

STATE OF IOWA
BEFORE THE IOWA UTILITIES BOARD

IN RE:)	
)	DOCKET NO. RPU-2023-0002
)	
INTERSTATE POWER AND LIGHT)	
COMPANY)	
)	
)	

PUBLIC VERSION
DIRECT TESTIMONY OF
DEVI GLICK
ON BEHALF OF ENVIRONMENTAL LAW AND POLICY CENTER, IOWA
ENVIRONMENTAL COUNCIL, AND SIERRA CLUB

April 16, 2024

TABLE OF CONTENTS

1. Introduction and purpose of testimony.....	1
2. Findings and recommendations.....	3
3. IPL relies on four aging coal-fired power plants that it co-owns with MidAmerican Energy Company	5
4. IPL’s coal plants have been marginal at best in recent years, and the Company has provided no analysis to demonstrate this is likely to change in the future to justify the inclusion of associated costs in rates.....	8
i. Much of IPL’s coal fleet has had marginal economic performance in recent years.....	8
ii. IPL has provided no forward-looking analysis on the projected performance of its coal fleet to justify continued inclusion of the costs in rates	12
iii. IPL has not taken sufficient action at Ottumwa or exercised sufficient oversight of its co-owned coal plants operated by MidAmerican to limit uneconomic costs and operations.....	20
iv. IPL has not evaluated the risks and benefits of existing regulations and policies on its coal fleet.....	24

LIST OF EXHIBITS

- EI Glick Direct Exhibit 1: Resume of Devi Glick
- EI Glick Direct Exhibit 2: IPL Response to EI Data Request 51, Attachment A
- EI Glick Direct Exhibit 3: IPL Response to EI Data Request 51
- EI Glick Direct Exhibit 4: IPL Response to EI Data Request 68
- EI Glick Direct Exhibit 5: IPL Response to OCA Data Request 127
- EI Glick Direct Exhibit 6: IPL Response to EI Data Request 11, Attachment A (CONFIDENTIAL)
- EI Glick Direct Exhibit 7: IPL Response to EI Data Request 11, Attachment C (CONFIDENTIAL)
- EI Glick Direct Exhibit 8: IPL Response to EI Data Request 11, Attachment D (CONFIDENTIAL)
- EI Glick Direct Exhibit 9: IPL Response to EI Data Request 52 (CONFIDENTIAL)
- EI Glick Direct Exhibit 10: IPL Response to EI Data Request 61, Attachment C (CONFIDENTIAL)
- EI Glick Direct Exhibit 11: IPL Response to EI Data Request 61, Attachment D (CONFIDENTIAL)

- EI Glick Direct Exhibit 12: IPL Response to EI Data Request 61, Attachment A (CONFIDENTIAL)
- EI Glick Direct Exhibit 13: IPL Response to EI Data Request 61, Attachment B (CONFIDENTIAL)
- EI Glick Direct Exhibit 14: IPL Response to EI Data Request 53
- EI Glick Direct Exhibit 15: IPL Response to EI Data Request 49
- EI Glick Direct Exhibit 16: IPL Response to EI Data Request 4
- EI Glick Direct Exhibit 17: IPL Response to EI Data Request 58
- EI Glick Direct Exhibit 18: IPL Response to EI Data Request 62
- EI Glick Direct Exhibit 19: IPL Response to EI Data Request 8
- EI Glick Direct Exhibit 20: IPL Response to EI Data Request 60
- EI Glick Direct Exhibit 21: IPL Response to EI Data Request 7
- EI Glick Direct Exhibit 22: IPL Supplemental Response to EI Data Request 9
- EI Glick Direct Exhibit 23: IPL Supplemental Response to EI Data Request 10
- EI Glick Direct Exhibit 24: IPL Response to EI Data Request 40 (CONFIDENTIAL)
- EI Glick Direct Exhibit 25: IPL Response to EI Data Request 11
- EI Glick Direct Exhibit 26: IPL Response to CEDI Data Request 5 (CONFIDENTIAL)
- EI Glick Direct Exhibit 27: IPL Response to CEDI Data Request 36
- EI Glick Direct Exhibit 28: IPL Response to OCA Data Request 283 (CONFIDENTIAL)
- EI Glick Direct Exhibit 29: IPL Response to CEDI Data Request 2, 3, 5, 6 &7 (CONFIDENTIAL)

LIST OF TABLES

Table 1. Plant data on IPL's coal fleet6

Table 2. Test year capex and O&M7

Table 3. Undepreciated plant balance and plant data for IPL coal fleet (IPL share).....8

Table 4. Confidential Ottumwa reliability data10

Table 5. Confidential outage commitment status data11

Table 6. Historical net revenues at IPL's coal-fired power plants (\$M) (2019–2023)12

LIST OF FIGURES

Figure 1. Capacity factors for IPL’s coal fleet.....9

1 **1. INTRODUCTION AND PURPOSE OF TESTIMONY**

2 **Q. Please state your name and occupation.**

3 A. My name is Devi Glick. I am a Senior Principal at Synapse Energy Economics, Inc.
4 (“Synapse”). My business address is 485 Massachusetts Avenue, Suite 3, Cambridge,
5 Massachusetts 02139.

6 **Q. Please describe Synapse Energy Economics.**

7 A. Synapse is a research and consulting firm specializing in energy and environmental
8 issues, including electric generation, transmission and distribution system reliability,
9 ratemaking and rate design, electric industry restructuring and market power, electricity
10 market prices, stranded costs, efficiency, renewable energy, environmental quality, and
11 nuclear power.

12 Synapse’s clients include state consumer advocates, public utilities commission staff,
13 attorneys general, environmental organizations, federal government agencies, and
14 utilities.

15 **Q. Please summarize your work experience and educational background.**

16 A. At Synapse, I conduct economic analysis and write testimony and publications that focus
17 on a variety of issues related to electric utilities. These issues include power plant
18 economics, electric system dispatch, integrated resource planning, environmental
19 compliance technologies and strategies, and valuation of distributed energy resources. I
20 have submitted expert testimony before state utility regulators in more than a dozen
21 states.

22 In the course of my work, I develop in-house models and perform analysis using
23 industry-standard electricity power system models. I am proficient in the use of
24 spreadsheet analysis tools, as well as optimization and electric dispatch models. I have

1 directly run EnCompass and PLEXOS and have reviewed inputs and outputs for several
2 other models.

3 Before joining Synapse, I worked at Rocky Mountain Institute (RMI), focusing on a wide
4 range of energy and electricity issues. I have a master's degree in public policy and a
5 master's degree in environmental science from the University of Michigan, as well as a
6 bachelor's degree in environmental studies from Middlebury College. I have more than
7 11 years of professional experience as a consultant, researcher, and analyst. A copy of my
8 current resume is attached as EI Glick Direct Exhibit 1.

