

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Joint Application of Nevada Power Company)
d/b/a NV Energy and Sierra Pacific Power)
Company d/b/a NV Energy for approval of) Docket No. 21-06001
their 2022-2041 Triennial Integrated Resource)
Plan and 2022-2024 Energy Supply Plan.)
_____)
)
Application of Sierra Pacific Power)
Company d/b/a NV Energy for approval of) Docket No. 21-06002
its Natural Gas Conservation and Energy)
Efficiency Plan for the period 2022-2024.)
_____)

DIRECT TESTIMONY OF DEVI GLICK

**ON BEHALF OF SIERRA CLUB AND NATURAL RESOURCES DEFENSE
COUNCIL**

REDACTED VERSION

October 6, 2021

TABLE OF CONTENTS

I. INTRODUCTION AND PURPOSE OF TESTIMONY.....1

II. FINDINGS AND RECOMMENDATIONS3

III. NV ENERGY MUST EVALUATE THE IMPACTS OF ITS 1,548 MW OF EXISTING GAS GENERATION RESOURCES LOCATED IN LAS VEGAS ENVIRONMENTAL JUSTICE COMMUNITIES AND WORK WITH THE COMMUNITIES TO MEET FUTURE NEEDS.....5

IV. NV ENERGY HAS NOT ESTABLISHED THAT VALMY 1 IS NEEDED BEYOND THE SUMMER OF 202212

V. NV ENERGY DID NOT ESTABLISH THE NEED FOR ITS PROPOSED MODIFICATIONS TO THE HARRY ALLEN GAS PLANT.....16

VI. RECOMMENDATIONS FOR THE COMMISSION24

LIST OF ATTACHMENTS

- Attachment DG-1: Resume of Devi Glick
- Attachment DG-2: NVE Response to SC-NRDC DR 1-06
- Attachment DG-3: Confidential Table 4 – Projected Capacity Factor and Fixed
Costs for Las Vegas Gas Plants

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

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

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

6 **2. 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,
10 electricity market prices, stranded costs, efficiency, renewable energy, environmental
11 quality, and 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 **3. Q. Please summarize your work experience and educational background.**

16 A. At Synapse, I conduct economic analysis and write testimony and publications that
17 focus on a variety of issues related to electric utilities. These issues include power
18 plant economics, utility resource planning practices, valuation of distributed energy
19 resources, and utility handling of coal combustion residuals waste. I have submitted
20 expert testimony on unit-commitment practices, plant economics, utility resource
21 needs, and solar valuation before state utility regulators in Nevada, Arizona,
22 Connecticut, Florida, Indiana, Michigan, New Mexico, North Carolina, South

1 Carolina, Texas, Wisconsin, and Virginia. In the course of my work, I develop in-
2 house electricity system models and perform analysis using industry-standard
3 electricity system models.

4 Before joining Synapse, I worked at Rocky Mountain Institute, focusing on a wide
5 range of energy and electricity issues. I have a master's degree in public policy and a
6 master's degree in environmental science from the University of Michigan, as well as
7 a bachelor's degree in environmental studies from Middlebury College. I have more
8 than eight years of professional experience as a consultant, researcher, and analyst. A
9 copy of my current resume is provided as Attachment DG-1.

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

11 A. I am testifying on behalf of the Sierra Club.

12 **5. Q. Have you testified previously before this Commission?**

13 A. Yes. I submitted testimony as part of Phase I of this current proceeding.

14 **6. Q. What is the purpose of your testimony in this proceeding?**

15 A. My testimony addresses Nevada Energy's ("NV Energy" or "the Company") supply-
16 side resource plan in its 2021 Integrated Resource Plan ("IRP") (excluding the gas
17 plant modifications from Phase I). In particular, my testimony analyzes and evaluates:

- 18 1. The local health and economic impacts of the Company's existing gas plants in
19 Las Vegas, and the Company's anticipated process to plan for replacement
20 resources when those plants retire;

- 1 2. NV Energy’s justification for continuing to operate the Valmy coal plant without
- 2 a committed retirement date, and the conditions under which the Company has
- 3 said it will operate the plant; and,
- 4 3. The Company’s proposal to modify a sixth combined cycle gas plant on its
- 5 system, the Harry Allen plant, and the adequacy of the alternatives the Company
- 6 considered.

7 **II. FINDINGS AND RECOMMENDATIONS**

8 **7. Q. Please summarize your findings.**

9 A. My primary findings are:

- 10 1. The Company did not evaluate and disclose the impact of the existing Las Vegas
- 11 gas plants (Las Vegas Generating Station, Edward W. Clark Generating Station
- 12 (“Clark”), and Sun Peak Generating Station) on the surrounding environmental
- 13 justice communities nor incorporate consideration of such impacts into long-term
- 14 planning on how to serve load in the Las Vegas area.
- 15 2. The Company did not demonstrate that Valmy is now necessary to serve load
- 16 given the Commission just approved in Phase I modification of Chuck Lenzie,
- 17 Block 1, Silverhawk, and Tracy plants. Together, these modifications add 146
- 18 MW of peaking summer capacity to NV Energy’s system, which is more than
- 19 enough to meet projected load forecasts.
- 20 3. The Company did not conduct robust analyses to demonstrate that the proposed
- 21 modifications to Harry Allen are both necessary and the least-cost manner to
- 22 serve customer load for the summer of 2023 and beyond given the availability of
- 23 resource alternatives, battery storage, renewables, and supply-side resources.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

8. Q. Please summarize your recommendations.

A. Based on my findings, I recommend that the Commission:

1. Acknowledge and require the Company to study and disclose the impacts of plant operations on the surrounding environmental justice communities in Las Vegas at the Las Vegas Generation Station, Clark Generating Station, and Sun Peak Generating Station.
2. Require NV Energy in the next IRP to incorporate consideration of the health impacts of fossil fuel generation on the local communities and engage the impacted communities in decisions about how to serve their load as existing fossil plants retire and need to be replaced.
3. Reject NV Energy’s request to extend the life of Valmy unit 1 beyond summer 2022. Alternatively, should the Commission decide to let NV Energy continue operating the coal plant short term, the Commission should set an enforceable retirement date for Valmy. That date should be no later than the end of 2024, or whenever the Iron Point project comes online, whichever is first. The Commission should also require annual reporting from NV Energy on each time the plant is operated.
4. Not grant NV Energy’s request for approval to modify the Harry Allen Combined Cycle Plant.

1 **III. NV ENERGY MUST EVALUATE THE IMPACTS OF ITS 1,548 MW OF**
 2 **EXISTING GAS GENERATION RESOURCES LOCATED IN LAS VEGAS**
 3 **ENVIRONMENTAL JUSTICE COMMUNITIES AND WORK WITH THE**
 4 **COMMUNITIES TO MEET FUTURE NEEDS**

5 **9. Q. Please provide a brief background on the existing gas plants in Las Vegas**
 6 **that are located in environmental justice communities.**

7 A. NV Energy operates three gas plants with a total capacity of 1,548 MW located in
 8 environmental justice communities within the city of Las Vegas, Nevada. The Las
 9 Vegas Generating Station has a summer peaking capacity of 272 MW, the Clark
 10 Generating Station has a summer peaking capacity of 1,102 MW, and the Sun Peak
 11 Generating station has a summer peaking capacity of 219 MW. All are scheduled to
 12 retire between 2029-2039. Full details on each unit are shown in Table 1 below.

