
O L S O N , B Z D O K & H O W A R D



July 6, 2022

Ms. Lisa Felice
Michigan Public Service Commission
7109 W. Saginaw Hwy.
P. O. Box 30221
Lansing, MI 48909

Via E-Filing

RE: MPSC Case N^o: U-21189

Dear Ms. Felice:

The following is attached for paperless electronic filing:

PUBLIC Direct Testimony of Tyler Comings on behalf of Sierra Club

Exhibits SC-1 thru SC-7

Proof of Service

NOTE: Confidential versions will be served upon those with a signed NDA on file

Sincerely,

Christopher M. Bzdok
chris@envlaw.com

xc: Parties to Case No. U-21189

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **INDIANA
MICHIGAN POWER COMPANY** for
approval of its integrated resource plan pursuant
to MCL 460.6t, avoided costs and for other
relief

U-21189

PUBLIC

DIRECT TESTIMONY OF TYLER COMINGS

ON BEHALF OF

SIERRA CLUB

July 6, 2022

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1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. Please state your name, business address, and position.**

3 A. My name is Tyler Comings. I am a Senior Researcher at Applied Economics Clinic, located
4 at 1012 Massachusetts Avenue, Arlington, Massachusetts.

5 **Q. Please describe Applied Economics Clinic.**

6 A. The Applied Economics Clinic is a 501(c)(3) non-profit consulting group. Founded in
7 February 2017, the Clinic provides expert testimony, analysis, modeling, policy briefs, and
8 reports for public interest groups on the topics of energy, environment, consumer
9 protection, and equity, while providing on-the-job training to a new generation of technical
10 experts.

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

12 A. I am testifying on behalf of Sierra Club.

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

14 A. I have 16 years of experience in economic research and consulting. At Applied Economics
15 Clinic, I focus on energy system planning, costs of regulatory compliance, wholesale
16 electricity markets, utility finance, and economic impact analyses. I have provided
17 testimony on these topics in Arizona, Colorado, the District of Columbia, Hawaii, Indiana,
18 Kentucky, Maryland, Michigan, Missouri, New Jersey, New Mexico, Ohio, Oklahoma,
19 West Virginia, and Nova Scotia (Canada). I am also a Certified Rate of Return Analyst
20 (CRRA) and member of the Society of Utility and Regulatory Financial Analysts
21 (SURFA).

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1 I have provided expertise for many public-interest clients including: American Association
2 of Retired Persons (AARP), Appalachian Regional Commission, Citizens Action Coalition
3 of Indiana, City of Atlanta, Consumers Union, District of Columbia Office of the People’s
4 Counsel, District of Columbia Government, Earthjustice, Energy Future Coalition, Hawaii
5 Division of Consumer Advocacy, Illinois Attorney General, Maryland Office of the
6 People’s Counsel, Massachusetts Energy Efficiency Advisory Council, Massachusetts
7 Division of Insurance, Michigan Agency for Energy, Montana Consumer Counsel,
8 Mountain Association for Community Economic Development, Nevada State Office of
9 Energy, New Jersey Division of Rate Counsel, New York State Energy Research and
10 Development, Nova Scotia Utility and Review Board Counsel, Rhode Island Office of
11 Energy Resources, Sierra Club, Southern Environmental Law Center, U.S. Department of
12 Justice, Vermont Department of Public Service, West Virginia Consumer Advocate
13 Division, and Wisconsin Department of Administration.

14 I was previously employed at Synapse Energy Economics, where I provided expert
15 testimony and reports on coal plant economics and utility system planning. Prior to that, I
16 performed research on consumer finance and behavioral economics at Ideas42 and
17 conducted economic impact and benefit-cost analysis of energy and transportation
18 investments at EDR Group (now EBP).

19 I hold a B.A. in Mathematics and Economics from Boston University and an M.A. in
20 Economics from Tufts University.

21 My full resume is attached as Exhibit SC-1

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1 **Q. Have you previously testified before the Michigan Public Service Commission?**

2 A. Yes, on seven other occasions. I filed testimony in the current DTE Electric Company's
3 rate case (No. U-20836). I testified in Consumers Energy Company's 2021 Integrated
4 Resource Plan (IRP) case (No. U-21090) and Consumers' 2020 and 2021 rate cases (No.
5 U-20697 and U-20963). In January of 2020, I submitted testimony on the Indiana Michigan
6 Power Company (I&M) 2018-2019 IRP (No. U-20591). In 2018, I submitted testimony on
7 Consumers' 2018 IRP (No. U-20165) and testified in Consumers' 2018 rate case (No. U-
8 20134).

9 **Q. What is the purpose of your testimony?**

10 A. My testimony focuses on Indiana Michigan Power Company's ("I&M" or "the Company")
11 commitments to coal generation from the Clifty Creek and Kyger Creek plants owned by
12 the Ohio Valley Electric Corporation and its subsidiary (the "OVEC plants"). I address
13 errors made by the Company (including in modeling costs of the OVEC plants), address
14 flaws in I&M's treatment of new replacement resources, and offer recommendations on
15 how the Commission should consider the status of the Company's OVEC contract.

16 **Q. What information did you review in preparing your testimony in this case?**

17 A. I reviewed the Company's testimony, exhibits, workpapers, and discovery responses.

18 **Q. Are you sponsoring any exhibits in this proceeding?**

19 A. Yes, I sponsor Exhibits SC-1 through SC-8

20 Exhibit SC-1: Resume of Tyler Comings

21 Exhibit SC-2: SC-08-01 w Attachment

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1 Exhibit SC-3: SC-03-10 w Attachments
2 Exhibit SC-4: AG-7-53
3 Exhibit SC-5: SC-1-10 Supplemental
4 Exhibit SC-6C: SC-1-09 CONFIDENTIAL
5 Exhibit SC-7C: SC-1-10 CONFIDENTIAL

6 **Q. Please describe OVEC.**

7 A. The Ohio Valley Electric Corporation (OVEC) is an independent power producer that is
8 owned a joint venture by 12 utilities in Ohio, Indiana, Michigan, Kentucky, Virginia, and
9 West Virginia—including AEP, I&M’s parent company, which is the largest shareholder
10 with 43.47 percent.¹ OVEC owns and operates the Kyger Creek coal plant (1.1 GW
11 capacity, located in Cheshire, Ohio) and operates and owns through its subsidiary, Indiana-
12 Kentucky Electric Corporation (IKEC), the Clifty Creek coal plant (1.3 GW capacity,
13 located in Madison, Indiana).² These two coal plants were both built in the 1950’s and are
14 among the oldest operating in the U.S. today. OVEC supplies the power from these plants
15 to utilities (called “Sponsoring Companies”) through a long-term contract called the Inter-
16 Company Power Agreement (ICPA). Together, the Sponsoring Companies are responsible
17 for the fixed and variable costs of OVEC. In turn, OVEC bills the Sponsoring Companies
18 variable, demand, and transmission charges.

¹ Ex. SC-2, Response to Data Request No. Staff 8-01 and Attachment 1 (OVEC Annual Report for 2020), p. 1 (exhibit p. 2); Ex. SC-3, discovery response SC 3-10.

² See: <https://www.ovec.com/index.php>

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1 **Q. Please describe the ICPA.**

2 A. The Inter-Company Power Agreement (ICPA) was initially entered in 1953 and was set to
3 expire on December 31, 2005. In 2004, the parties to the ICPA agreed among themselves
4 to extend the ICPA to 2026. I&M did not seek approval from the MPSC for the decision
5 to enter into the contract around the time that decision was made in 2004. In September
6 2010, the sponsors again agreed to a revised ICPA that extended its term until 2040.³
7 Therefore, unless they take further actions with respect to the ICPA, I&M and the other
8 Sponsoring Companies are obligated to cover the costs of the OVEC plants through 2040.
9 The Clifty Creek and Kyger Creek Plants will each be 85 years old by the time the ICPA
10 expires. Once again, I&M did not request or receive Commission approval for its decision
11 to enter into a revised ICPA contemporaneous with its decision to sign that contract in
12 2010.

13 **Q. Please describe I&M's share of the OVEC plants.**

14 A. As part of the ICPA, the Company has rights to a 7.85 percent share of energy and capacity
15 from the OVEC plants, which participate in the PJM energy and capacity markets. The
16 Company is also obligated to pay the variable and fixed costs of these units, such as large
17 capital projects. I&M's preferred plan in this case assumes that the contract is kept through
18 2040; but the Company also modeled a portfolio that assumed terminating the contract in
19 2022 and 2030.

³ Direct Testimony of Jason M. Stegall, p.3, line 13 through p.4, line 14.

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1 **Q. Describe the relationship between AEP, I&M, OVEC and IKEC.**

2 A. AEP subsidiaries, including I&M, together hold the largest participation share in the OVEC
3 plants under the ICPA at 43.47 percent.⁴ AEP Service Corp., another subsidiary of AEP,
4 procures all of the fuel for the OVEC plants. AEP holds three of the seats on the OVEC
5 Board of Directors, which is the most seats held by any single entity.⁵ AEP holds one seat
6 and I&M holds three seats on the board of IKEC.⁶ Those four seats provide AEP and I&M
7 with majority voting control of IKEC and, thereby, of the Clifty Creek plant.⁷ AEP's
8 Executive Vice President of Generation, Dr. Paul Chodak, is the President of both OVEC
9 and IKEC.⁸ Prior to holding his current position at AEP, Dr. Chodak was President and
10 Chief Operating Officer of I&M.

11 **Q. Please summarize your findings and recommendations.**

12 A. I find that the Company has failed to justify charging customers for the OVEC plants'
13 energy and capacity through 2040—the end of the contract—as part of its preferred plan.
14 The early termination of this contract should be re-evaluated given the myriad problems

⁴ Ex. SC-2, OVEC Annual Report for 2020, p. 15 (exhibit p. 16); Ex. SC-3, discovery response SC 3-10.

⁵ Ex. SC-2, OVEC Annual Report for 2020, p. 45 (exhibit p. 46); Ex. SC-3, discovery response SC 3-10.

⁶ Ex. SC-2, OVEC Annual Report for 2020, p. 45 (exhibit p. 46); Ex. SC-3, discovery response SC 3-10.

⁷ Ex. SC-3, discovery response SC 3-10(c) and Attachment 1, p. 7 (“Every owner of the capital stock of the Corporation shall have the right, at every shareholders’ meeting, to one vote for each share of stock standing in his name on the books of the Corporation.”).

⁸ Ex. SC-2, OVEC Annual Report for 2020, p. 45 (exhibit p. 46).

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1 with I&M’s analysis, and this aspect of its preferred plan should be rejected for the
2 following reasons:

3 **1. The Company made fundamental calculation errors, including for the costs of**
4 **the OVEC plants.** I&M made key errors in its IRP modeling by often confusing
5 real and nominal dollars. In one error that applies to all portfolios modeled, the
6 Company used the incorrect discount rate in calculating the net present value (NPV)
7 revenue requirements—making all of its reported costs incorrect. It also
8 miscalculated the costs of the OVEC plants in three ways: 1) the Company
9 incorrectly adjusted the energy costs for inflation twice, leading the modeling
10 results to underestimate the energy costs of the plants; 2) the Company failed to
11 report the carbon emissions costs for the OVEC units in its modeling results; and
12 3) the Company’s analysis of OVEC contract termination costs incorrectly mixes
13 real and nominal dollars.

14 **2. The Company unfairly handicapped new resources costs in its modeling,**
15 **including unreasonable solar and solar-hybrid costs.** I&M’s modeling is
16 generally biased against new resource additions in favor of existing generation. The
17 Company again misconstrued nominal and real dollars by applying the nominal
18 weighted average cost of capital (WACC) to develop the capital costs of new
19 resources in real dollars in the model. The final costs of new resources are inflated;
20 in particular, the costs of solar and solar-battery hybrid projects as modeled by I&M
21 are substantially higher than indicated in responses to RFPs that I&M has issued
22 for these resources. In addition, the Company assumed that the federal investment

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1 tax credit (ITC) for solar and solar-battery hybrids would be passed through to
2 customers ratably over the life of the project, whereas in reality, if procuring a
3 power purchase agreement (PPA) for these resources, the credit would be felt
4 immediately. Both of these issues contribute to I&M's exorbitant costs for these
5 resources.

6 **3. The Company grossly inflated solar-battery hybrid costs through a**
7 **miscalculation.** I&M applied the fixed costs per kW of the solar-battery hybrids to
8 the wrong capacity level—grossly overstating the resource's costs. Because the
9 Aurora model optimizes on a cost-basis, it is possible that more of this resource
10 type would have been selected if the Company had modeled them correctly.

11 **4. The Company should re-evaluate exiting the ICPA given the many flaws in its**
12 **modeling, and customers should not be on the hook for ICPA contract**
13 **termination costs.** The forward-looking modeling in this case attempts to address
14 potential earlier termination of the ICPA but, as explained above, that modeling
15 included fundamental calculation errors—primarily by understating the costs of the
16 OVEC plants and overstating the costs of replacement resources. These errors need
17 to be rectified before a determination can be made whether to continue charging
18 ratepayers for the OVEC plants. Moreover, the Company has not gotten prior
19 approval from this Commission to continue its contractual obligations with OVEC
20 through 2040; the plants have had negative economic value to customers in recent
21 years; and the plants are unlikely to run until 2040 given that they are among the
22 oldest in the U.S. For these many reasons, the contract must be re-evaluated and—

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1 should the Company exit the contract earlier than 2040—any termination costs
2 associated with that exit should not be passed on to ratepayers.

3 **5. The Company’s preferred plan has the most carbon dioxide (CO₂) emissions**
4 **of any of plan modeled.** The Company scores portfolios for “sustainability” based
5 on CO₂ emissions reductions from 2005 to 2041, looking only at the first and last
6 years of that span. But this calculation ignores the emissions in the interim years.
7 When using the more reasonable metric of cumulative emissions, the preferred
8 plan—including continued reliance on OVEC until 2040—is the worst of the 16
9 plans presented by I&M.

10 **II. THE COMPANY HAS FAILED TO JUSTIFY KEEPING THE OVEC CONTRACT**

11 **Q. Please briefly summarize the Company’s IRP modeling process and its preferred**
12 **plan.**

13 A. The Company used the Aurora model to evaluate the costs of alternative plans for new
14 and existing resources, including: 1) forecasts of costs of building new replacement
15 resources such as solar PV, wind, battery storage, and natural gas units; 2) forecasts of
16 the costs of owning and operating existing units; 3) testing removal of select units from
17 its system, such as retirement of Rockport Unit 1 in 2024, 2025, 2026, and 2028 and the
18 extension of the life of the Cook nuclear plant; and 4) modeling the termination of the
19 Company’s contract for energy and capacity from the OVEC plants in 2022, 2030 and
20 2040 (the current contract end date). The Company developed portfolios in part through
21 the use of Aurora and then ran iterations of the costs of these portfolios to generate the

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1 NPV of customer costs. These portfolios were also scored based on several metrics such
2 as “rate stability” and “sustainability.”⁹

3 Ultimately, the Company’s preferred plan included the following resource choices:¹⁰

- 4 • Continuation of payment to the OVEC plants until the contract lapses in 2040
- 5 • Retirement of Rockport Unit 1 in 2028
- 6 • 1,600 MW of new wind
- 7 • 1,900 MW of new solar PV
- 8 • One new 60 MW/300MW solar battery hybrid
- 9 • One new 1,070 MW gas combined cycle (CC) plant
- 10 • 1,750 MW of new gas combustion turbines (CTs)
- 11 • No extension of the Cook nuclear plant’s life

12 **Q. Did the Company find that its preferred plan, including keeping the ICPA through**
13 **2040, was cheaper than terminating the contract in either 2022 or 2030?**

14 A. Yes. The Company estimated low and high costs of terminating the ICPA in 2022 and
15 2030, which were calculated outside of the Aurora model.¹¹ When taken at face value, the
16 Company’s analysis finds that the costs of the preferred plan are lower than the plans that
17 terminate the ICPA early.¹²

⁹ Exhibit No. IM-2 (MAB-2), p. 21-2.

¹⁰ *Id.*, p. 17-8.

¹¹ *Id.*, Stegall Direct, p.8, lines 6-19.

¹² Exhibit IM-30 (JMS-2), Stegall Direct, p.11, lines 19-21.

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1 **Q. How does the Company consider approval of the IRP as relating to approval of the**
2 **ICPA costs?**

3 A. The Company has stated that it is not directly requesting cost approval for the ICPA costs
4 in this case; but it contends that approval of the preferred plan (which includes staying in
5 the contract through 2040) “will support MPSC approval of future requests for cost
6 recovery through the PSCR.”¹³

7 **Q. Please summarize the miscalculations you found in the Company’s portfolio costs,**
8 **including in the costs of the OVEC units.**

9 A. Many of I&M’s errors come down to a misuse of real and nominal dollars. Real dollars are
10 those that are adjusted to exclude inflation while nominal dollars include inflation. Real
11 dollars for future years are typically presented based on one particular dollar year (also
12 called “constant dollars”) so that an apples-to-apples comparison can be made; while
13 nominal dollars represent those of the year being shown (also called “current year” dollars).
14 Whether using real or nominal dollars, it is crucial that there is consistency in how they are
15 treated and accuracy when translating between one and the other. Unfortunately, I&M
16 committed errors on both fronts—by 1) using the wrong discount rate to calculate the NPV
17 of customer costs in all of its plans; 2) incorrectly adjusting OVEC energy costs for
18 inflation that were already in real dollar terms—thus vastly understating those costs; and
19 3) mixing real and nominal dollars together when presenting the costs of terminating the
20 OVEC contract. I explain these errors in more detail in this section.

¹³ Exhibit SC-4, Company response to AG 7-53(a).

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1 **Q. Did the Company also commit an error involving carbon dioxide (CO₂) emission costs**
2 **for the OVEC units?**

3 A. Yes. The Company intended to apply a price for CO₂ emissions for all of its carbon-
4 emitting units starting in 2028. But the costs of these emissions at the OVEC units were
5 not incorporated in those plans' costs, which compounds the aforementioned
6 understatement of these units' energy costs coming out of the model.

7 **Q. Were there also flaws made by I&M in modeling the costs of new resources?**

8 A. Yes. If the Company had used reasonable new resource costs, it may have found that
9 replacement of the OVEC energy and capacity was favorable to the preferred plan of
10 charging ratepayers through 2040 for the OVEC plants. However, as I describe further
11 below, the Company's modeling was biased against new resources, in general, and
12 included other resource-specific errors that handicapped those resources versus existing
13 resources. This unfair treatment of new resources is problematic because it biases the
14 modeling results towards keeping existing generation.

15 **A. I&M miscalculated the costs of its portfolios, including the costs of operating**
16 **the OVEC units**

17 **Q. Did the Company properly calculate the NPV of its plans?**

18 A. No. When calculating a net present value, a nominal discount rate is used to discount
19 nominal dollars, and a real discount rate is used for real dollars. Consistency on this
20 approach is important for calculating the correct NPV. But when the Company calculated
21 the NPV of customer costs of its plans, it adjusted all categories of costs from nominal to
22 real 2019 dollars, which alone is not problematic; but the Company then proceeded to

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1 discount the real dollars using a nominal discount rate.¹⁴ This is a clear error as the
2 Company should have either kept the model outputs in nominal terms or used a real
3 discount rate if it wanted to discount real dollars.

4 **Q. What is the proper real discount rate to use for the Company's real dollar costs?**

5 A. The formula for the real discount rate is the following:

6
$$\frac{1 + \textit{nominal discount rate}}{1 + \textit{inflation rate}} - 1$$

7 The Company's nominal discount rate is the weighted average cost of capital (WACC)
8 which is 7.19 percent. The average annual inflation used by the Company from 2022
9 through 2041 is 2.3 percent. Applying these values to this formula, I calculate a real
10 discount rate of 4.78 percent. This should have been applied to the real dollar portfolio
11 costs—or, alternatively, the Company could have used its nominal rate (7.19%) and
12 discounted the nominal costs. One cannot mix and match these dollar concepts.

13 **Q. Did the Company properly calculate the energy costs at the OVEC units in their**
14 **modeling?**

15 A. No, there were two errors related to the energy costs of OVEC units which led the Company
16 to underestimate the costs of these units. First, the Company modeled the energy costs of
17 its share of the OVEC plants in real 2019 dollars; the model outputs reported those costs

¹⁴ In a confidential modeling file titled [REDACTED]

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1 in real dollars (as opposed to nominal for other costs from the model)¹⁵; and the Company
2 then incorrectly adjusted these real dollars for inflation once again.¹⁶ This error led to a
3 gross underestimate of the energy costs of running the OVEC units in all of the Company’s
4 plans, by downwardly adjusting the costs of these units for inflation twice. (Witness Ms.
5 Hotaling explains this error in more detail.)