9 **Q. On whose behalf are you testifying in this case?**

10 A. I am testifying on behalf of the Iowa Environmental Council, the Environmental Law and
11 Policy Center, and Sierra Club, collectively the Environmental Intervenors (EI).

12 **Q. Have you testified before the Iowa Utilities Board ("Board")?**

13 A. Yes. I filed direct and supplemental testimony in the MidAmerican Wind PRIME Docket
14 RPU 2022-0001. I also conducted a Clean Energy Future study on behalf of the EI in
15 Docket No. SPU-2021-0003.

16 **Q. What is the purpose of your direct testimony?**

17 A. In this direct testimony, I review the costs that Interstate Power and Light Company (IPL)
18 is incurring to operate and own its coal-fired power plants at Ottumwa, Neal 3, Neal 4,
19 and Louisa. I evaluate the Company's justification for continuing to operate and maintain
20 these plants, and for including the associated costs in rates.

21 **Q. How is your testimony structured?**

22 A. In Section 2, I summarize my findings and recommendations for the Board.

23 In Section 3, I introduce IPL's coal fleet that the Company co-owns with MidAmerican
24 Energy Company (MidAmerican), including the Ottumwa Generating Station (Ottumwa)

1 that IPL operates and the three units at Neal 3, Neal 4, and Louisa that MidAmerican
2 operates. I summarize the relevant coal-fleet costs that IPL is requesting to include in
3 rates.

4 In Section 4, I review the recent historical performance of IPL's fleet as well as future
5 projections of how the plants are expected to operate moving forward. I discuss my
6 concerns with the lack of current analysis IPL has provided to support its rate case ask to
7 continue to recover the costs associated with operating its coal fleet. I evaluate the
8 operational and management decisions IPL has made at Ottumwa, and the Company's
9 lack of direct engagement and oversight of the decisions MidAmerican is making at the
10 co-owned plants at Neal 3, Neal 4, and Louisa. Finally, I review IPL's consideration and
11 evaluation of the benefits and risks of current and future environmental regulations and
12 incentive programs, including the Energy Infrastructure Reinvestment (EIR) program
13 available under the *Inflation Reduction Act (IRA)*.

14 **Q. What documents do you rely upon for your analysis, findings, and observations?**

15 A. My analysis relies primarily upon the direct testimony, workpapers, exhibits, and
16 discovery responses of IPL witnesses. I also rely on public information from other Board
17 proceedings and other publicly available documents.

18 **2. FINDINGS AND RECOMMENDATIONS**

19 **Q. Please summarize your findings.**

20 A. My primary findings are:

- 21 1. IPL has not supported its request to continue operating the Ottumwa coal-fired
22 power plant, to continue co-owning the plants at Neal 3, Neal 4, and Louisa, or to
23 continue including the associated costs in rates.
- 24 2. IPL has not provided any current or relevant analysis on the economics of
25 continuing to operate and co-own its coal-fired power plants relative to alternative
26 resource options.

- 1 3. IPL has not exercised sufficient oversight of the operation of the plants that it co-
2 owns with MidAmerican.
- 3 4. I find that all of IPLs coal-fired power plants have incurred net revenue losses in
4 at least three of the past five years
- 5 5. The forced outage rate at Ottumwa has been high in recent years, comprising its
6 dependability as a firm resource.
- 7 6. IPL self-committed the Ottumwa plant [REDACTED] in
8 2023.
- 9 7. IPL should not view undepreciated plant balances as a barrier to retirement for
10 legacy fossil resources. Funding available under the federal government's EIR
11 program can help Iowan's pay off legacy asset balances and bring online new
12 clean energy resources at a lower cost than traditional utility financing
13 mechanisms.
- 14 8. IPL has not properly evaluated its options to use the EIR program to address the
15 undepreciated plant balance at Lansing and to finance replacement clean energy
16 resources at the site.
- 17 9. IPL has not properly evaluated its options to retire Ottumwa early and use the EIR
18 program to address the undepreciated balance at the plant and finance
19 replacement resources.

20 **Q. Please summarize your recommendations.**

21 A. Based on my findings, I offer the following recommendations:

- 22 1. The Board should disallow inclusion in rates of all operations and maintenance
23 (O&M) and sustaining capital expenditures (capex) costs that are avoidable with
24 early retirement until IPL produces analysis demonstrating that it is economic for
25 the Company to continue relying on its aging coal assets. This analysis should
26 include consideration of currently proposed environmental regulations.
- 27 2. The Board should require IPL to seek clarity from the US. Department of Energy
28 (DOE) on whether the EIR funding can be used on a project to both refinance an
29 undepreciated plant balance and finance replacement, clean energy resources. The
30 Company should publicly share its communications with DOE.

- 1 3. The Board should require IPL to evaluate the potential for the EIR program to
2 refinance the undepreciated balance at Ottumwa and accelerate the retirement and
3 replacement of the coal plant.
- 4 4. The Board should require that IPL (1) economically commit the Ottumwa power
5 plant; or else (2) produce its daily unit commitment analysis and document its
6 decision-making process whenever its commitment decisions deviate from
7 economic commitment.
- 8 5. The Board should require IPL to demonstrate more active oversight of its co-
9 owned coal plants that are operated by MidAmerican.

10 **3. IPL RELIES ON FOUR AGING COAL-FIRED POWER PLANTS THAT IT CO-OWNS WITH**
11 **MIDAMERICAN ENERGY COMPANY**

12 **Q. Please provide an overview of IPL's coal fleet.**

13 A. IPL gets power from four coal-fired power plants. The Company is a partial owner of all
14 of them and owns 544 MW in total of coal-fired generating capacity.

15 Ottumwa is a 725 MW coal-fired power plant located in Wapello, Iowa. The plant began
16 operating in 1981 and has a retirement date set for 2034, per the current Iowa
17 depreciation study.¹ Ottumwa is the only coal plant IPL operates. IPL owns 48 percent of
18 the plant and MidAmerican owns the other 52 percent.

19 George Neal Station North (Neal 3) and George Neal South (Neal 4) are 584 MW and
20 696 MW coal-fired power plants located in Salix, Iowa on the border with Nebraska. The
21 plants began operating in 1975 and 1979 respectively and have retirement dates set for
22 2035 and 2040, based on the current depreciation study.² Louisa Generating Station
23 (Louisa) is an 812 MW coal-fired power plant located in Muscatine, Iowa. The plant
24 began operating in 1983 and has a retirement date of 2040 set based on the current
25 depreciation study.³ MidAmerican is the primary owner and operator of Neal 3, Neal 4,

¹ EI Glick Direct Exhibit 2, IPL Response to Discovery Request EI 51, Attachment A.

² *Id.*

³ *Id.*

1 and Louisa. IPL owns 28 percent of Neal 3, 25.7 percent of Neal 4, and 4 percent of
2 Louisa. Table 1 below summarizes IPL's coal fleet.