13 **Table 1: NV Energy Las Vegas Gas Plants**

Unit Name	Summer Capacity (MW)	Location	Year Online	Retirement Year
Las Vegas Generating Station (1x1) CC	48	North Las Vegas	1994	2029
Las Vegas Generating Station (2x1) CC	224	North Las Vegas	2004	2039
Clark Generating Station (2x1) CC	430	Las Vegas	1979-1994	2033/2034
Clark Generating Station CT (1)	54	Las Vegas	1973	2030
Clark Generating Station CT (12)	618	Las Vegas	2008	2038
Sun Peak CT (3)	210	Las Vegas	1991	2032
Total	1,584			

14 *Source: Joint Application to Approve Triennial Integrated Resource Plan, Three Year Action Plan*
 15 *and Energy Supply Plan, Vol. 14, Supply Side Narrative at 4-5, No. 21- 06001 (Pub. Utils.*
 16 *Comm'n of Nev. June 1, 2021); Id. at pdf 135 fig.GEN-01.*

17 **10. Q. How does NV Energy currently operate these plants?**

18 A. NV Energy uses these plants as peaking resources. In 2019 and 2020, NV Energy
 19 operated Clark, Las Vegas Generating Station, and Sun Peak all at extremely low

capacity factors ranging between 2.8 percent and 11 percent. Table 2 below shows the average capacity factors for each plan for 2019 and 2020.

Table 2: 2019 and 2020 Capacity Factors for Las Vegas Gas Plants

	Year	Capacity (MW)	Generation (MWh)	Capacity Factor
Clark Generating Station	2019	578.8	446,527	8.8%
	2020		560,741	11.1%
Las Vegas Generating Station	2019	358.9	196,104	6.2%
	2020		315,516	10.0%
Sun Peak Generating Station	2019	222	53,892	2.8%
	2020		118,596	6.1%

Source: Form EIA-923 detailed data with previous form data (EIA-906/920), U.S. Energy Info. Admin., <https://www.eia.gov/electricity/data/eia923/> (July 30, 2021); Form EIA-860 detailed data with previous form data (EIA-860A/860B), U.S. Energy Info. Admin., <https://www.eia.gov/electricity/data/eia860/> (June 3, 2021).

11. Q. Do these plants cause health impacts on the local community?

A. Yes. Several of these units have extremely high emissions rates for key air pollutants.

Sun Peak in particular has one of the highest nitrogen oxide (“NOx”) and carbon monoxide (“CO”) emission rates of all units on NV Energy’s system.¹ Exposure to high concentrations of NO₂ “over short period can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to the emergency room. Longer exposure to elevated concentrations of NO₂ may contribute to the development of asthma and potentially increase susceptibility to respiratory infections.”²

¹ Joint Application to Approve Triennial Integrated Resource Plan, Three Year Action Plan and Energy Supply Plan, Vol. 14, Supply Side Narrative at 335, Confidential fig.GEN-3, No. 21-06001 (Pub. Utils. Comm’n of Nev. June 1, 2021) [hereinafter “NVE IRP Application”].

² *Nitrogen Dioxide NO₂ pollution*, EPA, <https://www.epa.gov/no2-pollution/basic-information-about-no2> (last visited Oct. 4, 2021).

1 NO_x also reacts with other chemicals in the air to form particulate matter and ozone.³
2 Both are harmful when inhaled. The company regularly operates these plants during
3 days when local ozone concentrations exceed federal standards.⁴ This results in
4 significant air pollution and health impacts for the local surrounding community, as
5 outlined in Table 3.

6 **Table 3: Health and Environmental Impacts of Particulate Matter and**
7 **Ozone**

Health and Environmental Impacts of Particulate Matter

1. Premature death in people with heart or lung disease
2. Nonfatal heart attacks
3. Irregular heartbeat
4. Aggravated asthma
5. Decreased lung function
6. Increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

Health Effects of Ozone Pollution

1. Cause coughing and sore or scratchy throat
2. Make it more difficult to breathe deeply and vigorously and cause pain when taking a deep breath
3. Inflammation and damage the airways
4. Make the lungs more susceptible to infection
5. Aggravate lung diseases such as asthma, emphysema, and chronic bronchitis
6. Increase the frequency of asthma attacks

8 *Source: Nitrogen Dioxide NO₂ pollution, EPA, [https://www.epa.gov/no2-pollution/basic-information-](https://www.epa.gov/no2-pollution/basic-information-about-no2)*
9 *about-no2 (last visited Oct. 4, 2021).*

10 More than 130,000 people live within a three-mile radius of both the Clark and Sun
11 Peak plants.⁵ This population is disproportionately comprised of communities of color
12 and low-income households. Physicians, Scientists, and Engineers (“PSE”) for Healthy

³ *Id.*

⁴ PSE Healthy Energy, *Nevada Peaker Power Plants, Energy Storage Replacement Opportunities* (May 2020), available at <https://www.psehealthyenergy.org/wp-content/uploads/2020/05/Nevada.pdf>.

⁵ *Id.*

1 Energy, a multidisciplinary nonprofit that studies the impact of energy products on
2 public health and the environment, developed a *Cumulative Vulnerability Index* to
3 assess the environmental health burden posed by these plants relative to all other plants
4 in the state. They found that the Sun Peak and Clark stations scored significantly above
5 the median for combined environmental, health, and demographic burden indicators.⁶
6 This statistic highlights the impact of placing power plants' close proximities to
7 marginalized communities.

8 **12. Q. How does NV Energy plan to operate these plants?**

9 A. According to NV Energy's IRP modeling, the Company plans to operate each plant at
10 an extremely low capacity factor until it retires, as shown in Table 4 (provided as
11 Confidential Attachment DG-3). But the Company will still need to spend tens of
12 millions in fixed operations and maintenance costs ("FOM") for these plants,
13 regardless of how minimally each unit is utilized. Future state and federal
14 environmental regulations will likely further limit criteria air pollutants, which will
15 require the Company to make additional capital investments and will increase required
16 operating expenses to comply. Additionally, regulations to limit CO₂ emission and
17 future gas price volatility will all make the costs associated with operating these plants
18 more uncertain and expensive going forward than NV Energy has currently projected.
19 Please see Confidential Attachment DG-3 for Table 4 which provides the projected
20 capacity factor and fixed costs for the Las Vegas gas plants.

⁶ *Id.*; PSE Healthy Energy, *Equity-Focused Climate Strategies for Nevada, Socioeconomic and Environmental Health Dimensions of Decarbonization* (Aug. 2021), available at https://www.psehealthyenergy.org/wp-content/uploads/2021/08/Equity-Focused-Climatic-Strategies_NV_Summary.pdf.

1 Given that it will become increasingly expensive to operate these plants through their
2 current retirement dates, it is critical that NV Energy be proactive in developing a plan
3 to replace these resources. Failing to do so will limit its resource options to only those
4 that can be installed quickly, which would result in a higher cost solution than if the
5 Company were to proactively plan. It also would reduce the Company’s ability to
6 properly engage with local communities to develop both (a) a transition plan to retire
7 the existing plant with minimal economic and employment impacts, and (b) a
8 replacement plan to replace the necessary energy and grid services in a way that is the
9 lowest cost to ratepayers and includes those directly affected. Sun Peak’s retirement
10 date is only 10 years away. If NV Energy doesn’t start proactively planning for this in
11 the next IRP, then there won’t be sufficient time for meaningful discussions and
12 planning around a just and equitable transition.

13 **13. Q. Has NV Energy made any efforts to evaluate the environmental justice**
14 **impacts of relying on these units to serve load in Nevada?**

15 A. No. There was no mention of environmental justice and health impacts in NV
16 Energy’s entire IRP application. This is unacceptable given that climate justice is one
17 of the four metrics that guide the state’s actions on reducing carbon emissions, as part
18 of Nevada’s Climate Strategy framework issued by Nevada agencies and delivered to
19 Governor Steve Sisolak in December 2020. Specifically, the Strategy document
20 requires:

21 Across the United States and in Nevada, low-income communities, people of
22 color, and Indigenous populations have disproportionately borne the burden of
23 climate change impacts. As temperatures continue to rise and climate-related
24 challenges expand and intensify, particular attention **must** be paid to these

1 vulnerable populations. Through climate action, there is the opportunity to
2 reconcile the social justice challenges Nevadans face.⁷

3 Therefore, the Commission must direct the Company to analyze and disclose how it
4 intends to reduce the health impacts its fossil fuel plants have on environmental justice
5 communities located in proximity to its plants.