6 Second, the Company did not count the cost of carbon dioxide emissions for the OVEC
7 units despite applying a carbon price to other fossil units starting in 2028. This omission
8 also understated I&M’s intended costs for the OVEC units in its plans. (Ms. Hotaling also
9 explains how she discovered this error in the Aurora model.)

10 **Q. Did the Company properly calculate the net cost or benefit of terminating the OVEC**
11 **contract?**

12 A. No. The Company presented an analysis of terminating the OVEC contract in 2022 and
13 2030, using a low and high range of termination costs along with Aurora modeling results.
14 But, again, there is a mix up of nominal and real dollars. The Company is reporting the
15 portfolio costs, which are in 2019 dollars, but combining that with OVEC termination costs
16 that are in nominal dollars. The Company’s exhibit IM-30 (JMS-2) states that all costs are
17 “nominal” but this is not true for the “utility cost” values, which come from the Aurora

¹⁵ The real 2019 dollar outputs are also shown in the IRP, see p. 201 and Company Ex. IM-2 (MAB-2) WP 2021IRP_Vol 1 Ex C.

¹⁶ [REDACTED]

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1 modeling. The Company then calculated the net present value of all costs using the nominal
2 discount rate.¹⁷ The Company should have either: 1) translated the Aurora model outputs
3 (the “Utility Cost” values) to nominal terms or 2) translated the OVEC termination costs
4 to real 2019 dollars and then applied the real discount rate to those costs and the real 2019
5 dollar Aurora outputs. Instead, the Company made an error by combining real and nominal
6 dollars costs together and then, in a repeat of an aforementioned error, discounted the
7 model outputs using the wrong discount rate.

8 **B. The Company unfairly inflated the costs of new resources**

9 **Q. Are the assumed costs of new resources important to the Aurora modeling?**

10 A. Yes. The Company’s portfolios include a mixture of existing and new resources, testing
11 replacement of the former with the latter. For instance, the Company ran long-term capacity
12 expansion modeling runs to determine what would replace the OVEC capacity if it exited
13 the ICPA earlier than 2040.¹⁸ The Aurora model also chooses what resources to build in a
14 portfolio based on the costs that it is fed. If those costs are unfairly biased, in any direction,
15 it introduces bias into the portfolio that comes out of that model.

16 **Q. What problems did you find with I&M’s treatment of new resource costs?**

17 A. I found several problems with the Company’s new resource costs, which all bias the model
18 against new resources, especially solar and solar-battery hybrid resources. The problems I
19 found were the following:

¹⁷ Company Ex. IM-30 (JMS-2) WP Confidential OVEC ICPA

¹⁸ Company response to Staff 5-04.

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- 1 1. The Company misconstrued real and nominal dollars again by using the nominal
2 weighted average cost of capital (WACC) to develop the annual capital costs in real
3 2019 terms that were entered into the model for resource selection.
- 4 2. The Company assumed that the investment tax credit (ITC) that applies to solar and
5 solar-battery hybrid resources would be received annually over the life of the
6 project, rather than captured upfront as with a PPA price.
- 7 3. The Company incorrectly modeled the costs of solar-battery hybrid resources,
8 which grossly inflated that resource's costs.

9 **Q. Has the Company stated that it will issue a request for proposals (RFP) for new**
10 **replacement resources?**

11 A. Yes, the Company has issued RFPs in the past and plans to do so in the future: as part of
12 its action plan, it says it will issue two all-source RFPs between 2022 and 2024.¹⁹

13 **Q. Taken at face value, do the Company's costs of new resources appear reasonable?**

14 A. No. When you look at the solar and battery costs, they are quite doubtful when compared
15 to other sources for these costs. Past RFP responses provide a meaningful snapshot of the
16 market for new resources. In this case, the Company provided an analysis of bids it received
17 for solar and hybrid resources in two rounds of RFPs.²⁰ But the Company is assuming
18 substantially higher costs for these resources in this case:

¹⁹ Exhibit No. IM-2 (MAB-2), p.20.

²⁰ Exhibit SC-5, Company response to SC 1-10 Supplemental and Exhibit SC-6C, SC 1-09 and attachment titled "CONFIDENTIAL IM2020_RFP_Analysis_041222."

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- 1 • The most recent RFP results provided show a range of levelized costs for solar of
2 [[[REDACTED]
3 [REDACTED]
4 [REDACTED]].²¹ By contrast, the levelized costs of solar in the Company’s preferred
5 plan are [REDACTED]
6 [REDACTED]].²²
- 7 • There is not a directly comparable solar-battery hybrid project, but it is noteworthy
8 that in response to the latest RFP, [[[REDACTED]
9 [REDACTED]
10 [REDACTED]].²³ In
11 contrast, the levelized costs of solar and battery hybrids in the Company’s preferred
12 plan for a [[[REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED].]]

²¹ Exhibit SC-7C, Company response to SC 1-10 CONFIDENTIAL Supplemental.

²² The Company input new resource costs in Aurora but adjusted the new resource costs to be in nominal levelized cost form (shown in AG 6-51 AEP IM FOM Analysis). To calculate, the levelized costs per MWh, one can divide these annual costs by the generation reported in “AEPIM_Stochastic_Review_Template – PreferredPortfolio.”

²³ Exhibit SC-7C, Company response to SC 1-10 CONFIDENTIAL

²⁴ Supra note 22. There is not an installation of a solar-battery hybrid in the preferred plan until 2027.

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1 **Q. Did the Company’s assumption for project financing contribute to the high costs for**
2 **these resources entered into the model?**

3 A. Yes. Before inputting the real 2019 dollars for these resources into the model, the Company
4 applied a capital charge rate to the real 2019 capital costs and also included the 2019 fixed
5 operations and maintenance (O&M) expenses. But in doing this calculation, the Company
6 used the nominal WACC which produced too high of a capital charge rate.²⁵ This affects
7 all new resources in the model, which determines the resource selection based on cost and
8 thus unfairly biases the results towards existing resources.

9 **Q. Did the Company’s treatment of the ITC also contribute to the high costs of solar and**
10 **solar-battery hybrids?**

11 A. Yes. Solar and solar-battery hybrids can claim the ITC, but the mechanism of realizing that
12 credit to ratepayers is different if the builder is a utility versus a non-utility. The Company
13 assumes that the ITC is normalized which means that, under federal tax rules, the ratepayer
14 benefit of the tax credit is spread over 35 years, and the project would be built by the
15 Company itself.²⁶ But in the case of a PPA, the ITC would be captured in the more quickly
16 and built into the PPA price in the first year. Applying the credit in rates slowly over the
17 project life would only be done for a utility’s self-build resource, but the Company has
18 solicited and plans to solicit bids that would allow ratepayers to take advantage of the ITC
19 immediately in the price of a PPA.

²⁵ JSG 1-11 Carrying Cost_I&M_1220; U-21189 WP-KDP-1 Pearce Figure KDP-7, “SiemensBuildInputs” tab.

²⁶ Exhibit No. IM-2 (MAB-2), p.112

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1 **Q. Apart from the ITC and capital financing, did the Company also commit an error in**
2 **its modeling of solar-battery hybrids that falsely inflated their costs?**

3 A. Yes. The Company inflated the costs of solar-battery hybrid resources by incorrectly
4 applying its assumed fixed costs per kW. A solar-battery hybrid includes both solar PV and
5 battery storage components; for instance, in this case the Company models a system of 100
6 MW of solar PV and 20 MW of battery storage paired together. But the Company’s
7 assumed capital and fixed O&M costs for this resource are substantially higher than the
8 solar or battery components on a per kW basis: For instance, in 2025, the modeled capital
9 costs for solar-battery hybrid are \$1,214 per kW while the capital costs of solar alone are
10 \$993 per kW and battery alone are \$971 per kW.²⁷ But it appears that to arrive at the solar-
11 battery hybrid modeled cost per kW (\$1,214), the costs of the solar-battery hybrid are
12 divided by 100 MW—the solar capacity alone—not the 120 MW sum of the solar and
13 battery parts.²⁸ This is also how the costs of solar-battery hybrids are calculated in the
14 National Renewable Energy Laboratory (NREL) Annual Technology Baseline (ATB)
15 where NREL models a 100 MW (AC) solar component with a 50 MW battery; but the costs
16 per kW are on the basis of the size of the inverter (100 MW) which is the same as the solar
17 capacity alone—as opposed to the 150 MW straight sum of the components.²⁹

²⁷ U-21189 IM-2 (MAB-2) WP 2021IRP_Vol 1 Ex D

²⁸ JSG 1-02 EIA Resource_Cost_with AFUDC worksheets_5.3.22, “Resource Costs” tab.

²⁹ See: https://atb.nrel.gov/electricity/2022/utility-scale_pv-plus-battery. “The rated capacity in the denominator is reported in terms of the capacity of the shared central inverter, which sets the maximum AC power output of the plant.” The inverter for the NREL representative project is 100 MW (AC) for a hybrid with a 100 MW (AC) solar component and 50 MW (AC) battery.

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1 There is nothing inherently wrong with calculating the costs per kW this way, as long as
2 the costs per kW are applied to the correct level of capacity. But the Company incorrectly
3 applies the cost per kW, based on the 100 MW, to the 120 MW sum of the two components.
4 This error leads it to grossly inflate both the solar and battery components' costs.

5 **Q. Were solar and solar-battery hybrid resources treated unfairly in the Aurora model?**

6 A. Yes, the modeling unfairly handicapped all new resources through the capital financing
7 methodology. But the solar and solar-battery hybrid resources were particularly
8 handicapped by the Company's application of the ITC and the error in applying the solar-
9 battery hybrid fixed costs to the wrong capacity level. These issues are problematic because
10 the model was given falsely inflated costs for these resources, which make it far less likely
11 to economically select them as replacement resources; and when such resources are
12 included in a portfolio, the costs of it are far overstated.

13 **C. I&M needs to re-evaluate the OVEC contract and should not pass on the**
14 **termination costs to ratepayers for an early exit**

15 **Q. Has the Company made the case in this IRP for charging ratepayers for the costs of**
16 **the OVEC contract through 2040?**

17 A. No. While the Company's modeling finds its preferred plan to be lower cost than exiting
18 the OVEC contract ten years earlier (i.e., 2030 vs. 2040), these results included errors and
19 flaws, all of which biased the results by unfairly favoring continued use of the OVEC units
20 over new resources. First, the costs of the OVEC units themselves were incorrectly
21 understated in the modeling by deflating the energy costs twice and not counting the cost
22 of carbon emissions. Second, the Company's modeling of new resource costs made them

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1 look unfairly unattractive—especially for solar and solar-hybrid resources. It is possible
2 that with more reasonable new resource costs and corrections to the OVEC costs, that the
3 corrected modeling would show that terminating the contract in 2030 would be the lower-
4 cost option.

5 **Q. Have the OVEC units provided net benefits to I&M ratepayers in recent years?**

6 A. No. The costs of I&M's share in the OVEC units have outweighed the value of energy and
7 capacity that the units have provided since at least 2016. In the 2018-2019 I&M IRP case
8 (U-20591), I compared I&M's OVEC costs to the combined energy and capacity value,
9 showing a net cost of \$39 million over a three-year period of 2016 through 2018.³⁰ More
10 recently, Sierra Club Witness Devi Glick presented a similar analysis in the most recent
11 I&M PSCR case (U-21052) which showed roughly \$61 million in net costs from 2019
12 through 2021.³¹ In sum, from 2016 through 2021, the net cost of I&M's share of the OVEC
13 units was \$100 million.

14 **Q. Has the Commission ruled on the prudence of extension of the OVEC contract that**
15 **committed I&M to its share until 2040?**

16 A. No. In 2010, the Company signed an extension of the OVEC commitment from 2026 until
17 2040. But, as this Commission has previously found, neither the ICPA nor the 2011
18 extension of the ICPA has been reviewed by the Commission.³² Therefore, the

³⁰ Comings direct testimony on behalf of Sierra Club, Case No. U-20591, p.26. Net costs are the "I&M OVEC Costs" minus the "OVEC Energy and Capacity Value" in Figure 1 (e.g. \$32 million minus \$19 million in 2016).

³¹ Glick direct testimony on behalf of Sierra Club, Case No. U-21052, p.13.

³² Direct Testimony of Jonathan J. DeCooman, p.8, lines 4-13.

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1 Commission has not had the opportunity to determine the prudence of the extension of the
2 ICPA until 2040.

3 **Q. Is it likely that the OVEC units will run until 2040?**

4 A. No. These units date back to the Eisenhower administration, becoming operational in 1955,
5 which makes them among the oldest coal units in the U.S. According to the most recent
6 data from the Energy Information Administration (EIA), only two coal plants owned by
7 electric utilities have coal units over 50 MW in size that are older than the OVEC units.³³
8 Of these other units, all are slated for retirement in either 2027, 2033 or 2035 (at the
9 latest).³⁴ Indeed, apart from the OVEC units, there are 31 utility-owned coal units over 50
10 MW that came on-line in the 1950s and are still operational; and all of these units have
11 planned retirement dates in the 2020s or early-mid 2030s.³⁵ At 67 years old, the OVEC
12 units are more than 20 years above the age of the average coal unit operating in the U.S.
13 today.³⁶ It is highly unlikely that these units will run until they are 85 years old.

³³ EIA Preliminary Monthly Electric Generator Inventory, Form 860M, available at: <https://www.eia.gov/electricity/data/eia860m/>. Latest data available was March 2022.

³⁴ *Id.* The two plants with older coal units include Shawnee (KY) and Kingston (TN). The St. Clair plant was excluded because it was retired earlier this year. Shawnee unit 3 was not listed in the EIA data as having a retirement date but its owner, TVA, has stated that it is retiring all coal units by 2035 (see: <https://www.utilitydive.com/news/tva-to-retire-coal-fleet-by-2035-ceo-says-with-renewables-gas-and-nuclea/599370/>).

³⁵ *Id.* Gulf Clean Energy Center was excluded because it operates on gas (see: <https://www.pnj.com/story/news/2021/01/22/gulf-powers-plant-crist-converts-natural-gas-gets-new-name/6674602002/>) and Allen S. King is currently slated for 2028 retirement (which has approved by the Minnesota PUC) but was listed by EIA as having no retirement date (see: MN PUC, Commission Order, Docket No. E-002/RP-19-368, April 15, 2022).

³⁶ EIA, “Of the operating U.S. coal-fired power plants, 28% plan to retire by 2035,” available at: <https://www.eia.gov/todayinenergy/detail.php?id=50658#>

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1 **Q. If the Company exits the OVEC contract prior to 2040, should it pass on any of the**
2 **termination costs to ratepayers?**

3 A. No. The Company has assumed a range of “low” and “high” termination costs if it were to
4 exit the contract that it includes in the costs of portfolios where the contract is terminated
5 in 2030. But the plants have had negative economic value to customers in recent years. The
6 forward-looking modeling in this case attempts to address earlier termination with OVEC
7 but, as explained in the previous section, that modeling included many flaws and errors
8 which biased it towards keeping the contract. Because I&M never sought approval to
9 extend the ICPA in 2004 and 2010, it assumed the risk that the ICPA would no longer
10 provide value to customers and fail to recover costs under the ICPA. Therefore, any
11 contract termination costs should not be included in rates and should be excluded from the
12 portfolio costs in this IRP or any future re-evaluation of exiting the OVEC contract.

13 **IV. THE PREFERRED PLAN HAS THE HIGHEST LEVEL OF CARBON EMISSIONS OF ANY OF**
14 **THE COMPANY’S PLANS**

15 **Q. Does the Company’s preferred plan have the most carbon dioxide emissions?**

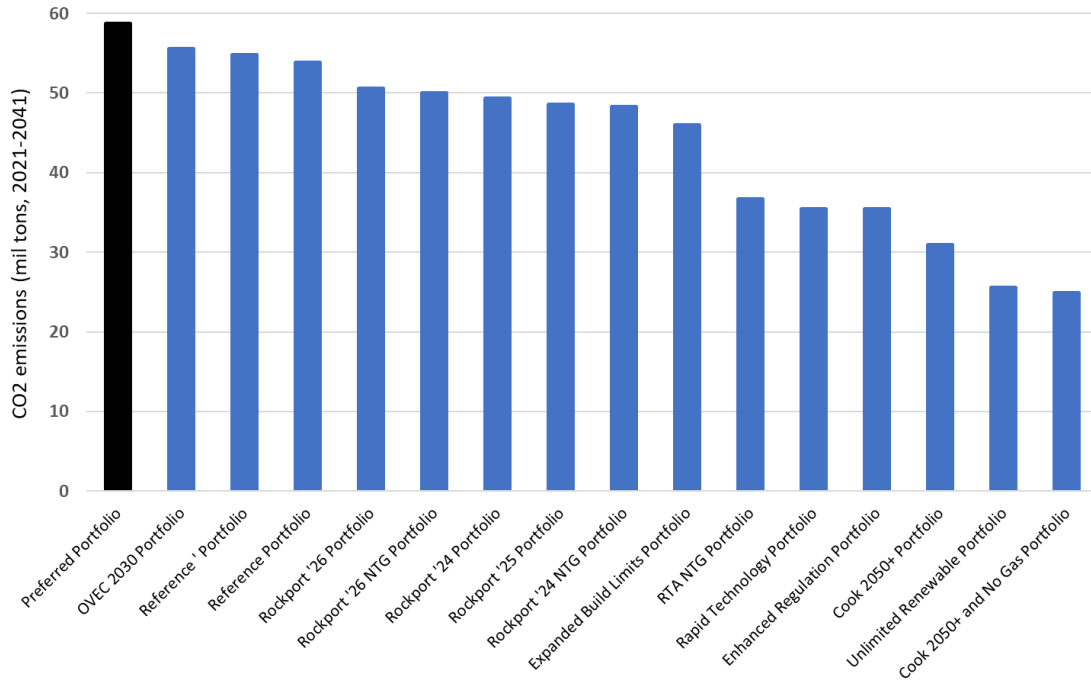
16 A. Yes. According to the Company’s own projections of emissions, the preferred plan releases
17 the highest level of cumulative CO₂ emissions across all evaluated portfolios. The
18 Company tried to justify the preferred plan as one that “leads to a lower carbon future” but
19 this was based on the percentage reduction in emissions in 2041 relative to 2005 emissions
20 levels, rather than the cumulative CO₂ emissions through 2041.³⁷ Cumulative emissions

³⁷ Exhibit No. IM-2 (MAB-2), p.160

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1 are a more meaningful metric than an annual snapshot, and on this front the preferred plan
2 is the worst of any plan modeled by I&M, as shown below in Figure 1.

Figure 1: CO₂ Emissions in I&M’s IRP Portfolios (2021-2041)³⁸



4
5 **Q. Does the Company expect the carbon dioxide emissions from its plan to be higher at**
6 **the end of the modeling period than today?**

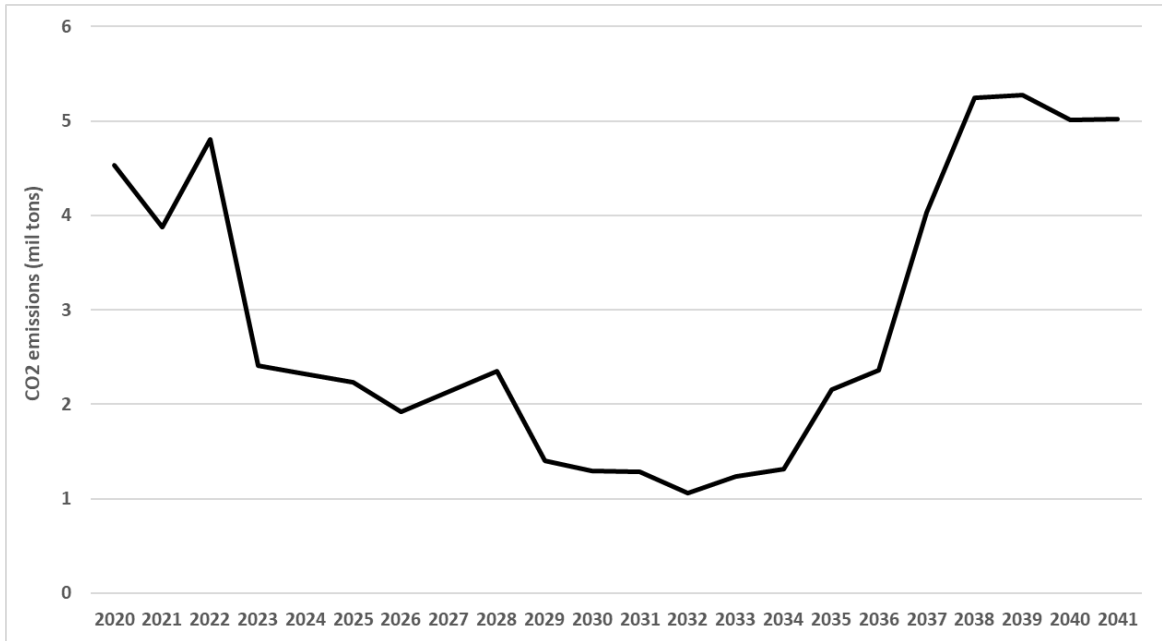
7 A. Yes. As shown above, the Preferred Portfolio results in the greatest cumulative amount of
8 carbon emissions—nearly 59 million tons of CO₂ from 2021 through 2041—of all
9 evaluated portfolios. In addition to having the highest total emissions, the plan also results
10 in an increase in emissions in the early 2030’s resulting in higher annual emissions than
11 recent levels—as shown in Figure 2.