3 **Table 1. Plant data on IPL's coal fleet**

Plant	Year online	Retirement date	Ownership share	Nameplate Capacity (MW)
Ottumwa	1981	2034	48%	348.4
Louisa	1983	2040	4%	32.5
Neal Unit 3	1975	2035	28%	163.5
Neal Unit 4	1979	2040	25.7%	178.8

4 **Q. What test year does IPL use in this rate case?**

5 A. IPL uses a future test year (FTY) of October 1, 2024, through September 30, 2025. This
6 means that the test year is based on projected costs and performance rather than
7 historical, actual costs and performance.

8 **Q. How much in capex and fixed O&M costs has IPL included in the test year for its
9 coal fleet?**

10 A. As shown in Table 2 below, IPL is requesting to include \$29 million in O&M for its coal
11 plants in rates. The Company did not provide unit-level capital expenditures as we
12 requested.⁴ The plant additions for its Electric Steam Production Plants summed to a total
13 of \$37.1 million for the FTY, but that includes capital expenditures for IPL's other steam
14 plants. Company witness Michek provided projected capital expenditures in Exhibit 7,
15 Schedule G, but these were not broken down by plant—instead the Company provided
16 only an aggregate budget for non-operated plants (for Neal 3, Neal 4, and Louisa) which
17 totaled \$7.7 million for the FTY, and a shared capital budget for all coal and natural gas

⁴ See, EI Glick Direct Ex. 3, IPL Response to Data Request EI 51(a); EI Glick Direct Ex. 4, IPL Response to Data Request EI 68.

1 facilities marked as IPL only that totaled \$29.1 million for the FTY.⁵ IPL indicated in a
2 discovery response that it develops its capital budgets based on costs experienced in
3 recent years with some adjustments for known spends, but most budgetary and blanket
4 cost are not forecasted to the individual project level.⁶ It's concerning that the Company
5 is unable to provide any more detail on projected capital spend by plant or project for a
6 test year that is only six months away.

7 **Table 2. Test year capex and O&M**

Plant	Capital expenditures (\$Millions)	O&M (\$Millions)
Ottumwa	Some portion of \$29.1	\$12.6
Louisa	\$7.7	\$1.0
Neal Unit 3		\$7.6
Neal Unit 4		\$7.8
Total		\$29.1

8 *Source: EI Glick Direct Ex. 3, IPL Response to Discovery Request EI 51a; Michek Direct Exhibit 7,*
9 *Schedule 3 (Plant in Service), Schedule G (Capital Expenditures), Schedule H (Plant Additions by Project).*

10 **Q. What level of undepreciated balance remains at each plant?**

11 A. As shown in Table 3 below, Ottumwa has the largest net book value at over \$337 million.
12 While IPL's relative share of the remaining plants is much smaller, their book values are
13 also much smaller, even when scaling for ownership share. In total, IPL has just under
14 half a billion dollars in undepreciated plant balance at its coal plants. These undepreciated
15 plant balances should not be viewed as a barrier to retirement. As discussed below, there
16 are options to address undepreciated plant balances, including through the EIR program.

⁵ Michek Direct Exhibit 7, Schedule 3 (Plant in Service), Schedule G (Capital Expenditures), Schedule H (Plant Additions by Project).

⁶ EI Glick Direct Ex. 5, IPL Response to Data Request OCA 127.

1 **Table 3. Undepreciated plant balance and plant data for IPL coal fleet (IPL share)**

Plant	Net book value as of 12/31/2023 (\$Million)
Ottumwa	\$337.8
Louisa	\$15.9
Neal Unit 3	\$74.7
Neal Unit 4	\$67.6
Total	\$496.1

2 *Source: EI Glick Direct Ex. 2, IPL Response to Discovery Request EI 51, Attachment A.*

3 **4. IPL’S COAL PLANTS HAVE BEEN MARGINAL AT BEST IN RECENT YEARS, AND THE COMPANY**
4 **HAS PROVIDED NO ANALYSIS TO DEMONSTRATE THIS IS LIKELY TO CHANGE IN THE FUTURE**
5 **TO JUSTIFY THE INCLUSION OF ASSOCIATED COSTS IN RATES**

6 **i. Much of IPL’s coal fleet has had marginal economic performance in recent years**

7 **Q. How have Ottumwa, Neal 3, Neal 4, and Louisa been utilized over the past five**
8 **years?**

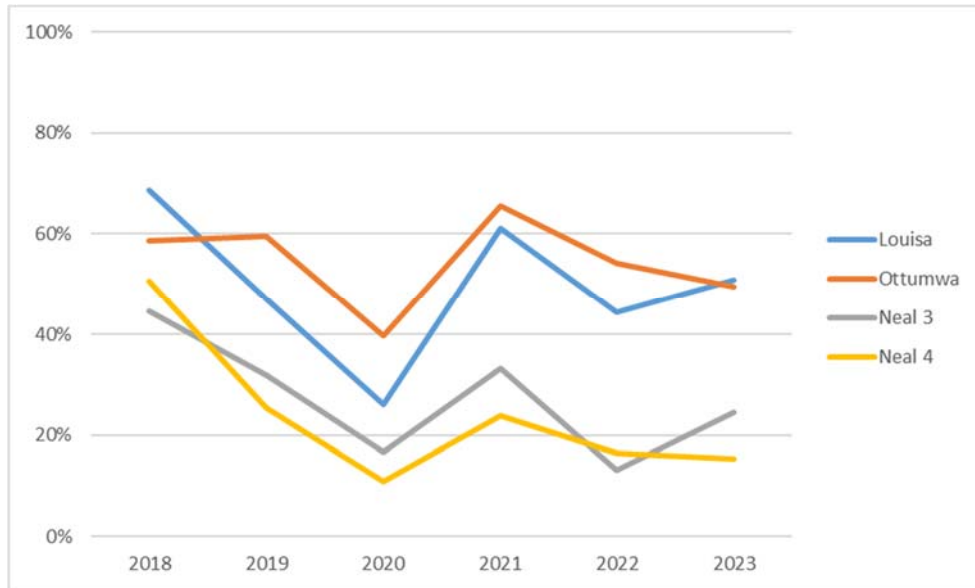
9 **A.** As shown in Figure 1 below, since 2018, Ottumwa and Louisa have had capacity factors
10 around and above 50 percent while the Neal units have had declining capacity factors,
11 falling from around 50 percent in 2018 to around 20 percent in 2023. Specifically, Neal 4
12 has fallen below a 20-percent capacity factor in three of the past six years, and Neal 3
13 operated at just below 25 percent in 2023. The low utilization of the Neal units indicates
14 that they are not economic to operate relative to alternatives and should be retired. The
15 low utilization of the Neal units is not surprising given that the Neal units were [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

⁷ See EI Glick Direct Ex. 6, IPL Response to Data Request EI 11, Confidential Attachment A; EI Glick Direct Ex. 7
IPL Response to Data Request EI 11, Confidential Attachment C; and EI Glick Direct Ex. 8, IPL Response to Data
Request EI 11, Confidential Attachment D.