6 **14. Q. Why is it so important for local residents to be involved in future resource**
7 **planning?**

8 A. The Las Vegas gas plants currently provide electricity and grid services when load is
9 high and the system is constrained in its ability to bring lower-cost power in from
10 outside the city. In order to maintain local reliability, at least some peaking capacity
11 will need to remain in the region. But NV Energy must ensure that it does not leave
12 aging, costly, and dirty power plants online for reliability reasons in disproportionately
13 low-income communities and communities of color.

14 Equally important, when the Company does retire these aging plants, some
15 replacement resources will likely need to be located in the Las Vegas region. Local
16 residents have born the air and water impacts from coal and gas plant pollution for a
17 generation, and they will continue to be impacted as long as the company burns fossil
18 fuels. Additionally, Las Vegas residents will be best served by a portfolio of resources
19 on both the supply and demand-side, centralized and distributed, rather than a large
20 replacement resource. These type of resource portfolios would lower residents' energy
21 burden and make the system more resilient, while meeting load and reliability needs.

⁷ State of Nev. Climate Initiative Leadership Team, *2020 State Climate Strategy* (2020),
available at [https://climateaction.nv.gov/wp-
content/uploads/2021/01/NVClimateStrategy_011921.pdf](https://climateaction.nv.gov/wp-content/uploads/2021/01/NVClimateStrategy_011921.pdf) (emphasis added).

1 Given all of these critical considerations, and in light of the *Nevada 2020 Climate*
2 *Strategy* directive on environmental justice, local residents must be included in
3 planning for their future energy needs.

4 **15. Q. Should NV Energy begin planning for the retirement of these units, and if**
5 **so, what are the main resource options?**

6 A. Yes. There is a good reason to consider early retirement for these units in NV
7 Energy’s next IRP. As discussed above, each of these units will only be minimally
8 used for peaking purposes and will have significant air quality impacts on the
9 surrounding communities. Sixty percent of the capacity at these three plants is over 15
10 years old, and approximately 50 percent of the capacity is over 25 years old. The
11 specific peaking services provided by these plants can easily be met by battery storage
12 and solar photovoltaic (“PV”).

13 In light of the serious environmental harms caused by these plants and their
14 questionable economic value, NV Energy must proactively examine whether to retire
15 these plants in the near term as part its next IRP. But the Company cannot decide on
16 replacement resources based simply on utility modeling; instead, for the reasons given
17 previously, it must work with local communities to evaluate the cost-effectiveness and
18 health considerations of all options in conjunction with local residents.

1 **IV. NV ENERGY HAS NOT ESTABLISHED THAT VALMY 1 IS NEEDED BEYOND**
 2 **THE SUMMER OF 2022**

3 **16. Q. Please provide a brief background on Valmy units 1 and 2 and describe the**
 4 **Company’s proposal regarding the operation and retirement of each unit.**

5 A. Valmy is a 2-unit coal plant with a peak capacity of 522 MW and is located near Battle
 6 Mountain, Nevada.⁸ Unit 1 was constructed in 1981 and unit 2 in 1985.⁹ The plant is
 7 owned 50 percent by NV Energy and 50 percent by Idaho Power. As show in Table 5,
 8 unit 1 operated at a 44 percent capacity factor in 2019, but that fell to 15 percent in
 9 2020. Unit 2 operated at between a 22 and 25 percent capacity factor both years.

10 **Table 4: Capacity factor for North Valmy for 2019 and 2020**

Plant	Capacity (MW)	Year	Generation (MWh)	Capacity Factor
North Valmy 1	277.2	2019	1,075,871	44%
		2020	375,393	15%
North Valmy 2	289.8	2019	622,850	25%
		2020	556,802	22%

11 *Source: Form EIA-923 detailed data with previous form data (EIA-906/920), U.S. Energy Info. Admin.,*
 12 *<https://www.eia.gov/electricity/data/eia923/> (July 30, 2021); Form EIA-860 detailed data with previous*
 13 *form data (EIA-860A/860B), U.S. Energy Info. Admin., <https://www.eia.gov/electricity/data/eia860/>*
 14 *(June 3, 2021).*

15 In prior IRPs, the owners committed to retire unit 1 at the end of 2021 and unit 2 at the
 16 end of 2024, However, NV Energy is now proposing to keep both units online through
 17 the end of 2025. The prior retirement date for unit 1 was conditioned on meeting
 18 system reliability, which NV Energy now claims has not been met.

⁸ NVE IRP Application, Vol. 14, Supply Side Narrative at 4-5 (pdf 133-134).

⁹ *Form EIA-860 detailed data with previous form data (EIA-860A/860B), U.S. Energy Info. Admin., <https://www.eia.gov/electricity/data/eia860/> (June 3, 2021).*

1 Now the Company is proposing to keep unit 1 online through at least the end of 2025,
2 or until after the replacement resources come online.¹⁰ Starting in January 2022, unit 1
3 will be used for system support only and will not be used for economic dispatch.
4 Specifically, it will be in stand-by mode and ready to operate on 24-hour notice.¹¹

5 **17. Q. What are the purported system reliability conditions that are delaying the**
6 **retirement of Valmy 1?**

7 A. The Company claims that Valmy is critical to transmission reliability in northeastern
8 Nevada, and that the units are needed to provide capacity and voltage support to the
9 mining load in the 350+ MW Carlin Trend area load pocket.¹² The Company claims
10 that it owns no other assets in the area that could provide these specific services, but
11 there are several large transmission lines in the area. The Company goes on to claim
12 that if unit 1 were to retire, and unit 2 to need maintenance or go offline, the system
13 would be “one contingency away from having to shed critical mining load.”¹³

14 **18. Q. Are there viable solutions to address NV Energy’s reliability concerns?**

15 A. Yes. NV Energy is building two solar PV and battery energy storage system (“BESS”)
16 projects that will connect directly to the Valmy Substation. The Iron Point 250 MW
17 PV / 200 MW BESS project will connect at the Valmy 120 kV bus and Hot Pot 350
18 MW PV / 380 MW BESS will connect at the Valmy 345 kV bus. These new

¹⁰ NVE IRP Application, Vol. 14, Supply Side Narrative at 11-12 (pdf 140-141).

¹¹ *Id.* at 13 (pdf 142).

¹² *Id.* at 12 (pdf 141).

¹³ *Id.* at 13 (pdf 142).

1 generation projects will fully address NV Energy’s reliability concerns. Iron Point is
2 scheduled to come online in December 2023 and Hot Pot in December 2024.¹⁴

3 **19. Q. Did you identify additional deficiencies in the Company’s support for its**
4 **proposal?**

5 A. Yes.

- 6 1. NV Energy has not justified operating Valmy 1 an additional two years beyond
7 when Iron Point comes online; the unit should be retired as soon as Iron Point is
8 operational, at a minimum, and possibly sooner if temporary resource support
9 within the Carlin Trend load pocket could be obtained by NV Energy.
- 10 2. NV Energy is asking ratepayers to subsidize the cost of operating an aging coal
11 plant so the Company can provide what appears to be an unnecessarily high level
12 of transmission system reliability. In fact, the Company’s proposal could be
13 beyond what is required by the North American Electric Reliability Corporation’s
14 (“NERC”) reliability requirements for transmission planning. This is because it
15 presumes at least two contingency events (loss of Valmy 2 and loss of a 345 kV
16 line) while ignoring possible use of interruptible load resources within the Carlin
17 Trend load pocket. It also does not consider extending the support that could be
18 provided by the TS Power Plant once its conversion to dual fuel capability is
19 complete in 2022.¹⁵ Instead, it purports a need to protect load pocket customers,

¹⁴ *Id.*

¹⁵ *See, e.g.,* Adella Harding, *NGM Converting Power Plan to Reduce Carbon Emissions*, Elko Daily, June 3, 2020, available at https://elkodaily.com/mining/ngm-converting-power-plant-to-reduce-carbon-emissions/article_ec74a148-da17-5016-a31d-3819877145fe.html.