³⁸ Company Ex. IM-2 (MAB-2) WP 2021IRP_Vol 1 Ex C-23 thru 26, “Summary (CO₂)” tab, “Direct Emissions with Imports - Expected (P50).”

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1

Figure 2: CO₂ Emissions in I&M's Preferred Plan (2020-2041)³⁹



2

3 **Q. Should the preferred plan be justified on the basis of carbon emissions?**

4 A. No. The plan is the worst of any modeled by the Company in terms of carbon emissions
5 and results in higher annual emissions by the end of the modeling period. This increase
6 occurs in other portfolios as well because they include new natural gas combined cycle
7 (NGCC) units installed in the 2030's. If the Company wants to continue to grade portfolios
8 on "sustainability," then it should do so on the grounds of cumulative emissions and having
9 emissions lower than current levels.

³⁹ *Id.*

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1 **V. CONCLUSION AND RECOMMENDATIONS**

2 **Q. What do you recommend to the Commission?**

3 A. For the reasons explained above I recommend the following:

4 1. The Commission should reject the component of the Company's preferred plan
5 which includes participating in the OVEC contract through 2040, as the Company
6 has failed to justify this long-term investment.

7 2. The Commission should direct the Company to re-evaluate its participation in the
8 OVEC contract in the next IRP and apply heightened scrutiny before allowing
9 OVEC costs into rates in future rate and PSCR cases.

10 3. The Commission should determine that any termination costs associated with
11 exiting the OVEC contract prior to 2040 are not recovered in rates, nor should these
12 costs be considered as part of the re-evaluation of the contract described above.

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

14 A. Yes.



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Applied Economics Clinic, Arlington, MA. Senior Researcher, June 2017 – Present.

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Synapse Energy Economics Inc., Cambridge, MA. Senior Associate, July 2014 – June 2017, Associate, July 2011 – July 2014.

Provided expert testimony and reports on energy system planning, coal plant economics and economic impacts. Performed benefit-cost analyses and research on energy and environmental issues.

Ideas42, Boston, MA. Senior Associate, 2010 – 2011.

Organized studies analyzing behavior of consumers regarding finances, working with top researchers in behavioral economics. Managed studies of mortgage default mitigation and case studies of financial innovations in developing countries.

Economic Development Research Group Inc., Boston, MA. Research Analyst, Economic Consultant, 2005 – 2010.

Performed economic impact modeling and benefit-cost analyses using IMPLAN and REMI for transportation and renewable energy projects, including support for Federal stimulus applications. Developed a unique web-tool for the National Academy of Sciences on linkages between economic development and transportation.

Harmon Law Offices, LLC., Newton, MA. Billing Coordinator, Accounting Liaison, 2002 – 2005.

Allocated IOLTA and Escrow funds, performed bank reconciliation and accounts receivable. Projected legal fees and costs.

Massachusetts Department of Public Health, Boston, MA. Data Analyst (contract), 2002.

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Tufts University, Medford, MA

Master of Arts in Economics, 2007

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Resume dated July 2022

INDIANA MICHIGAN POWER COMPANY
MICHIGAN PUBLIC SERVICE COMMISSION STAFF
DATA REQUEST SET NO. STAFF DR 8
CASE NO. U-21189

DATA REQUEST NO. Staff 8-01

Request

Please provide the most recent annual report from the Ohio Valley Electric Corporation.

Response

The 2020 OVEC Annual Report is the most recent annual report available at OVEC.com and is provided as "Staff 8-01 Attachment_1.pdf".

Preparer

Stegall

ANNUAL REPORT — 2020

OHIO VALLEY ELECTRIC CORPORATION

and subsidiary

INDIANA-KENTUCKY ELECTRIC CORPORATION

Ohio Valley Electric Corporation

GENERAL OFFICES, 3932 U.S. Route 23, Piketon, Ohio 45661

Ohio Valley Electric Corporation (OVEC) and its wholly owned subsidiary, Indiana-Kentucky Electric Corporation (IKEC), collectively, the Companies, were organized on October 1, 1952. The Companies were formed by investor-owned utilities furnishing electric service in the Ohio River Valley area and their parent holding companies for the purpose of providing the large electric power requirements projected for the uranium enrichment facilities then under construction by the Atomic Energy Commission (AEC) near Portsmouth, Ohio.

OVEC, AEC and OVEC's owners or their utility-company affiliates (called Sponsoring Companies) entered into power agreements to ensure the availability of the AEC's substantial power requirements. On October 15, 1952, OVEC and AEC executed a 25-year agreement, which was later extended through December 31, 2005 under a Department of Energy (DOE) Power Agreement. On September 29, 2000, the DOE gave OVEC notice of cancellation of the DOE Power Agreement. On April 30, 2003, the DOE Power Agreement terminated in accordance with the notice of cancellation.

OVEC and the Sponsoring Companies signed an Inter-Company Power Agreement (ICPA) on July 10, 1953, to support the DOE Power Agreement and provide for excess energy sales to the Sponsoring Companies of power not utilized by the DOE or its predecessors. Since the termination of the DOE Power Agreement on April 30, 2003, OVEC's entire generating capacity has been available to the Sponsoring Companies under the terms of the ICPA. The Sponsoring Companies and OVEC entered into an Amended and Restated ICPA, effective as of August 11, 2011, which extends its term to June 30, 2040.

OVEC's Kyger Creek Plant at Cheshire, Ohio, and IKEC's Clifty Creek Plant at Madison, Indiana, have nameplate generating capacities of 1,086,300 and 1,303,560 kilowatts, respectively. These two generating stations, both of which began operation in 1955, are connected by a network of 705 circuit miles of 345,000-volt transmission lines. These lines also interconnect with the major power transmission networks of several of the utilities serving the area.

The current Shareholders and their respective percentages of equity in OVEC are:

Allegheny Energy, Inc. ¹	3.50
American Electric Power Company, Inc.*	39.17
Buckeye Power Generating, LLC ²	18.00
The Dayton Power and Light Company ³	4.90
Duke Energy Ohio, Inc. ⁴	9.00
Kentucky Utilities Company ⁵	2.50
Louisville Gas and Electric Company ⁵	5.63
Ohio Edison Company ¹	0.85
Ohio Power Company** ⁶	4.30
Peninsula Generation Cooperative ⁷	6.65
Southern Indiana Gas and Electric Company ⁸	1.50
The Toledo Edison Company ¹	<u>4.00</u>
	<u>100.00</u>

The Sponsoring Companies are each either a shareholder in the Company or an affiliate of a shareholder in the Company, with the exception of Energy Harbor Corp. The Sponsoring Companies currently share the OVEC power participation benefits and requirements in the following percentages:

Allegheny Energy Supply Company LLC ¹	3.01
Appalachian Power Company ⁶	15.69
Buckeye Power Generating, LLC ²	18.00
The Dayton Power and Light Company ³	4.90
Duke Energy Ohio, Inc. ⁴	9.00
Energy Harbor Corp.....	4.85
Indiana Michigan Power Company ⁶	7.85
Kentucky Utilities Company ⁵	2.50
Louisville Gas and Electric Company ⁵	5.63
Monongahela Power Company ¹	0.49
Ohio Power Company ⁶	19.93
Peninsula Generation Cooperative ⁷	6.65
Southern Indiana Gas and Electric Company ⁸	<u>1.50</u>
	<u>100.00</u>

Some of the Common Stock issued in the name of:

- *American Gas & Electric Company
- **Columbus and Southern Ohio Electric Company

Subsidiary or affiliate of:

- ¹FirstEnergy Corp.
- ²Buckeye Power, Inc.
- ³The AES Corporation
- ⁴Duke Energy Corporation
- ⁵PPL Corporation
- ⁶American Electric Power Company, Inc.
- ⁷Wolverine Power Supply Cooperative, Inc.
- ⁸CenterPoint Energy, Inc.

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

A Message from the President

Ohio Valley Electric Corporation (OVEC) and its subsidiary, Indiana-Kentucky Electric Corporation (IKEC), faced the 2020 challenge of COVID-19 and its impact on our business, our industry and our way of life. The OVEC-IKEC team stepped up to this challenge. Our employees have shown amazing perseverance while working in this new environment and continue to remain focused on achieving our goals of being a safe, reliable and environmentally compliant provider of choice.

For 2021, we look to achieve another year of improved unit availability, safety results and strong operating performance. Our success will be solely due to the great work of our employees and their efforts in creating a zero-harm culture, focusing on environmental stewardship, and using continuous improvement and LEAN tools to improve operating metrics and create cost optimization. OVEC-IKEC's employees continue to focus on our efforts for "better" and improving every day.

SAFETY

Our commitment to providing a safe and healthy place to work for all employees is our first priority. Clifty Creek employees completed two years with no recordable injuries in 2020. System Office employees have worked over 17 years without a lost-time injury. Electrical Operations have completed six years with no recordable injuries in 2020 as well. The company recordable and DART incident rates trended up in 2020 from the previous year, with year-end rates being 0.97 and 0.77, respectively. The goal is unchanged, zero-harm is the target.

In 2021, our safety focus is on effective and quality coaching in the field with our ongoing Supervisor Field Observation program. In alignment with Strategic Plan initiatives, a new Human Performance Improvement (HPI) Refocus program has been started at all facilities. In 2021, we will continue to strive to create and sustain a zero-harm culture for all working at OVEC-IKEC.

CULTURE

OVEC-IKEC remains on its continuous journey of culture improvement. Beginning in 2016, the company has seen significant improvement from the initial survey and continues to make improvements every year. OVEC-IKEC believes investing in culture improvement to engage our people will be the key to our long-term success. For 2021, we will continue with another survey to allow our teams to continue to focus on opportunities and update their culture action plans to enable improvement.

RELIABILITY

In 2020, the combined equivalent availability of the five generating units at Kyger Creek and the six units at Clifty Creek was 78.8 percent compared with 78.2 percent in 2019. The combined equivalent forced outage rate (EFOR) at both plants was 4.4 percent in 2020 compared with 5.8 percent in 2019.

Through May 2021, the combined EFOR of the eleven generating units was 5.5 percent.

ENERGY SALES

OVEC's use factor — the ratio of power scheduled by the Sponsoring Companies to power available — for the combined on- and off-peak periods averaged 60.8 percent in 2020 compared with 76.2 percent in 2019. The on-peak use factor averaged 68.6 percent in 2020 compared with 87.4 percent in 2019. The off-peak use factor averaged 50.9 percent in 2020 and 61.8 percent in 2019.

In 2020, OVEC delivered 9.0 million megawatt hours (MWh) to the Sponsoring Companies under the terms of the Inter-Company Power Agreement compared with 11.2 million MWh delivered in 2019. The reduction to both generation and utilization was due to impacts of COVID-19 on energy demand.

POWER COSTS

In 2020, OVEC's average power cost to the Sponsoring Companies was \$67.00 per MWh compared with \$57.04 per MWh in 2019. The total Sponsoring Company power costs were \$605 million in 2020 compared with \$641 million in 2019. Increased average power costs were directly related to reduced generation by the impact of COVID-19 on the energy demand.

2021 ENERGY SALES OUTLOOK

Through May, this year has provided an improved energy market, rebounding from COVID-19's historic negative impact in 2020. OVEC's total generation through June was approximately 5.2 million MWh compared to approximately 3.9 million MWh through June 2020. OVEC's updated projection for 2021, which assumes some continued improvement in the energy demand by the end of the year, is projected at approximately 10.5 million MWh of generation.

COST CONTROL INITIATIVES

The OVEC and IKEC employees continue to strive to control costs and improve operating performance through application of its continuous improvement process (CIP). Since 2013, CIP has obtained over \$26.5 million in sustainable savings through implementation of over 6,000 process improvements. Employee-driven process improvements and a continued effort in hands-on skill development with CIP and LEAN tools throughout the Company are driving the sustainability of the continuous improvement efforts.

In 2020, OVEC-IKEC continued utilizing the LEAN tool of Open Book Leadership (OBL) as a cost-control initiative to further improve our culture and overall business success. OBL is a management philosophy that focuses on empowering employees by providing them the information, education and communication necessary to understand how the Company performs and how they can impact that performance. The OBL process creates transparency of Company performance and engages employees in their ability to impact and improve key performance areas.

For 2021, OVEC is working to optimize operating cost and available generation, during this unprecedented time.

ENVIRONMENTAL COMPLIANCE

OVEC-IKEC continues to maintain a strong commitment to meeting all applicable federal, state and local environmental rules and regulations. During 2020, OVEC operated in substantial compliance with the Mercury Air Toxics Standards (MATS), the Cross-State Air Pollution Rule (CSAPR) and other applicable state and federal air, water and solid waste regulations. In addition, for the fourth consecutive year, OVEC successfully met the challenge of operating in compliance with the more stringent ozone season NO_x constraints that went into effect with the 2017 ozone season with the adoption of EPA's CSAPR Update Rule. The Company is well positioned to continue to operate all SCR controlled units during 2021 and all future ozone seasons within the constraints of the current CSAPR Update Rule.

Clifty Creek and Kyger Creek both continue to sell nearly all of the gypsum produced at each plant into the wallboard market. Clifty Creek has also been successful in marketing fly ash, and OVEC anticipates that market to continue to grow longer term. Kyger Creek will also pursue a marketing agreement for its dry fly ash in 2023 and beyond following the completion of the dry fly ash conversion project at that Station

2020 was also a year of transition relative to key regulatory and legal actions that impact Company operations with respect to environmental compliance. The regulatory actions taken in 2020 included USEPA issuing a final Coal Combustion Residuals (CCR), Part A Rule that requires the closure of all clay lined and unlined surface impoundments receiving CCR material, and USEPA issuing final revised steam electric effluent limitation guideline (ELG) regulations applicable to certain wastewater discharges from Clifty Creek and Kyger Creek operations. OVEC-IKEC prepared for these regulatory actions and has already initiated the multi-year environmental compliance projects needed to meet requirements in the new ELG and CCR rule requirements.

A Legal decision issued by the D.C. Circuit Court in 2020 also resulted in the vacature of the federal Affordable Clean Energy (ACE) Rule. OVEC will continue to monitor and evaluate the impacts of the D.C. Circuit Court decision on the ACE Rule, additional litigation challenging that decision, and the next steps the current administration may take to issue a replacement regulation relative to utility sector carbon emissions. OVEC will also continue monitoring other regulatory initiatives that may impact the utility sector.

In the interim, the Company continues to work toward executing our compliance strategies for complying with obligations associated with the current CCR rule, the current ELG rule and the Clean Water Act Section 316(b) regulations applicable to both facilities.

BOARD OF DIRECTORS AND OFFICERS CHANGES

On July 31, 2020, Mr. Justin J. Cooper was elected Vice President, Chief Operating Officer and Chief Financial Officer of the Companies following the retirement of Mr. Robert A. Osborne. Mr. Osborne had served as OVEC-IKEC's Vice President since 2015.

On July 31, 2020, Ms. Cassandra K. Martin was elected Secretary and Treasurer of OVEC and IKEC, replacing Mr. Justin J. Cooper who transitioned to the Vice President position.

On October 1, 2020, Ms. Julie Sloat, Executive Vice President and Chief Financial Officer of AEP, was elected a director of OVEC following the resignation of Ms. Lana L. Hillebrand. Ms. Hillebrand had served as an OVEC director since 2013. Ms. Sloat was appointed Chairperson of the Human Resource Committee, replacing Ms. Hillebrand.

On December 15, 2020, Mr. Gustavo Garavaglia, Vice President and Chief Financial Officer of Dayton Power & Light, was elected a director of OVEC following the resignation of Mr. Mark E. Miller. Mr. Miller had served as an OVEC director since 2015.



Paul Chodak III
OVEC-IKEC President

July 22, 2021

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

CONSOLIDATED BALANCE SHEETS AS OF DECEMBER 31, 2020 AND 2019

	2020	2019
ASSETS		
ELECTRIC PLANT:		
At original cost	\$ 2,869,460,850	\$ 2,793,490,793
Less—accumulated provisions for depreciation	<u>1,648,697,601</u>	<u>1,563,780,062</u>
	1,220,763,249	1,229,710,731
Construction in progress	<u>18,727,452</u>	<u>13,208,832</u>
Total electric plant	<u>1,239,490,701</u>	<u>1,242,919,563</u>
CURRENT ASSETS:		
Cash and cash equivalents	50,835,059	32,241,171
Accounts receivable	44,900,548	74,486,689
Fuel in storage	79,328,652	61,351,858
Emission allowances	143,905	291,681
Materials and supplies	40,428,263	40,931,063
Income taxes receivable	-	2,307,853
Property taxes applicable to future years	3,255,000	3,150,000
Prepaid expenses and other	<u>4,031,567</u>	<u>2,817,715</u>
Total current assets	<u>222,922,994</u>	<u>217,578,030</u>
REGULATORY ASSETS:		
Unrecognized postemployment benefits	6,833,166	5,201,536
Unrecognized pension benefits	34,784,688	32,170,308
Income taxes billable to customers	<u>10,751,917</u>	<u>-</u>
Total regulatory assets	<u>52,369,771</u>	<u>37,371,844</u>
DEFERRED CHARGES AND OTHER:		
Unamortized debt expense	382,580	688,643
Long-term investments	273,951,093	240,739,279
Income taxes receivable	-	2,307,341
Other	<u>1,488,586</u>	<u>2,510,636</u>
Total deferred charges and other	<u>275,822,259</u>	<u>246,245,899</u>
TOTAL	<u>\$ 1,790,605,725</u>	<u>\$ 1,744,115,336</u>

(Continued)

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

CONSOLIDATED BALANCE SHEETS AS OF DECEMBER 31, 2020 AND 2019

	2020	2019
CAPITALIZATION AND LIABILITIES		
CAPITALIZATION:		
Common stock, \$100 par value—authorized, 300,000 shares; outstanding, 100,000 shares in 2020 and 2019	\$ 10,000,000	\$ 10,000,000
Long-term debt	1,009,833,026	1,119,568,409
Line of credit borrowings	60,000,000	80,000,000
Retained earnings	<u>20,104,306</u>	<u>17,294,023</u>
Total capitalization	<u>1,099,937,332</u>	<u>1,226,862,432</u>
CURRENT LIABILITIES:		
Current portion of long-term debt	194,982,570	141,387,803
Accounts payable	37,908,306	34,871,926
Accrued other taxes	11,247,988	10,527,047
Regulatory liabilities	20,718,951	7,677,404
Accrued interest and other	<u>26,547,150</u>	<u>27,532,934</u>
Total current liabilities	<u>291,404,965</u>	<u>221,997,114</u>
COMMITMENTS AND CONTINGENCIES (Notes 3, 9, 11, and 12)		
REGULATORY LIABILITIES:		
Postretirement benefits	64,415,536	76,162,798
Income taxes refundable to customers	-	8,658,897
Advance billing of debt reserve	120,000,000	90,000,000
Decommissioning, demolition and other	<u>-</u>	<u>14,718,161</u>
Total regulatory liabilities	<u>184,415,536</u>	<u>189,539,856</u>
OTHER LIABILITIES:		
Pension liability	34,784,688	32,170,308
Deferred income tax liability	19,410,815	-
Asset retirement obligations	138,933,456	63,487,038
Postretirement benefits obligation	11,995,106	4,242,848
Postemployment benefits obligation	6,833,166	5,201,536
Other non-current liabilities	<u>2,890,661</u>	<u>614,204</u>
Total other liabilities	<u>214,847,892</u>	<u>105,715,934</u>
TOTAL	<u>\$ 1,790,605,725</u>	<u>\$ 1,744,115,336</u>

See notes to consolidated financial statements.

