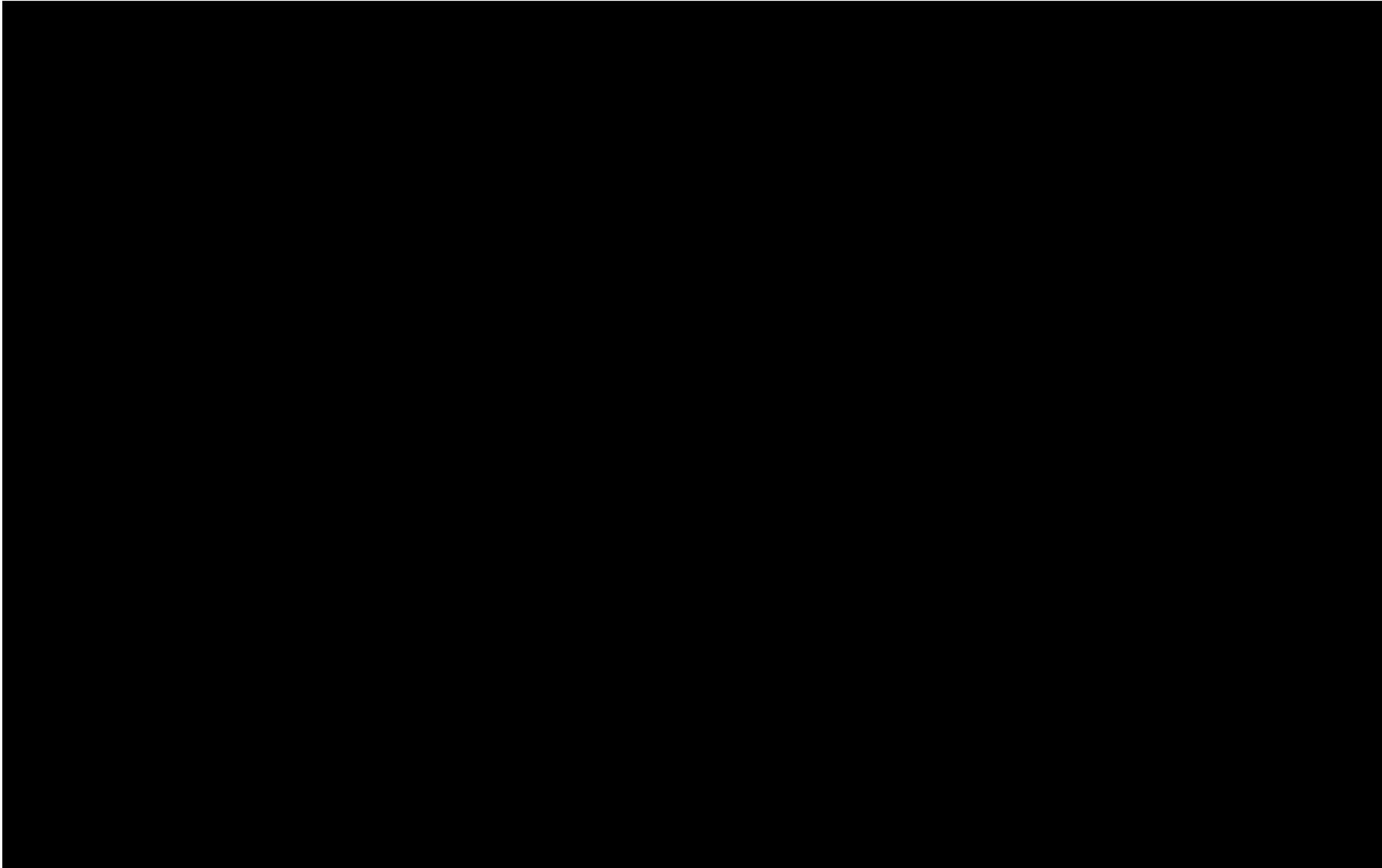


Changes in Inputs to Load Forecasting Models

- Historical data for customers, kwh and \$/kwh: June 2020
- DOE forecasts of appliance and equipment saturations and kwh/unit: Updated 2020
- Class models in the 2021 Metro and MO West filing are the same as the 2018 filing.
- The Company also re-evaluated the elasticities (price, output, household income, household size) used in the models and adjusted them to improve the model fit as applicable.
- EPRI electric vehicle adoption projections in the 2021 Triennial filing are updated from the 2018 filing.
- EIA West North Central end-use saturations were calibrated to the Metro and MO West 2020 appliance saturation survey and C&I saturation survey results.
- End-use intensity estimates from the EIA West North Central division were calibrated to the conditional demand outputs from the 2020 Metro and MO West potential study.
- An electrification adoption scenario was layered onto the high case energy and peak forecasts to produce a high case electrification scenario.



Net System Input and Peak Forecast – Evergy Metro



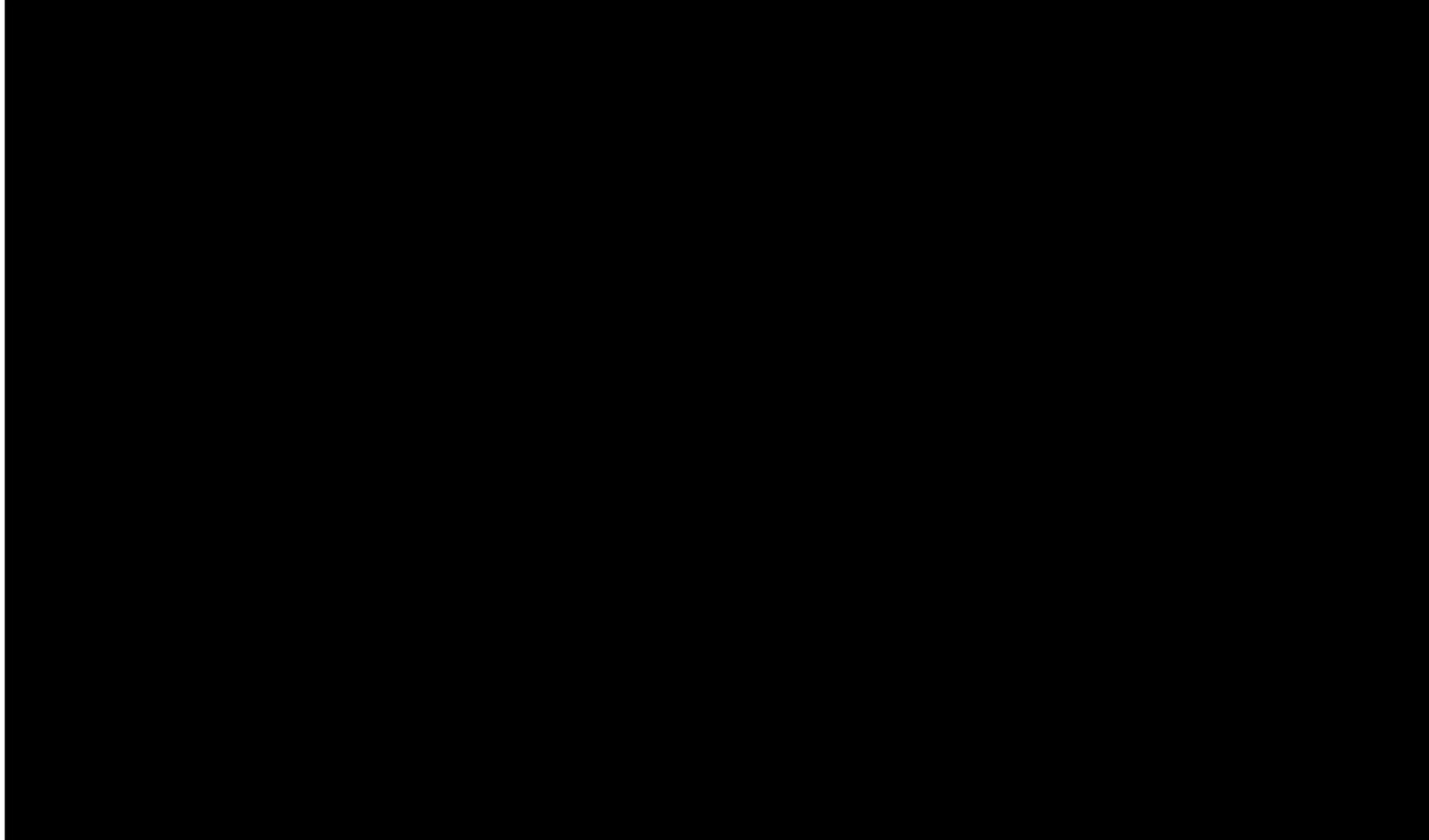


Evergy Metro Historical and Comparison of Mid-Case Forecasts of Net System Input, Excluding DSM Forecasted Impact





Evergy Metro Historical and Comparison of Mid-Case Forecasts of Demand, Excluding DSM Forecasted Impact