1 including mining load moving from retail customer status to distribution only
2 status,¹⁶ from a situation that the Company itself has admitted would be
3 exceedingly rare.¹⁷

- 4 3. NV Energy wants approval to spend substantial ratepayer funds on O&M to
5 maintain the plant, even after Iron Point comes online.
- 6 4. NV Energy claimed that in addition to forced outages, *planned* maintenance at
7 Unit 2 may render it unavailable. But the Company can *plan* its maintenance for
8 the off-peak season; or even perform necessary maintenance on Unit 2 while Unit
9 1 is still online to avoid taking the whole plant offline to perform planned
10 maintenance.
- 11 5. Valmy 1 will need approximately 24 hours to ramp up. Given this slow response
12 time, it will not come online in time to help avoid load shedding in the event of a
13 transmission line failure, which is one of the Company's justifications for keeping
14 this unit in the first place.¹⁸ Additional support from either interruptible load
15 within the Carlin Trend area, or from the TS Power plant, could provide required
16 support if a rare event occurs.
- 17 6. With the gas plant modifications approved in Phase 1, the Company's overall
18 open position has been lowered for summer 2022 and beyond, reducing the need
19 for the energy and capacity from the Valmy coal plant. In fact, one of Staff's

¹⁶ NVE IRP Application, Vol. 4, Summary at 17 (pdf 18).

¹⁷ *Id.*

¹⁸ NVE IRP Application. Vol. 14, Supply Side Narrative at 13 (pdf 142).

1 justifications for supporting the gas plant modifications was specifically to avoid
2 reliance on Valmy.¹⁹

3 7. Finally, the Company has not committed to a date-certain for retirement even
4 after Iron Point comes online. Nor has NV Energy provided any process for
5 documenting when Valmy is used, to ensure the Plant is only used for system
6 support and to provide emergency services.

7 For these reasons, I recommend the Commission deny NV Energy's request to extend
8 the life of Valmy unit 1 through the end of 2025 and instead require that the Company
9 retire the plant by the end of 2024, or when Iron Point comes online, whichever
10 occurs first. The Commission should also require annual reporting from NV Energy
11 on each time the plant is operated.

12 **V. NV ENERGY DID NOT ESTABLISH THE NEED FOR ITS PROPOSED**
13 **MODIFICATIONS TO THE HARRY ALLEN GAS PLANT**

14 **20. Q Please provide relevant background on the proposed gas Harry Allen plant**
15 **modification.**

16 A. The Company is proposing to modify the combustion turbine at the Harry Allen
17 Combined Cycle Plant. Harry Allen is a 484 MW combined cycle plant located 24
18 miles northeast of Las Vegas, Nevada. The plant was built in 2011 and is scheduled to
19 retire in 2046.²⁰

20 This is the sixth gas plant the Company hopes to modify. As shown in Table 6 below,
21 the Company already installed modifications at the Walter Higgins combined cycle

¹⁹ Phase I Direct Testimony of Gary Cameron at 7-8, Q&A 13.

²⁰ *Id.* at 6 (pdf 135) fig.GEN-1.

1 plant and Chuck Lenzie Block 1 plant in 2020 and 2021 respectively. The Company
 2 just received approval to modify three additional units at the Chuck Lenzie Block 2,
 3 Silverhawk, and Tracy plants which the Company asserts will be completed by the
 4 summer of 2022.²¹ These modifications would increase capacity by approximately 146
 5 MW.

6 **Table 5: Completed and planned combustion turbine modifications**

Unit	Pre- modification summer peak capacity (MW)	Summer peak capacity addition (MW)	Post- modification summer peak capacity (MW)	Upgrade year (*proposed)	Depreciation- based retirement date
Completed Modifications					
Walt Higgins CC	545	59	604	2020	2039
Chuck Lenzie 1	585	40	625	2021	2041
Approved Modifications					
Silverhawk	560	70	630	2022	2039
Chuck Lenzie 2	585	40	625	2022	2041
Tracy 8, 9, 10	553	36	589	2022	2043
Proposed Modifications					
Harry Allen CC	510	45	555	2023*	2046
Total	3,338	290	3,628		

7 *Source: NVE IRP Application. Vol. 2, Application at 26 (pdf 29); NVE IRP Application. Vol. 14, Supply*
 8 *Side Narrative at 6 (pdf 135), fig. GEN-1.*

9 **21. Q. Did the Company analyze the Harry Allen modifications separately from**
 10 **the three expedited requests in Phase I?**

11 A. No. NV Energy provided a single justification for all four of the gas plant
 12 modifications proposed in this IRP, even though the Harry Allen plant would be
 13 modified a year later. Because the Company conducted a single, generic analysis for

²¹ Order Granting Phase I Application, Docket Nos. 21-06001 and 21-06002 (Sept. 28, 2021).

1 all four modification proposals, my analysis of the Harry Allen modifications largely
2 overlaps with the concerns I raised in Phase I.

3 **22. Q. What distinguishes the Commission’s review of the Harry Allen**
4 **modifications from the expedited review it already completed in Phase I of**
5 **this proceeding?**

6 A. There is one major difference that distinguishes the Harry Allen modifications from
7 those the Commission already approved in Phase I: the Harry Allen modifications
8 won’t be available until May 2023. This is significant because many of NV Energy’s
9 justifications for the expedited approval in Phase I, including the need to rush review
10 and the availability of alternative resources, do not apply.

11 **23. Q. Do the Company’s analyses adequately support the need for the proposed**
12 **modifications?**

13 A. No. The Company generally described a need to avoid curtailments and address
14 renewable integration on its system but provided no specific analysis on why this
15 modification was necessary. Instead, the Company stated only:

16 The Companies have identified and evaluated two areas of concern:

17 First, the events from the summer of 2020 demonstrate that external
18 resources may no longer be as readily available as in previous years. The
19 evaluation reviewed curtailments from August 17-23, 2020 for the hours
20 ending 1700-2200. A total of 7,111 MW was curtailed and 5,113 MW or
21 72 percent were from day-ahead or real-time products.

22 Second, due to the development of portfolios with large quantities of
23 variable renewable resources in which available resources drop rapidly in
24 the evening hours, producing larger open positions in non-peak load hours.
25 As a result, the Companies have evaluated several options to reliably meet
26 their resource needs. Upgrades the CTs at Chuck Lenzie Power Block,

1 Tracy, Silverhawk, and Harry Allen will assist in alleviating a portion of
2 those resource needs.²²

3 **24. Q. Did the Company evaluate the cost of the proposed modifications relative**
4 **to alternative resource options?**

5 A. No. As I discussed in my Phase 1 testimony, NV Energy conducted a screening
6 analysis using its capital expense recovery (“CER”) model but did not conduct a
7 robust modeling exercise that tested alternative resource build options.²³ Instead, the
8 Company ran its production cost model with (change case) and without (base case)²⁴
9 the batteries (three grid-tied battery storage projects totaling 66 MW of new capacity
10 and 264 MWh of energy storage to Sierra Pacific Power’s system in 2023),²⁵ plus all
11 the combustion turbine modifications (three that received preliminary approval in
12 2022 and Harry Allen in 2023). The model was allowed to dispatch and choose market
13 energy to fill the gap.²⁶ Based on this analysis, NV Energy found that the 30-year
14 present worth revenue requirement was \$44 million less for the scenario with the
15 resources than without.²⁷

²² NVE Response to SC-NRDC DR 1-06(a) (provided as Attachment DG-2).

²³ NVE IRP Application, Vol. 2, Integrated Resource Plan Direct Testimony of Anita Hart at 21:15-23 [hereinafter “Hart IRP Direct”].

²⁴ *Id.* at 21:15-23.

²⁵ NVE IRP Application, Vol. 18, Energy Supply Plan Direct Testimony of Anita Hart at 9:2-22.

²⁶ NV Energy did not provide outputs from either the PROMOD or PLEXOS model that show what analysis the Company did as part of the screening analysis, and what alternative resource builds or dispatches the model was allowed to test. The Company only provided its CER model, which contains the annual total Costs from PROMOD by region and by scenario.

²⁷ Hart IRP Direct, *supra* note 21, at 21:19-22.