1

Figure 1. Capacity factors for IPL's coal fleet



2

3

Source: EIA form 923.

4

Q. How reliable have Ottumwa, Neal 3, Neal 4, and Louisa been in recent years, as measured by outage rates?

5

6

A. As shown in Table 4 below, Ottumwa's capacity factor has been dropping, and its outage rate has been [REDACTED] over the past six years. With this type of trend in performance, I would expect IPL to be evaluating retirement and replacement. But as discussed throughout this testimony, IPL is instead planning to continue to rely on the plant without evaluating its economics. With [REDACTED], IPL cannot count on Ottumwa to provide reliable, firm capacity when it needs it. In 2023, Ottumwa had an effective forced outage rate of over [REDACTED] percent. This means that there was a [REDACTED] percent chance that the unit was unavailable to meet demand due to an unplanned outage. This is up [REDACTED] from just six years ago, when the effective forced outage rate at the plant was below [REDACTED]

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1 **Table 4. Confidential Ottumwa reliability data**

	Capacity factor (NAF)	Equivalent availability factor (EAF)	Forced outage rate (FOR) ⁸	Effective forced outage rate (EFORd)
2018	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
2019	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
2020	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
2021	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
2022	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
2023	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

2 *Source: EI Glick Direct Ex. 9, IPL Confidential Response to Data Request EI-52.*

3 For Neal 3, Neal 4, and Louisa, IPL does not appear to track outage rates for any of the
4 plants operated by MidAmerican and responded that this information is not readily
5 available to IPL. This is concerning, especially for the Neal units where utilization rates
6 have been falling and the units were offline during several cold snaps earlier this year that
7 froze the water intake pipes and shut the plants down.⁹ According to IPL’s own hourly
8 dispatch data, Neal 3 and Neal 4 were [REDACTED]
9 during this cold snap (between January 12 and 15, 2024).¹⁰

10 Based on hourly unit commitment data that IPL provided, we can see that total outage
11 rates (including both planned and unplanned outages) [REDACTED]
12 [REDACTED] And while some plants have had
13 lower outage rates in recent years, [REDACTED]
14 [REDACTED] Once again, this trend is concerning, and not surprising, for

⁸ Forced outage rate is the percent of the hours in a year where a plant is offline and unavailable due to unplanned outages.

⁹ See, Anderson, Julie. “OPPD customers helped conserve when cold temporarily shuttered coal plants.” *Omaha World Herald*, January 16, 2024 (discussing coal plants in the region that were offline because of frozen water intakes and stating that “With the river stage at Sioux City recovering, MidAmerican Energy was bringing its Sioux City plant back online Monday.”) available at https://omaha.com/news/local/weather/oppd-customers-helped-conserve-when-cold-temporarily-shuttered-coal-plants/article_96143c6c-b48f-11ee-ae47-fbe103f57fb5.html (last visited April 15, 2024).

¹⁰ EI Glick Direct Ex. 10, IPL Response to Data Request EI 61, Attachment C and EI Glick Direct Ex. 11, IPL Response to Data Request EI 61, Attachment D.

1 aging legacy fossil plants. IPL should be evaluating the economics of continuing to rely
 2 on these plants, given their unpredictable outage levels.

3 **Table 5. Confidential outage commitment status data**

	2018	2019	2020	2021	2022	2023	2024
Ottumwa	■	■	■	■	■	■	■
Louisa	■	■	■	■	■	■	■
Neal 3	■	■	■	■	■	■	■
Neal 4	■	■	■	■	■	■	■

4 *Source: EI Glick Direct Ex. 10; EI Glick Direct Ex. 11, EI Glick Direct Ex. 12, IPL Response to Data*
 5 *Request EI 61, Confidential Attachment A; and EI Glick Direct Ex.13, IPL Response to Data Request EI*
 6 *61, Confidential Attachment B.*

7 **Q. How have the economics of Ottumwa, Neal 3, Neal 4, Louisa been over the past few**
 8 **years?**

9 A. As shown in Table 6 below, all IPLs coal-fired power plants have incurred net revenue
 10 losses in at three of the past five year (based on fuel costs, O&M, sustaining capital
 11 expenditures, energy and capacity market revenues). 2021 and 2022 were the only years
 12 when all plants earned positive net revenues; these results were based on market trends
 13 that are not expected to continue going forward. Specifically:

- 14 • In 2021, the market was recovering from disruptions stemming from the Covid
 15 pandemic.
- 16 • High revenues in 2022 were driven by the war in Ukraine, which caused a
 17 constriction in the global natural gas supply, which in turn drove up market prices in
 18 the United States. This period of high market prices is not representative of normal
 19 market conditions or the level of energy market revenues expected under normal
 20 conditions in the future.

1 **Table 6. Historical net revenues at IPL's coal-fired power plants (\$M) (2019–2023)**

	2019	2020	2021	2022	2023
Ottumwa	(\$8.57)	(\$14.68)	\$25.20	\$57.31	(\$6.28)
Louisa	(\$0.95)	(\$2.65)	\$3.03	\$6.09	(\$0.42)
Neal 3	(\$8.58)	(\$10.98)	\$6.74	\$3.88	(\$8.88)
Neal 4	(\$12.60)	(\$13.93)	\$5.12	\$10.44	(\$11.02)

2 *Source: Fuel receipts from EIA form 923; O&M from IPL Response to EI.51(a); energy revenues*
3 *calculated using MISO Market LMPs and Clean Air Markets data;¹¹ sustaining capex from Sargent*
4 *and Lundy Life Extending Capital Report from EIA AEO.*

5 Next, I looked at whether the plants were passing even the lowest bar of unit
6 performance—meaning I looked at whether each plant’s energy market revenues were
7 sufficient to cover its fuel costs. This is a useful metric because if a plant’s energy
8 revenues don’t cover its fuel costs, then there is no revenue to begin covering any of a
9 unit’s fixed costs. On an energy basis, looking at just fuel costs and energy market
10 revenues, Neal 4 has incurred net revenue losses on an energy basis in two of the past
11 five years,¹² including in 2023. Louisa also incurred net revenues losses in one year,
12 2020.

13 **ii. IPL has provided no forward-looking analysis on the projected performance of its coal**
14 **fleet to justify continued inclusion of the costs in rates**

15 **Q. How does IPL project each plant will perform on an operational and economic basis**
16 **going forward?**

17 A. IPL provided very minimal data on its coal plants projected forward-going economic
18 performance so it’s unclear how the Company anticipates its coal plants will operate in

¹¹ To allow us to present our results publicly, we relied on public LMP and generation data. We validated our results against the confidential energy revenue data that IPL provided under NDA to ensure the results were aligned.

¹² Calculated based on EIA 923 fuel receipts and LMPs from PJM.