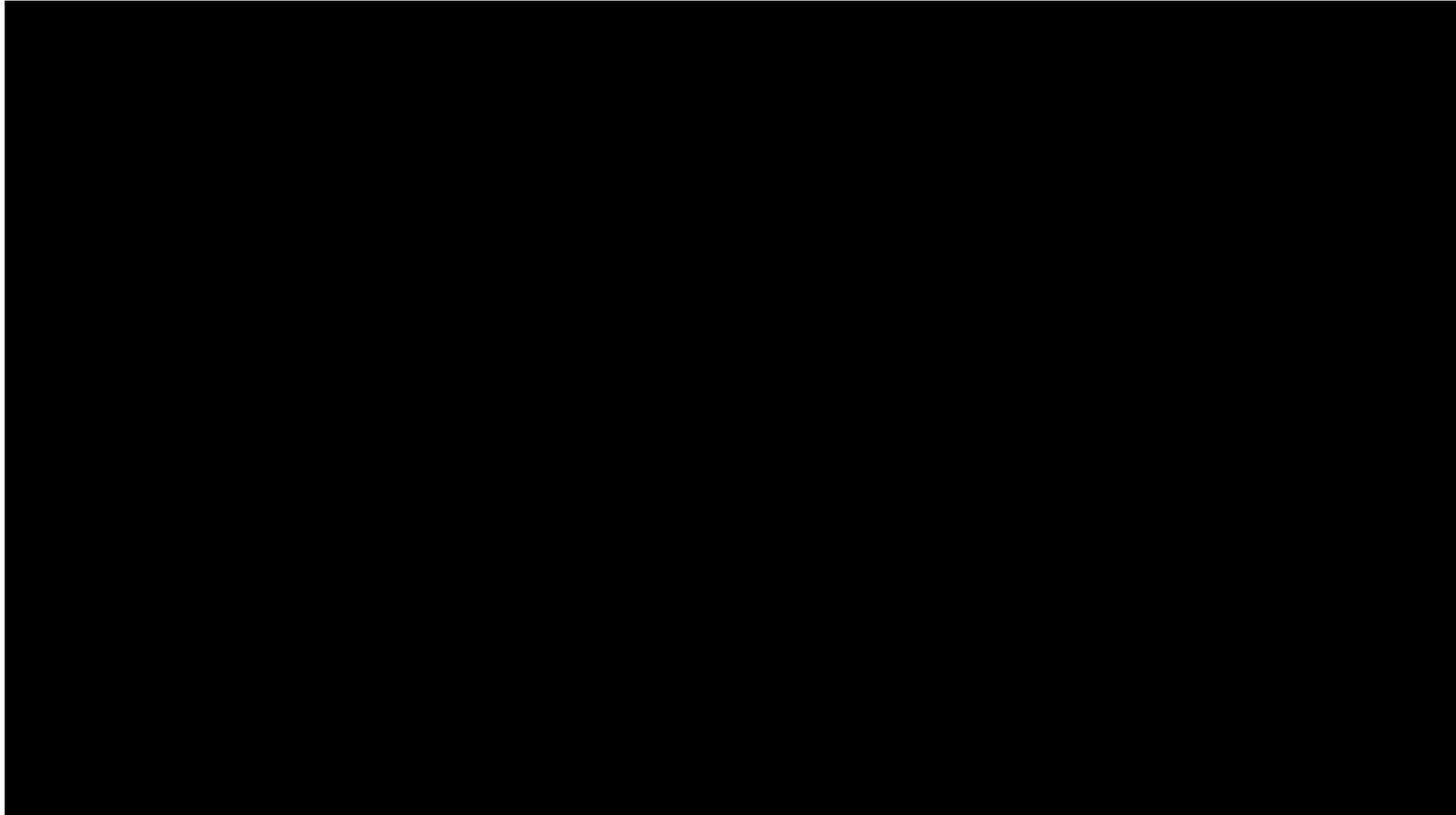


Net System Input and Peak Forecast – Evergy MO West



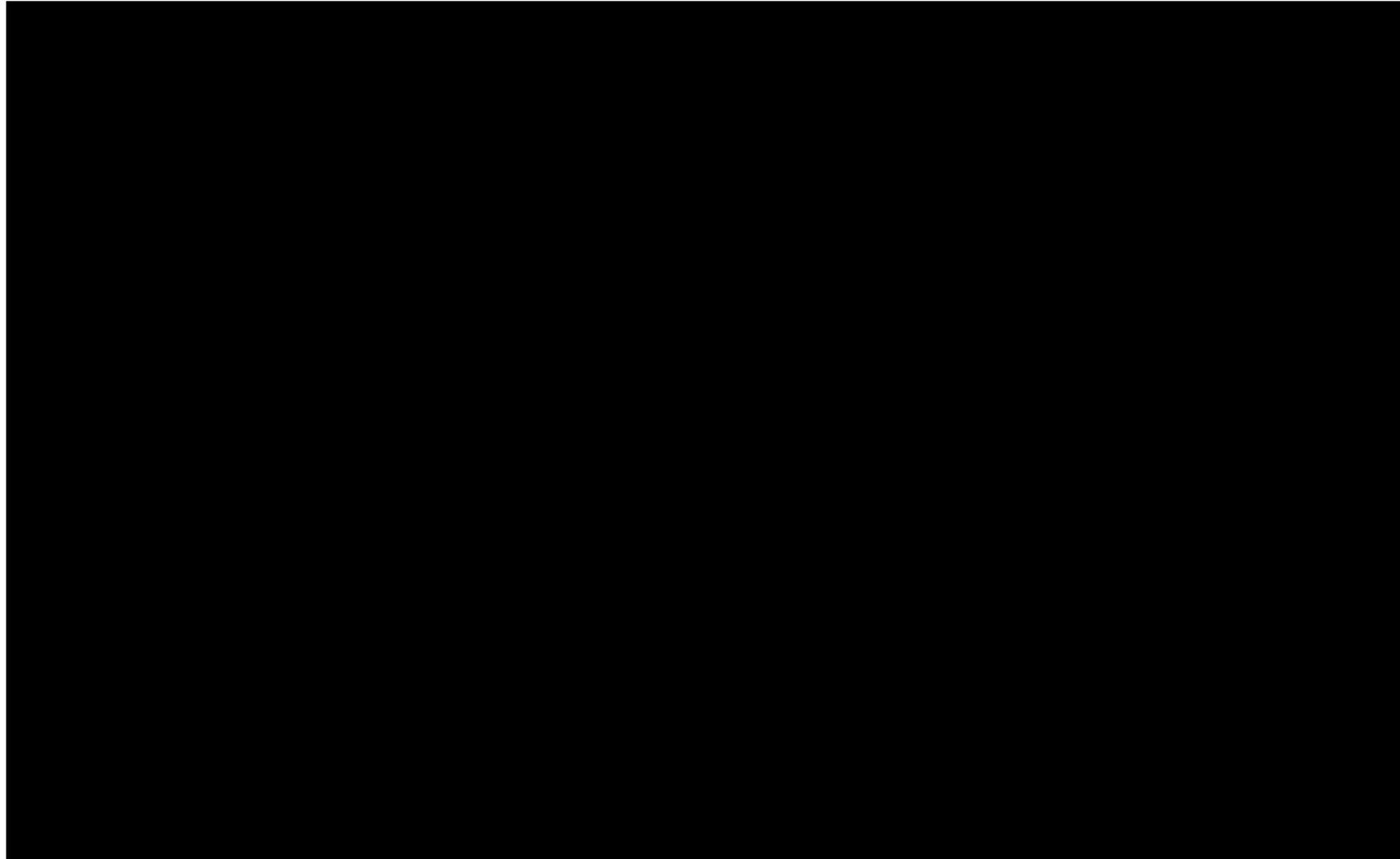


Evergy MO West Historical and Comparison of Mid-Case Forecasts of Net System Input, Excluding DSM Forecasted Impact





Evergy MO West Historical and Comparison of Mid-Case Forecasts of Demand, Excluding DSM Forecasted Impact





RFP Outreach Update

- RFP distribution
 - Notification of RFP sent to over 800 1898 & Co. industry contacts
 - Notification of RFP sent via NAEMA email blast to over 800 recipients (NAEMA members, industry participants, and other interested parties)
- 130+ potential respondents downloaded RFP documents
- 30 companies submitted Notice of Intent (NOI)
 - 1 has retracted their NOI
- ~50 projects from 21 companies received on or before March 5th
- Project submittals currently being evaluated for potential future acquisition

Develop Alternative Resource Plans

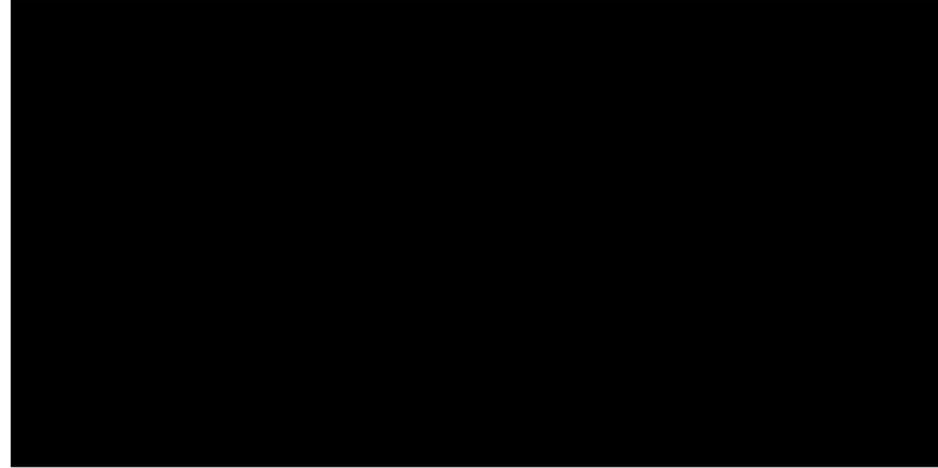
Laura Becker





Alternative Resource Plan Selection Methodology

- Additional Alternative Resource Plans developed since the December Stakeholder Meeting
 - 30 new Evergy ARPs, 1 new Evergy Metro and 1 new Evergy Missouri West



- See results slides for details

- Alternative Resource Plans developed since planned February Stakeholder Meeting

- 14 new Evergy ARPs –



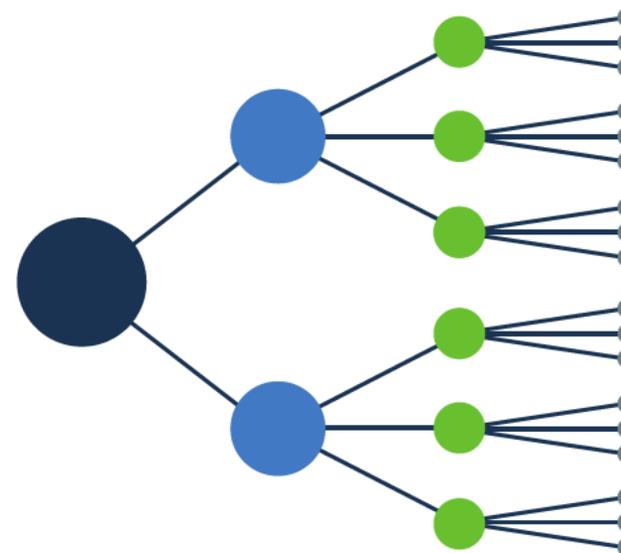
Test Critical Uncertain Factors & Create Scenarios

Laura Becker





Critical Uncertain Factor Approach



Uncertain Factors

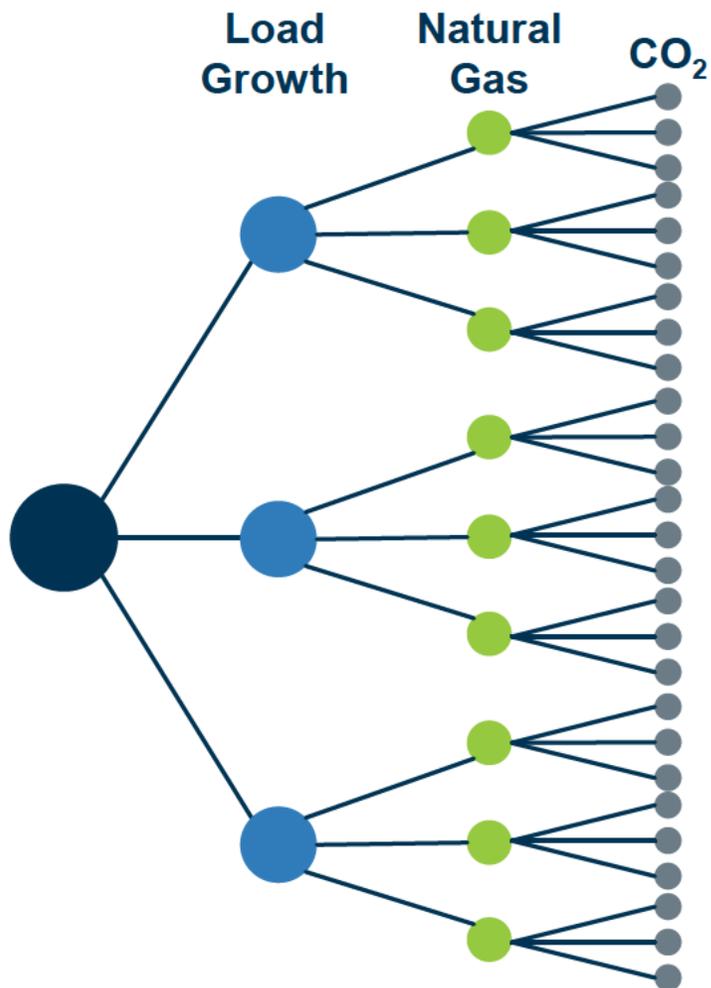
Analyzed individually to determine criticality (i.e., impact on Alternative Resource Plan ranking)

Scenarios

Constructed based on combinations of Critical Uncertain Factors (gas price, CO₂ pricing, load forecast, etc.)