1 **25. Q. Did the screening analysis include any evaluation of the risks posed by the**
2 **gas projects?**

3 A. No. The Company conducted no sensitivity analysis and made no mention of risk
4 assessment. Continued expenditures at gas plants expose the Company, and critically
5 its ratepayers, to risks from gas price volatility and stranded asset risk if the asset
6 becomes uneconomic and uncompetitive (due to the implementation of a CO₂ price,
7 for example) before it has been fully depreciated. The Harry Allen plant has 25 years
8 of economic life remaining,²⁸ and these proposed modifications will simply add to the
9 plant's current undepreciated balance. Additionally, the Company evaluated the
10 economics of the proposed modification over 20 years. In the likely scenario that the
11 plant retires in less than 20 years, the cost of the modification will be costlier to
12 ratepayers than presented here. None of these risks were acknowledged or appeared to
13 factor into the Company's decision.

14 **26. Q. Does NV Energy have resource alternatives available for the summer of**
15 **2023 that were not available in the summer of 2022?**

16 A. Yes. NV Energy's justification for requesting expedited approval of the three gas plant
17 modifications in Phase 1 was that none of the responses from the 2020 all-source or
18 battery storage RFPs could be available by the summer of 2022. But that justification
19 breaks down when looking at the summer of 2023 instead. The Company's own data
20 shows that there were several battery storage projects (as well as several tolling

²⁸ NVE IRP Application. Vol. 14, Supply Side Narrative at 6 (pdf 135) fig.GEN-1.

1 agreements and gas plant asset purchases) that could be available by the summer of
2 2023.²⁹ With the Phase 1 approval of the three gas plant modifications, and the
3 availability of alternative resource options, i.e., battery storage from the RFPs, NV
4 Energy has no demonstrated need for this sixth gas plant modification. The Company
5 has not shown that modifying this plant would be the least cost option to serve
6 ratepayers relative to alternatives, such as battery storage, that can be online by the
7 summer of 2023.

8 **27. Q. Is the proposed modification at Harry Allen consistent with meeting the**
9 **state’s 2050 Net Zero goal?**

10 A. No. My research indicates the modification will hinder the state’s goals. The
11 installation of the proposed modifications will add 45 MW of summer peaking
12 capacity and add to the plant’s undepreciated plant balance. This will make it more
13 difficult to retire the plant, and essentially lock in Harry Allen’s entire 555 MW for 20
14 plus years. The more gas there is locked in, the fewer renewables the Company will
15 bring online; therefore, it will be harder for the Company to reach Nevada’s net zero
16 goal.

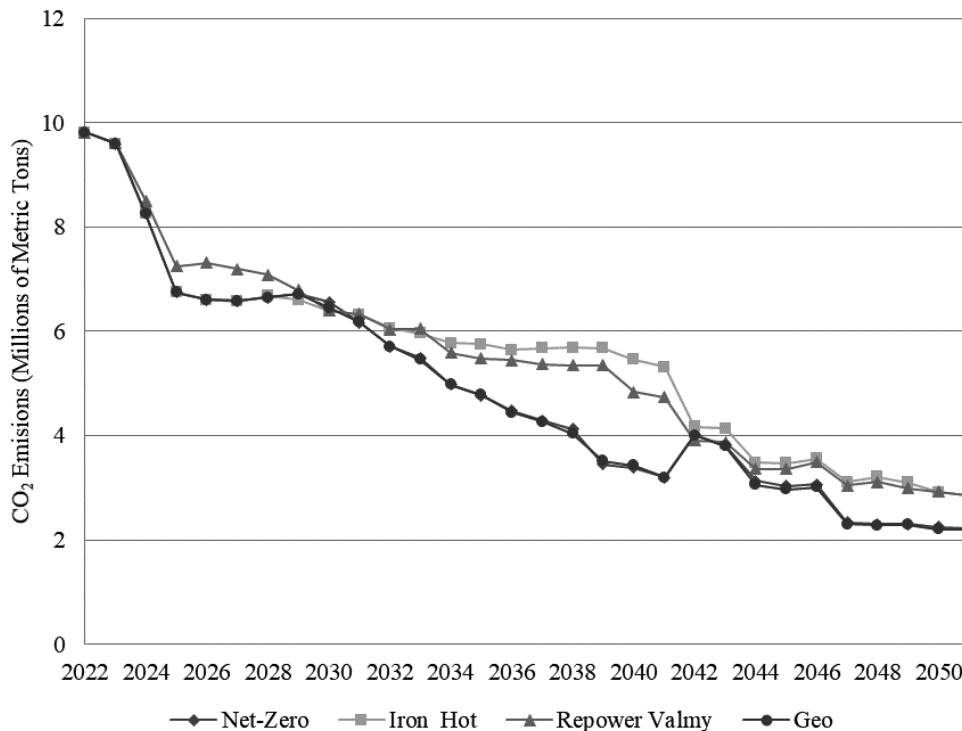
17 NV Energy already performed similar modifications at Walter Higgins in 2020 and
18 Chuck Lenzie Unit 1 in 2021 and now has approval to complete similar modifications
19 at Chuck Lenzie Unit 2, Tracy, and Silverhawk by 2022 (as shown in Table 6). If the
20 modification for Harry Allen are also approved, these six plants together will account

²⁹ Phase I Rebuttal Testimony of Shane Pritchard at 4 tbl.1.

1 for 3,628 MW of peak summer capacity. This represents 60 percent of NV Energy’s
2 current fossil peak summer capacity.

3 This means that NV Energy is planning to run—for at least 20 years—60 percent of its
4 current fossil generation capacity. Further, in order to comply with the net zero goal,
5 the Company will then have to retire and replace, or otherwise rely on unproven and
6 expensive technologies to mitigate the emissions from, 3,628 MW of capacity in less
7 than a decade. For this reason, it is not surprising that, as shown in Figure 1, NV
8 Energy only plans to reduce emissions 70 to 80 percent by 2050 to comply with the
9 state’s net zero regulations and does not currently plan to completely phase out fossil
10 resources.

11 **Figure 1: IRP Figure NERA-3 Carbon Dioxide Emissions, 2022–2051**



12
13 *Source: NVE IRP Application, Vol. 14, Supply Side Narrative at 158 (pdf 288) fig.NERA-3.*

1 **28. Q. What if NV Energy retires any of the combined cycle plants early?**

2 A. If the Company retires any of the six plants that it has already modified, or proposes to
3 modify, earlier than projected (or more specifically, earlier than 20 years from the
4 modification), this will reduce the Company’s cumulative emissions significantly.

5 But doing so will require the plant modifications to be paid off in fewer than the 20
6 years³⁰ that NVE modeled, which in turn will make the projects less economic.

7 Specifically, by decreasing the lifetime over which each proposed modification is paid
8 off, the project will become more expensive and ultimately less economic than NV
9 Energy claims it will be based on the analysis it files in this docket. The Company
10 produced no analysis that evaluated the economics of the upgrades over a shorter time
11 period than 20 years.

12 **29. Q. Please provide your conclusions regarding the emissions impact of the**
13 **proposed modification to Harry Allen and how it aligns with Nevada’s net**
14 **zero by 2050 goal?**

15 A. I find that the proposed modification to the Harry Allen plant will increase the
16 Company’s total emissions and will make it harder and costlier to ratepayers for the
17 Company to meet Nevada’s net zero by 2050 goal. With the recently approved
18 projects, and the modifications NV Energy recently made to two other combined cycle
19 plants, the Company is either locking ratepayers into over 3,628 MW of fossil
20 resources for another two decades or else basing its economic analysis on faulty

³⁰ NVE Workpapers, Conf. Attach. CER_screen_BLBFS – CONF.xlsx (assumed amortization period is not confidential per agreement with NV Energy, full document available pursuant to the protective agreement).

1 assumptions around the project lifetimes that make the projects look less costly than
2 they will actually be.