(Concluded)

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

CONSOLIDATED STATEMENTS OF INCOME AND RETAINED EARNINGS FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

	2020	2019
REVENUES FROM CONTRACTS WITH CUSTOMERS—Sales of electric energy to:		
Department of Energy	\$ 3,265,537	\$ 4,641,167
Sponsoring Companies	547,668,086	606,993,408
Other	<u>784,078</u>	<u>3,033,066</u>
Total revenues from contracts with customers	<u>551,717,701</u>	<u>614,667,641</u>
OPERATING EXPENSES:		
Fuel and emission allowances consumed in operation	231,316,036	274,843,402
Purchased power	2,545,280	3,735,333
Other operation	73,452,698	91,611,162
Maintenance	78,628,228	87,208,116
Depreciation	82,237,657	88,825,066
Taxes—other than income taxes	12,203,087	11,330,963
Income taxes	<u>-</u>	<u>(2,912,531)</u>
Total operating expenses	<u>480,382,986</u>	<u>554,641,511</u>
OPERATING INCOME (LOSS)	71,334,715	60,026,130
OTHER INCOME (EXPENSE)	<u>86,805</u>	<u>24,280,007</u>
INCOME BEFORE INTEREST CHARGES	<u>71,421,520</u>	<u>84,306,137</u>
INTEREST CHARGES:		
Amortization of debt expense	4,288,807	4,204,163
Interest expense	<u>64,322,430</u>	<u>77,046,683</u>
Total interest charges	<u>68,611,237</u>	<u>81,250,846</u>
NET INCOME	2,810,283	3,055,291
RETAINED EARNINGS—Beginning of year	<u>17,294,023</u>	<u>14,238,732</u>
RETAINED EARNINGS—End of year	<u>\$ 20,104,306</u>	<u>\$ 17,294,023</u>

See notes to consolidated financial statements.

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

CONSOLIDATED STATEMENTS OF CASH FLOWS FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

	2020	2019
OPERATING ACTIVITIES:		
Net income	\$ 2,810,283	\$ 3,055,291
Adjustments to reconcile net income to net cash provided by (used in) operating activities:		
Depreciation	82,237,657	88,825,066
Amortization of debt expense	4,288,807	4,204,163
Loss (gain) on marketable securities	-	(16,672,791)
Changes in assets and liabilities:		
Accounts receivable	29,586,141	(10,207,793)
Fuel in storage	(17,976,794)	(27,877,672)
Materials and supplies	502,800	(296,420)
Property taxes applicable to future years	(105,000)	(87,500)
Emissions allowances	147,776	6,674
Income tax receivable	2,307,853	2,382,211
Prepaid expenses and other	(1,213,852)	(641,810)
Other regulatory assets	(4,246,010)	9,392,126
Other noncurrent assets	3,329,391	1,042,342
Accounts payable	1,215,500	(5,360,967)
Accrued taxes	720,941	(198,718)
Accrued interest and other	(950,127)	6,869,743
Decommissioning, demolition and other	12,914,757	11,899,339
Other liabilities	15,277,153	(3,242,134)
Other regulatory liabilities	17,373,170	15,662,796
Net cash provided by operating activities	<u>148,220,446</u>	<u>78,753,946</u>
INVESTING ACTIVITIES:		
Electric plant additions	(12,899,927)	(12,474,714)
Proceeds from sale of long-term investments	198,124,748	55,360,283
Purchases of long-term investments	(234,468,776)	(98,155,238)
Net cash (used in) provided by investing activities	<u>(49,243,955)</u>	<u>(55,269,669)</u>
FINANCING ACTIVITIES:		
Debt issuance and maintenance costs	(2,068,564)	(3,849,380)
Repayment of Senior 2006 Notes	(23,333,029)	(22,029,278)
Repayment of Senior 2007 Notes	(16,591,089)	(15,648,462)
Repayment of Senior 2008 Notes	(18,130,679)	(16,992,682)
Reissuance 2009A Bonds	-	25,000,000
Redemption of 2009E Bonds	-	(100,000,000)
Issuance of 2019A Bonds	-	100,000,000
Proceeds from line of credit	25,000,000	10,000,000
Payments on line of credit	(45,000,000)	(15,000,000)
Principal payments under capital leases	(259,242)	(246,860)
Net cash (used in) provided by financing activities	<u>(80,382,603)</u>	<u>(38,766,662)</u>
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	\$ 18,593,888	\$ (15,282,385)
CASH AND CASH EQUIVALENTS—Beginning of year	<u>32,241,171</u>	<u>47,523,556</u>
CASH AND CASH EQUIVALENTS—End of year	<u>\$ 50,835,059</u>	<u>\$ 32,241,171</u>
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:		
Interest paid	<u>\$ 64,526,922</u>	<u>\$ 75,703,531</u>
Income taxes (received) paid—net	<u>\$ (4,615,202)</u>	<u>\$ (4,690,064)</u>
Non-cash electric plant additions included in accounts payable at December 31	<u>\$ 2,102,982</u>	<u>\$ 58,516</u>

See notes to consolidated financial statements.

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

1. ORGANIZATION AND SIGNIFICANT ACCOUNTING POLICIES

Consolidated Financial Statements—The consolidated financial statements include the accounts of Ohio Valley Electric Corporation (OVEC) and its wholly owned subsidiary, Indiana-Kentucky Electric Corporation (IKEC), collectively, the Companies. All intercompany transactions have been eliminated in consolidation.

Organization—The Companies own two generating stations located in Ohio and Indiana with a combined electric production capability of approximately 2,256 megawatts. OVEC is owned by several investor-owned utilities or utility holding companies and two affiliates of generation and transmission rural electric cooperatives. These entities or their affiliates comprise the Sponsoring Companies. The Sponsoring Companies purchase power from OVEC according to the terms of the Inter-Company Power Agreement (ICPA), which has a current termination date of June 30, 2040. Approximately 24% of the Companies' employees are covered by a collective bargaining agreement that expires on August 31, 2021.

Prior to 2004, OVEC's primary commercial customer was the U.S. Department of Energy (DOE). The contract to provide OVEC-generated power to the DOE was terminated in 2003 and all obligations were settled at that time. Currently, OVEC has an agreement to arrange for the purchase of power (Arranged Power), under the direction of the DOE, for resale directly to the DOE. The current agreement with the DOE was executed on July 11, 2018, for one year, with the option for the DOE to extend the agreement at the anniversary date. The agreement was extended on July 11, 2020, for one year. OVEC anticipates that this agreement could continue to 2027. All purchase costs are billable by OVEC to the DOE.

Rate Regulation—The proceeds from the sale of power to the Sponsoring Companies are designed to be sufficient for OVEC to meet its operating expenses and fixed costs, as well as earn a return on equity before federal income taxes. In addition, the proceeds from power sales are designed to cover debt amortization and interest expense associated with financings. The Companies have continued and expect to continue to operate pursuant to the cost-plus rate of return recovery provisions at least to June 30, 2040, the date of termination of the ICPA.

The accounting guidance for Regulated Operations provides that rate-regulated utilities account for and report assets and liabilities consistent with the economic effect of the way in which rates are established, if the rates established are designed to recover the costs of providing the regulated service and it is probable that such rates can be charged and collected. The Companies follow the accounting and reporting requirements in accordance with the guidance for Regulated Operations. Certain expenses and credits subject to utility regulation or rate determination normally reflected in income are deferred in the accompanying consolidated balance sheets and are recognized as income as the related amounts are included in service rates and recovered from or refunded to customers.

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

The Companies' regulatory assets, liabilities, and amounts authorized for recovery through Sponsor billings at December 31, 2020 and 2019, were as follows:

	2020	2019
Regulatory assets:		
Noncurrent regulatory assets:		
Unrecognized postemployment benefits	\$ 6,833,166	\$ 5,201,536
Unrecognized pension benefits	34,784,688	32,170,308
Income taxes billable to customers	<u>10,751,917</u>	<u>-</u>
Total	<u>52,369,771</u>	<u>37,371,844</u>
Total regulatory assets	<u>\$ 52,369,771</u>	<u>\$ 37,371,844</u>
Regulatory liabilities:		
Current regulatory liabilities:		
Deferred revenue—advances for construction	\$ 19,371,880	\$ 6,182,811
Deferred credit—advance collection of interest	<u>1,347,071</u>	<u>1,494,593</u>
Total	<u>20,718,951</u>	<u>7,677,404</u>
Noncurrent regulatory liabilities:		
Postretirement benefits	64,415,536	76,162,798
Income taxes refundable to customers	-	8,658,897
Advance billing of debt reserve	120,000,000	90,000,000
Decommissioning, demolition and other	<u>-</u>	<u>14,718,161</u>
Total	<u>184,415,536</u>	<u>189,539,856</u>
Total regulatory liabilities	<u>\$ 205,134,487</u>	<u>\$ 197,217,260</u>

Regulatory Assets—Regulatory assets consist primarily of pension benefit costs, postemployment benefit costs, income taxes, and accrued decommissioning and demolition costs to be billed to the Sponsoring Companies in future years. The Companies' current billing policy for pension and postemployment benefit costs is to bill its actual plan funding.

Regulatory Liabilities—The regulatory liabilities classified as current in the accompanying consolidated balance sheet as of December 31, 2020, consist primarily of interest expense collected from customers in advance of expense recognition and customer billings for construction in progress. These amounts will be credited to customer bills during 2021. Other regulatory liabilities consist primarily of postretirement benefit costs and advanced billings collected from the Sponsoring Companies for debt service.

The regulatory liability for postretirement benefits recorded at December 31, 2020 and 2019, represents amounts collected in historical billings in excess of the accounting principles generally accepted in the United States of America (GAAP) net periodic benefit costs, including a termination payment from the DOE in 2003 for unbilled postretirement benefit costs, and

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

incremental unfunded plan obligations recognized in the balance sheets but not yet recognizable in GAAP net periodic benefit costs.

In January 2017, the Companies started advance billing the Sponsoring Companies for debt service as allowed under the ICPA. As of December 31, 2020 and 2019, \$120 million and \$90 million, respectively, had been advance billed to the Sponsoring Companies. As the Companies have not yet incurred the related costs, a regulatory liability was recorded which will be credited to customer bills on a long-term basis.

Cash and Cash Equivalents—Cash and cash equivalents primarily consist of cash and money market funds and their carrying value approximates fair value. For purposes of these statements, the Companies consider temporary cash investments to be cash equivalents since they are readily convertible into cash and have original maturities of less than three months.

Electric Plant—Property additions and replacements are charged to utility plant accounts. Depreciation expense is recorded at the time property additions and replacements are billed to customers or at the date the property is placed in service if the in-service date occurs subsequent to the customer billing. Customer billings for construction in progress are recorded as deferred revenue—advances for construction. These amounts are closed to revenue at the time the related property is placed in service. Depreciation expense and accumulated depreciation are recorded when financed property additions and replacements are recovered over a period of years through customer debt retirement billing. All depreciable property will be fully billed and depreciated prior to the expiration of the ICPA. Repairs of property are charged to maintenance expense.

Fuel in Storage, Emission Allowances, and Materials and Supplies—The Companies maintain coal, reagent, and oil inventories, as well as emission allowances, for use in the generation of electricity for regulatory compliance purposes due to the generation of electricity. These inventories are valued at average cost. Materials and supplies consist primarily of replacement parts necessary to maintain the generating facilities and are valued at average cost.

Long-Term Investments—Long-term investments consist of marketable securities that are held for the purpose of funding decommissioning and demolition costs, debt service, potential postretirement funding, and other costs. These debt securities have been classified as trading securities in accordance with the provisions of the accounting guidance for Investments—Debt and Equity Securities. Debt and equity securities reflected in long-term investments are carried at fair value. Beginning in 2020, the unrealized gain or loss is reported in Regulatory Liability (Asset). The cost of securities sold is based on the specific identification cost method. The fair value of most investment securities is determined by reference to currently available market prices. Where quoted market prices are not available, the Companies use the market price of similar types of securities that are traded in the market to estimate fair value. See Fair Value Measurements in Note 10. Long-term investments primarily consist of municipal bonds, money market mutual fund investments, and mutual funds. Net unrealized gains (losses) recognized during 2020 and 2019 on securities still held at the balance sheet date were \$3,840,821 and \$16,445,716, respectively.

Fair Value Measurements of Assets and Liabilities—The accounting guidance for Fair Value Measurements and Disclosures establishes a fair value hierarchy that prioritizes the

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

inputs used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). Where observable inputs are available, pricing may be completed using comparable securities, dealer values, and general market conditions to determine fair value. Valuation models utilize various inputs that include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in inactive markets, and other observable inputs for the asset or liability.

Unamortized Debt Expense—Unamortized debt expense relates to costs incurred in connection with obtaining revolving credit agreements. These costs are being amortized over the term of the related revolving credit agreement and are recorded as an asset in the consolidated balance sheets. Costs incurred to issue debt are recorded as a reduction to long-term debt as presented in Note 6.

Asset Retirement Obligations and Asset Retirement Costs—The Companies recognize the fair value of legal obligations associated with the retirement or removal of long-lived assets at the time the obligations are incurred and can be reasonably estimated. The initial recognition of this liability is accompanied by a corresponding increase in depreciable electric plant. Subsequent to the initial recognition, the liability is adjusted for any revisions to the expected value of the retirement obligation (with corresponding adjustments to electric plant) and for accretion of the liability due to the passage of time.

These asset retirement obligations are primarily related to obligations associated with future asbestos abatement at certain generating stations and certain plant closure costs, including the impacts of the coal combustion residuals rule.

Balance—January 1, 2019	\$ 60,246,682
Accretion	3,275,262
Liabilities settled	(34,906)
Revisions to cash flows	-
	<hr/>
Balance—December 31, 2019	63,487,038
Accretion	3,476,310
Liabilities settled	-
Revisions to cash flows	71,970,108
	<hr/>
Balance—December 31, 2020	<u>\$ 138,933,456</u>

In 2020, the U.S. EPA finalized several changes to the regulations for coal combustion residuals. These changes included a final rule that all unlined surface impoundments are required to retrofit or close, not just those that have detected groundwater contamination above regulatory levels. The rule also changes the classification of certain surface impoundments from “lined” to “unlined.” Finally, the rule establishes a revised date, April 11, 2021, by which unlined surface impoundments and units that failed the aquifer location restriction must cease receiving waste and initiate closure or retrofit, unless a company files for an extension of that date, which the Companies have done and is further discussed in

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

Note 9. As a result of these rule changes and the potential for new, more restrictive rules under a new presidential administration, the Companies decided to accelerate the timing of remediation activities related to their coal ash ponds and landfills. This resulted in an upward revision to projected cash flows and an increase in the resulting asset retirement obligations in 2020, as disclosed in the table above. Changes in the regulations, or in the remediation technologies could potentially result in material increases in the asset retirement obligation. The Companies will revisit the studies as appropriate throughout the process of executing remediation related to the coal ash ponds and landfills to maintain an accurate estimated cost of remediation.

The Companies do not recognize liabilities for asset retirement obligations for which the fair value cannot be reasonably estimated. The Companies have asset retirement obligations associated with transmission assets. However, the retirement date for these assets cannot be determined; therefore, the fair value of the associated liability currently cannot be estimated and no amounts are recognized in the consolidated financial statements herein.

Income Taxes—The Companies use the liability method of accounting for income taxes. Under the liability method, the Companies provide deferred income taxes for all temporary differences between the book and tax basis of assets and liabilities, which will result in a future tax consequence. The Companies account for uncertain tax positions in accordance with the accounting guidance for income taxes.

Use of Estimates—The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Revenue Recognition—Revenue is recognized when the Companies transfer promised goods or services to customers in an amount that reflects the consideration to which the Companies expect to be entitled in exchange for those goods or services. Performance obligations related to the sale of electric energy are satisfied over time as system resources are made available to customers and as energy is delivered to customers and the Companies recognize revenue upon billing the customer.

The Companies have three contracts with customers resulting in three types of revenue. These three contracted revenue types are:

- 1) Sales of Electric Energy to Department of Energy
- 2) Sales of Electric Energy to Sponsoring Companies
- 3) Sales of Electric Energy to Pennsylvania, Jersey, Maryland Power Pool (PJM)

The performance obligations and recognition of revenue are similar and both individually and, in the aggregate, were not materially impacted by the implementation of Topic 606. The Companies have no contract assets or liabilities as of December 31, 2020. The following table provides information about the Companies' receivables from contracts with customers:

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

	Accounts Receivable
Beginning balance as of January 1, 2019	\$ 64,278,896
Ending balance as of December 31, 2019	<u>74,486,689</u>
Increase/(decrease)	<u>\$ 10,207,793</u>
Beginning balance as of January 1, 2020	\$ 74,486,689
Ending balance as of December 31, 2020	<u>\$ 44,900,548</u>
	<u>\$ (29,586,141)</u>

Recently Issued Accounting Standards—In June 2016, the FASB issued ASU 2016-13, *Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. The pronouncement changes the impairment model for most financial assets, replacing the current “incurred loss” model. ASU 2016-13 will require the use of an “expected loss” model for instruments measured at amortized cost and will also require entities to record allowances for available-for-sale debt securities rather than reduce the carrying amount. The Companies adopted ASC 326 effective January 1, 2020, using a modified retrospective method of adoption. Results for the reporting periods beginning after January 1, 2020, are presented under ASC 326, while prior periods are not adjusted.

Subsequent Events—In preparing the accompanying financial statements and disclosures, the Companies reviewed subsequent events through April 27, 2021, which is the date the consolidated financial statements were issued.

2. RELATED-PARTY TRANSACTIONS

Transactions with the Sponsoring Companies during 2020 and 2019 included the sale of all generated power to them, the purchase of arranged power from them, and other utility systems in order to meet the DOE’s power requirements, contract barging services, railcar services, and minor transactions for services and materials. The Companies have Power Agreements with Louisville Gas and Electric Company, Duke Energy Ohio, Inc., The Dayton Power and Light Company, Kentucky Utilities Company, Ohio Edison Company, and American Electric Power Service Corporation as agent for the American Electric Power System Companies; and Transmission Service Agreements with Louisville Gas and Electric Company, Duke Energy Ohio, Inc., The Dayton Power and Light Company, The Toledo Edison Company, Ohio Edison Company, Kentucky Utilities Company, and American Electric Power Service Corporation as agent for the American Electric Power System Companies.

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

At December 31, 2020 and 2019, balances due from the Sponsoring Companies are as follows:

	2020	2019
Accounts receivable	<u>\$37,633,208</u>	<u>\$66,926,922</u>

During 2020 and 2019, American Electric Power accounted for approximately 44% of operating revenues from Sponsoring Companies and Buckeye Power accounted for 18%. No other Sponsoring Company accounted for more than 10%.

American Electric Power Company, Inc. and subsidiary companies owned 43.47% of the common stock of OVEC as of December 31, 2020. The following is a summary of the principal services received from the American Electric Power Service Corporation as authorized by the Companies' Boards of Directors:

	2020	2019
General services	\$2,761,173	\$4,830,104
Specific projects	<u>257,787</u>	<u>119,157</u>
Total	<u>\$3,018,960</u>	<u>\$4,949,261</u>

General services consist of regular recurring operation and maintenance services. Specific projects primarily represent nonrecurring plant construction projects and engineering studies, which are approved by the Companies' Boards of Directors. The services are provided in accordance with the service agreement dated December 15, 1956, between the Companies and the American Electric Power Service Corporation.

3. COAL SUPPLY

The Companies have coal supply agreements with certain nonaffiliated companies that expire at various dates from the year 2020 through 2023. Pricing for coal under these contracts is subject to contract provisions and adjustments. The Companies currently have 100% of their 2020 coal requirements under contract. These contracts are based on rates in effect at the time of contract execution. The Companies' total obligations under these agreements as of December 31, 2020, are included in the table below:

2021	\$181,692,000
2022	112,722,000
2023	41,100,000

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

4. ELECTRIC PLANT

Electric plant at December 31, 2020 and 2019, consists of the following:

	2020	2019
Steam production plant	\$ 2,774,455,039	\$2,698,568,508
Transmission plant	81,986,558	81,986,558
General plant	12,992,689	12,909,163
Intangible	<u>26,564</u>	<u>26,564</u>
	2,869,460,850	2,793,490,793
Less accumulated depreciation	<u>1,648,697,601</u>	<u>1,563,780,062</u>
	1,220,763,249	1,229,710,731
Construction in progress	<u>18,727,452</u>	<u>13,208,832</u>
Total electric plant	<u>\$ 1,239,490,701</u>	<u>\$ 1,242,919,563</u>

All property additions and replacements are fully depreciated on the date the property is placed in service, unless the addition or replacement relates to a financed project. As the Companies' policy is to bill in accordance with the debt service schedule under the debt agreements, all financed projects are being depreciated in amounts equal to the principal payments on outstanding debt.

5. BORROWING ARRANGEMENTS AND NOTES

OVEC has a revolving credit facility of \$185 million set to expire on April 25, 2022. At December 31, 2020 and 2019, OVEC had borrowed \$60 million and \$80 million, respectively, under lines of credit. Interest expense related to lines of credit borrowings was \$1,860,768 in 2020 and \$3,757,148 in 2019. During 2020 and 2019, OVEC incurred annual commitment fees of \$308,303 and \$268,285, respectively, based on the borrowing limits of the line of credit.