1 the future.¹³ Specifically, IPL stated that “IPL has not projected forecasts of plant
2 performance as part of this rate review. Absent significant changes in a generation unit,
3 IPL would expect similar performance as historical values.”¹⁴ This expectation is
4 concerning especially given the age and recent outage rates at some of the plants, and the
5 increasing availability of low and zero marginal cost alternatives in the market that will
6 impact the cost competitiveness of the coal resources.

7 IPL did perform dispatch modeling to calculate test year fuel costs and energy market
8 revenues for 2024 and 2025.¹⁵ These projections show [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

12 Overall, it is concerning that the Company expects to continue recovering the costs of
13 operating its coal plants while providing limited and incomplete data on the anticipated
14 forward-going costs and the FTY costs associated with its coal fleet. Based on its
15 responses to a discovery request, discussed in detail below, it appears that IPL believes
16 that uncertainty in reliability initiatives at MISO market justifies its decision to retain its
17 coal fleet without further justification or analysis.¹⁶

18 **Q. Has IPL performed any recent resource planning or unit economic analysis?**

19 A. IPL published a study called the Iowa Clean Energy Blueprint Resource Planning in
20 November 2020. This study is outdated, performed a very limited retirement analysis,
21 and does not currently serve as a reasonable basis for evaluating the cost-effectiveness of
22 running any of the Company’s coal plants. Specifically, my concerns with the study are:

¹³ EI Glick Direct Ex. 14, IPL response to Data Request EI 53.

¹⁴ *Id.*

¹⁵ IPL Michek Direct Ex. 6_(E&G)_CONF, Schedule E, Workpaper 6 – 2024 Fuel Outlook, and Workpaper 7 – 2025 Fuel Outlook.

¹⁶ EI Glick Direct Ex. 15, IPL response to Data Request EI 49.

- 1 1. The study is around four years old and relatively outdated. Several plants have
2 been retired, new resources added, and markets and regulatory environment have
3 changed substantially enough (for example, with passage of the IRA, proposed
4 GHG regulations under section 111 of the clean air act, and proposed MISO
5 market reforms) to require an updated study to provide useful results. IPL has
6 agreed to undertake a new planning process as part of a settlement in docket RPU-
7 2021-0003.

- 8 2. In the study, IPL did not evaluate optimal retirement dates for any of its coal
9 plants. IPL only evaluated a few pre-selected dates for possible retirement of
10 Lansing and Ottumwa. This included three specific dates for Ottumwa.¹⁷
11 Predetermining the retirement dates in the portfolios limits the information the
12 study can provide about the plant economics.

- 13 3. IPL evaluated no retirement scenarios for Neal 3, Neal 4, and Louisa.

- 14 4. The Company's findings from the Blueprint that early retirement of Ottumwa
15 resulted in increased costs for customers for most scenarios is outdated and likely
16 would not be supported by any updated analysis.¹⁸

- 17 5. In the study, IPL constrained replacement resource additions, most notably
18 allowing only 250 MW of 4-hour battery energy storage system (BESS) to be
19 added each year.¹⁹

¹⁷ Interstate Power and Light Company, Docket No. RPU-2019-0001, Iowa Clean Energy Blueprint: 2020 Resource Planning.

¹⁸ EI Glick Direct Ex. 16, IPL response to EI Data Request 4.

¹⁹ Interstate Power and Light Company, Docket No. RPU-2019-0001, Iowa Clean Energy Blueprint: 2020 Resource Planning at 33.

1 6. For new resource cost assumptions, the modeling occurred before the passage of
2 the IRA and cannot (based on timing) have incorporated tax credits available
3 under the IRA.

4 7. IPL's financial analysis incorporates the impacts of net book value for IPL's
5 existing assets into the total cost calculations for each portfolio.²⁰ These costs are
6 unavoidable and should not be considered in evaluating the economics of
7 retirement for the Company's existing assets.

8 IPL also confirmed that it has not performed any coal plant analysis specifically for prior
9 rate cases over the past 10 years.²¹

10 **Q. Has IPL performed any current analysis to evaluate the forward-going economics of**
11 **continuing to own and operate Ottumwa?**

12 A. No.

13 **Q. Has IPL performed any current analysis to evaluate the forward-going economics of**
14 **continuing to own a share of Neal 3, Neal 4, and Louisa?**

15 A. No. IPL indicated that MidAmerican is the primary owner of these facilities and makes
16 the final decisions on long-term planning and management.²²

²⁰ *Id.* at 46.

²¹ EI Glick Direct Ex. 17, IPL Response to Data Request EI 58.

²² EI Glick Direct Ex. 18, IPL Response to Data Request EI 62.

1 **Q. What data or analysis has IPL presented to the Board to justify its decision to**
2 **continue relying on Ottumwa, Neal 3, Neal 4, and Louisa and including their costs in**
3 **rates?**

4 A. The Company doesn't justify its decision to include the costs of its coal plants in rates.
5 IPL instead points to reliability initiatives at MISO to argue it should do no analysis.
6 Specifically, IPL states:

- 7 • "Reliability initiatives at MISO and developments at IPL may result in the need to
8 retain the capacity of dispatchable resources."²³
9 • "MISO's Reliability Imperative and Reliability Attributes initiatives indicate that
10 much[-]needed operating benefits of thermal units are not currently adequately
11 recognized in markets and obligations. MISO seeks to develop such markets and
12 obligations. Until these markets and obligations are known, it is inappropriate to
13 make economic analyses of resource retirements."²⁴

14 This response is concerning because it indicates that IPL does not believe it has an
15 obligation to perform analysis to evaluate the economics of continuing to operate its coal
16 plants or otherwise justify its request to include the costs of operating its coal plants in
17 rates. The Company also hasn't evaluated whether it could provide a similar amount of
18 capacity at a lower cost, or has the ability to meet any updated MISO obligations at a
19 lower cost, with renewables and storage.

20 **Q. How should MISO's reliability initiatives impact IPL's evaluation of the economics**
21 **of its coal plants?**

22 Q. Resource planning is fundamentally about designing a system that minimizes system
23 costs subject to reliability (and environmental and regulatory) constraints. Various factors
24 and settings are changed across scenarios, but reliability is always at the core of all
25 scenarios. As the grid transitions and experiences new challenges to reliability, IPL

²³ EI Glick Direct Ex. 15.

²⁴ *Id.*

1 should be doing more, not less, modeling to understand how these risks and uncertainties
2 impact the cost-effectiveness of its current and potential future resource mix. It is a
3 bigger threat to IPL's reliability to perform no analysis or evaluation of the economics
4 and risks of continuing to rely on its existing fossil resources relative to alternatives,
5 especially given the high forced outages rates some of its units experienced in recent
6 years.