3 **VI. RECOMMENDATIONS FOR THE COMMISSION**

4 **30. Q. Please summarize your recommendations.**

5 A. Based on my findings, I recommend that the Commission:

- 6 1. Acknowledge and require the Company to study and disclose the impacts of plant
7 operations on the surrounding environmental justice communities in Las Vegas at
8 the Las Vegas Generation Station, Clark Generating Station, and Sun Peak
9 Generating Station.
- 10 2. Require NV Energy in the next IRP to incorporate consideration of the health
11 impacts of fossil fuel generation on the local communities and engage the
12 impacted communities in decisions about how to serve their load as existing fossil
13 plants retire and need to be replaced.
- 14 3. Reject NV Energy's request to extend the life of Valmy unit 1 beyond summer
15 2022. Alternatively, should the Commission decide to let NV Energy continue
16 operating the coal plant short term, the Commission should set an enforceable
17 retirement date for Valmy. That date should be no later than the end of 2024, or
18 whenever the Iron Point project comes online, whichever is first. The
19 Commission should also require annual reporting from NV Energy on each time
20 the plant is operated.
- 21 4. Not grant NV Energy's request for approval to modify the Harry Allen Combined
22 Cycle Plant.

1 **31. Q. Does this conclude your testimony?**

2 A. Yes.

Attachment DG-1

Devi Glick, Principal Associate

Synapse Energy Economics | 485 Massachusetts Avenue, Suite 3 | Cambridge, MA 02139 | 617-453-7050
dglick@synapse-energy.com

PROFESSIONAL EXPERIENCE

Synapse Energy Economics Inc., Cambridge, MA. *Principal Associate*, June 2021- Present; *Senior Associate*, April 2019 – June 2021; *Associate*, January 2018 – March 2019.

Conducts research and provides expert witness and consulting services on energy sector issues.

Examples include:

- Modeling for resource planning using PLEXOS and Encompass utility planning software to evaluate the reasonableness of utility IRP modeling.
- Modeling for resource planning to explore alternative, lower-cost and lower-emission resource portfolio options.
- Providing expert testimony in rate cases on the prudence of continued investment in, and operation of, coal plants based on the economics of plant operations relative to market prices and alternative resource costs.
- Providing expert testimony and analysis on the reasonableness of utility coal plant commitment and dispatch practice in fuel and power cost adjustment dockets.
- Serving as an expert witness on avoided cost of distributed solar PV and submitting direct and surrebuttal testimony regarding the appropriate calculation of benefit categories associated with the value of solar calculations.
- Reviewing and assessing the reasonableness of methodologies and assumptions relied on in utility IRPs and other long-term planning documents for expert report, public comments, and expert testimony.
- Evaluating utility long-term resource plans and developing alternative clean energy portfolios for expert reports.
- Co-authoring public comments on the adequacy of utility coal ash disposal plans, and federal coal ash disposal rules and amendments.
- Analyzing system-level cost impacts of energy efficiency at the state and national level.

Rocky Mountain Institute, Basalt, CO. August 2012 – September 2017

Senior Associate

- Led technical analysis, modeling, training and capacity building work for utilities and governments in Sub-Saharan Africa around integrated resource planning for the central electricity grid energy. Identified over one billion dollars in savings based on improved resource-planning processes.
- Represented RMI as a content expert and presented materials on electricity pricing and rate design at conferences and events.

-
- Led a project to research and evaluate utility resource planning and spending processes, focusing specifically on integrated resource planning, to highlight systematic overspending on conventional resources and underinvestment and underutilization of distributed energy resources as a least-cost alternative.

Associate

- Led modeling analysis in collaboration with NextGen Climate America which identified a CO2 loophole in the Clean Power Plan of 250 million tons, or 41 percent of EPA projected abatement. Analysis was submitted as an official federal comment which led to a modification to address the loophole in the final rule.
- Led financial and economic modeling in collaboration with a major U.S. utility to quantify the impact that solar PV would have on their sales and helped identify alternative business models which would allow them to recapture a significant portion of this at-risk value.
- Supported the planning, content development, facilitation, and execution of numerous events and workshops with participants from across the electricity sector for RMI's Electricity Innovation Lab (eLab) initiative.
- Co-authored two studies reviewing valuation methodologies for solar PV and laying out new principles and recommendations around pricing and rate design for a distributed energy future in the United States. These studies have been highly cited by the industry and submitted as evidence in numerous Public Utility Commission rate cases.

The University of Michigan, Ann Arbor, MI. *Graduate Student Instructor*, September 2011 – July 2012

The Virginia Sea Grant at the Virginia Institute of Marine Science, Gloucester Point, VA. *Policy Intern*, Summer 2011

Managed a communication network analysis study of coastal resource management stakeholders on the Eastern Shore of the Delmarva Peninsula.

The Commission for Environmental Cooperation (NAFTA), Montreal, QC. *Short Term Educational Program/Intern*, Summer 2010

Researched energy and climate issues relevant to the NAFTA parties to assist the executive director in conducting a GAP analysis of emission monitoring, reporting, and verification systems in North America.

Congressman Tom Allen, Portland, ME. *Technology Systems and Outreach Coordinator*, August 2007 – December 2008

Directed Congressman Allen's technology operation, responded to constituent requests, and represented the Congressman at events throughout southern Maine.

EDUCATION

The University of Michigan, Ann Arbor, MI

Master of Public Policy, Gerald R. Ford School of Public Policy, 2012

Master of Science, School of Natural Resources and the Environment, 2012

Masters Project: *Climate Change Adaptation Planning in U.S. Cities*

Middlebury College, Middlebury, VT

Bachelor of Arts, 2007

Environmental Studies, Policy Focus; Minor in Spanish

Thesis: *Environmental Security in a Changing National Security Environment: Reconciling Divergent Policy Interests, Cold War to Present*

PUBLICATIONS

Glick, D. *Synapse Comments and Surreply Comments to the Minnesota Public Utility Commission in response to Otter Tail Power's 2021 Compliance Filing* Docket E-999/CI-19-704. Synapse Energy Economics for the Sierra Club.

Eash-Gates, P., D. Glick, S. Kwok, R. Wilson. 2020. *Orlando's Renewable Energy Future: The Path to 100 Percent Renewable Energy by 2020*. Synapse Energy Economics for the First 50 Coalition.

Eash-Gates, P., B. Fagan, D. Glick. 2020. *Alternatives to the Surry-Skiffes Creek 500 kV Transmission Line*. Synapse Energy Economics for the National Parks Conservation Association.

Biewald, B., D. Glick, J. Hall, C. Odom, C. Roberto, R. Wilson. 2020. *Investing in Failure: How Large Power Companies are Undermining their Decarbonization Targets*. Synapse Energy Economics for Climate Majority Project.

Glick, D., D. Bhandari, C. Roberto, T. Woolf. 2020. *Review of benefit-cost analysis for the EPA's proposed revisions to the 2015 Steam Electric Effluent Limitations Guidelines*. Synapse Energy Economics for Earthjustice and Environmental Integrity Project.

Camp, E., B. Fagan, J. Frost, N. Garner, D. Glick, A. Hopkins, A. Napoleon, K. Takahashi, D. White, M. Whited, R. Wilson. 2019. *Phase 2 Report on Muskrat Falls Project Rate Mitigation, Revision 1 – September 25, 2019*. Synapse Energy Economics for the Board of Commissioners of Public Utilities, Province of Newfoundland and Labrador.

Camp, E., A. Hopkins, D. Bhandari, N. Garner, A. Allison, N. Peluso, B. Havumaki, D. Glick. 2019. *The Future of Energy Storage in Colorado: Opportunities, Barriers, Analysis, and Policy Recommendations*. Synapse Energy Office for the Colorado Energy Office.

Glick, D., B. Fagan, J. Frost, D. White. 2019. *Big Bend Analysis: Cleaner, Lower-Cost Alternatives to TECO's Billion-Dollar Gas Project*. Synapse Energy Economics for Sierra Club.

Glick, D., F. Ackerman, J. Frost. 2019. *Assessment of Duke Energy's Coal Ash Basin Closure Options Analysis in North Carolina*. Synapse Energy Economics for the Southern Environmental Law Center.