Scenarios & Probabilities Modeled To-Date



Updated Probability Distribution

	Low	Mid	High
Load Growth	35%	50%	15%
Natural Gas	35%	50%	15%
CO ₂ Price	20%	60%	20%

Endpoint	Load Growth	Natural Gas	CO ₂	Endpoint Probability
1	High	High	High	0.5%
2	High	High	Mid	1.4%
3	High	High	Low	0.5%
4	High	Mid	High	1.5%
5	High	Mid	Mid	4.5%
6	High	Mid	Low	1.5%
7	High	Low	High	1.1%
8	High	Low	Mid	3.2%
9	High	Low	Low	1.1%
10	Mid	High	High	1.5%
11	Mid	High	Mid	4.5%
12	Mid	High	Low	1.5%
13	Mid	Mid	High	5.0%
14	Mid	Mid	Mid	15.0%
15	Mid	Mid	Low	5.0%
16	Mid	Low	High	3.5%
17	Mid	Low	Mid	10.5%
18	Mid	Low	Low	3.5%
19	Low	High	High	1.1%
20	Low	High	Mid	3.2%
21	Low	High	Low	1.1%
22	Low	Mid	High	3.5%
23	Low	Mid	Mid	10.5%
24	Low	Mid	Low	3.5%
25	Low	Low	High	2.5%
26	Low	Low	Mid	7.4%
27	Low	Low	Low	2.5%

Model Revenue Requirement & Other Key Metrics

Laura Becker





Revenue Requirement Calculations

ARP #1

ARP #2

ARP #3

ARP #4

...

ARP #n

*Combinations of
Resource Retirements /
New Generation / DSM
over 20 years*

Scenario #1

Scenario #2

Scenario #3

...

Scenario #n

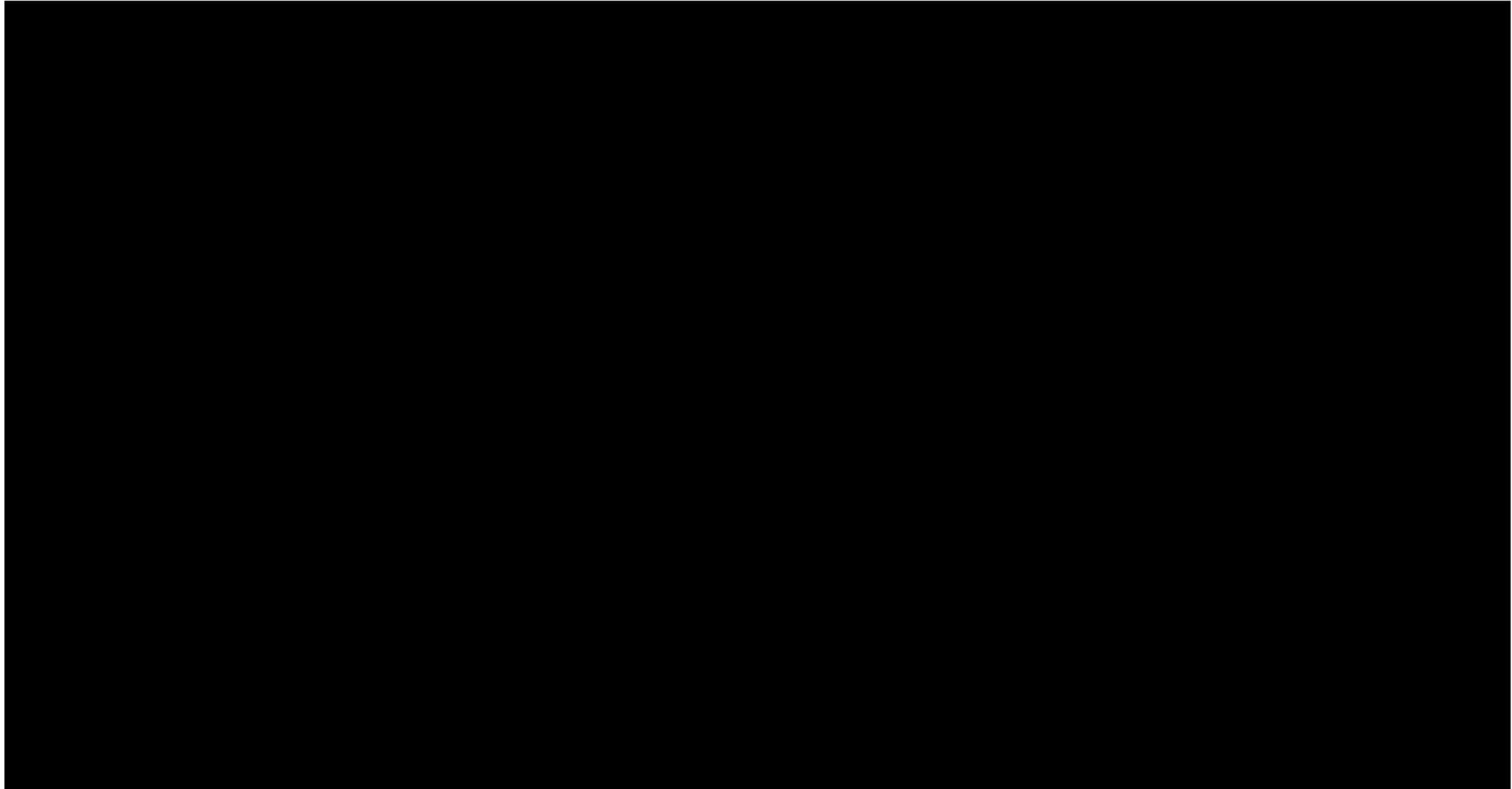
*Made up of Critical Uncertain
Factors (e.g., may consist of
different wholesale market prices)*

Net Present Value of
Revenue Requirement
(NPVRR) results for
Individual Scenarios