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

6. LONG-TERM DEBT

The following amounts were outstanding at December 31, 2020 and 2019:

	Interest Rate Type	Interest Rate	2020	2019
Senior 2006 Notes:				
2006A due February 15, 2026	Fixed	5.80 %	\$ 146,533,289	\$ 168,569,904
2006B due June 15, 2040	Fixed	6.40	52,846,460	54,142,874
Senior 2007 Notes:				
2007A-A due February 15, 2026	Fixed	5.90	64,250,051	74,610,818
2007A-B due February 15, 2026	Fixed	5.90	16,180,745	18,790,003
2007A-C due February 15, 2026	Fixed	5.90	16,309,586	18,939,620
2007B-A due June 15, 2040	Fixed	6.50	26,354,033	27,012,831
2007B-B due June 15, 2040	Fixed	6.50	6,637,764	6,802,916
2007B-C due June 15, 2040	Fixed	6.50	6,690,005	6,857,084
Senior 2008 Notes:				
2008A due February 15, 2026	Fixed	5.92	20,059,786	23,292,665
2008B due February 15, 2026	Fixed	6.71	40,716,172	47,301,931
2008C due February 15, 2026	Fixed	6.71	42,874,648	49,367,759
2008D due June 15, 2040	Fixed	6.91	38,486,303	39,387,935
2008E due June 15, 2040	Fixed	6.91	39,155,024	40,072,323
Series 2009 Bonds:				
2009A due February 1, 2026	Fixed	2.88	25,000,000	25,000,000
2009B due February 1, 2026	Floating	2.01	25,000,000	25,000,000
2009C due February 1, 2026	Floating	2.01	25,000,000	25,000,000
2009D due February 1, 2026	Fixed	2.88	25,000,000	25,000,000
Series 2010 Bonds:				
2010A due November 1, 2030	Fixed	3.00	50,000,000	50,000,000
2010B due February 1, 2040	Floating	2.01	50,000,000	50,000,000
Series 2012 Bonds:				
2012A due June 1, 2032	Fixed	5.00	76,800,000	76,800,000
2012A due June 1, 2039	Fixed	5.00	123,200,000	123,200,000
2012B due November 1, 2030	Fixed	3.00	50,000,000	50,000,000
2012C due November 1, 2030	Fixed	3.00	50,000,000	50,000,000
Series 2017 Notes:				
2017A due September 6, 2022	Floating	4.37	100,000,000	100,000,000
Series 2019 Bonds:				
2019A due September 1, 2029	Fixed	3.25	<u>100,000,000</u>	<u>100,000,000</u>
Total debt			1,217,093,866	1,275,148,663
Total premiums and discounts (net)			(415,266)	(437,865)
Less unamortized debt expense			<u>(11,863,004)</u>	<u>(13,754,586)</u>
Total debt net of premiums, discounts, and unamortized debt expense			1,204,815,596	1,260,956,212
Current portion of long-term debt			<u>194,982,570</u>	<u>141,387,803</u>
Total long-term debt			<u>\$ 1,009,833,026</u>	<u>\$ 1,119,568,409</u>

All of the OVEC amortizing unsecured senior notes have maturities scheduled for February 15, 2026, or June 15, 2040, as noted in the previous table.

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

In 2009, the Ohio Air Quality Development Authority (the "OAQDA") issued the variable-rate, non-amortizing, tax-exempt State of Ohio Air Quality Revenue Bonds (Ohio Valley Electric Corporation Project) in four series (the "Series 2009A", the "Series 2009B", the "Series 2009C", and the "Series 2009D") of \$25 million each and \$100 million fixed-rate non-amortizing tax-exempt State of Ohio Air Quality Revenue Bonds (Ohio Valley Electric Corporation Project) (the "Series 2009E Bonds"), the proceeds of which were used to finance a portion of OVEC's costs of acquiring, constructing and installing certain solid waste disposal facilities comprising "air quality facilities," as defined in Chapter 3706, Ohio Revised Code, as amended, for Units 1-5 of the Kyger Creek Plant. OVEC is obligated to make payments under loan agreements between OVEC and OAQDA equal to the principal and interest payments due on such bonds, among other payments.

The Series 2009B and Series 2009C Bonds were remarketed in August 2016, for a five-year interest period that extends to August 25, 2021. On August 14, 2019, the Series 2009A Bonds and Series 2009D Bonds were each reoffered with a fixed interest rate of 2.875% per annum for the period beginning on August 28, 2019 and ending on February 1, 2026. In addition, in August 2019, the OAQDA issued the State of Ohio Air Quality Revenue Refunding Bonds (Ohio Valley Electric Corporation Project), Series 2019A in an aggregate principal amount of \$100 million (the "Series 2019A Bonds"), with a fixed interest rate of 3.25% per annum for the period beginning August 28, 2019 to September 1, 2029, the proceeds of which were used to refund the Series 2009E, which were scheduled to mature on October 1, 2019. The Series 2019A bonds begin amortizing in 2026. The Series 2009B and the Series 2009C Bonds are to be remarketed in 2021.

In December 2010, OVEC established a borrowing facility under which OVEC borrowed, in 2011, \$100 million variable-rate bonds due on February 1, 2040. In June 2011, the \$100 million variable-rate bonds were reissued by the Indiana Finance Authority (the "IFA") as two series of \$50 million variable-rate, non-amortizing, tax-exempt bonds: the Series 2010A Bonds, with an interest period of three years and the Series 2010B Bonds, with an interest period of five years. The Series 2010B Bonds were remarketed in August 2016 for another five-year interest period ending on August 25, 2021. The Series 2010A Bonds were remarketed in June 2014 for a three-year period and in September 2017 for another three-year period that extended to August 4, 2020. The Series 2010A Bonds were remarketed in July 2020 with a fixed interest rate of 3.0% per annum for the period beginning July 9, 2020 to November 1, 2030. The Series 2010A Bonds begin amortizing in 2026. The Series 2010B Bonds are to be remarketed in 2021.

During 2012, the IFA issued \$200 million fixed-rate, tax-exempt Midwestern Disaster Relief Revenue Bonds (Ohio Valley Electric Corporation Project) (the "Series 2012A Bonds") and two series of \$50 million each, variable-rate, tax-exempt bonds: the Series 2012B Bonds and the Series 2012C Bonds. The Series 2012A Bonds will begin amortizing on June 1, 2027, up to its maturity date. OVEC is obligated to make payments under loan agreements between OVEC and the IFA equal to the principal and interest payments due on such bonds, among other payments.

In 2017, the Series 2012B Bonds and the Series 2012C Bonds, which had been secured by irrevocable transferable direct-pay letters of credit, were remarketed with four-year and five-year interest periods expiring August 4, 2021 and August 4, 2022, respectively. In July 2020, the Series 2012B and Series 2012C Bonds were refinanced with a fixed interest rate of 3.0%

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per annum for the period beginning July 9, 2020 to November 1, 2030. The Series 2012B Bonds and the Series 2012C bonds begin amortizing in 2026.

During 2017, OVEC issued \$100 million 2017A variable-rate non-amortizing unsecured senior notes ("2017A Notes") to refinance and retire a 2013 series of notes ("2013A Notes"). The 2013A Notes had an original maturity date of February 15, 2018. The 2017A Notes have an annual repayment of \$33,333,333 on September 6, 2020, September 6, 2021, and at the maturity date of September 6, 2022. In 2020, pursuant to the 2017A Notes agreement, the lenders executed their consent to decline the first installment payment and defer payment of such amount until maturity.

The annual maturities of long-term debt as of December 31, 2020, are as follows:

2021	\$ 194,982,570
2022	132,134,224
2023	69,523,395
2024	73,831,592
2025	78,243,501
2026-2041	<u>668,378,584</u>
Total	<u>\$ 1,217,093,866</u>

Note that the 2021 maturities include \$100 million variable-rate bonds subject to remarketing in August 2021.

7. INCOME TAXES

OVEC and IKEC file a consolidated federal income tax return. The effective tax rate varied from the statutory federal income tax rate due to differences between the book and tax treatment of various transactions as follows:

	2020	2019
Income tax expense at statutory rate (21%)	\$ 590,159	\$ 29,980
Temporary differences flowed through to customer bills	(591,673)	(2,948,492)
Permanent differences and other	<u>1,514</u>	<u>5,981</u>
Income tax provision	<u>\$ -</u>	<u>\$ (2,912,531)</u>

Components of the income tax provision were as follows:

	2020	2019
Current income tax expense—federal	\$ -	\$ (2,912,531)
Current income tax (benefit)/expense—state	-	-
Deferred income tax expense/(benefit)—federal	<u>-</u>	<u>-</u>
Total income tax provision	<u>\$ -</u>	<u>\$ (2,912,531)</u>

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OVEC and IKEC record deferred tax assets and liabilities based on differences between book and tax basis of assets and liabilities measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. Deferred tax assets and liabilities are adjusted for changes in tax rates.

To the extent that the Companies have not reflected charges or credits in customer billings for deferred tax assets and liabilities, they have recorded a regulatory asset or liability representing income taxes billable or refundable to customers under the applicable agreements among the parties. These temporary differences will be billed or credited to the Sponsoring Companies through future billings. The regulatory asset was \$10,751,917 and regulatory liability was \$8,658,898 at December 31, 2020 and 2019, respectively.

Deferred income tax assets (liabilities) at December 31, 2020 and 2019, consisted of the following:

	2020	2019
Deferred tax assets:		
Deferred revenue—advances for construction	\$ 4,072,606	\$ 1,299,537
Federal net operating loss carryforwards	26,854,145	39,691,784
Postretirement benefit obligation	2,521,765	891,785
Pension liability	7,418,001	7,034,974
Postemployment benefit obligation	1,436,556	1,093,288
Asset retirement obligations	29,208,377	13,344,057
Advanced collection of interest and debt service	25,511,141	19,230,828
Miscellaneous accruals	1,146,349	1,154,630
Regulatory liability—postretirement benefits	13,542,262	16,008,318
Regulatory liability—asset retirement costs	-	3,093,544
Regulatory liability—income taxes refundable to customers	-	4,549,301
	<u>111,711,201</u>	<u>107,392,046</u>
Total deferred tax assets		
Deferred tax liabilities:		
Prepaid expenses	(501,970)	(384,597)
Electric plant	(90,448,307)	(81,887,070)
Unrealized gain/loss on marketable securities	(4,184,852)	(4,348,230)
Regulatory asset—pension benefits	(7,312,884)	(6,719,696)
Regulatory asset—asset retirement costs	-	-
Regulatory asset—unrecognized postemployment benefits	(1,436,556)	(1,093,288)
Regulatory asset—income taxes billable to customers	(2,257,902)	-
	<u>(106,142,472)</u>	<u>(94,432,881)</u>
Total deferred tax liabilities		
Valuation allowance	(24,979,544)	(12,959,165)
Deferred income tax liability	<u>\$ (19,410,815)</u>	<u>\$ -</u>

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Because future taxable income may prove to be insufficient to recover the Companies' gross deferred tax assets, the Companies have recorded a valuation allowance for their deferred tax assets as of December 31, 2020 and 2019. The valuation allowance required against the gross deferred tax assets results in the Companies recording an overall deferred tax liability in 2020.

The accounting guidance for Income Taxes addresses the determination of whether the tax benefits claimed or expected to be claimed on a tax return should be recorded in the financial statements. Under this guidance, the Companies may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. The Companies have not identified any uncertain tax positions as of December 31, 2020 and 2019, and accordingly, no liabilities for uncertain tax positions have been recognized.

The Companies file income tax returns with the Internal Revenue Service and the states of Ohio, Indiana, and the Commonwealth of Kentucky. The Companies are no longer subject to federal tax examinations for tax years 2016 and earlier. The Companies are no longer subject to State of Indiana tax examinations for tax years 2016 and earlier. The Companies are no longer subject to Ohio and the Commonwealth of Kentucky examinations for tax years 2015 and earlier. The Companies have \$127,876,880 of Federal Net Operating Loss carryovers that begin to expire in 2034.

8. PENSION PLAN AND OTHER POSTRETIREMENT AND POSTEMPLOYMENT BENEFITS

The Companies have a noncontributory qualified defined benefit pension plan (the Pension Plan) covering substantially all of their employees hired prior to January 1, 2015. The benefits are based on years of service and each employee's highest consecutive 36-month compensation period. Employees are vested in the Pension Plan after five years of service with the Companies.

Funding for the Pension Plan is based on actuarially determined contributions, the maximum of which is generally the amount deductible for income tax purposes and the minimum being that required by the Employee Retirement Income Security Act of 1974, as amended.

In addition to the Pension Plan, the Companies provide certain health care and life insurance benefits (Other Postretirement Benefits) for retired employees. Substantially, all of the Companies' employees hired prior to January 1, 2015, become eligible for these benefits if they reach retirement age while working for the Companies. These and similar benefits for active employees are provided through employer funding and insurance policies. In December 2004, the Companies established VEBA trusts. In January 2011, the Companies established an Internal Revenue Code Section 401(h) account under the Pension Plan.

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The full cost of the pension benefits and other postretirement benefits has been allocated to OVEC and IKEC in the accompanying consolidated financial statements. The allocated amounts represent approximately a 53% and 47% split between OVEC and IKEC, respectively, as of December 31, 2020, and approximately a 56% and 44% split between OVEC and IKEC, respectively, as of December 31, 2019.

The Pension Plan's assets as of December 31, 2020, consist of investments in equity and debt securities. All of the trust funds' investments for the pension and postemployment benefit plans are diversified and managed in compliance with all laws and regulations. Management regularly reviews the actual asset allocation and periodically rebalances the investments to targeted allocation when appropriate. The investments are reported at fair value under the Fair Value Measurements and Disclosures accounting guidance.

All benefit plan assets are invested in accordance with each plan's investment policy. The investment policy outlines the investment objectives, strategies, and target asset allocations by plan. Benefit plan assets are reviewed on a formal basis each quarter by the OVEC-IKEC Qualified Plan Trust Committee.

The investment philosophies for the benefit plans support the allocation of assets to minimize risks and optimize net returns.

Investment strategies include:

- Maintaining a long-term investment horizon.
- Diversifying assets to help control volatility of returns at acceptable levels.
- Managing fees, transaction costs, and tax liabilities to maximize investment earnings.
- Using active management of investments where appropriate risk/return opportunities exist.
- Keeping portfolio structure style neutral to limit volatility compared to applicable benchmarks.

The target asset allocation for each portfolio is as follows:

Pension Plan Assets	Target
Domestic equity	15 %
International and global equity	15
Fixed income	68
Cash	2
VEBA Plan Assets	Target
Domestic equity	20 %
International and global equity	20
Fixed income	60

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Each benefit plan contains various investment limitations. These limitations are described in the investment policy statement and detailed in customized investment guidelines. These investment guidelines require appropriate portfolio diversification and define security concentration limits. Each investment manager's portfolio is compared to an appropriate diversified benchmark index.

Equity investment limitations:

- No security in excess of 5% of all equities.
- Cash equivalents must be less than 10% of each investment manager's equity portfolio.
- Individual securities must be less than 15% of each manager's equity portfolio.
- No investment in excess of 5% of an outstanding class of any company.
- No securities may be bought or sold on margin or other use of leverage.

Fixed-Income Limitations—As of December 31, 2020, the Pension Plan fixed-income allocation consists of managed accounts composed of U.S. Government, corporate, and municipal obligations. The VEBA benefit plans' fixed-income allocation is composed of a variety of fixed-income securities and mutual funds. Investment limitations for these fixed-income funds are defined by manager prospectus.

Cash Limitations—Cash and cash equivalents are held in each trust to provide liquidity and meet short-term cash needs. Cash equivalent funds are used to provide diversification and preserve principal. The underlying holdings in the cash funds are investment grade money market instruments, including money market mutual funds, certificates of deposit, treasury bills, and other types of investment-grade short-term debt securities. The cash funds are valued each business day and provide daily liquidity.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

Projected Pension Plan and Other Postretirement Benefits obligations and funded status as of December 31, 2020 and 2019, are as follows:

	Pension Plan		Other Postretirement Benefits	
	2020	2019	2020	2019
Change in projected benefit obligation:				
Projected benefit obligation—beginning of year	\$ 244,541,899	\$ 234,099,137	\$ 159,833,696	\$ 151,305,246
Service cost	6,919,404	6,078,450	3,867,790	3,428,368
Interest cost	8,652,849	10,082,144	5,595,528	6,571,166
Plan participants' contributions	-	-	1,339,527	1,312,941
Benefits paid	(13,391,815)	(8,079,496)	(6,912,071)	(6,795,047)
Net actuarial loss (gain)	29,783,513	30,255,836	14,510,766	21,462
Plan amendments (1)	-	-	-	3,989,560
Settlement (2)	-	(27,857,703)	-	-
Expenses paid from assets	(71,538)	(36,469)	-	-
Projected benefit obligation—end of year	<u>276,434,312</u>	<u>244,541,899</u>	<u>178,235,236</u>	<u>159,833,696</u>
Change in fair value of plan assets:				
Fair value of plan assets—beginning of year	212,371,591	200,204,812	155,590,848	141,118,649
Actual return on plan assets	32,441,386	42,540,447	16,186,032	19,940,452
Expenses paid from assets	(71,538)	(36,469)	-	-
Employer contributions	10,300,000	5,600,000	35,794	13,853
Plan participants' contributions	-	-	1,339,527	1,312,941
Benefits paid	(13,391,815)	(8,079,496)	(6,912,071)	(6,795,047)
Settlement	-	(27,857,703)	-	-
Fair value of plan assets—end of year	<u>241,649,624</u>	<u>212,371,591</u>	<u>166,240,130</u>	<u>155,590,848</u>
Underfunded status—end of year	<u>\$ (34,784,688)</u>	<u>\$ (32,170,308)</u>	<u>\$ (11,995,106)</u>	<u>\$ (4,242,848)</u>

⁽¹⁾ The \$3.9M plan amendment is the result of the change of the long-term retiree cost sharing through retiree contributions for pre-65 retirees from 20% to 12%.

⁽²⁾ The \$27.9M settlement is the result of an annuity purchase of about \$22.7M for 162 retirees and beneficiaries which was paid on November 25, 2019 and the lump sums payments totaling about \$5.2M during 2019.

See Note 1 for information regarding regulatory assets related to the Pension Plan and Other Postretirement Benefits plan.

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The accumulated benefit obligation for the Pension Plan was \$246,035,532 and \$218,590,886 at December 31, 2020 and 2019, respectively.

Components of Net Periodic Benefit Cost—The Companies record the expected cost of Other Postretirement Benefits over the service period during which such benefits are earned.

Pension expense is recognized as amounts are contributed to the Pension Plan and billed to customers. The accumulated difference between recorded pension expense and the yearly net periodic pension expense, as calculated under generally accepted accounting principles, is billable as a cost of operations under the ICPA when contributed to the pension fund. This accumulated difference has been recorded as a regulatory asset in the accompanying consolidated balance sheets.