7 **Q. IPL is currently engaged in a Resource Evaluation Study (RES). Does that support**
8 **IPL's recovery for the cost of operating its coal plants in rates?**

9 A. The RES may provide an updated analysis that addresses the economics of IPL's existing
10 generation and therefore could support the recovery in rates. However, IPL chose to file
11 the rate case before conducting the RES. At this time, the results of the RES are not
12 available to support its request for the recovery of the costs of operating its coal plants.

13 **Q. Why do you say the RES *may* provide support?**

14 A. The analysis will only provide support for the recovery of costs for operating coal plants
15 if the analysis properly evaluates the economics for all of IPL's coal assets, including its
16 co-owned assets that it does not operate. Specifically, a proper analysis would include an
17 evaluation of the early economic retirement of Ottumwa, Neal 3, Neal 4, and Louisa. As
18 discussed above, in IPL's last RES, the Clean Energy Blueprint, the Company did not
19 evaluate its co-owned generation assets operated by MidAmerican. Given that the Clean
20 Energy Blueprint does not provide any support for the recovery of operating costs of
21 those assets, if IPL's current RES is similarly limited, IPL will not have demonstrated
22 any support for recovering the operating costs of its co-owned coal plants. IPL needs to
23 evaluate the economics of all units it owns - even the units it doesn't operate. And to
24 explore retirement or contract exit options with MidAmerican for those it finds to be
25 uneconomic.

1 **Q. Is there other information that calls into question the economics of these coal**
2 **plants?**

3 A. As part of Docket No. RPU 2022-0001 (the Wind PRIME docket), EI's experts at Energy
4 Futures Group and Synapse conducted modeling to evaluate the economics of
5 MidAmerican's coal fleet. In the modeling, the EI found that it was economic to retire
6 Louisa, Ottumwa, and Neal 3 in the first year the model was allowed to do so, which was
7 2025. The plan also includes retirement of Neal 3 in 2028. To replace these retired
8 resources, the model economically added a mix of 4-hour BESS starting in 2025, solar
9 PV in 2030, and wind in 2033.²⁵

10 Prior to the Wind PRIME docket, MidAmerican conducted two studies between 2019 and
11 2021 that evaluated the economics of retiring its coal fleet and replacing the units with
12 alternative supply options; the results supported MidAmerican's consideration of
13 retirement for at least some of its coal fleet. The first study is the Zero Emissions Study;
14 MidAmerican conducted this study internally in March 2019. The second study was
15 conducted by Siemens in February 2020. Neither study robustly evaluated retirement
16 relative to replacement alternatives. The findings and recommendations from the studies
17 do nonetheless support the need for MidAmerican to regularly conduct robust resource
18 replacement analysis.

19 The Zero Emissions Study found that (1) solar PV replacements provide the lowest-cost
20 zero emissions solution in all scenarios studied;²⁶ (2) new solar PV meets summer peak
21 hours and other on-peak needs throughout the year and is complementary to the output

²⁵ Supplemental and Reply Testimony of Devi Glick, Docket No. RPU 2022-0001, at 45.

²⁶ Zero Emissions Study at 14.

1 patterns of wind both diurnally and seasonally;²⁷ (3) Louisa and Ottumwa were not found
2 to be profitable in baseline runs.²⁸

3 The Siemens study found that, under reference market conditions, Ottumwa and Neal 3
4 could be uneconomic over the study period. The presence of a carbon price puts
5 additional pressure on the economics of these units. Overall, across the different load and
6 carbon price scenarios Neal 3 and 4 performed the worst, followed by Ottumwa and
7 Louisa.²⁹ The study also found that “market futures with high penetration of renewables
8 challenge the economics of MidAmerican’s coal units.” This means that as more zero
9 marginal cost renewables are deployed onto the market, the competitiveness of the coal
10 units will continue to fall.³⁰ The study also found that even with the potential addition of
11 large customers, there was minimal impact on coal unit dispatch when looking at MISO
12 more broadly. That means that coal units were not expected to be what economically
13 served new commercial customer load in Iowa.³¹

14 **Q. Is IPL aware of this information calling into question the economics of its coal**
15 **generating assets?**

16 A. Yes, given that the information is public, IPL should be aware of it. IPL indicated that it
17 has no planning analysis other than the information MidAmerican made public.³²

18 Further, IPL’s own analysis has indicated that it believed [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] should invite additional scrutiny on the part of IPL.

²⁷ *Id.*

²⁸ *Id.* at 13.

²⁹ Siemens Study at 10.

³⁰ *Id.* at 39.

³¹ *Ibid.*

³² EI Glick Direct Ex. 19, IPL Response to Data Request EI 8.

³³ EI Glick Direct Ex. 7.

1 **iii. IPL has not taken sufficient action at Ottumwa or exercised sufficient oversight of its**
2 **co-owned coal plants operated by MidAmerican to limit uneconomic costs and**
3 **operations**

4 **Q. How does IPL manage the commitment and dispatch of Ottumwa?**

5 A. IPL stated that it makes its commitment decisions based on a multi-day dispatch analysis.
6 Specifically, the Company develops a seven-day look-ahead locational marginal price
7 (LMP) forecast and runs those projected LMPs through a dispatch model with forecasted
8 fuel costs and operational inputs. The dispatch results guide commitment decisions. IPL
9 stated that that it typically uses the unit commitment status of must-run during periods
10 when IPL believes the revenue is larger than the average cost over multiple days or even
11 weeks for lower-cost coal resources. During longer extended periods of anticipated low
12 market conditions, the unit commitment status is changed to economic.³⁴ IPL stated that
13 the data was not in a format that could be easily shared and shared none of its unit
14 commitment analysis.

15 **Q. How did IPL commit and dispatch Ottumwa in recent years?**

16 A. Since 2018, IPL has consistently self-committed Ottumwa [REDACTED]
17 [REDACTED] The practice of self-commitment is when
18 a utility commits a unit into the market with a must-run status, that is, tells the market to
19 start the unit up or keep it online, regardless of economics. This is in contrast with an
20 economic commitment status, when the utility tells the market to decide whether to start
21 the unit up, keep it online, or bring it offline based on economics. Over the past three
22 years, the practice has become even more pronounced, with IPL self-committing the plant
23 between [REDACTED] of the time it was available (not in outage mode).³⁵ This is in
24 contrast with how MidAmerican has operated its coal plants at Louisa, Neal 3, and Neal
25 4, where the Company only self-committed Louisa, Neal 3, and Neal 4 [REDACTED]

³⁴ EI Glick Direct Ex. 20, IPL Response to Data Request EI 60.

³⁵ EI Glick Direct Ex. 10, 11, 12, and 13.

1 [REDACTED] of the time each unit was available. This means that the low utilization at Neal 3
2 and Neal 4 is driven by poor unit economics and not uneconomic self-commitment
3 practices. At Ottumwa, on the other hand, the plant is being self-committed regularly, and
4 therefore incurring higher energy market losses than if it was more economically
5 committed.