**Expected Value of
NPVRR across all Scenarios**

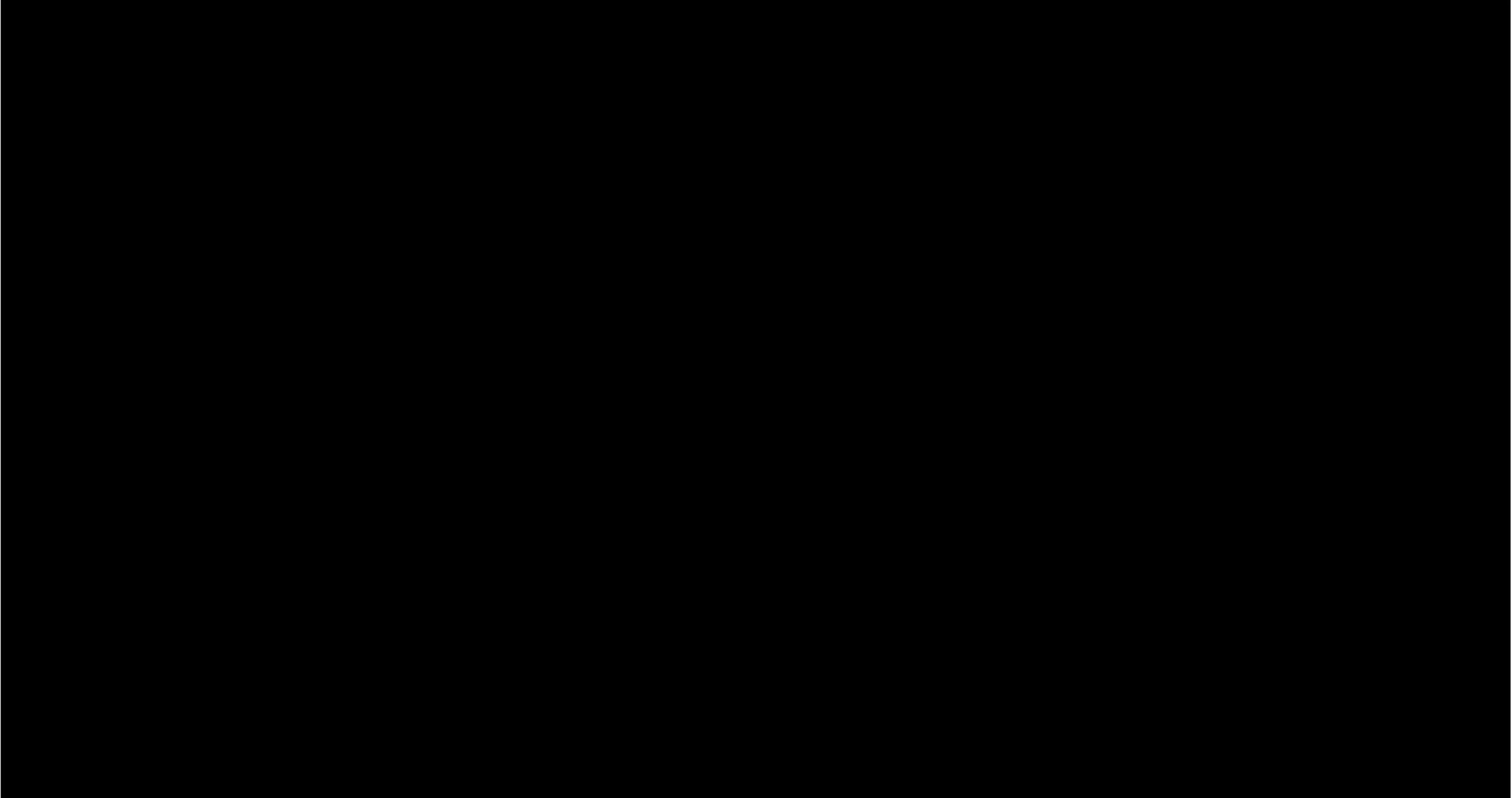


Preliminary Evergy Results – No CO₂ Restrictions



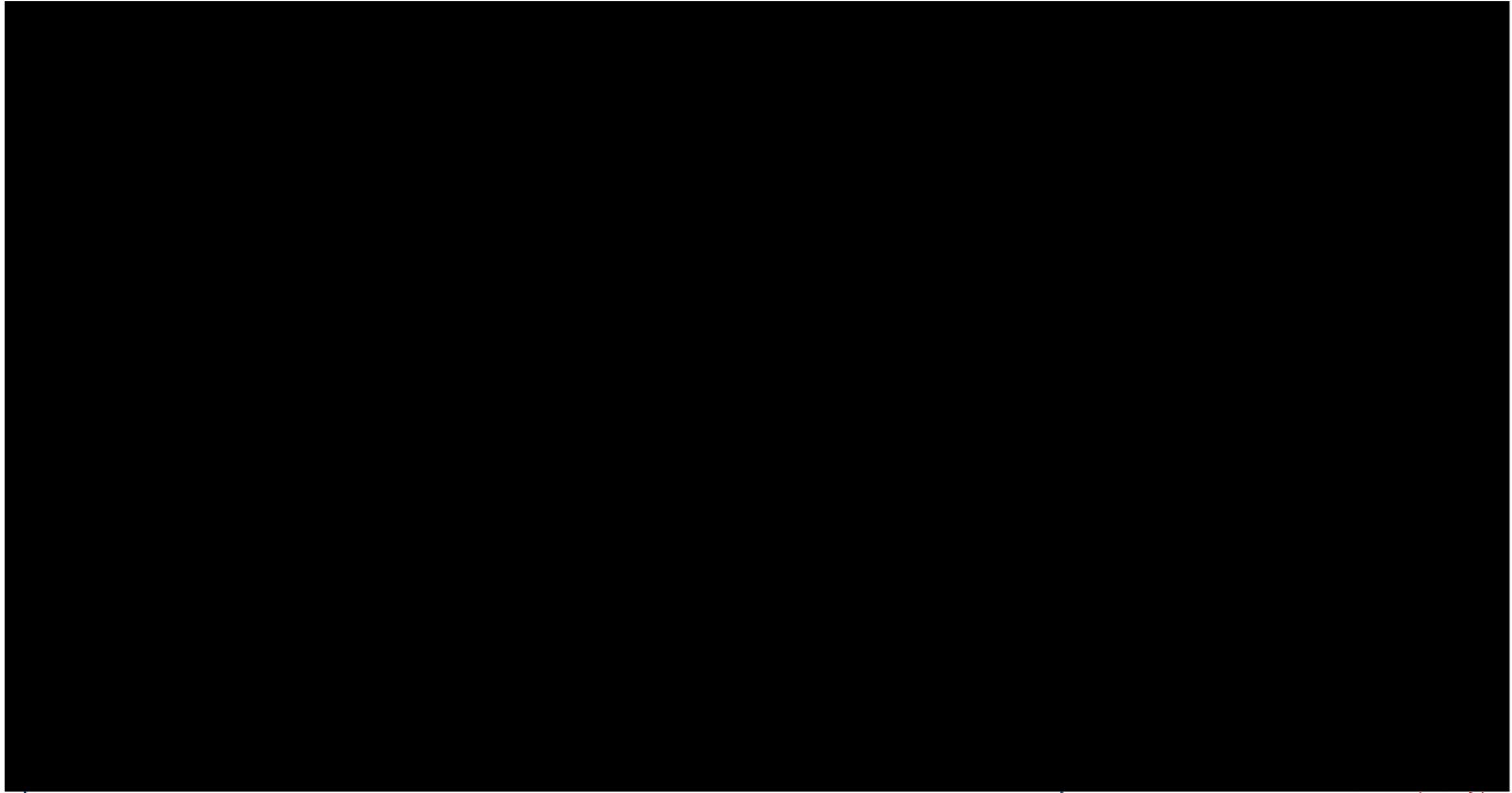


Preliminary Evergy Results – Mid CO₂ Restrictions



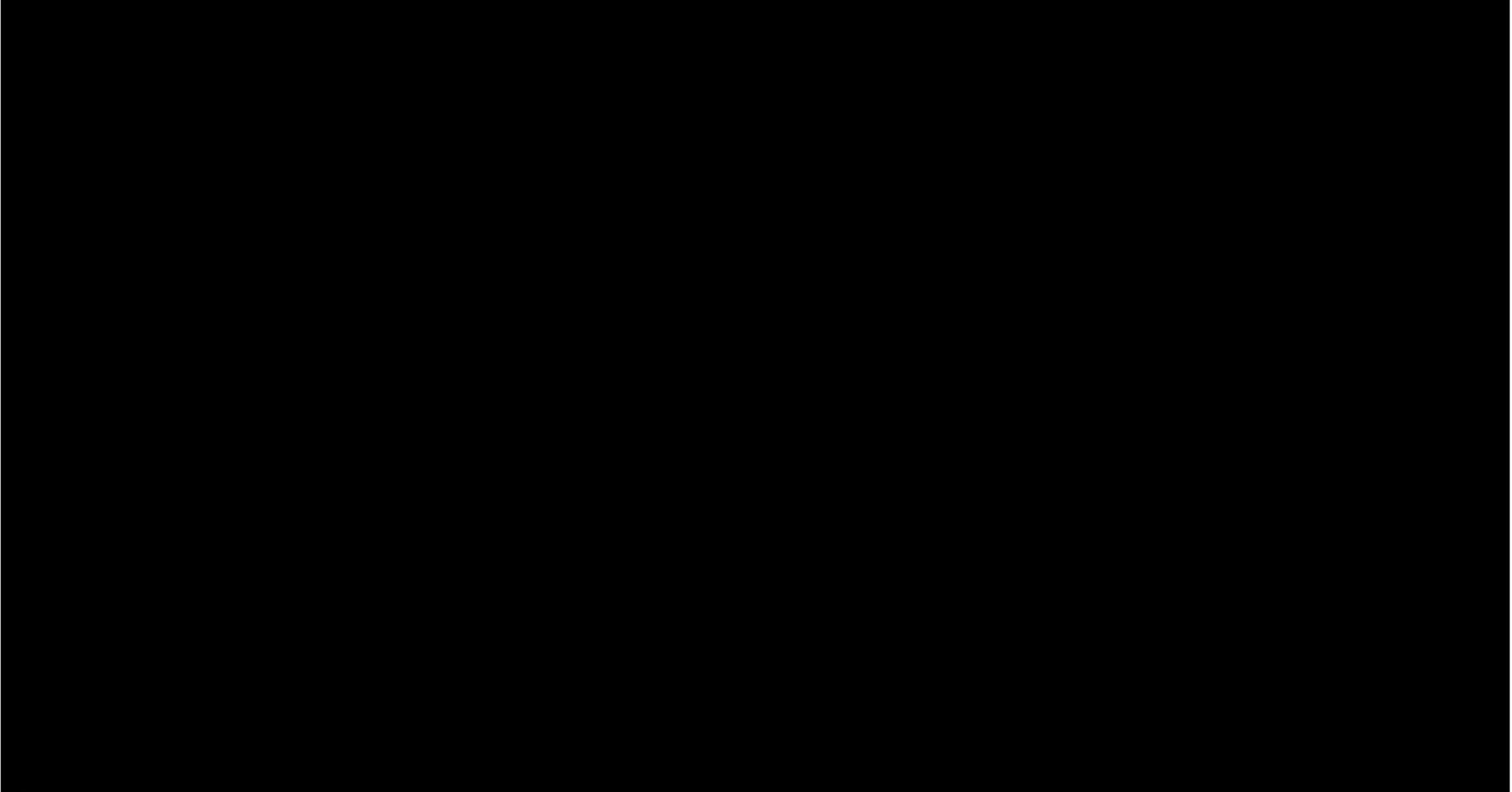


Preliminary Evergy Results – High CO₂ Restrictions



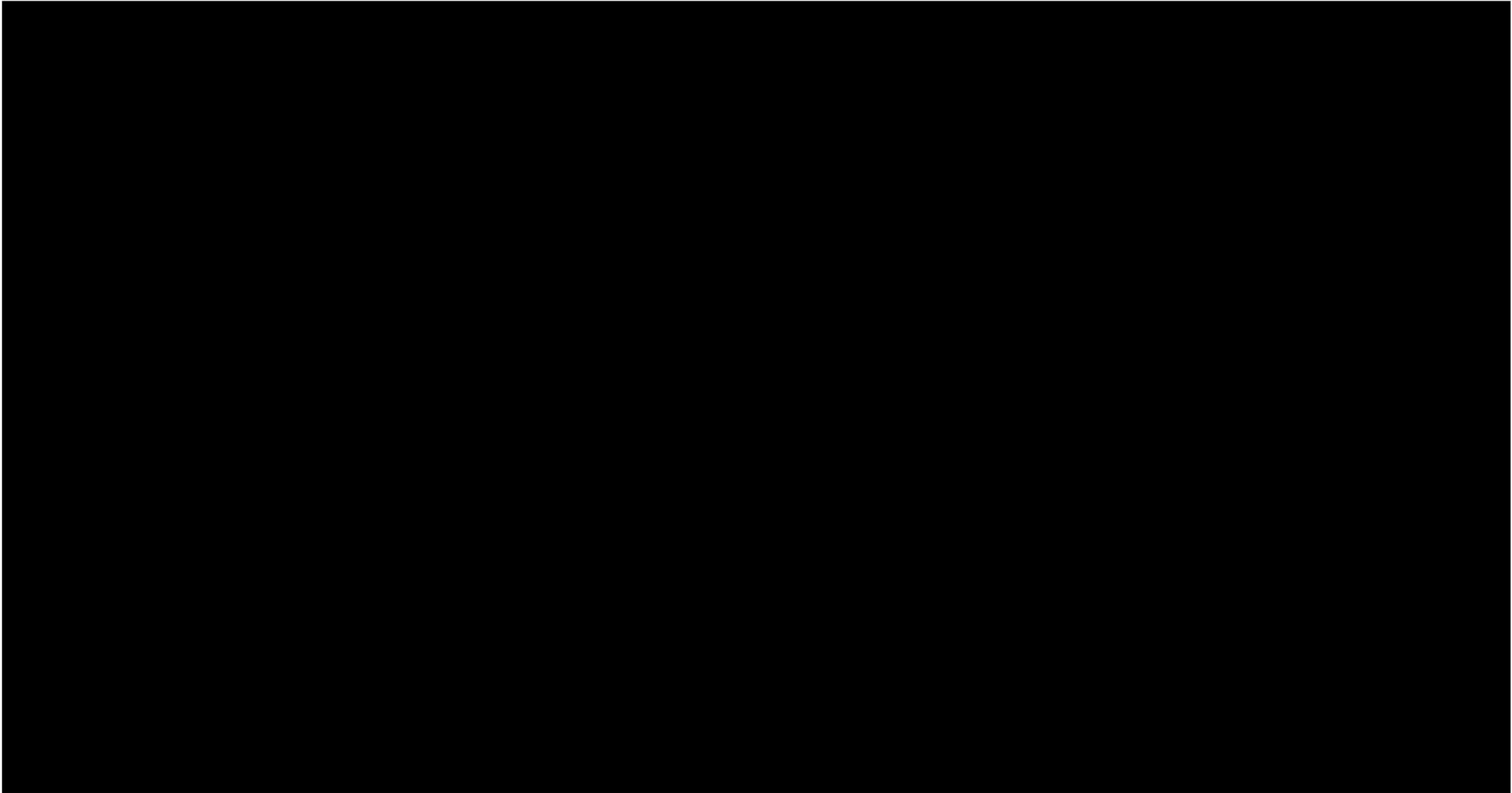


Preliminary Evergy Results – Expected Value



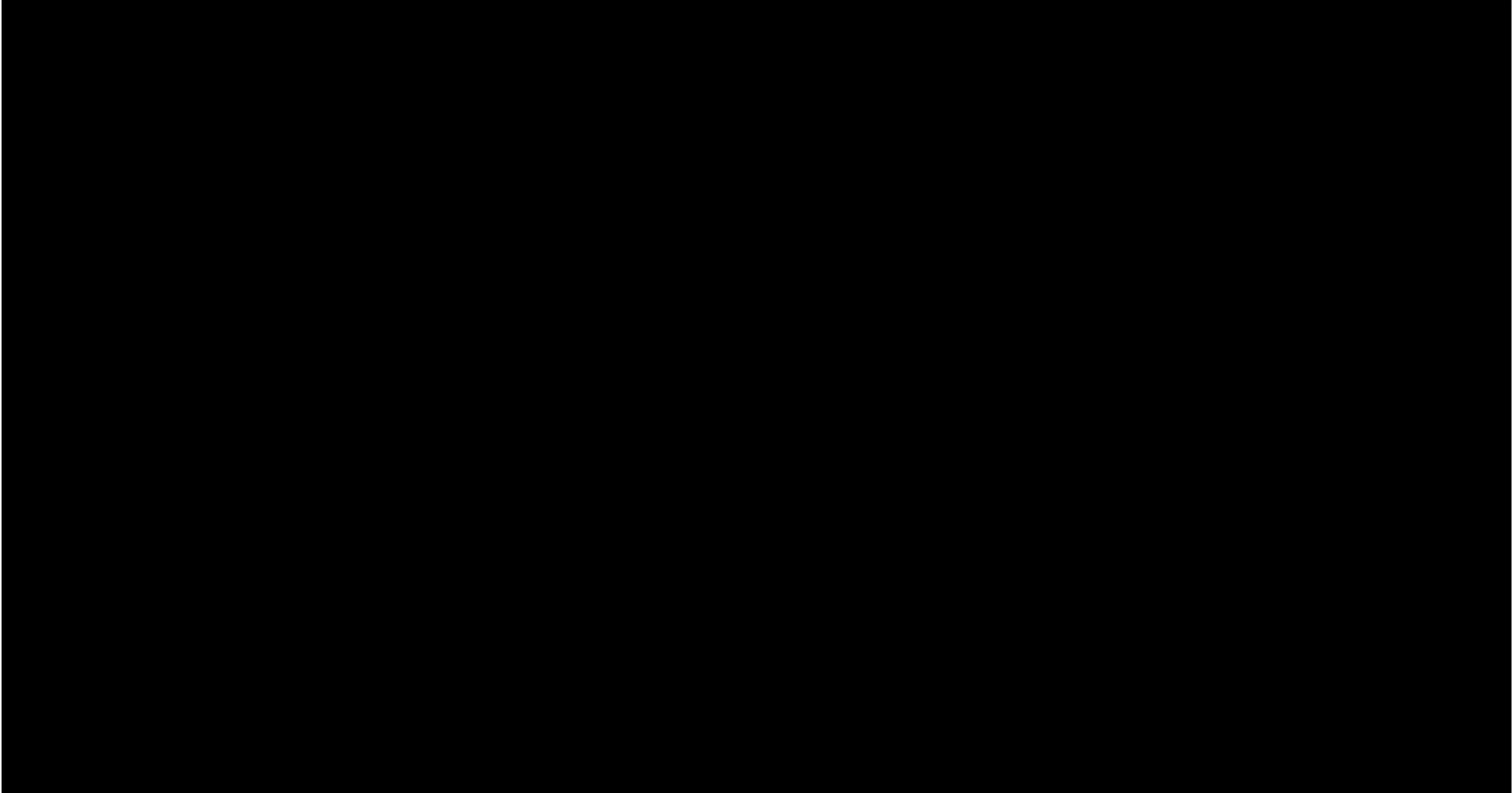


Preliminary Evergy Metro Results – No CO₂ Restrictions



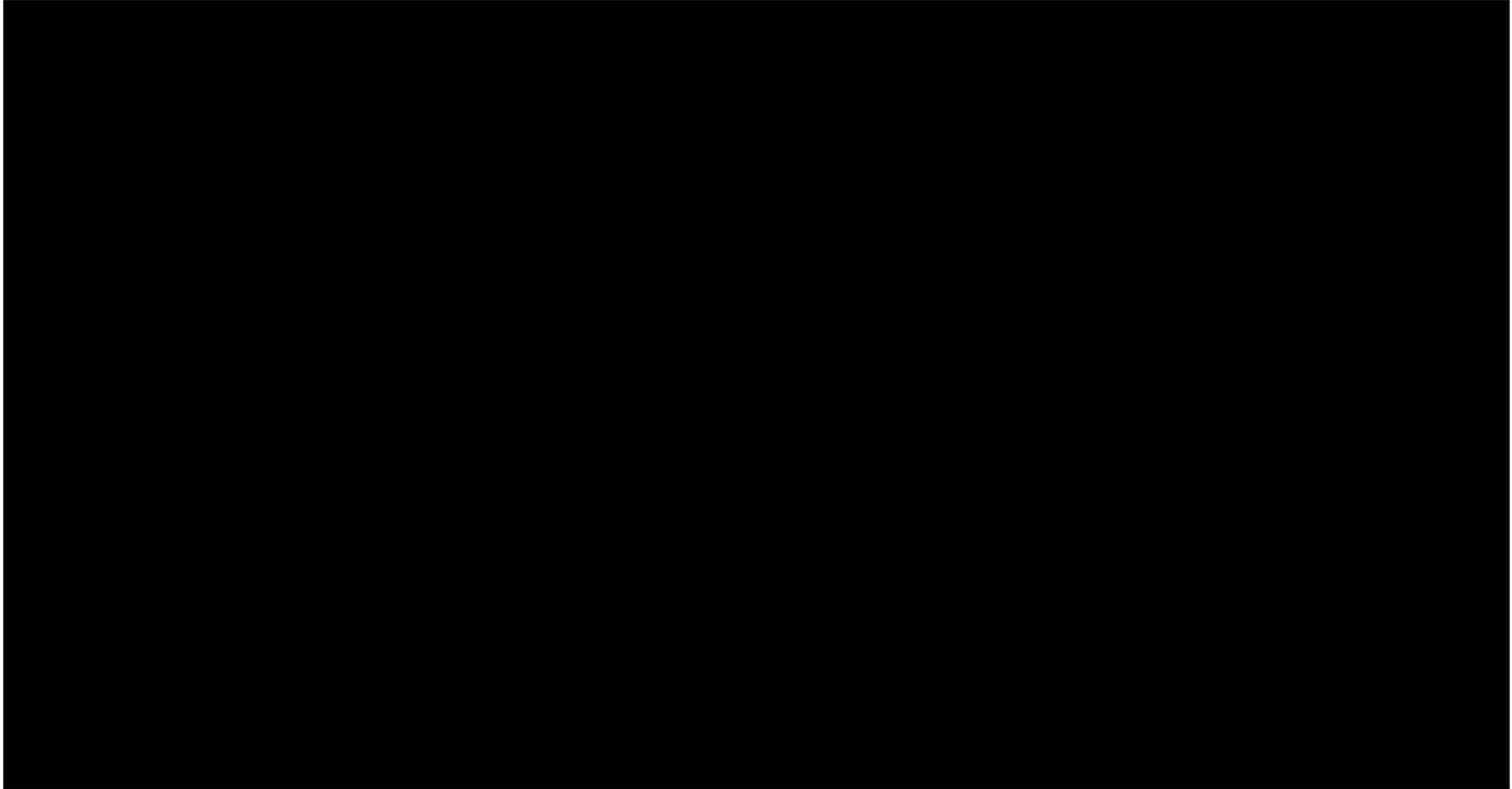