	Pension Plan		Other Postretirement Benefits	
	2020	2019	2020	2019
Service cost	\$ 6,919,404	\$ 6,078,450	\$ 3,867,790	\$ 3,428,368
Interest cost	8,652,849	10,082,144	5,595,528	6,571,166
Expected return on plan assets	(12,231,210)	(11,867,776)	(7,948,184)	(7,515,431)
Amortization of prior service cost	(416,565)	(416,565)	(2,781,539)	(3,145,420)
Recognized actuarial loss (gain)	815,085	1,234,195	(766,517)	-
Cost of settlements	-	3,570,924	-	-
Total benefit cost	<u>\$ 3,739,563</u>	<u>\$ 8,681,372</u>	<u>\$ (2,032,922)</u>	<u>\$ (661,317)</u>
Pension and other postretirement benefits expense recognized in the consolidated statements of income and retained earnings and billed to Sponsoring Companies under the ICPA	<u>\$ 5,800,000</u>	<u>\$ 5,600,000</u>	<u>\$ -</u>	<u>\$ -</u>

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The following table presents the classification of Pension Plan assets within the fair value hierarchy at December 31, 2020 and 2019:

	Fair Value Measurements at Reporting Date Using			Total
	Quoted Prices in Active Market for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	
2020				
Common stock	\$ 11,191,580	\$ -	\$ -	\$ 11,191,580
Equity mutual funds	53,315,439	-	-	53,315,439
Index futures	-	232	-	232
Fixed-income securities	-	157,072,275	-	157,072,275
Commodities	-	43	-	43
Cash equivalents	<u>5,718,922</u>	<u>-</u>	<u>-</u>	<u>5,718,922</u>
Subtotal benefit plan assets	<u>\$ 70,225,941</u>	<u>\$ 157,072,550</u>	<u>\$ -</u>	227,298,491
Investments measured at net asset value (NAV)				<u>14,351,133</u>
Total benefit plan assets				<u>\$241,649,624</u>
2019	(Level 1)	(Level 2)	(Level 3)	Total
Common stock	\$ 8,792,346	\$ -	\$ -	\$ 8,792,346
Equity mutual funds	42,776,633	-	-	42,776,633
Index futures	-	230	-	230
Fixed-income securities	-	140,413,999	-	140,413,999
Commodities	-	43	-	43
Cash equivalents	<u>7,154,484</u>	<u>-</u>	<u>-</u>	<u>7,154,484</u>
Subtotal benefit plan assets	<u>\$ 58,723,463</u>	<u>\$ 140,414,272</u>	<u>\$ -</u>	199,137,735
Investments measured at net asset value (NAV)				<u>13,233,857</u>
Total benefit plan assets				<u>\$212,371,592</u>

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The following table presents the classification of VEBA and 401(h) account assets within the fair value hierarchy at December 31, 2020 and 2019:

	Fair Value Measurements at Reporting Date Using			Total
	Quoted Prices in Active Market for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	
2020				
Equity mutual funds	\$ 61,519,280	\$ -	\$ -	\$ 61,519,280
Fixed-income mutual funds	79,992,711	-	-	79,992,711
Fixed-income securities	-	19,910,040	-	19,910,040
Cash equivalents	<u>1,403,900</u>	<u>-</u>	<u>-</u>	<u>1,403,900</u>
Benefit plan assets	<u>\$ 142,915,891</u>	<u>\$ 19,910,040</u>	<u>\$ -</u>	162,825,931
Uncleared cash disbursements from benefits paid				(5,536,750)
Investments measured at net asset value (NAV)				<u>8,950,949</u>
Total benefit plan assets				<u>\$ 166,240,130</u>
2019	(Level 1)	(Level 2)	(Level 3)	Total
Equity mutual funds	\$ 54,952,087	\$ -	\$ -	\$ 54,952,087
Fixed-income mutual funds	75,428,176	-	-	75,428,176
Fixed-income securities	-	21,122,393	-	21,122,393
Cash equivalents	<u>1,175,475</u>	<u>-</u>	<u>-</u>	<u>1,175,475</u>
Benefit plan assets	<u>\$ 131,555,738</u>	<u>\$ 21,122,393</u>	<u>\$ -</u>	152,678,131
Uncleared cash disbursements from benefits paid				(5,468,253)
Investments measured at net asset value (NAV)				<u>8,380,969</u>
Total benefit plan assets				<u>\$ 155,590,847</u>

Investments that were measured at net asset value (NAV) per share (or its equivalent) as a practical expedient have not been classified in the fair value hierarchy. These investments represent holdings in a single private investment fund that are redeemable at the election of the holder upon no more than 30 days' notice. The values reported above are based on information provided by the fund manager.

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Pension Plan and Other Postretirement Benefit Assumptions—Actuarial assumptions used to determine benefit obligations at December 31, 2020 and 2019, were as follows:

	Pension Plan		Other Postretirement Benefits			
	2020	2019	2020		2019	
			Medical	Life	Medical	Life
Discount rate	2.85 %	3.58 %	2.82 %	2.82 %	3.55 %	3.55 %
Rate of compensation increase	3.00	3.00	N/A	3.00	N/A	3.00

Actuarial assumptions used to determine net periodic benefit cost for the years ended December 31, 2020 and 2019, were as follows:

	2020	2019	2020		2019	
			Medical	Life	Medical	Life
	Discount rate	3.58 %	4.40 %	3.55 %	3.55 %	4.40 %
Expected long-term return on plan assets	5.75	6.00	5.11	5.75	5.33	6.00
Rate of compensation increase	3.00	3.00	N/A	3.00	N/A	3.00

In selecting the expected long-term rate of return on assets, the Companies considered the average rate of earnings expected on the funds invested to provide for plan benefits. This included considering the Pension Plan and VEBA trusts' asset allocation, and the expected returns likely to be earned over the life of the Pension Plan and the VEBAs.

Assumed health care cost trend rates at December 31, 2020 and 2019, were as follows:

	2020	2019
Health care trend rate assumed for next year—participants under 65		
Health care trend rate assumed for next year—participants over 65	6.50 %	7.00 %
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)—participants under 65	6.80	7.30
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)—participants over 65	5.00	5.00
Year that the rate reaches the ultimate trend rate	5.00	5.00
	2024	2024

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Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plans. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

	One-Percentage- Point Increase	One-Percentage- Point Decrease
Effect on total service and interest cost	\$ 1,167,960	\$ (957,902)
Effect on postretirement benefit obligation	21,697,182	(17,801,770)

Pension Plan and Other Postretirement Benefit Assets—The asset allocation for the Pension Plan and VEBA trusts at December 31, 2020 and 2019, by asset category was as follows:

	<u>Pension Plan</u>		<u>VEBA Trusts</u>	
	2020	2019	2020	2019
Asset category:				
Equity securities	33 %	31 %	41 %	39 %
Debt securities	67	69	59	61

Pension Plan and Other Postretirement Benefit Contributions—The Companies expect to contribute \$6,000,000 to their Pension Plan and \$25,400 to their Other Postretirement Benefits plan in 2021.

Estimated Future Benefit Payments—The following benefit payments, which reflect expected future service, as appropriate, are expected to be paid:

Years Ending December 31	Pension Plan	Other Postretirement Benefits
2021	\$ 10,340,070	\$ 7,163,164
2022	11,128,901	7,606,599
2023	11,750,475	8,114,635
2024	12,727,758	8,667,211
2025	12,723,903	9,162,833
Five years thereafter	69,056,395	50,538,385

Postemployment Benefits—The Companies follow the accounting guidance in FASB ASC 712, *Compensation—Non-Retirement Postemployment Benefits*, and accrue the estimated cost of benefits provided to former or inactive employees after employment but before retirement. Such benefits include, but are not limited to, salary continuations, supplemental unemployment, severance, disability (including workers' compensation), job training, counseling, and continuation of benefits, such as health care and life insurance coverage. The cost of such benefits and related obligations has been allocated to OVEC and IKEC in the

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accompanying consolidated financial statements. The allocated amounts represent approximately a 37% and 63% split between OVEC and IKEC, respectively, as of December 31, 2020, and approximately a 42% and 58% split between OVEC and IKEC, respectively, as of December 31, 2019. The liability is offset with a corresponding regulatory asset and represents unrecognized postemployment benefits billable in the future to customers. The accrued cost of such benefits was \$6,833,166 and \$5,201,536 at December 31, 2020 and 2019, respectively.

Defined Contribution Plan—The Companies have a trustee-defined contribution supplemental pension and savings plan that includes 401(k) features and is available to employees who have met eligibility requirements. The Companies' contributions to the savings plan equal 100% of the first 1% and 50% of the next 5% of employee- participants' pay contributed. In addition, the Companies provide contributions to eligible employees, hired on or after January 1, 2015, of 3% to 5% of pay based on age and service. Benefits to participating employees are based solely upon amounts contributed to the participants' accounts and investment earnings. By its nature, the plan is fully funded at all times. The employer contributions for 2020 and 2019 were \$1,920,461 and \$1,966,847, respectively.

9. ENVIRONMENTAL MATTERS

Air Regulations

On March 10, 2005, the United States Environmental Protection Agency (the U.S. EPA) issued the Clean Air Interstate Rule (CAIR) that required significant reductions of SO₂ and NO_x emissions from coal-burning power plants. On March 15, 2005, the U.S. EPA also issued the Clean Air Mercury Rule (CAMR) that required significant mercury emission reductions for coal-burning power plants. These emission reductions were required in two phases: 2009 and 2015 for NO_x, 2010 and 2015 for SO₂ and 2010 and 2018 for mercury. Ohio and Indiana subsequently finalized their respective versions of CAIR and CAMR. In response, the Companies determined that it would be necessary to install flue gas desulfurization (FGD) systems at both plants to comply with these rules. Following completion of the necessary engineering and permitting, construction was started on the FGD systems, and the two Kyger Creek FGD systems were placed into service in 2011 and 2012, while the two Clifty Creek FGD systems were placed into service in 2013.

After the promulgation of CAIR and CAMR, a series of legal challenges to those rules resulted in their replacement with additional rules. CAMR was replaced with a rule referred to as the Mercury and Air Toxics Standards (MATS) rule. The rule became final on April 16, 2012, and the Companies had to demonstrate compliance with MATS emission limits on April 16, 2015. The MATS rule has also undergone legal challenges since it went into effect, and there are a few remaining legal issues pending. The controls the Companies have installed have proven to be adequate to meet the stringent emissions requirements outlined in the MATS rule.

After CAIR was promulgated, legal challenges resulted in that rule being remanded back to the U.S. EPA. The U.S. EPA subsequently promulgated a replacement rule to CAIR called the Cross-State Air Pollution Rule (CSAPR). CSAPR was issued on July 6, 2011, and it was scheduled to

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go into effect on January 1, 2012. However, a legal challenge of that rule resulted in a stay. The stay was lifted by the D.C. Circuit Court in 2014 and CSAPR, which requires significant NOx and SO2 emissions reductions, became effective on January 1, 2015. Further legal challenges of CSAPR resulted in the U.S. Supreme Court remanding portions of the CSAPR rule back to the D.C. Circuit Court for additional review and subsequent action by the U.S. EPA. This resulted in U.S. EPA issuing the CSAPR Update rule which became final on September 7, 2016, and went into effect beginning with the May 1, 2017 to September 30, 2017 ozone season. The CSAPR Update did not replace CSAPR, it only required additional reductions in NOx emissions from utilities in 22 states (including Ohio and Indiana) during the ozone season. The Companies prepared for and implemented a successful compliance strategy for the CSAPR Update rule requirements in the 2017 ozone season. That strategy was standardized to meet future ozone season compliance obligations, and its execution provided for another successful ozone season in 2019. The CSAPR Update Rule has also been subject to extensive litigation, and the D.C. Circuit Court of Appeals issued a decision on September 13, 2019, on one of those legal challenges that remanded portions of this rule back to U.S. EPA to address. On October 15, 2020, the EPA issued a proposed revision to the CSAPR Update in response to the court remand; and on March 15, 2021, U.S. EPA Administer Regan signed a final rule revising the CSAPR Update. This rule will go into effect in the summer of 2021, 60-days after it is formally published in the *Federal Register*. The Companies are not currently anticipating that this new rule will impact our near term compliance strategy or materially change future operations.

As a result of the installation and effective operation of the FGD systems and the SCR systems at each plant, management did not need to purchase additional annual SO2 allowances, annual NOx allowances or ozone season NOx allowances in 2020 to cover actual emissions. The Companies also maintain a bank of allowances for all three programs as a hedge to cover future emissions in the event of any short-term operating events or other external factors. Depending on a variety of operational and economic factors, management may elect to consume a portion of these banked allowances and/or strategically purchase additional CSAPR annual and ozone season allowances in 2021 and beyond for compliance with the CSAPR and the recently revised CSAPR Update rules.

With all FGD systems fully operational, the Companies continue to expect to have adequate SO2 allowances available every year without having to rely on market purchases to comply with the CSAPR rules in their current form. Given the success of the Companies' NOx ozone season compliance strategy, the purchase of additional NOx allowances is less likely in the short term as well; however, the Companies did implement changes in unit dispatch criteria for Clifty Creek Unit 6 during the 2017 and subsequent ozone seasons and are continuing to evaluate the need for additional NOx controls for this unit to provide additional flexibility in operating this unit in light of recent changes to the CSAPR Update rules that are expected to go into effect during the 2021 NOx ozone season.

CCR Rule

In 2010, the U.S. EPA published a proposed rule to regulate the disposal and beneficial reuse of coal combustion residuals (CCRs), including fly ash and boiler slag generated at coal-fired electric generating units as well as FGD gypsum generated at some coal-fired plants. The proposed rule contained two alternative proposals. One proposal would impose federal

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hazardous waste disposal and management standards on these materials and another would allow states to retain primary authority to regulate the beneficial reuse and disposal of these materials under state solid waste management standards, including minimum federal standards for disposal and management. Both proposals would impose stringent requirements for the construction of new coal ash landfills and existing unlined surface impoundments.

Various environmental organizations and industry groups filed a petition seeking to establish deadlines for a final rule. To comply with a court-ordered deadline, the U.S. EPA issued a prepublication copy of its final rule in December 2014. The rule was published in the Federal Register in April 2015 and became effective in October 2015.

In the final rule, the U.S. EPA elected to regulate CCR as a nonhazardous solid waste and issued new minimum federal solid waste management standards. The rule applies to new and existing active CCR landfills and CCR surface impoundments at operating electric utility or independent power production facilities. The rule imposes new and additional construction and operating obligations, including location restrictions, liner criteria, structural integrity requirements for impoundments, operating criteria, and additional groundwater monitoring requirements. The rule is self-implementing and currently does not require state action for the states of Indiana or Ohio. As a result of this self-implementing feature, the rule contains extensive recordkeeping, notice, and Internet posting requirements.

The Companies have been systematically implementing the applicable provisions of the CCR rule. The Companies have completed all compliance obligations associated with the rule to date and are continuing to evaluate what, if any, impacts groundwater quality will have on the South Fly Ash Pond and landfill at Kyger Creek and the West Boiler Slag Pond and landfill at Clifty Creek. To date, these four CCR units continue to meet the groundwater monitoring standards of the CCR rule. The Companies have been evaluating potential impacts to groundwater quality near the boiler slag pond at Kyger Creek and the landfill runoff collection pond at Clifty Creek as required by the CCR rule. The Companies have determined that statistically significant increases (SSIs) in certain groundwater parameters are present at the two identified locations, and additional steps as defined by the CCR rule were taken. The evaluation of whether an SSI exists is a required component of the groundwater monitoring conditions of the CCR rule. A determination that an SSI appears to be present requires additional evaluation to be undertaken by the facility to determine if there are alternative sources that are influencing groundwater quality and to evaluate the extent of the groundwater quality impact. Concurrently, a facility must continue to evaluate groundwater quality as required by the CCR rule, and determine what potential corrective actions are feasible to address the SSIs. The Companies conducted Alternative Source Demonstrations (ASD) to determine if groundwater was being influenced from sources other than the CCR unit. The ASDs were unable to definitively prove that alternative sources were directly influencing groundwater quality. As a result, the Companies worked with their Qualified Professional Engineer (QPE) to determine what corrective actions were feasible for each CCR unit, and then held a public meeting to discuss these options with the public prior to selecting a remedy. The Companies continue to work through the compliance requirements of the CCR Rule and remain in compliance.

Since the initial publication of the CCR rules in 2015, several legal, legislative and regulatory events impacting the scope, applicability and future CCR compliance obligations and timelines

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have also taken place. Final actions include: 1.) federal legislation (i.e., the WIIN Act) that provides a pathway for states to seek approval for administering and enforcing the federal CCR program; 2.) U.S. EPA's issuance of a Phase I, Part I revision to the CCR rules on March 1, 2018; 3.) the D.C. Circuit Court's August 21, 2018, ruling vacating and remanding portions of the CCR rule; 4.) U.S. EPA's issuance of a final CCR Rule, Part A, which was published in the *Federal Register* on August 28, 2020. This final rule introduced a significant revision to the 2015 CCR rule requiring all impoundments that do not meet the liner requirements outlined in the rule to cease receiving CCR material and initiate closure by April 11, 2021, regardless of their overall compliance status. If that date is not technically feasible, an alternate date to cease receiving CCR material and initiate closure can be secured from U.S. EPA through a proposed extension request process, which was required by U.S. EPA no later than November 30, 2020. The surface impoundments at Kyger Creek and Clifty Creek were not constructed in a manner that meets the definition of a liner under the 2015 CCR rule. As a result, the Companies completed an engineering evaluation to develop preliminary closure designs for the impoundments and to determine a technically feasible timeline for discontinuing placement of CCR and non-CCR wastestreams in these impoundments and to initiate closure of the CCR impoundments consistent with the requirements of the rule. The Companies submitted technical justification documents to U.S. EPA in compliance with the November 30, 2020, deadline that demonstrated why additional time is needed to cease placement of CCR and non-CCR wastestreams in the surface impoundments and initiate closure. The Companies anticipate U.S. EPA will approve the alternative schedule at this time. However, U.S. EPA is still reviewing the Companies' justifications at the time of the development of this footnote. The Companies anticipate that U.S. EPA will provide feedback in the first half of 2021. Separately, the proposed Part B revisions to the 2015 CCR rule outline the development of a federal permitting program to regulate and enforce the CCR rule at all applicable facilities consistent with the Congressional mandate outlined in the WIIN Act. This federal permit program would replace the current enforcement mechanism of a self-implementing rule enforced through citizen suits and place it back with U.S. EPA or any state regulatory that receives primacy to implement the CCR permitting within their respective state. The Companies are actively monitoring these developments and adapting their CCR compliance program to ensure compliance obligations and timelines are adjusted accordingly. Changes in regulations or in the Companies' strategies for mitigating the impact of coal combustion residuals could potentially result in material increases to the asset retirement obligations. The Companies will revisit the demolition and decommissioning studies as appropriate throughout the process of executing closure of the CCR surface impoundments to maintain an accurate estimated cost of ultimate facility closure and decommissioning.

In February 2014, the U.S. EPA completed a risk evaluation of the beneficial uses of coal fly ash in concrete and FGD gypsum in wallboard and concluded that the U.S. EPA supports these beneficial uses. Currently, approximately 65 percent of the coal ash and other residual products from the Companies' generating facilities are reused in the production of cement and wallboard, as soil amendments, as abrasives or road treatment materials, and for other beneficial uses.

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NAAQS Compliance for SO₂

On June 22, 2010, the U.S. EPA revised the Clean Air Act by developing and publishing a new one-hour SO₂ NAAQS of 75 parts per billion, which replaced the previously existing 24-hour and annual standards, and became effective on August 23, 2010. States with areas failing to meet the standard were required to develop state implemented plans to expeditiously attain and maintain the standard.

On August 15, 2013, the U.S. EPA published its initial non-attainment area designations for the new one-hour SO₂, which did not include the areas around Kyger Creek or Clifty Creek. However, the amended rule does establish that at a minimum, sources that emit 2,000 tons SO₂ or more per year be characterized by their respective states using either modeling of actual source emissions or through appropriately sited ambient air quality monitors.

In addition, U.S. EPA entered into a settle agreement with Sierra Club/NRDC in the U.S. District Court for the Northern District of California requiring U.S. EPA to take certain actions, including completing area designation by July 2, 2016, for areas with either monitored violations based on 2013-15 air quality monitoring or sources not announced for retirement that emitted more than 16,000 tons SO₂ or more than 2,600 tons with a 0.45 SO₂/mmBtu emission rate in 2012.

Both Kyger Creek and Clifty Creek directly or indirectly triggered one of the criteria and have been evaluated by the respective state regulatory agencies through modeling. The modeling results showed Clifty Creek could meet the new one-hour SO₂ limit using their current scrubber systems without any additional investment or modifications. Kyger Creek's modeling data was rejected by U.S. EPA as inconclusive in 2016. As a result, U.S. EPA required Kyger Creek install an SO₂ monitoring network around the plant and monitor ambient air quality beginning on January 1, 2017. Based on the first three years of data from that network, Ohio EPA prepared an updated petition to U.S. EPA in early 2020 requesting that the area in the county surrounding the plant be re-designated to attainment/unclassifiable with the one-hour SO₂ standard. U.S. EPA subsequently acted on this request and published a notice in the *Federal Register* proposing to make this re-designation. A final rulemaking approving the re-designation is expected in 2021. Finally, on February 26, 2019, the U.S. EPA issued a final decision that it is retaining the existing primary SO₂ NAAQS at 75 parts per billion for the next five-year NAAQS review cycle. Given this decision, combined with current scrubber performance, the Companies expect to avoid more restrictive permit limits relative to its SO₂ emissions or the need for additional capital investment in major scrubber upgrades or modifications.

Steam Electric ELGs

On September 30, 2015, the U.S. EPA signed a new final rule governing Effluent Limitations Guidelines (ELGs) for the wastewater discharges from steam electric power generating plants. The rule, which was formally published in the Federal Register on November 3, 2015, impacted future wastewater discharges from both the Kyger Creek and Clifty Creek stations.