6 **Q. What actions has IPL taken to exercise oversight over the management and**
7 **operations of the co-owned plants at Neal 3, Neal 4, and Louisa?**

8 A. IPL has taken very minimal actions to exercise oversight of its co-owned plants. IPL
9 stated that MidAmerican makes final decisions on daily operations and long-term
10 planning decisions. IPL representative attend biannual meetings and have discussions
11 with MidAmerican about the co-owned plants, but provided no meeting minutes (based
12 on claims that they may contain confidential MidAmerican data)³⁶ and stated that it has
13 retained no supporting documentation.³⁷ When asked specifically about unit cost and
14 operational data, IPL stated that it has not reached out to MidAmerican and requested
15 information on unit cost and operations over the past five years.³⁸ This means that IPL
16 has not done its own analysis or received any analysis from MidAmerican on the
17 prudence of continuing to own its share of the coal plants at Neal and Louisa.

18 **Q. Do IPL's actions differ from steps a prudent utility would take to justify continued**
19 **cost recovery?**

20 A. Yes. A prudent utility would take an active role in the evaluation, oversight, and
21 management of all generation assets that it seeks to include in rates—even ones that it
22 does not directly operate. This would include regularly evaluating the economics of its
23 resources, participating in regular meetings with the operators, requesting updates and
24 input on long-term investment and planning decisions, and requesting specific

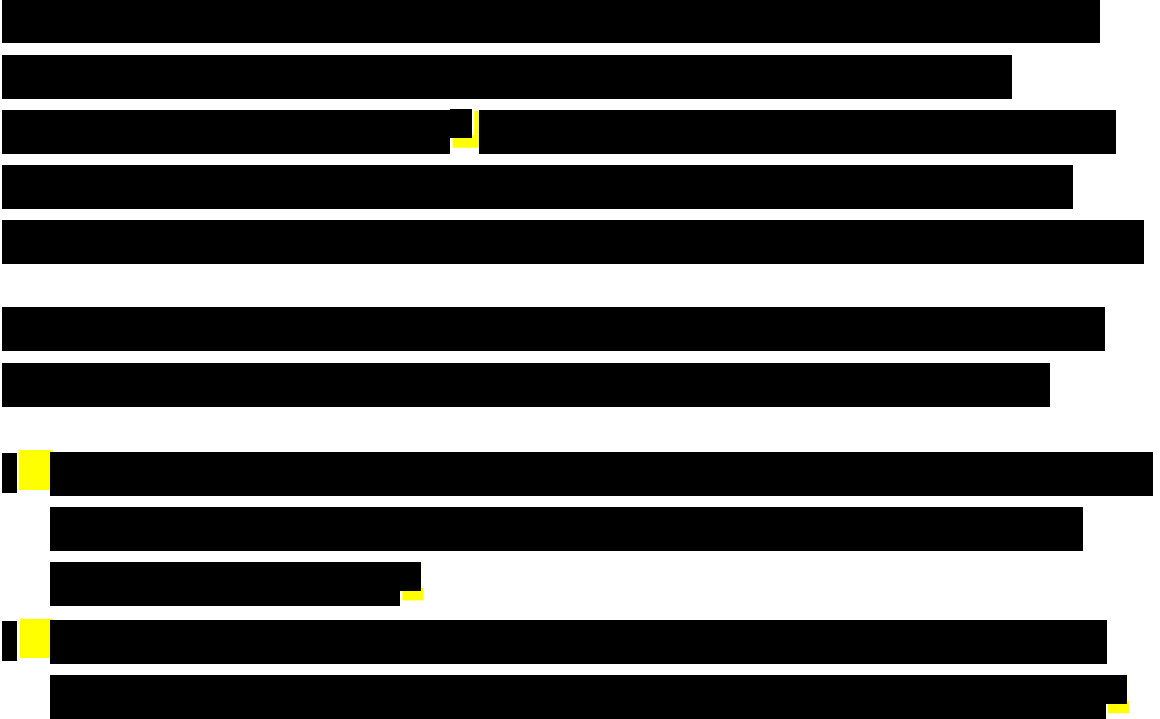
³⁶ EI Glick Direct Ex. 21, IPL Response to Data Request EI 7; EI Glick Direct Ex. 22, IPL Supplemental Response to Data Request EI 9; EI Glick Direct Ex. 23, IPL Supplemental Response to Data Request EI 10.

³⁷ *Id.*

³⁸ EI Glick Direct Ex. 18.

1 operational and management changes when existing plans and practices are not prudent
2 or economic. Simply attending biannual meetings and keeping no record of what was
3 discussed and having no documented reports or summaries for IPL management does not
4 reflect best practices. While IPL does not have unilateral authority to make decisions at
5 its co-owned plants, it does have the authority, and the obligation to its ratepayers, to
6 request a change in operations and management when it deems existing practices or
7 decisions imprudent.

8 **Q. Has IPL ever considered selling or transferring its share of Neal 3, Neal 4, or**
9 **Louisa?**

10 A.  The answer is redacted with multiple black bars. There are several yellow marks within the redacted text, likely indicating line breaks or specific points of interest. The redaction covers the entire text of the answer.

³⁹ EI Glick Direct Ex. 6.

⁴⁰ *Id.* at 5.

⁴¹ *Id.* at 8.

⁴² EI Glick Direct Ex. 7, IPL Response to Data Request EI 11, Confidential Attachment C.

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED]

15 **Q. Has IPL provided evidence of any other subsequent actions to pursue a swap?**

16 A. No. The EI requested all documents related to IPL's consideration or evaluation of selling
17 its share of the co-owned generation assets or purchasing additional shares of its co-
18 owned assets.⁴⁹ The documents the Company provided relate only to the [REDACTED]
19 [REDACTED] If IPL had considered any subsequent swap transactions, it was
20 required to provide that information to the EI as well. It is concerning that IPL has taken
21 no action to re-evaluate a swap option in over four years.

⁴³ EI Glick Direct Ex. 8, IPL Response to Data Request EI 11, Confidential Attachment D, at 1.

⁴⁴ EI Glick Direct Ex. 7, IPL Response to Data Request EI 11, Confidential Attachment C.

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*

⁴⁷ EI Glick Direct Ex. 24, IPL Response to Data Request EI 40 (Confidential).

⁴⁸ *See*, EI Glick Direct Ex. 6, 7 and 8.

⁴⁹ EI Glick Direct Ex. 25, IPL Response to Data Request EI 11.