Preliminary Evergy Metro Results – Mid CO₂ Restrictions





Preliminary Evergy Metro Results – High CO₂ Restrictions





Preliminary Evergy Metro Results – Expected Value



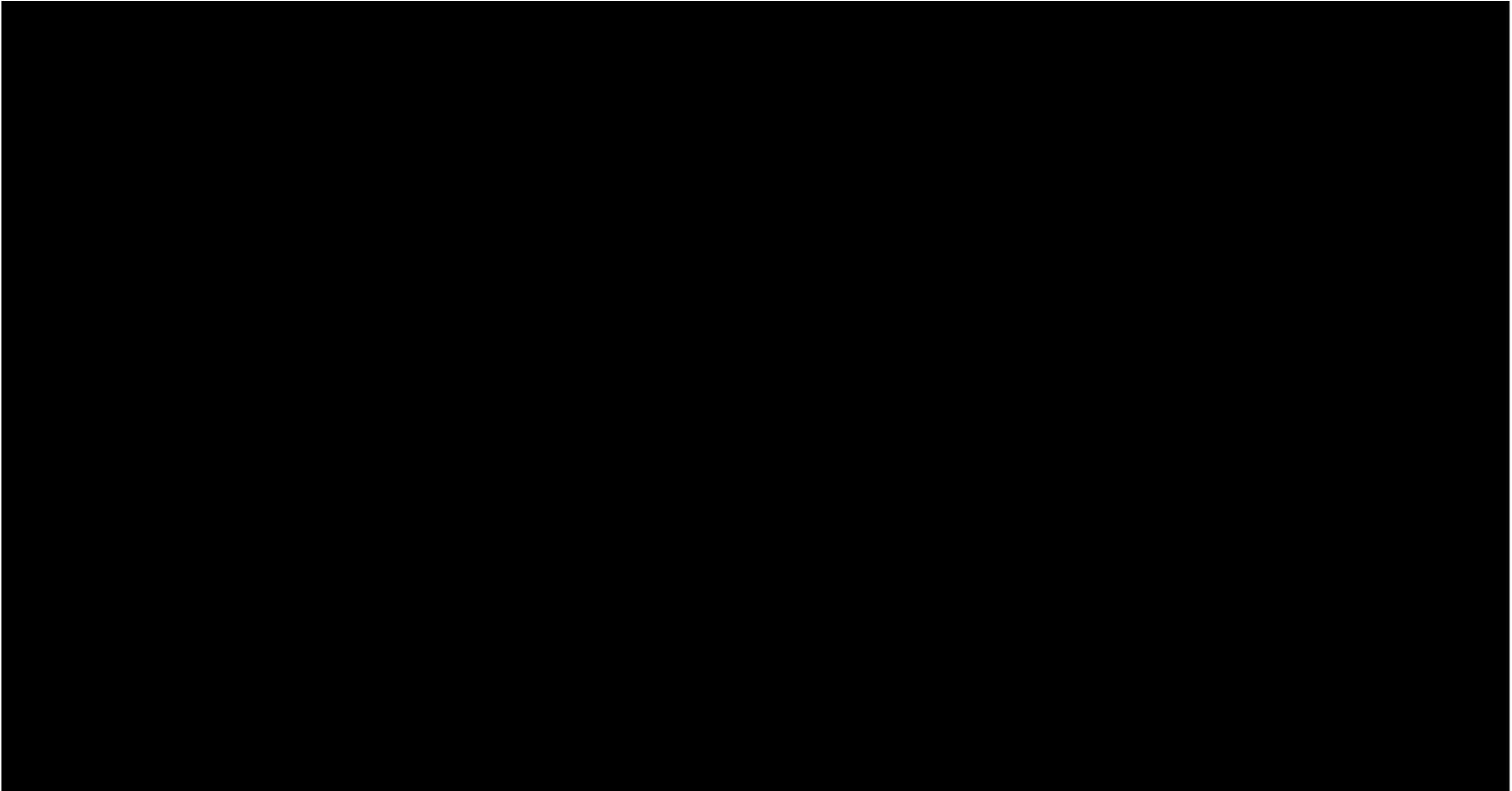


Preliminary Evergy Missouri West Results – No CO₂ Restrictions





Preliminary Evergy Missouri West Results – Mid CO₂ Restrictions



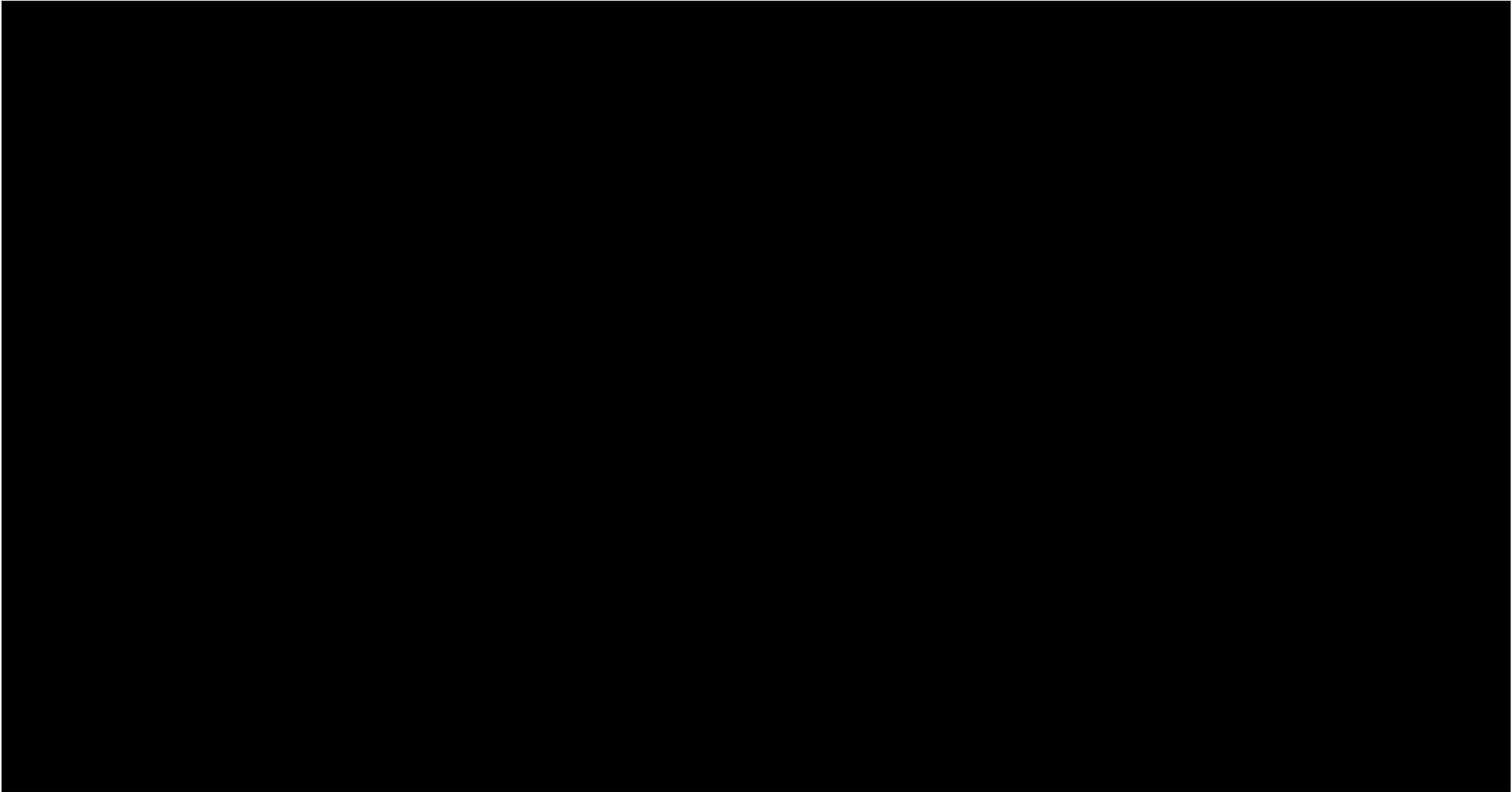


Preliminary Evergy Missouri West Results – High CO₂ Restrictions





Preliminary Evergy Missouri West Results – Expected Value