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The rule was intended to require the Companies to modify the way they handle a number of wastewater processes at both power plants. Specifically, the new ELG standards were going to affect the following wastewater processes in three ways listed below; however, in April 2017, the U.S. EPA issued an administrative stay on the ELG rule; and then in June 2017, the U.S. EPA issued a separate rulemaking staying the compliance deadlines for portions of the ELG rule applicable to bottom ash sluice water and to FGD wastewater discharges. The U.S. EPA revised the rule redefining what constitutes "best available technology" for these two wastewater discharges and issued an updated final rule in the Federal Register on October 13, 2020. Based on the original rule and revisions captured in the 2020 update, the following impacts to each wastewater discharge are expected:

1. Kyger Creek will need to convert to dry fly ash handling by no later than December 31, 2023. The U.S. EPA stay on portions of the ELG rule does not impact the need to convert Kyger Creek station to dry fly ash handling or the associated timeline. The Clifty Creek station already has a dry fly ash handling system in place, so this provision of the rule will not impact Clifty Creek's operations.
2. The new ELG rules originally prohibited the discharge of bottom ash sluice water from boiler slag/bottom ash waste water treatment systems. For Clifty Creek and Kyger Creek, this will result in the conversion of each plant's boiler slag pond to a closed-loop sluicing system for boiler slag, with up to a ten percent purge based on the volume of each facilities' total wetted volume. The Companies conducted a Phase I engineering study in 2016 to determine options and costs associated with retrofitting the plants' boiler slag treatment systems, but postponed the study until more information was available from U.S. EPA on the technologies being considered in the revised rule. After reviewing the new rule in draft, the Companies resumed the engineering study needed to formulate an overall compliance strategy based on this updated information. This study includes a further evaluation of technologies or retrofits capable of complying with the requirements of the revised rule, which included preliminary engineering, design, and schedule development that were initiated late in 2019. The Companies have completed the required evaluation associated with each facilities' boiler slag/bottom ash transport waste water treatment in 2020. This feed information was used to develop design and to initiate the bid process to conduct the work. Both Kyger Creek and Clifty Creek Stations are securing various environmental permits necessary to commence construction on the boiler slag/bottom ash handling systems, with work at both locations expected to initiate sometime in 2021.
3. The new ELG rules originally established new internal limitations for the FGD system wastewater discharges. Specifically, there were to be new internal limits for arsenic, mercury, selenium, and nitrate/nitrite nitrogen from the FGD chlorides purge stream wastewater treatment plant at each plant. After reviewing the requirements of the 2015 edition of the rule, the Companies expected both Clifty Creek and Kyger Creek stations to be able to meet the mercury and arsenic limitations with the current wastewater treatment technology; however, the Companies anticipated the potential to add some form of biological (or equivalent nonbiological) treatment system downstream of each station's existing FGD waste water treatment plant to meet the new nitrate/nitrite nitrogen and selenium limitations. Installation of new controls to meet the final effluent limitations contained in the revised rule were placed on hold while the U.S. EPA reconsidered the 2015

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ELG rule to ensure that the compliance strategy ultimately selected would be able to meet any revised requirements in the updated ELG rule. With the finalization of the October 13, 2020 ELG Revision, the Companies resumed evaluation of the appropriate technology, design, and schedule to achieve compliance with the new requirements, which included a change in the final effluent limitations for arsenic, nitrate/nitrite, mercury and selenium. The most significant change to the rule is associated with the final effluent limitation for mercury, which was ultimately lower than the final limit in the 2015 version of the rule, resulting in the Companies needing to re-evaluate and pilot technologies to determine what technology is capable of achieving this reduced mercury limit on the FGD discharges from each station. The Companies have been working with outside engineering resources to develop preliminary design reports and to schedule pilots since late 2020. Further, the Companies have been working with state agencies to request the revised ELG applicability date for FGD waste water of no later than December 31, 2025.

Any new ELG limits will be implemented through each station's waste water discharge permit, which is typically renewed on a five-year basis. The final compliance dates are expected to be facility-specific and negotiated with the Companies' state permit agencies based on the time needed to plan, secure funding, design, procure, and install necessary control technologies once the new rulemaking has been completed. The Companies will continue to monitor EPA regulatory actions on this rule and will respond as necessary.

316(b) Compliance

The 316(b) rule was published as a final rule in the Federal Register on August 15, 2014, and impacts facilities that use cooling water intake structures designed to withdraw at least 2 million gallons per day from waters of the U.S., and those facilities who also have an NPDES permit. The rule requires such facilities to choose one of seven options specified by the rule to reduce impingement to fish and other aquatic organisms. Additionally, facilities that withdraw 125 million gallons or more per day must conduct entrainment studies to assist state permitting authorities in determining what site-specific controls are required to reduce the number of aquatic organisms entrained by each respective cooling water system.

The Companies have completed the required two-year fish entrainment studies and filed the reports with the respective state regulatory agencies consistent with regulatory requirements under 40 CFR Section 122.21(r).

The timeline for determining if retrofits may be required to the cooling water systems at either Clifty Creek or Kyger Creek, as well as the type of retrofit required, will be negotiated with each state regulatory agency during future NPDES Permit renewals consistent with state regulatory obligations under 40 CFR Section 125.98(f).

The environmental rules and regulations discussed throughout the Environmental Matters footnote could require additional capital expenditures or maintenance expenses in future periods.

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10. FAIR VALUE MEASUREMENTS

The accounting guidance for financial instruments requires disclosure of the fair value of certain financial instruments. The estimates of fair value under this guidance require the application of broad assumptions and estimates. Accordingly, any actual exchange of such financial instruments could occur at values significantly different from the amounts disclosed.

OVEC utilizes its trustee's external pricing service in its estimate of the fair value of the underlying investments held in the benefit plan trusts and investment portfolios. The Companies' management reviews and validates the prices utilized by the trustee to determine fair value. Equities and fixed-income securities are classified as Level 1 holdings if they are actively traded on exchanges. In addition, mutual funds are classified as Level 1 holdings because they are actively traded at quoted market prices. Certain fixed-income securities do not trade on an exchange and do not have an official closing price. Pricing vendors calculate bond valuations using financial models and matrices. Fixed-income securities are typically classified as Level 2 holdings because their valuation inputs are based on observable market data. Observable inputs used for valuing fixed-income securities are benchmark yields, reported trades, broker/dealer quotes, issuer spreads, bids, offers, and economic events. Other securities with model-derived valuation inputs that are observable are also classified as Level 2 investments. Investments with unobservable valuation inputs are classified as Level 3 investments.

As of December 31, 2020 and 2019, the Companies held certain assets that are required to be measured at fair value on a recurring basis. These consist of investments recorded within long-term investments. The investments consist of money market mutual funds, equity mutual funds, and fixed-income municipal securities. Changes in the observed trading prices and liquidity of money market funds are monitored as additional support for determining fair value, and unrealized gains and losses are recorded in earnings.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the Companies believe their valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

As cash and cash equivalents, current receivables, current payables, and line of credit borrowings are all short-term in nature, their carrying amounts approximate fair value.

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Long-Term Investments—Assets measured at fair value on a recurring basis at December 31, 2020 and 2019, were as follows:

	Fair Value Measurements at Reporting Date Using		
	Quoted Prices in Active Market for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
2020			
Equity mutual funds	\$ 55,782,673	\$ -	\$ -
Fixed-income mutual funds	-	-	-
Fixed-income municipal securities	-	96,555,122	-
Cash equivalents	<u>121,616,295</u>	<u>-</u>	<u>-</u>
Total fair value	<u>\$ 177,398,968</u>	<u>\$ 96,555,122</u>	<u>\$ -</u>
2019	(Level 1)	(Level 2)	(Level 3)
Equity mutual funds	\$ 99,982,734	\$ -	\$ -
Fixed-income mutual funds	37,002,850	-	-
Fixed-income municipal securities	-	101,374,099	-
Cash equivalents	<u>2,379,596</u>	<u>-</u>	<u>-</u>
Total fair value	<u>\$ 139,365,180</u>	<u>\$ 101,374,099</u>	<u>\$ -</u>

Long-Term Debt—The fair values of the senior notes and fixed-rate bonds were estimated using discounted cash flow analyses based on current incremental borrowing rates for similar types of borrowing arrangements. These fair values are not reflected in the balance sheets. The fair values and recorded values of the senior notes and fixed- and variable-rate bonds as of December 31, 2020 and 2019, are as follows:

	2020		2019	
	Fair Value	Recorded Value	Fair Value	Recorded Value
Total	<u>\$ 1,364,602,177</u>	<u>\$ 1,217,093,866</u>	<u>\$ 1,390,779,759</u>	<u>\$ 1,275,148,664</u>

11. LEASES

OVEC has various operating leases for the use of other property and equipment.

On January 1, 2019, the Companies adopted ASC 842, "Leases" which, among other changes, requires the Companies to record liabilities classified as operating leases on the balance sheet along with a corresponding right-of-use asset. The Companies elected the package of practical

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expedients available for expired or existing contracts, which allowed them to carryforward their historical assessments of whether contracts are or contain leases, lease classification tests and treatment of initial direct costs. Further, the Companies elected to not separate lease components from non-lease components for all fixed payments, and excluded variable lease payments in the measurement of right-of-use assets and lease obligations.

Upon adoption of ASC 842, the impact was a \$22,000 increase in ROU assets and operating lease obligations. These adjustments are the result of assigning a right-of-use asset and related lease liability to the Companies operating leases. There were no cumulative effect adjustments to opening retained earnings, and adoption of the lease standard had no impact to cash from or used in operating, financing, or investing activities on the cash flow statement.

The Companies determine whether an arrangement is, or includes, a lease at contract inception. Leases with an initial term of 12 months or less are not recognized on the balance sheet. The Companies recognize lease expense for these leases on a straight-line basis over the lease term.

Operating lease right-of-use assets and liabilities are recognized at commencement date and initially measured based on the present value of lease payments over the defined lease term.

The leases typically do not provide an implicit rate; therefore, the Companies use the estimated incremental borrowing rate at the time of lease commencement to discount the present value of lease payments. In order to apply the incremental borrowing rate, a portfolio approach with a collateralized rate is utilized. Assets were grouped based on similar lease terms and economic environments in a manner whereby the Companies reasonably expect that the application is not expected to differ materially from a lease-by-lease approach.

The Companies have operating and finance leases for the use of vehicles, property, and equipment. The leases have remaining terms of 0 year to 6 years. The components of lease expense were as follows:

December 31	2020
Operating lease cost	<u>\$ 7,512</u>
Finance lease cost:	
Amortization of leased assets	\$ 386,089
Interest on lease liabilities	<u>62,702</u>
Total finance lease cost	<u>\$ 448,791</u>

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Supplemental cash flow information related to leases was as follows:

Operating cash flows from operating leases	\$ 7,512
Operating cash flows from finance leases	65,300
Financing cash flows from finance leases	259,242
Weighted average remaining lease term:	
Operating leases	< 1 year
Finance leases	5 years
Weighted average discount rate:	
Operating leases	2.5 %
Finance leases	5.4 %

The amount of operating lease ROU assets and liabilities is \$0 and \$7,431 as of December 31, 2020 and 2019, respectively.

The amount in property under finance leases is \$4,081,933 and \$1,545,051 with accumulated depreciation of \$610,556 and \$669,164 as of December 31, 2020 and 2019, respectively.

Future cash flows of operating leases, and maturities of finance lease liabilities are as follows:

Years Ending December 31	Operating	Finance
2021	\$ -	\$ 803,802
2022	-	732,870
2023	-	667,913
2024	-	620,873
2025	-	520,679
Thereafter	-	50,528
	<hr/>	<hr/>
Total future minimum lease payments	\$ -	3,396,665
		<hr/>
Less estimated interest element		355,432
		<hr/>
Estimated present value of future minimum lease payments		<u>3,041,233</u>

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12. COMMITMENTS AND CONTINGENCIES

The Companies are party to or may be affected by various matters under litigation. Management believes that the ultimate outcome of these matters will not have a significant adverse effect on either the Companies' future results of operation or financial position.

On March 31, 2018, FirstEnergy Solutions Corp. (FES), one of the Sponsoring Companies under the ICPA, filed for Chapter 11 bankruptcy protection under the United States Bankruptcy Code

in the United States Bankruptcy Court for the Northern District of Ohio (the "Bankruptcy Court"). OVEC made a preemptive filing on March 26, 2018, at the Federal Energy Regulatory Commission (FERC) requesting either (i) an order finding that FES's anticipated rejection of the ICPA would constitute a violation of that agreement's terms and would not satisfy the Federal Power Act's "public interest" standard, or, (ii) an order declaring that FERC has exclusive jurisdiction over the proposed rejection of the ICPA (the "FERC Action"). On April 1, 2018, FES filed in the Bankruptcy Court a motion to reject the ICPA and separately obtained an order temporarily enjoining the FERC Action. On May 11, 2018, the Bankruptcy Court granted a preliminary injunction enjoining FERC from reviewing FES's requested rejection of the ICPA under the public interest standard. FERC subsequently filed an appeal of this decision with the United States Court of Appeals for the Sixth Circuit (the "Injunction Appeal"), which OVEC joined as an intervenor. On July 31, 2018, the Bankruptcy Court granted FES's motion to reject the ICPA using the "business judgement" standard used to evaluate contract rejection under the Bankruptcy Code (the "Rejection Order"). Per the ICPA, upon rejection, OVEC made available to all other Sponsoring Companies FES's entitlement to available energy under the ICPA. OVEC appealed the Rejection Order to the Sixth Circuit (the "Rejection Appeal"). The Rejection Appeal was ultimately consolidated with the Injunction Appeal (together as consolidated, the "Sixth Circuit Rejection Appeal"). On October 14, 2018, OVEC filed with the Bankruptcy Court its rejection damages claim of approximately \$540 million against FES.

On July 31, 2019, OVEC and FES entered into a stipulation with respect to OVEC's objection to confirmation of the FES plan of reorganization, stipulating that FES (a) would not seek to dismiss OVEC's Sixth Circuit appeal, or, if applicable, OVEC's appeal of an order with respect to an objection by OVEC to confirmation of the plan arising under section 1129(a)(6) of the Bankruptcy Code or oppose further review by the United States Supreme Court, on the grounds of mootness. OVEC objected to confirmation of the FES plan under section 1129(a)(6) of the Bankruptcy Code, which requires any governmental regulatory commission with jurisdiction, after confirmation of the plan, over the rates of a debtor to approve any rate change provided for in the plan, or that such rate change is expressly conditioned on such regulatory approval. OVEC's objection was overruled at the confirmation hearing on August 21, 2019. The FES plan of reorganization was confirmed on October 16, 2019. On October 29, 2019, OVEC moved to certify a direct appeal of the Bankruptcy Court's confirmation order to the Sixth Circuit. On November 27, 2019, the Bankruptcy Court granted OVEC's motion to certify the confirmation order for direct appeal to the Sixth Circuit which was granted on March 24, 2020. The Sixth Circuit granted OVEC's petition for direct appeal of the confirmation order.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

On December 12, 2019, the U.S. Court of Appeals for Sixth Circuit ruled on the Sixth Circuit Rejection Appeal by (1) affirming the Bankruptcy Court's jurisdiction over the rejection of the ICPA and (2) finding that the Bankruptcy Court should have considered the public interest in the standard for rejection and remanding to the Bankruptcy Court for further consideration under a heightened standard, after giving FERC a reasonable opportunity to weigh in. OVEC filed a petition for rehearing "en banc," and on March 13, 2020, the Sixth Circuit denied the petition.

On May 18, 2020, Energy Harbor LLC (EH), successor to FES, filed a motion to approve a stipulation between itself and OVEC with respect to the parties' outstanding disputes (the "Stipulation"). The material terms of the Stipulation provided, among other things, that (a) EH shall assume the ICPA, (b) shall continue to perform its obligations under the ICPA arising on or after June 1, 2020, pursuant to the terms of the ICPA, (c) EH shall pay OVEC \$32,500,000 in cash as full and final settlement of any cure amounts required to be paid in connection with the assumption of the ICPA, and (d) OVEC's claims in the bankruptcy cases shall be deemed withdrawn with prejudice and expunged, OVEC shall withdraw and dismiss, with prejudice, its appeal of the confirmation order and shall withdraw any of its actions, pleadings, or positions, with prejudice, taken before FERC with respect to FERC's proceedings arising from the Sixth Circuit's decision in connection with the Rejection Order. On June 15, 2020, the Bankruptcy Court entered an order approving the Stipulation, and the Stipulation became effective shortly thereafter.

* * * * *



Deloitte & Touche LLP
180 East Broad Street
Suite 1400
Columbus, OH 43215-3611
USA

Tel: +1 614 221 1000
Fax: +1 614 229 4647
www.deloitte.com

INDEPENDENT AUDITORS' REPORT

To the Board of Directors of Ohio Valley Electric Corporation

We have audited the accompanying consolidated financial statements of Ohio Valley Electric Corporation and its subsidiary company, Indiana-Kentucky Electric Corporation (the "Companies"), which comprise the consolidated balance sheets as of December 31, 2020 and 2019, and the related consolidated statements of income, retained earnings, and cash flows for the years then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Companies' preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Companies' internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Companies as of December 31, 2020 and 2019, and the results of their operations and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

/s/Deloitte & Touche LLP

April 27, 2021

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

OVEC PERFORMANCE – A 5-YEAR COMPARISON (UNAUDITED)

	2020	2019	2018	2017	2016
Net Generation (MWh)	9,025,018	11,238,298	12,146,856	11,940,259	9,946,877
Energy Delivered (MWh) to Sponsors	9,033,056	11,234,353	11,863,505	11,724,662	9,745,956
Maximum Scheduled (MW) by Sponsors	2,215	2,209	2,173	2,186	2,167
Power Costs to Sponsors	\$605,270,000	\$640,801,000	\$644,114,000	\$636,287,000	\$571,687,000
Average Price (MWh) Sponsors	\$67.006	\$57.040	\$54.294	\$54.270	\$58.657
Operating Revenues	\$551,718,000	\$614,667,000	\$615,839,000	\$624,058,000	\$585,896,000
Operating Expenses	\$480,383,000	\$554,642,000	\$523,196,000	\$560,170,000	\$515,702,000
Cost of Fuel Consumed	\$231,316,000	\$274,843,000	\$277,369,000	\$288,503,000	\$261,833,000
Taxes (federal, state, and local)	\$12,203,000	\$8,418,000	\$12,165,000	\$11,975,000	\$12,329,000
Payroll	\$53,461,000	\$55,491,000	\$57,569,000	\$58,847,000	\$60,051,000
Fuel Burned (tons)	4,148,459	5,111,144	5,428,783	5,338,318	4,603,575
Heat Rate (Btu per kWh, net generation)	11,036	10,714	10,540	10,622	10,904
Unit Cost of Fuel Burned (per mmBtu)	\$2.04	\$2.28	\$2.17	\$2.27	\$2.41
Equivalent Availability (percent)	78.9	78.2	76.6	75.6	72.9
Power Use Factor (percent)	60.80	76.23	84.19	83.90	72.67
Employees (year-end)	563	591	640	666	708

OHIO VALLEY ELECTRIC CORPORATION AND SUBSIDIARY COMPANY

DIRECTORS

Ohio Valley Electric Corporation

¹ **THOMAS ALBAN**, Columbus, Ohio
*Vice President, Power Generation
Buckeye Power, Inc.*

DAN ARBOUGH, Louisville, Kentucky
*Treasurer
LG&E and KU Energy LLC*

ERIC D. BAKER, Cadillac, Michigan
*President and Chief Executive Officer
Wolverine Power Supply Cooperative, Inc.*

¹ **CHRISTIAN T. BEAM**, Charleston, West Virginia
*President and Chief Operating Officer
Appalachian Power*

^{1,2} **LONNIE E. BELLAR**, Louisville, Kentucky
*Chief Operating Officer
LG&E and KU Energy LLC*

² **PAUL CHODAK III**, Columbus, Ohio
*Executive Vice President - Generation
American Electric Power Company, Inc.*

WAYNE D. GAMES, Evansville, Indiana
*Vice President – Power Supply
Vectren Corporation*

GUSTAVO GARAVAGLIA, Indianapolis, Indiana
*Vice President and Chief Financial Officer
Dayton Power & Light Company*

STEVEN K. NELSON, Coshocton, Ohio
*Chairman, Buckeye Power Board of Trustees
The Frontier Power Company*

² **PATRICK W. O’LOUGHLIN**, Columbus, Ohio
*President and Chief Executive Officer
Buckeye Power, Inc.*

² **DAVID W. PINTER**, Akron, Ohio
*Executive Director, Business Development
FirstEnergy Corp.*

¹ **JULIE SLOAT**, Columbus, Ohio
*Executive Vice President and Chief Financial Officer
American Electric Power Company, Inc.*

² **RAJA SUNDARARAJAN**, Gahanna, Ohio
*President and Chief Operating Officer, AEP Ohio
American Electric Power Company, Inc.*

² **JOHN A. VERDERAME**, Charlotte, North Carolina
*Director, Power Trading & Dispatch
Duke Energy Corporation*

Indiana-Kentucky Electric Corporation

² **PAUL CHODAK III**, Columbus, Ohio
*Executive Vice President - Generation
American Electric Power Company, Inc.*

WAYNE D. GAMES, Evansville, Indiana
*Vice President – Power Supply
Vectren Corporation*

MARC E. LEWIS, Fort Wayne, Indiana
*Vice President, External Relations
Indiana Michigan Power*

DAVID A. LUCAS, Fort Wayne, Indiana
*Vice President – Finance
Indiana Michigan Power*

² **PATRICK W. O’LOUGHLIN**, Columbus, Ohio
*President and Chief Executive Officer
Buckeye Power, Inc.*

² **DAVID W. PINTER**, Akron, Ohio
*Executive Director, Business Development
FirstEnergy Corp.*

TOBY L. THOMAS, Fort Wayne, Indiana
*President and Chief Operating Officer
Indiana Michigan Power*

OFFICERS—OVEC AND IKEC

PAUL CHODAK III
President

KASSANDRA K. MARTIN
Secretary and Treasurer

JULIE SLOAT
*Assistant Secretary and
Assistant Treasurer*

JUSTIN J. COOPER
*Vice President,
Chief Operating Officer and
Chief Financial Officer*

¹Member of Human Resources Committee.