1 *iv. IPL has not evaluated the risks and benefits of existing regulations and policies on its*
2 *coal fleet*

3 **Q. What other federal programs are available to IPL to assist with retirement of legacy**
4 **fossil resources and deployment of clean energy resources?**

5 A. The EIR program was established under the IRA. This program provides the U.S.
6 Department of Energy (DOE) with \$300 billion in loan authority that it can deploy to
7 “retool, repower, repurposes, or replace” fossil infrastructure.⁵⁰ The loans are available at
8 just above the federal government’s cost of borrowing with repayment periods up to 30
9 years.⁵¹ Per statute, utilities are required to pass through the savings enabled under the
10 EIR to their customers.⁵²

11 My understanding is that the funding can be used to both lower the project costs for
12 replacement resources and address legacy asset plant balances. Specifically, the loans are
13 available to finance investment in replacement generation capacity, distribution upgrades,
14 or other investments that can help enable emission reductions. The loans can also cover
15 refinancing for outstanding asset balances of existing legacy coal units when used in
16 conjunction with financing of replacement resources.⁵³ This addresses a critical barrier to
17 retirement and can help accelerate unit retirements while reducing the economic burden
18 on ratepayers relative to traditional financing mechanisms (and providing the utility with
19 a level of certainty on cost recovery).

⁵⁰ U.S. Department of Energy, Loan Programs Office, Program Guidance for Title 17 Clean Energy Financing Program. May 19, 2023, pg. 6. Available at <https://www.energy.gov/lpo/articles/program-guidance-title-17-clean-energy-program#page=1>.

⁵¹ *Id.* at 8.

⁵² U.S. Department of Energy, Loan Programs Office, Energy Infrastructure Reinvestment. Available at <https://www.energy.gov/lpo/energy-infrastructure-reinvestment>.

⁵³ C. Fong, D. Posner, and U. Veradarajan. “The Energy Infrastructure Reinvestment Program: Federal financing for an equitable, clean economy.” RMI. February 16, 2024. Available at <https://rmi.org/the-energy-infrastructure-reinvestment-program-federal-financing-for-an-equitable-clean-economy/>. Note that

1 **Q. Has IPL applied for funding available under the EIR program?**

2 A. In September 2023, IPL filed Part I of the EIR application to the DOE Loan Programs
3 Office. In December 2023, IPL received approval for Part 1 of its application and
4 submitted Part II of its application.⁵⁴ The Company said in testimony that it does not
5 anticipate receiving funding under the program, and that it will update its revenue
6 requirement calculations if it does receive funding.⁵⁵

7 **Q. Has IPL evaluated the potential to utilize funding available under the IRA from the**
8 **EIR program to facilitate the retirement of any of its aging coal plants, including at**
9 **the retired Lansing plant?**

10 A. No, not specifically. IPL asserted that its understanding of the EIR is that it can either (1)
11 apply for funding to substitute the lost capacity from decommissioned coal facilities with
12 new, clean energy resources, or (2) finance replacement clean energy resources
13 equivalent to the remaining book value of a retiring coal plant. IPL indicated that it
14 selected option 1 because it resulted in a higher loan amount. The Company has a
15 remaining book balance at Lansing of \$216 million. The loan the Company applied for is
16 for [REDACTED]

[REDACTED] ⁵⁶
18 IPL has asserted that it does not believe the EIR funding is eligible to be used to
19 refinance existing plant balances, such as the plant balance at Lansing Unit 4.⁵⁷

⁵⁴ EI Glick Direct Ex. 26, IPL Response to Data Request CEDI-5; EI Glick Direct Ex. 27, IPL Response to Data Request CEDI 36.

⁵⁵ Direct Testimony of Witness Michek at 63-64.

⁵⁶ EI Glick Direct Ex. 28, IPL Response to Data Request OCA 283 (A&B).

⁵⁷ EI Glick Direct Ex. 27, IPL Response to Data Request CEDI 36 (e); *See also*, EI Glick Direct Ex. 29, IPL Response to Data Request CEDI 2, 3, 5, 6 & 7, Confidential Attachment B at 4.

1 **Q. What is your understanding of the EIR program and is its applicability for**
2 **undepreciated plant balances?**

3 A. My understanding is that the EIR is intended to provide funding to address undepreciated
4 plant balances when used in conjunction with funding to finance clean energy
5 replacement resources. IPL indicated that it has reached out to the DOE to obtain clarity
6 on whether the EIR can be used on a stand-alone basis to finance legacy plant balances.⁵⁸
7 The Company provided email communications with DOE where it asked for clarification
8 on the applicability of EIR financing to undepreciated plant balances. Unfortunately, it
9 appears that the matter was ultimately discussed verbally between IPL and DOE. IPL was
10 not able to provide written documentation that definitively settles the issue of whether the
11 funding can be used to both refinance the existing plant balances and finance clean
12 energy replacement resources.⁵⁹ It is critical that IPL get a definitive answer from the
13 DOE on this issue, as the current balance of Lansing is being recovered through a
14 regulatory asset with a rate of return. IPL ratepayers would therefore benefit if EIR
15 funding was used both to refinance the legacy balance and finance replacement resources.

16 **Q. Is the EIR the only option available to IPL for financing the remaining plant**
17 **balance at Lansing now and at other plants in the future?**

18 A. Currently the EIR is the best option for IPL because securitization is not enabled in Iowa.
19 If IPL was serious about leveraging a low-cost financing option to reduce legacy
20 depreciation costs to ratepayers, it should be working to advance securitization-enabling
21 legislation in Iowa, as many other states have done already. Even if this legislation is not
22 enacted in time to address the balance at Lansing, it can help enable retirement and
23 replacement of IPL's other legacy assets that are still operating on the grid.

⁵⁸ EI Glick Direct Ex. 27, IPL Response to Data Request CEDI 36.

⁵⁹ *Id.*; CEDI Motion to Compel.

1 **Q. Has IPL evaluated the use of EIR funding to accelerate the retirement and**
2 **replacement of Ottumwa?**

3 A. No. As discussed above, the Company has not evaluated early retirement and
4 replacement of Ottumwa. IPL has also not provided any evidence that it has evaluated
5 how the EIR program can lower the cost of retiring and replacing its existing legacy
6 assets, including Ottumwa.

7 **Q. Has IPL discussed use of the EIR with MidAmerican, especially for its lower-**
8 **utilization coal plants at Neal 3 and Neal 4?**

9 A. There is no evidence that IPL has exercised its authority as a co-owner to encourage
10 MidAmerican to evaluate the potential for the EIR to address the undepreciated balances
11 at Neal 3 and Neal 4 and finance replacement resources. It is unclear if MidAmerican has
12 evaluated the economics of using the EIR to lower the cost of retiring and replacing Neal
13 or Louisa.

14 **Q. Does this conclude your testimony?**

15 A. Yes.

AFFIDAVIT OF DEVI GLICK

STATE OF Maine)
) ss.
COUNTY OF Cumberland)

I, Devi Glick, being duly sworn on oath, state that I am the same Devi Glick identified in the testimony being filed with this affidavit, that I have caused the testimony to be prepared and am familiar with its contents, and that the testimony is true and correct to the best of my knowledge and belief as of the date of this affidavit.

/s/ Devi Glick _____
Devi Glick

State of Maine)
) ss.
County of Cumberland)

Subscribed and Sworn before me this 16 day of April, 2024.

/s/ Carrie M Weeman _____
Notary Public