Findings from NPVRR Results to Date



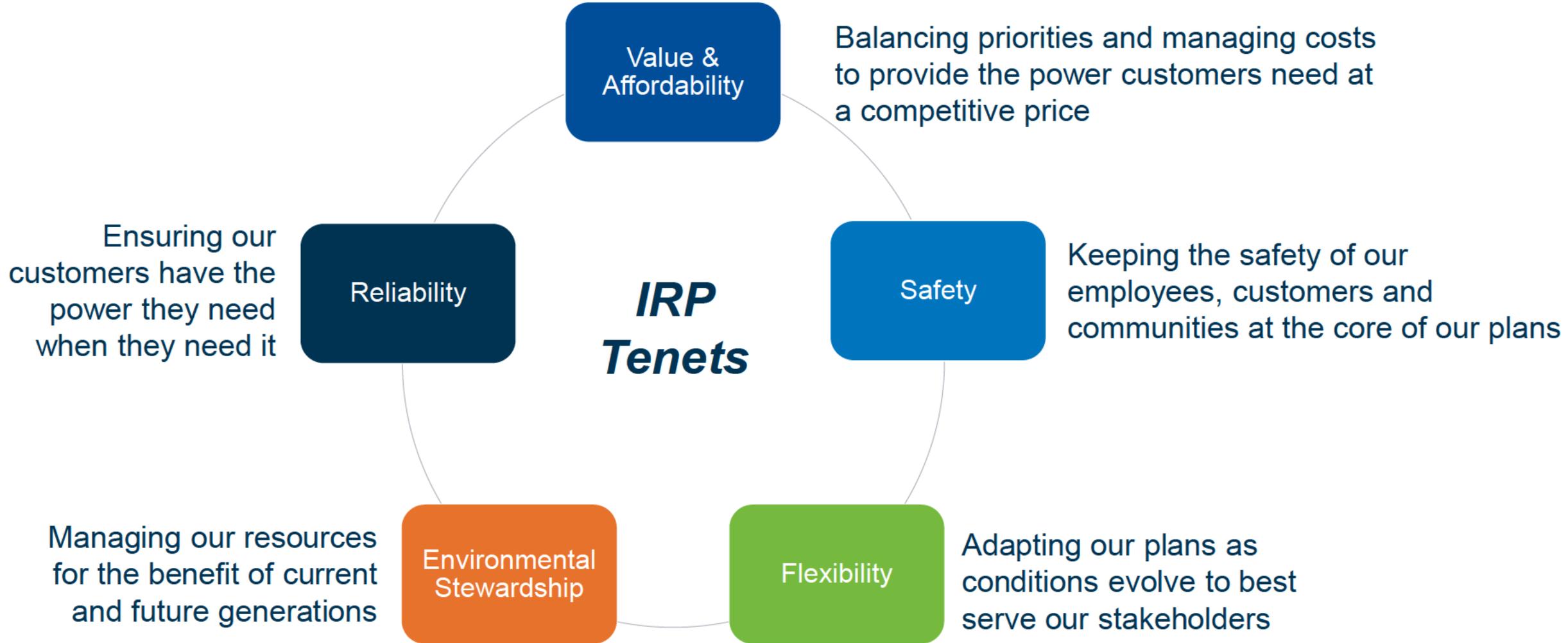
Preferred Plan Evaluation Framework

Kayla Messamore





Core Tenets of the IRP Process



Next Steps

Kayla Messamore





Analytical Next Steps

- Additional Alternative Resource Plans
 - Grain Belt Express plans
 - Additional stand-alone utility plans
- Other
 - Flat to declining market price impacts
 - Behind-the-meter solar and energy storage sensitivity testing
 - Re-evaluate SPP renewable penetration scenario impacts



Next Steps

Per 20 CSR 4240-22.080 (5)(B) submit comments to:

Evergy Missouri Metro - EO-2021-0035

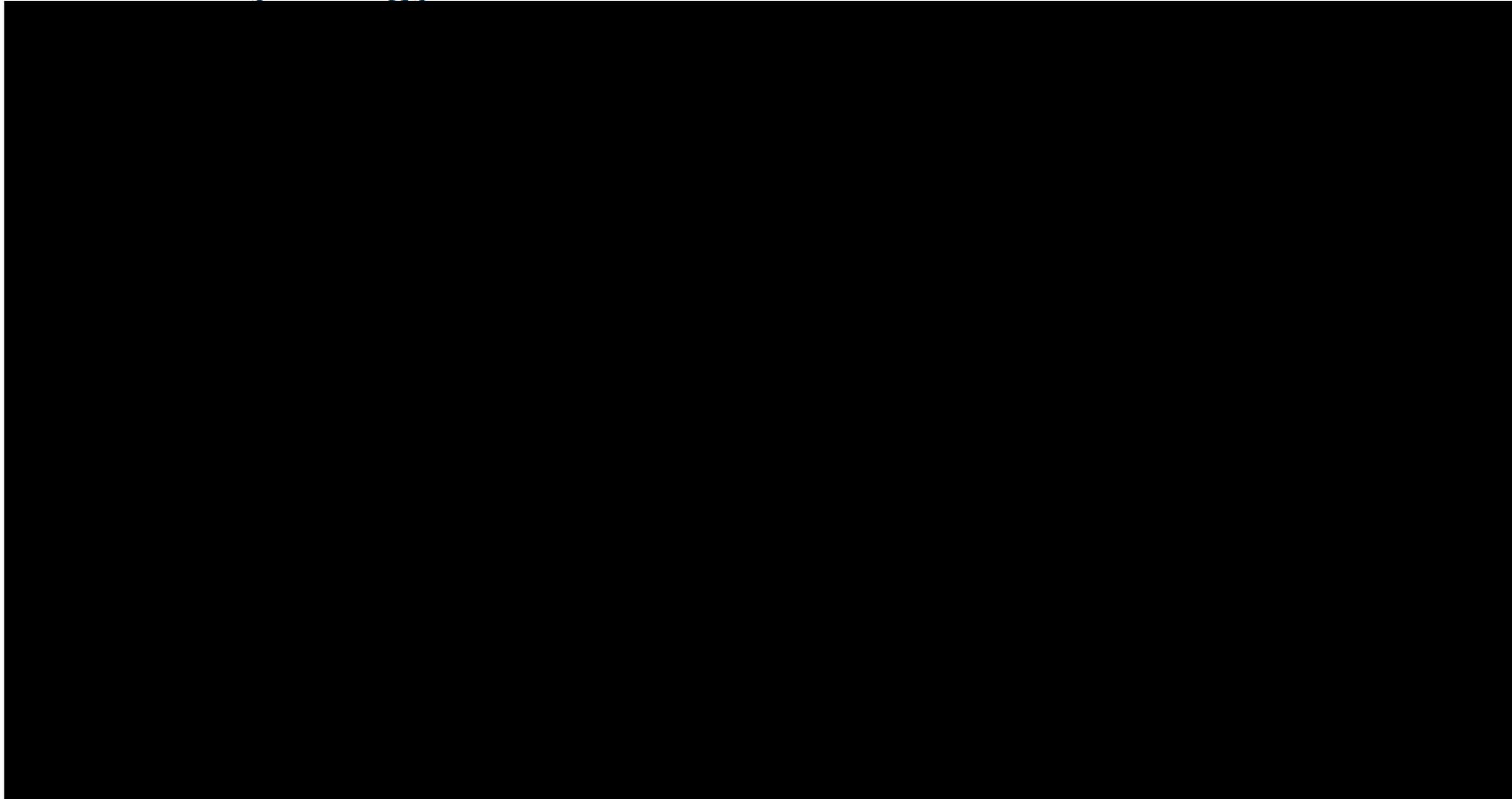
Evergy Missouri West - EO-2021-0036

by April 24th

Appendix



Preliminary Energy Results – No CO Restrictions



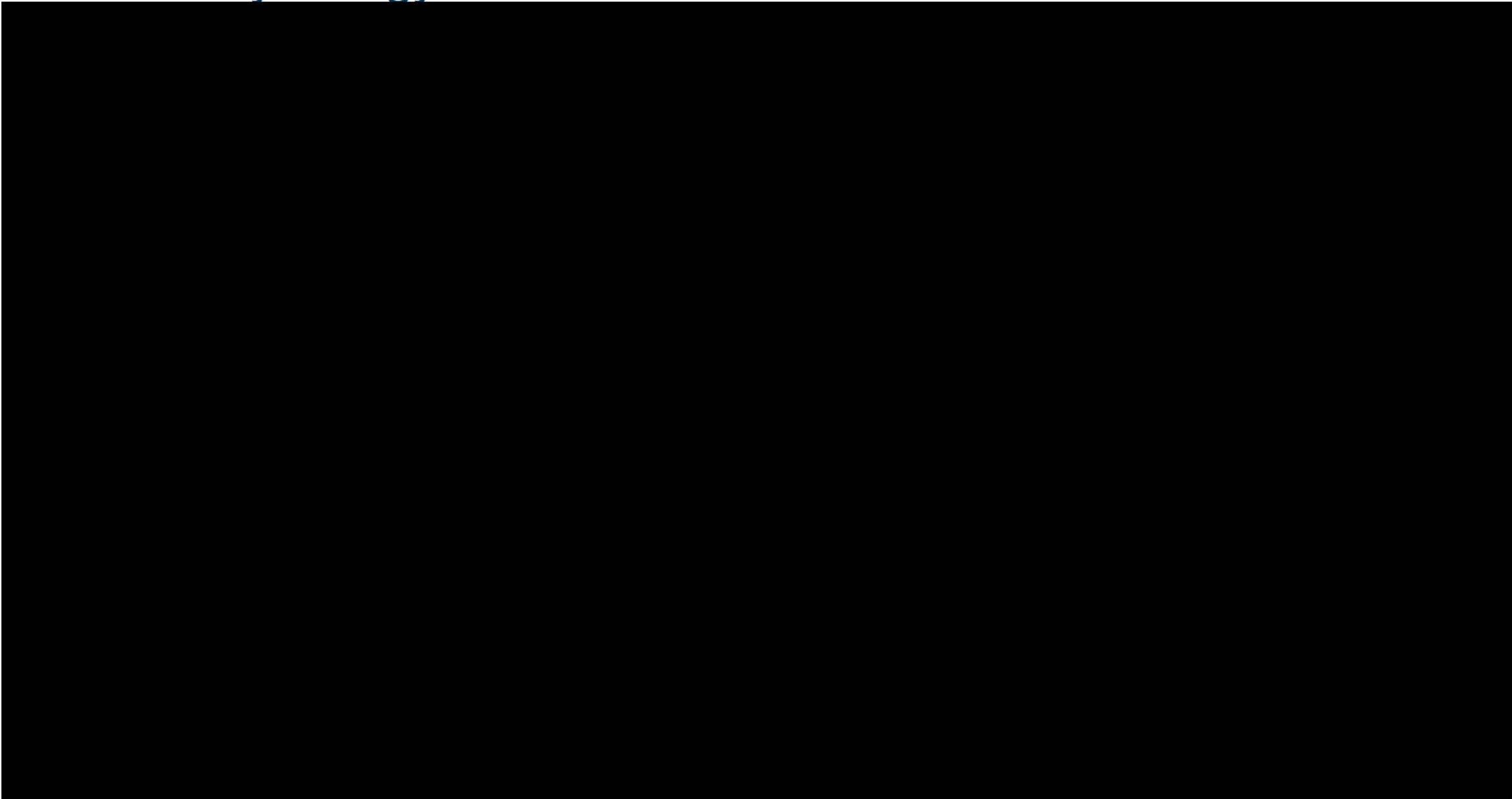


Preliminary Evergy Results – No CO Restrictions (Cont.)