Glick, D., N. Peluso, R. Fagan. 2019. *San Juan Replacement Study: An alternative clean energy resource portfolio to meet Public Service Company of New Mexico's energy, capacity, and flexibility needs after the retirement of the San Juan Generating Station*. Synapse Energy Economics for Sierra Club.

Suphachalasai, S., M. Touati, F. Ackerman, P. Knight, D. Glick, A. Horowitz, J.A. Rogers, T. Amegroud. 2018. *Morocco – Energy Policy MRV: Emission Reductions from Energy Subsidies Reform and Renewable Energy Policy*. Prepared for the World Bank Group.

Camp, E., B. Fagan, J. Frost, D. Glick, A. Hopkins, A. Napoleon, N. Peluso, K. Takahashi, D. White, R. Wilson, T. Woolf. 2018. *Phase 1 Findings on Muskrat Falls Project Rate Mitigation*. Synapse Energy Economics for Board of Commissioners of Public Utilities, Province of Newfoundland and Labrador.

Allison, A., R. Wilson, D. Glick, J. Frost. 2018. *Comments on South Africa 2018 Integrated Resource Plan*. Synapse Energy Economics for Centre for Environmental Rights.

Hopkins, A. S., K. Takahashi, D. Glick, M. Whited. 2018. *Decarbonization of Heating Energy Use in California Buildings: Technology, Markets, Impacts, and Policy Solutions*. Synapse Energy Economics for the Natural Resources Defense Council.

Knight, P., E. Camp, D. Glick, M. Chang. 2018. *Analysis of the Avoided Costs of Compliance of the Massachusetts Global Warming Solutions Act*. Supplement to 2018 AESC Study. Synapse Energy Economics for Massachusetts Department of Energy Resources and Massachusetts Department of Environmental Protection.

Fagan, B., R. Wilson, S. Fields, D. Glick, D. White. 2018. *Nova Scotia Power Inc. Thermal Generation Utilization and Optimization: Economic Analysis of Retention of Fossil-Fueled Thermal Fleet to and Beyond 2030 – M08059*. Prepared for Board Counsel to the Nova Scotia Utility Review Board.

Ackerman, F., D. Glick, T. Vitolo. 2018. *Report on CCR proposed rule*. Prepared for Earthjustice.

Lashof, D. A., D. Weiskopf, D. Glick. 2014. *Potential Emission Leakage Under the Clean Power Plan and a Proposed Solution: A Comment to the US EPA*. NextGen Climate America.

Smith, O., M. Lehrman, D. Glick. 2014. *Rate Design for the Distribution Edge*. Rocky Mountain Institute.

Hansen, L., V. Lacy, D. Glick. 2013. *A Review of Solar PV Benefit & Cost Studies*. Rocky Mountain Institute.

TESTIMONY

North Carolina Utilities Commission (Docket No. E-7, Sub 1250): Direct Testimony of Devi Glick in the Matter of Application Duke Energy Carolinas, LLC Pursuant to §N.C.G.S 62-133.2 and Commission Rule R8-5 Relating to Fuel and Fuel-Related Charge Adjustments for Electric Utilities. On behalf of Sierra Club. May 17, 2021.

Public Utility Commission of Texas (PUC Docket No. 51415): Direct Testimony of Devi Glick in the application of Southwestern Electric Power Company for authority to change rates. On behalf of Sierra Club. March 31, 2021.

Michigan Public Service Commission (Docket No. U-20804): Direct Testimony of Devi Glick in the application of Indiana Michigan Power Company for approval of a Power Supply Cost Recovery Plan and factors (2021). On behalf of Sierra Club. March 12, 2021.

Public Utility Commission of Texas (PUC Docket No. 50997): Direct Testimony of Devi Glick in the application of Southwestern Electric Power Company for authority to reconcile fuel costs for the period May 1, 2017- December 31, 2019. On behalf of Sierra Club. January 7, 2021.

Michigan Public Service Commission (Docket No. U-20224): Direct Testimony of Devi Glick in the application of Indiana Michigan Power Company for Reconciliation of its Power Supply Cost Recovery Plan (Case No. U-20223) for the 12-month period ending December 31, 2019. On behalf of Sierra Club. October 23, 2020.

Public Service Commission of Wisconsin (Docket No. 3270-UR-123): Surrebuttal Testimony of Devi Glick in the application of Madison Gas and Electric Company for authority to change electric and natural gas rates. On behalf of Sierra Club. September 29, 2020.

Public Service Commission of Wisconsin (Docket No. 6680-UR-122): Surrebuttal Testimony of Devi Glick in the application of Wisconsin Power and Light Company for approval to extend electric and natural gas rates into 2021 and for approval of its 2021 fuel cost plan. On behalf of Sierra Club. September 21, 2020.

Public Service Commission of Wisconsin (Docket No. 3270-UR-123): Direct Testimony and Exhibits of Devi Glick in the application of Madison Gas and Electric Company for authority to change electric and natural gas rates. On behalf of Sierra Club. September 18, 2020.

Public Service Commission of Wisconsin (Docket No. 6680-UR-122): Direct Testimony and Exhibits of Devi Glick in the application of Wisconsin Power and Light Company for approval to extend electric and natural gas rates into 2021 and for approval of its 2021 fuel cost plan. On behalf of Sierra Club. September 8, 2020.

Indiana Utility Regulatory Commission (Cause No. 38707-FAC125): Direct Testimony and Exhibits of Devi Glick in the application of Duke Energy Indiana, LLC for approval of a change in its fuel cost adjustment for electric service. On behalf of Sierra Club. September 4, 2020.

Indiana Utility Regulatory Commission (Cause No. 38707-FAC123 S1): Direct Testimony and Exhibits of Devi Glick in the Subdocket for review of Duke Energy Indian, LLC's Generation Unit Commitment Decisions. On behalf of Sierra Club. July 31, 2020.

Indiana Utility Regulatory Commission (Cause No. 38707-FAC124): Direct Testimony and Exhibits of Devi Glick in the application of Duke Energy Indiana, LLC for approval of a change in its fuel cost adjustment for electric service. On behalf of Sierra Club. June 4, 2020.

Arizona Corporation Commission (Docket No. E-01933A-19-0028): Rely to Late-filed ACC Staff Testimony of Devi Glick in the application of Tucson Electric Power Company for the establishment of just and reasonable rates. On behalf of Sierra Club. May 8, 2020.

Indiana Utility Regulatory Commission (Cause No. 38707-FAC123): Direct Testimony and Exhibits of Devi Glick in the application of Duke Energy Indiana, LLC for approval of a change in its fuel cost adjustment for electric service. On behalf of Sierra Club. March 6, 2020.

Texas Public Utility Commission (PUC Docket No. 49831): Direct Testimony of Devi Glick in the application of Southwestern Public Service Company for authority to change rates. On behalf of Sierra Club. February 10, 2020.

New Mexico Public Regulation Commission (Case No. 19-00170-UT): Testimony of Devi Glick in Support of Uncontested Comprehensive Stipulation. On behalf of Sierra Club. January 21, 2020.

Nova Scotia Utility and Review Board (Matter M09420): Expert Evidence of Fagan, B, D. Glick reviewing Nova Scotia Power's Application for Extra Large Industrial Active Demand Control Tariff for Port Hawkesbury Paper. Prepared for Nova Scotia Utility and Review Board Counsel. December 3, 2019.

New Mexico Public Regulation Commission (Case No. 19-00170-UT): Direct Testimony of Devi Glick regarding Southwestern Public Service Company's application for revision of its retail rates and authorization and approval to shorten the service life and abandon its Tolk generation station units. On behalf of Sierra Club. November 22, 2019.

North Carolina Utilities Commission (Docket No. E-100, Sub 158): Responsive testimony of Devi Glick regarding battery storage and PURPA avoided cost rates. On behalf of Southern Alliance for Clean Energy. July 3, 2019.

State Corporation Commission of Virginia (Case No. PUR-2018-00195): Direct testimony of Devi Glick regarding the economic performance of four of Virginia Electric and Power Company's coal-fired units and the Company's petition to recover costs incurred to company with state and federal environmental regulations. On behalf of Sierra Club. April 23, 2019.