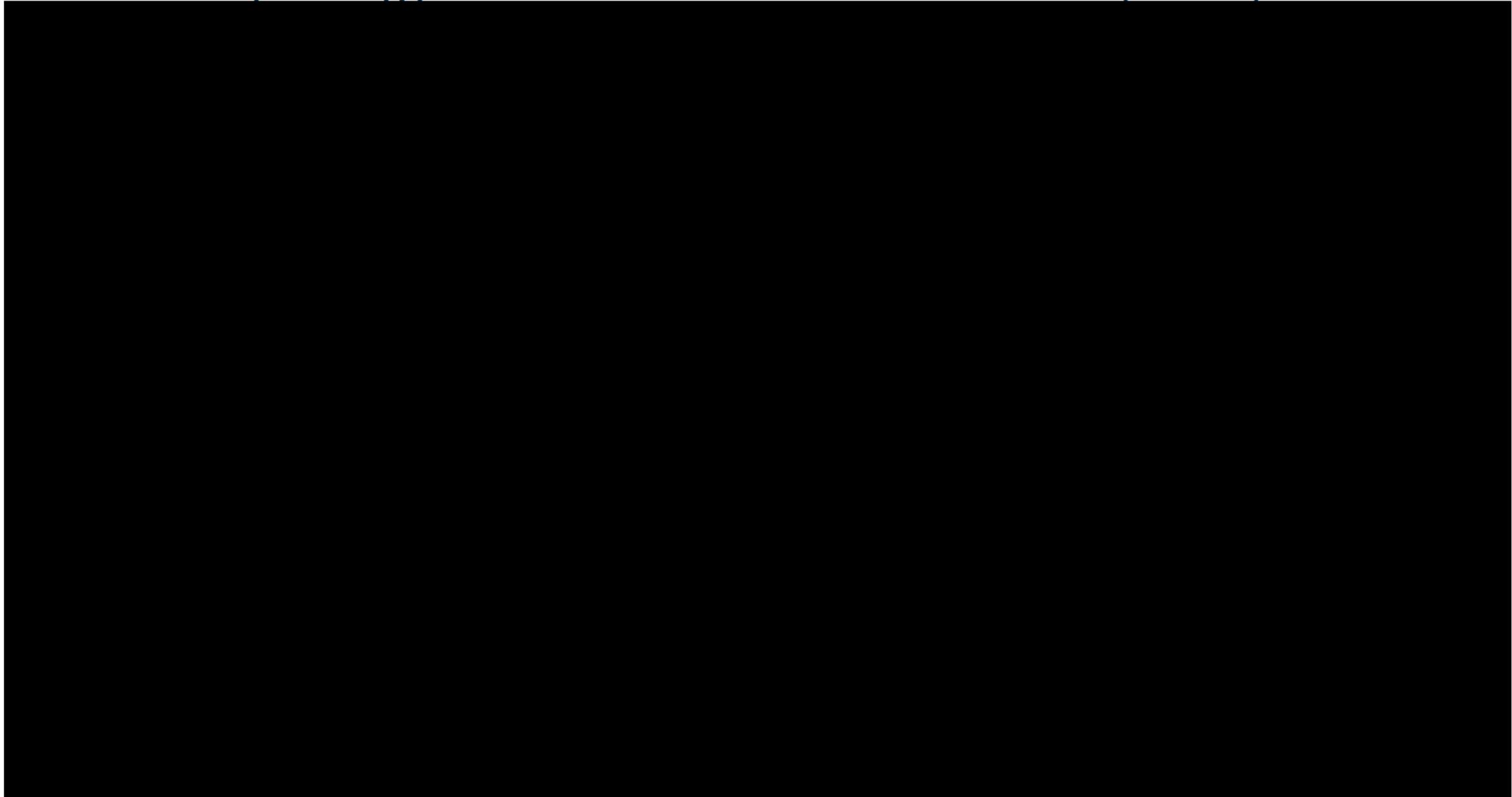


Preliminary Energy Results – Mid CO Restrictions



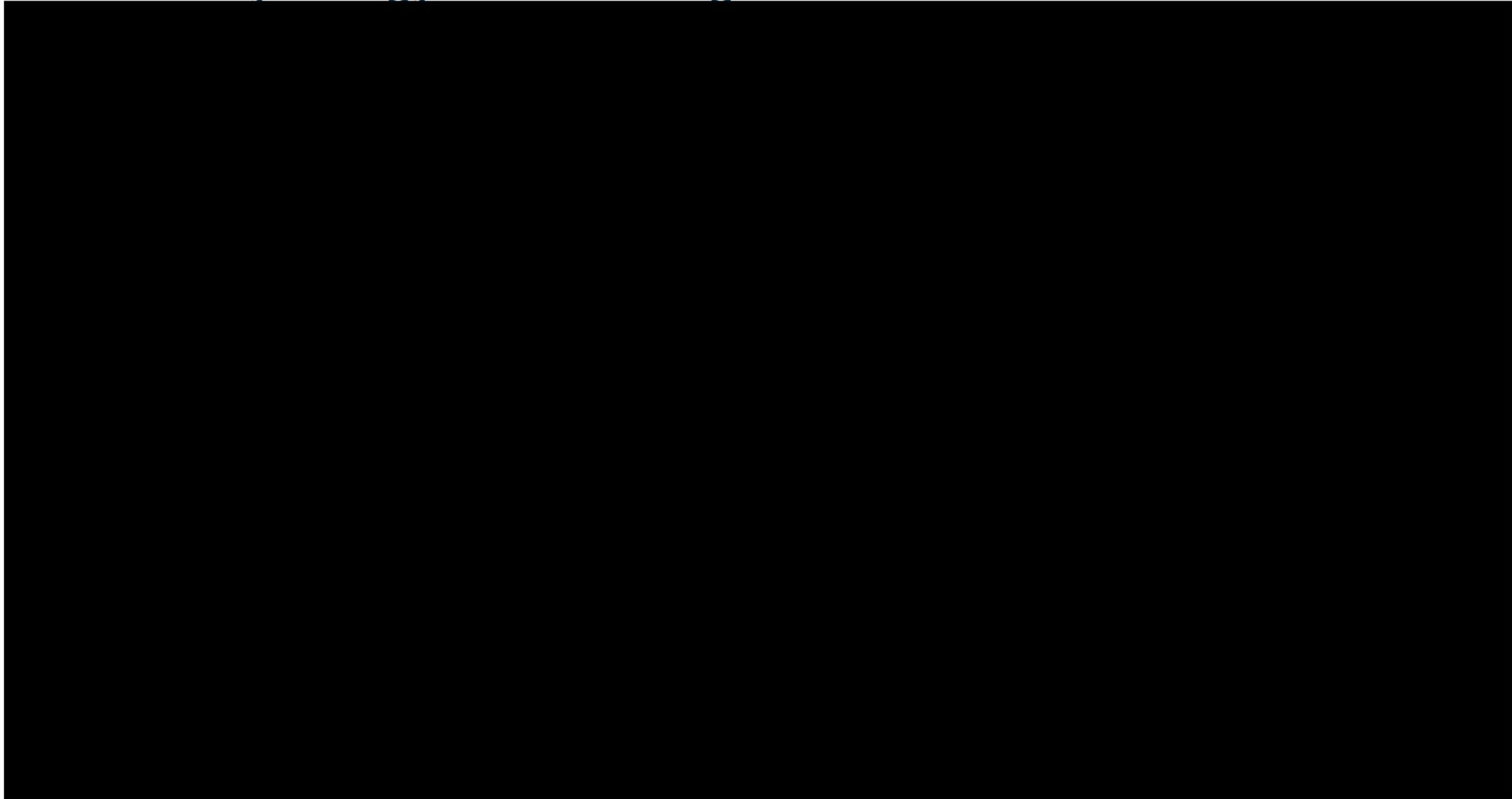


Preliminary Evergy Results – Mid CO Restrictions (Cont.)



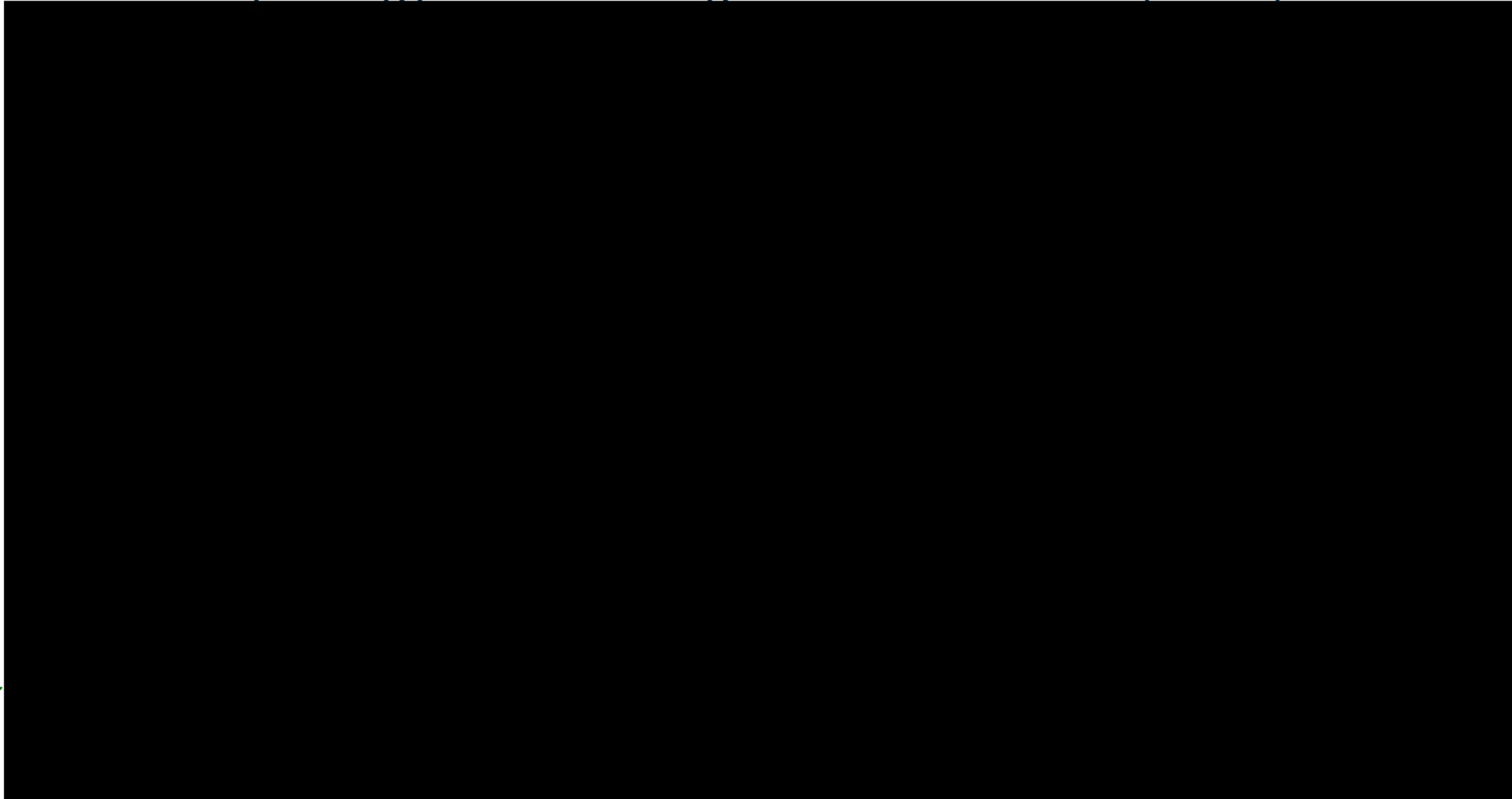


Preliminary Energy Results – High CO Restrictions



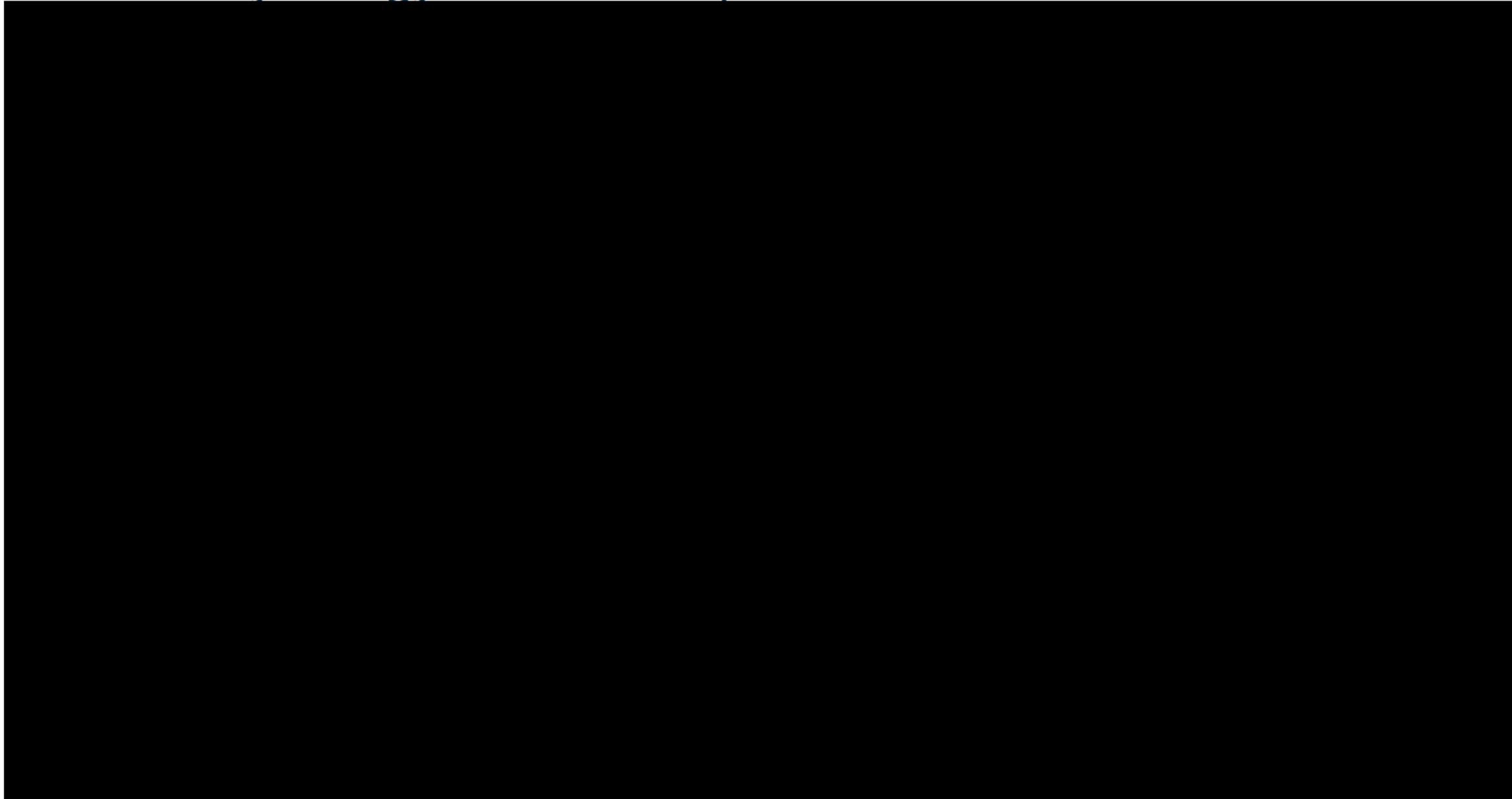


Preliminary Evergy Results – High CO₂ Restrictions (Cont.)





Preliminary Energy Results – Expected Value





Preliminary Evergy Results – Expected Value (Cont.)