Connecticut Siting Council (Docket No. 470B): Joint testimony of Robert Fagan and Devi Glick regarding NTE Connecticut's application for a Certificate of Environmental Compatibility and Public Need for the Killingly generating facility. On behalf of Not Another Power Plant and Sierra Club. April 11, 2019.

Public Service Commission of South Carolina (Docket No. 2018-3-E): Surrebuttal testimony of Devi Glick regarding annual review of base rates of fuel costs for Duke Energy Carolinas. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. August 31, 2018.

Public Service Commission of South Carolina (Docket No. 2018-3-E): Direct testimony of Devi Glick regarding the annual review of base rates of fuel costs for Duke Energy Carolinas. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. August 17, 2018.

Public Service Commission of South Carolina (Docket No. 2018-1-E): Surrebuttal testimony of Devi Glick regarding Duke Energy Progress' net energy metering methodology for valuing distributed energy resources system within South Carolina. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. June 4, 2018.

Public Service Commission of South Carolina (Docket No. 2018-1-E): Direct testimony of Devi Glick regarding Duke Energy Progress' net energy metering methodology for valuing distributed energy resources system within South Carolina. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. May 22, 2018.

Public Service Commission of South Carolina (Docket No. 2018-2-E): Direct testimony of Devi Glick on avoided cost calculations and the costs and benefits of solar net energy metering for South Carolina Electric and Gas Company. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. April 12, 2018.

Public Service Commission of South Carolina (Docket No. 2018-2-E): Surrebuttal testimony of Devi Glick on avoided cost calculations and the costs and benefits of solar net energy metering for South Carolina Electric and Gas Company. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. April 4, 2018.

Resume updated August 2021

Attachment DG-2

NV Energy

RESPONSE TO INFORMATION REQUEST

DOCKET NO: 21-06001 **REQUEST DATE:** 07-12-2021
REQUEST NO: SCNRDC 1-06 **KEYWORD:** vol 14 pg 145-152; upgrade
CTs chuck lenzie power block,
tracy, silverhawk, harr
REQUESTER: Glick **RESPONDER:** Lescenski, John

REQUEST:

Reference: Pages 145-152 of Volume 14 of the Joint IRP

Question: Regarding the Company's decision to upgrade the CTs at Chuck Lenzie Power Block, Tracy, Silverhawk, and Harry Allen discussed on pages 145-152 of Volume 14 of the Joint IRP:

- a. Has the Company conducted any analysis on its need for the services provided by the proposed upgrades?
 - i. If no, explain why not.
 - ii. If yes, identify the date and nature of such analysis.
 - iii. If yes, provide all reports or other documentation of the results of each such analysis and any supporting calculations, data, documents, modeling inputs and output files, and work papers associated with such analysis.

- b. Indicate whether the Company has conducted any economic or net present value analysis of upgrading these units relative to other supply- and demand-side resource options.
 - i. If no, explain why not.
 - ii. If yes, identify the date and nature of such analysis.
 - iii. If yes, provide all reports or other documentation of the results of each such analysis and any supporting calculations, data, documents, modeling inputs and output files, and work papers associated with such analysis.

- c. Describe the analysis or decision-making process the Company used in deciding to upgrade the CTs.

- d. Indicate the projected lifetime of the CT upgrades.
- e. Indicate the projected retirement dates of each of the CC's being upgraded.

f. Indicate whether the Company has applied for and received all new and/or revised air or water permits necessary to allow all of the upgrades to proceed at each plant.

i. If yes, indicate all permits that the Company has either applied for and/or received.

ii. If no, detail all outstanding permits needed by the Company, the steps that the Company needs to take to receive the permits, and the anticipated timeline to complete the process.

g. Indicate whether the Company currently has sufficient natural gas supply and transportation to all plants that are being upgraded.

i. If no, indicate whether the costs provided in Table GEN-3 on pages 145- 146 of Volume 14 of the Joint IRP, Large Turbine Upgrades include all costs associated with expanding the infrastructure and procuring the necessary gas supply. If Table GEN-3 does not include all costs, provide the anticipated costs beyond what is included in the Table GEN-3.

RESPONSE CONFIDENTIAL (yes or no): No

TOTAL NUMBER OF ATTACHMENTS: None

RESPONSE:

a. Yes, the Companies have identified and evaluated two areas of concern: First, the events from the summer of 2020 demonstrate that external resources may no longer be as readily available as in previous years. The evaluation reviewed curtailments from August 17-23, 2020 for the hours ending 1700-2200. A total of 7,111 MW was curtailed and 5,113 MW or 72 percent were from day-ahead or real-time products.

Second, due to the development of portfolios with large quantities of variable renewable resources in which available resources drop rapidly in the evening hours, producing larger open positions in non-peak load hours. As a result, the Companies have evaluated several options to reliably meet their resource needs. Upgrades the CTs at Chuck Lenzie Power Block, Tracy, Silverhawk, and Harry Allen will assist in alleviating a portion of those resource needs.

i. n/a

ii. The Companies performed analysis of the events from the summer of 2020 and have reported the results of that analysis and proposed solutions to the Public Utilities Commission of Nevada ("Commission") in this instant filing along with Docket Nos. 20-08014, 20-12020, and 21-04036.

iii. Please see dockets referenced in response 1.ii.

b. Other short-term resource options are not currently available in NV Energy's system. Resources outside of NV Energy's system have been subject to curtailment during system emergencies and would not have been available to serve load in August 2020 and July 2021 when system conditions were critical in the region. These upgrades provide peak resources and additional capacity inside NV Energy's system

c. see part a. above

d. The CT upgrades are designed to be available for the remaining life of the CTs. As noted in Figure GEN 1 of the Supply Side narrative, the projected retirement dates are:

Chuck Lenzie Block 2 2041

Harry Allen CC 2046

Silverhawk 2039

Tracy CC 2043

e. See part d. of this response above

f. The Companies have submitted all necessary applications to complete the turbine upgrades, except as noted below for Harry Allen.

i. Chuck Lenzie Block 2

- Permit modifications applied for and been received.

- Block 2 construction planned for Spring 2022

Silverhawk

- Permit modification application has been submitted, expected issuance from Clark County DAQ by end of 2021.

Tracy 8-9

- Permit modification application has been submitted, expected issuance from NDEP-BAPC by end of 2021.

Harry Allen 5-6

- Pending project approval

- Have not started any application process yet

g. As noted in the Supply Plan narrative in this Docket: The upgrades may require additional natural gas capacity and transportation at the Chuck Lenzie and Silverhawk plants. The Companies are working with Kern River to upgrade the metering equipment at both facilities to meet the full load requirements. The scope of work for Chuck Lenzie includes the installation of an additional fuel separator and ultrasonic flow meter leveraging a spare pipe run. The scope of work for Silverhawk includes the replacement of the existing fuel meter with a high capacity meter. The estimates above include estimates for supply infrastructure upgrades that could be required. Potential increases in natural gas transportation are discussed in the 2021 Energy Supply Plan.

Attachment DG-3

REDACTED VERSION

REDACTED

Table 1: Projected capacity factor and fixed costs for Las Vegas gas plants

	Projected average capacity factor	Projected average annual FOM (\$Million)	Modeled retirement date
Clark Generating Station	█%	█	2038
Las Vegas Generating Station	█%	█	2039
Sun Peak Generating Station	█%	█	2031

Source: NVE IRP Application, Vol. 16, Confidential Table ECON-3

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

AFFIRMATION

STATE OF NEVADA)
 : ss.
CARSON CITY)

Pursuant to the requirements of NRS 53.045(1) and NAC 703.710, I, Devi Glick, swear that I am the person identified in the attached Direct Testimony and that such testimony was prepared by me or under my direct supervision; that the answers and information set forth therein are true to the best of my knowledge and belief; and that if asked the questions set forth therein, my answers thereto would, under oath, be the same.

I declare under penalty of perjury under the law of the State of Nevada that the foregoing is true and correct.

Executed on: 10/05/2021

Devi Glick