²Member of Executive Committee.

INDIANA MICHIGAN POWER COMPANY
SIERRA CLUB
DATA REQUEST SET NO. SC 3
CASE NO. U-21189

DATA REQUEST NO. SC 3-10

Request

- (a) Identify the current members of the OVEC board of directors.
- (b) Identify the current members of the IKEC board of directors.
- (c) Produce any agreement(s) or other document(s) that set forth the scope of responsibilities, authority, decision-making, or governance of IKEC, including but not limited to any agreements regarding these topics between IKEC and OVEC.
- (d) Produce minutes of the meetings of the Board of Directors of IKEC from January 2020 to present.
- (e) Produce minutes of the meetings of any executive committee or similar sub-entity of the Board of Directors of IKEC from January 2020 to present.
- (f) Produce any email polls or votes of the IKEC Board of Directors or any executive committee or similar sub-entity of the Board of Directors of IKEC from January 2020 to present.
- (g) Produce any meeting presentations or materials from any meetings or email polls or votes referenced in parts (d) through (f), above, that address any of the following: capital expenditures (including but not limited to environmental capex), economic analysis, unit retirement, Michigan Public Service Commission proceeding(s), or any aspect or provision of the ICPA.

Response

- a. Mr. Paul Chodak, Mr. Tom Alban, Mr. Lonnie Bellar, Mr. Wayne Games, Mr. Eric Baker, Mr. Christian Beam, Mr. Steven Nelson, Mr. Patrick O'Laughlin, Mr. Ahmed Pasha, Mr. David Pinter, Mr. Marc Reitter, Ms. Julie Sloat, and Mr. John Verdame.
- b. Mr. Paul Chodak, Ms. Katherine Davis, Mr. Wayne Games, Mr. David Isaacson, Mr. Patrick O'Laughlin, Mr. David Pinter, and Mr. Toby Thomas
- c. Please see "SC 3-10c Attachment 1.pdf".
- d-g. Please see the attached documents:
 - "SC 3-10 OVEC BOD Combined.pdf" for the Board of Director presentations
 - "SC 3-10 OpComm Combined.pdf" for the operating committee minutes

Preparer
Lucas



RESTATEMENT OF ARTICLES OF INCORPORATION
 State Form 42152 (R5 / 2-11)
 Approved by State Board of Accounts, 1895

CHARLES F. WHITE
 SECRETARY OF STATE
 CORPORATIONS DIVISION
 302 W. Washington St., Rm. E018
 Indianapolis, IN 46204
 Telephone: (317) 232-6576

INSTRUCTIONS: Use 8 1/2" x 11" white paper for attachments.
 Present original and one copy to address in upper right corner of this form.
 Please TYPE or PRINT.
 Please visit our office on the web at www.sos.in.gov.

Indiana Code 23-1-38-7
 FILING FEE IS \$30.00

**RESTATEMENT OF
 ARTICLES OF INCORPORATION
 OF**

Indiana-Kentucky Electric Corporation
 (Name of Corporation)

**APPROVED
 AND
 FILED**
Charles F. White
 IND. SECRETARY OF STATE

The above corporation (hereinafter referred to as the "Corporation") existing pursuant to the Indiana Business Corporation Law and the notice of corporate action effectuating the restatement of its Articles of Incorporation, sets forth the following:

ARTICLE I - RESTATEMENT

- SECTION I:** The date of incorporation of the Corporation (month, day, year):
October 1, 1952
- SECTION II:** The name of the Corporation following this restatement:
Indiana-Kentucky Electric Corporation
- SECTION III:** The exact text of the Restatement of Articles of Incorporation is attached as "Exhibit A".
See Exhibit A

ARTICLE II - MANNER OF ADOPTION AND VOTE (Strike inapplicable section)

SECTION I: The restatement does not contain an amendment requiring shareholder approval and the board of directors adopted the restatement.

SECTION II: The restatement contains an amendment requiring shareholder approval and the vote is set forth below:
 VOTE OF SHAREHOLDERS
 The designation (i.e. common, preferred and any classification where different classes of stock exist), number of outstanding shares, number of votes entitled to vote separately on the amendment and the number of votes of each voting group represented at the meeting is set forth as follows:

	TOTAL	A	B	C
DESIGNATION OF EACH VOTING GROUP		Common		
NUMBER OF OUTSTANDING SHARES	100,000	100,000		
NUMBER OF VOTES ENTITLED TO BE CAST	100,000	100,000		
NUMBER OF VOTES REPRESENTED AT THE MEETING	100,000	100,000		
SHARES VOTED IN FAVOR	100,000	100,000		
SHARES VOTED AGAINST	-0-	-0-		

The number cast for the amendment by each voting group was sufficient for approval by that voting group.

In Witness Whereof, the undersigned being the Secretary & Treasurer
 (Title)
 of said Corporation executes this Restatement of Articles of Incorporation and verifies, subject to penalties of perjury, that the statements contained herein are true, this 11 day of MAY, 2012.

Signature: *J. D. Brodt* Printed name: **John D. Brodt**

Indiana Secretary of State
Packet: 193000A114
Filing Date: 05/21/2012
Effective Date: 05/21/2012

U-21189 | July 6, 2022
Direct Testimony of T. Comings on behalf of Sierra Club
Ex: SC-3; Source: SC-3-10 w Attachments
Page 3 of 12

Exhibit A

Amended and Restated as of April 16, 2012

ARTICLES OF INCORPORATION

of

INDIANA-KENTUCKY ELECTRIC CORPORATION

The undersigned incorporators, desiring to form a corporation (hereinafter referred to as the "Corporation") pursuant to the provisions of The Indiana General Corporation Act, as amended (hereinafter referred to as the "Act"), execute the following Articles of Incorporation.

ARTICLE I

NAME

The name of the Corporation is **INDIANA-KENTUCKY ELECTRIC CORPORATION**.

ARTICLE II

PURPOSES

The purposes for which the Corporation is formed are:

(a) So far as permitted by law, to acquire, operate or engage in the electric public utility business or public utility holding company business, and any other business which may be necessary, appropriate, convenient or incidental to either of the foregoing; and to acquire by purchase, lease, appropriation or otherwise, and to construct, extend, own, finance, deal in, sell or otherwise dispose of, maintain and operate facilities for the purpose of generation, transmission and sale of electric energy for public and private use, and all other property, real, personal and mixed, which may be necessary, appropriate, convenient or incidental to the foregoing business or businesses;

(b) To sell for light, heat or power purposes all or any part of the power or energy output of the Corporation or

power or energy otherwise acquired by the Corporation to one or more consumers, including federal or state governmental bodies or agencies, and to public utility companies; and to enter into any contracts or other arrangements with respect to any such sale of power or energy;

(c) To acquire, organize, assemble, develop, build up and operate constructing, operating and other organizations and systems, and to hire, sell, lease, exchange, turn over, deliver and dispose of such organizations and systems in whole or in part and as going organizations and systems or otherwise, and to enter into and to perform contracts, agreements, arrangements and undertakings of any kind in connection with any or all of the foregoing business or businesses;

(d) To acquire all or any part of the business, good will, rights and property of any person, firm, association or corporation, and to undertake or in any way to assume the liabilities of any person, firm, association or corporation; to pay for all or any part of the business, good will, rights and property of any such person, firm, association or corporation, in cash or in stocks, bonds, notes or other obligations of the Corporation, or of any other corporation, or otherwise, or by undertaking the whole or any part of the liabilities of the transferor; to hold, utilize and in any manner dispose of the whole or any part of the business, good will, rights and property so acquired; to conduct in any lawful manner the whole or any part of any business so acquired; and to exercise all the powers necessary or convenient in and about the conduct and management of such business;

(e) To aid in any manner permitted by law or any corporation or association, domestic or foreign, or any firm or individual in which the Corporation may own any shares of stock, bonds, debentures, notes, evidences of indebtedness or other securities, contracts or obligations, or in which the Corporation may have any other legal or equitable interest, and to do any other act permitted by law to preserve, protect, improve or enhance the value of the same or the property represented thereby; and to organize or promote or facilitate the organization of subsidiary corporations;

(f) To purchase or lease, exchange, hire or otherwise acquire lands or any interest therein, whatsoever and

wheresoever situated; to erect, construct, rebuild, enlarge, alter, improve, maintain, manage and operate plants, buildings, houses or other works of any description on any lands owned or leased by the Corporation, or upon any other lands, to sell, lease, sublet, mortgage, exchange, or otherwise dispose of any of the lands or any interest therein, or any plants, buildings, houses, or other works owned by the Corporation;

(g) To draw, make, accept, endorse, discount, execute and issue promissory notes, drafts, bills of exchange, warrants, bonds, debentures, notes and other negotiable or transferable instruments and evidences of indebtedness without limitation as to amount, whether secured by mortgage or pledge or otherwise, as well as to secure the same by mortgage or otherwise, so far as may be permitted by law;

(h) To purchase or otherwise acquire, so far as may be permitted by law, and to hold, pledge and reissue shares of its own capital stock;

(i) To act as agent, broker or factor, for any person, individual, firm, corporation or other body;

(j) To purchase, acquire, hold, own and dispose of patents, copyrights and trade-marks and any licenses or other rights or interest therein and thereunder;

(k) Without in any particular limiting or restricting any of the objects or powers of the Corporation, it is hereby expressly declared and provided that the Corporation shall have the power to issue bonds and other obligations and shares of its capital stock in payment for property, real or personal, purchased or acquired by it, or for any other lawful object which may be necessary, appropriate, convenient or incidental to the foregoing business or businesses; to mortgage or pledge any stocks, bonds, debentures, notes or other obligations or any property which may be acquired by the Corporation; to guarantee any dividends or bonds or contracts or other obligations; to make and perform contracts of every kind and description and, in carrying on its business, for the purpose of attaining or furthering any of its objects or purposes, to do any and all other things and to exercise any and all other powers which a co-partnership or individual or natural person could do or exercise, or which now or hereafter may be authorized by law;

(l) To purchase, acquire, hold, own and dispose of franchises, concessions, consents, indeterminate permits, privileges and licenses necessary, appropriate, convenient, useful or desirable in connection with the foregoing business or businesses;

(m) To have one or more officers and to conduct the foregoing business or businesses within and without the state of Indiana, in other states, and in the District of Columbia, the territories, colonies and dependencies of the United States, and in foreign countries, without restriction as to place or amount;

(n) To do all and everything necessary, suitable or proper for the accomplishment of any of the purposes, the attainment of any of the objects or the furtherance of any of the powers hereinbefore set forth, either alone or in connection with other corporations, firms or individuals and either as principals or agents, and to do every other act or acts, thing or things, incidental or appurtenant to or growing out of or connected with the aforesaid objects, purposes or powers of any of them; and

Nothing in the foregoing enumerations of powers and purposes shall be construed to authorize the conduct by the Corporation of rural loan and savings associations, credit unions, or a banking, railroad, insurance, surety, trust, safe deposit, mortgage guaranty, or building and loan business or to authorize the Corporation to carry on the business of receiving deposits of money, bullion, or foreign coins, or of issuing bills, notes or other evidences of debt for circulation as money.

ARTICLE III

TERM OF EXISTENCE

The period during which the Corporation shall continue as a corporation is perpetual.

ARTICLE IV

PRINCIPAL OFFICE

The post-office address of the principal office the Corporation is 1335 Clifty Hollow Road, city of Madison, county of Jefferson, state of Indiana.

ARTICLE V

AMOUNT OF CAPITAL STOCK

The total number of shares into which the authorized capital stock of the Corporation is divided is 100,000 shares without par value.

ARTICLE VI

TERMS OF CAPITAL STOCK

The number of shares of the capital stock of this Corporation is to be divided into 100,000 shares of Common Stock, without par value. The 100,000 shares of Common Stock of the Corporation may be issued for such consideration as may be fixed from time to time by the Board of Directors of the Corporation.

ARTICLE VII

VOTING RIGHTS OF CAPITAL STOCK

Every owner of the capital stock of the Corporation shall have the right, at every shareholders' meeting, to one vote for each share of stock standing in his name on the books of the Corporation.

ARTICLE VIII

PAID-IN CAPITAL

The amount of paid-in capital, with which the Corporation is beginning business is \$1,000.

ARTICLE IX

DATA RESPECTING DIRECTORS

SECTION 1. *Number.* The maximum number of directors of the Corporation which the Corporation may have is eleven (11). The exact number of directors which the Corporation may have, may, from time to time, be specified by the By-Laws at not less than three(3). The exact number of directors which the Corporation shall have shall be nine (9) whenever the By-Laws do not specify the exact number of directors of the Corporation.

SECTION 2. *Qualifications.* Directors need not be shareholders of the Corporation. A majority of the directors at any time shall be citizens of the United States.

ARTICLE X

FURTHER DATA RESPECTING DIRECTORS

SECTION 1. *Names and Post-Office Addresses.* The names and post-office addresses of the first Board of Directors of the Corporation are as follows:

<u>Name</u>	<u>Number and Street or Building</u>	<u>City</u>	<u>State</u>
J. B. Poston	Dublin Road	Columbus	Ohio
J. Lee Rice, Jr.	Cross River Road, Star Route	Katona	New York
Philip Sporn	320 East 22nd Street	New York	New York
C. V. Sorenson	1123 Maxine Street	Fort Wayne	Indiana
Walter H. Sammis	24 South Portage Path	Akron	Ohio
A. B. Brown	1420 Akin Drive	Evansville	Indiana
J. H. Buell	Box 1111	Ogden Dunes	Indiana
Joseph M. Cooper	508 Broadway	Madison	Indiana
John H. Groves	1313 Merchants Bank Building	Indianapolis	Indiana

SECTION 2. *Citizenship.* All of such directors are citizens of the United States and a majority of such directors are residents of Indiana.

ARTICLE XI

DATA WITH RESPECT TO INCORPORATORS

SECTION 1. Names and Post-Office Addresses. The names and post-office addresses of the incorporators of the Corporation are as follows:

Name	Number and Street or Building	City	State
John H. Groves	1313 Merchants Bank Building	Indianapolis,	Indiana
Jerry P. Kelknap	1313 Merchants Bank Building	Indianapolis,	Indiana
Louis A. Highmark	1313 Merchants Bank Building	Indianapolis,	Indiana

SECTION 2. Age and Citizenship. All of such incorporators are of lawful age; and all of such incorporators are citizens of the United States.

SECTION 3. Compliance with Provisions of Sections 15 and 16 of the Act. The undersigned incorporators hereby certify that the person or persons intending to form the Corporation first caused lists for subscriptions to the shares of the capital stock of the Corporation to be opened at such time and place as he or they determined; when such subscriptions had been obtained in an amount not less than \$1,000, such person or persons, or a majority of them, called a meeting of such subscribers for the purpose of designating the incorporators and of electing the first Board of Directors; the incorporators so designated are those named in Section 1 of this Article; and the directors so elected are those named in Section 1 of Article X.

ARTICLE XII

PROVISIONS FOR REGULATION OF BUSINESS AND CONDUCT OF AFFAIRS OF CORPORATION

The following provisions are inserted for the regulation of the business and conduct of the affairs of the Corporation, and it

is expressly provided that such provisions are intended to be in furtherance and not in limitation of the powers specifically conferred by the statutes of the state of Indiana:

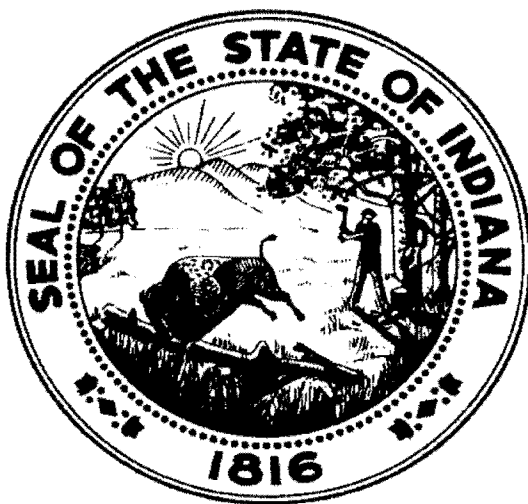
The shareholders and directors of the Corporation shall have power to hold meetings and to keep books (except that the Corporation shall maintain the original or duplicate stock register or transfer book at its principal office in Indiana) documents and papers of the Corporation, in or out of the state of Indiana, and to have one or more offices within or without the State of Indiana, at such place or places as may from time to time be designated by the By-Laws of the Corporation or by resolution of the shareholders or directors of the Corporation, except as otherwise required by the laws of the state of Indiana.

State of Indiana
Office of the Secretary of State

CERTIFICATE OF RESTATEMENT OF ARTICLES OF INCORPORATION
of
INDIANA-KENTUCKY ELECTRIC CORPORATION

I, CONNIE LAWSON, Secretary of State of Indiana, hereby certify that Restatement of Articles of Incorporation of the above For-Profit Domestic Corporation have been presented to me at my office, accompanied by the fees prescribed by law and that the documentation presented conforms to law as prescribed by the provisions of the Indiana Business Corporation Law.

NOW, THEREFORE, with this document I certify that said transaction will become effective Monday, May 21, 2012.



In Witness Whereof, I have caused to be affixed my signature and the seal of the State of Indiana, at the City of Indianapolis, May 21, 2012.

Connie Lawson

CONNIE LAWSON,
SECRETARY OF STATE

INDIANA MICHIGAN POWER COMPANY
MICHIGAN DEPARTMENT OF ATTORNEY GENERAL
DATA REQUEST SET NO. AG DR 7
CASE NO. U-21189

DATA REQUEST NO. AG 7-53

Request

With respect to the OVEC units and the ICPA:

- a. Is I&M seeking any cost approvals from the Commission in this case with respect to the OVEC units and/or the ICPA? Explain your answer.
- b. Is I&M seeking any reasonableness and prudence determinations from the Commission in this case with respect to the OVEC units and/or the ICPA? Explain your answer.
- c. Other than as described in your answer to the prior two sub-parts, what other relief if any is I&M seeking from the Commission in this case with respect to the OVEC units and/or the ICPA?

Response

a. No. I&M is seeking approval of its IRP, pursuant to 460.6t(7) and (8)a, as the most reasonable and prudent means of meeting I&M's energy and capacity needs. That IRP, and I&M's Preferred Portfolio specifically, includes continuing to take power pursuant to the ICPA through the current term of the ICPA. I&M has demonstrated that it has no unilateral opportunity to exit or terminate the ICPA early. Moreover, I&M has demonstrated that continuing to take power pursuant to the ICPA is reasonable and prudent because it costs less than the only alternative - replacing that power while continuing to pay I&M's ongoing obligations under the ICPA. While this filing does not constitute a request for cost approval, I&M expects that approval of its IRP -- inclusive of its plan to continue taking power pursuant to the ICPA rather than pursuing a more costly alternative -- will support MPSC approval of future requests for cost recovery through the PSCR.

b. I&M is seeking approval of its IRP, pursuant to 460.6t(7) and (8)a, as the most reasonable and prudent means of meeting I&M's energy and capacity needs. That IRP, and I&M's Preferred Portfolio specifically, includes continuing to take power pursuant to the ICPA through the current term of the ICPA.

In addition, I&M has been directed by the Commission in several orders to provide a robust analysis of its ICPA participation in this IRP docket. For example, in Case No. U-20529, I&M was directed to file "a comprehensive analysis regarding the ICPA with its 2021 IRP as identified by the Staff, as well as model a sensitivity to the company's preferred course of action with and without energy and capacity purchased under the ICPA, along with a model of optimized resources to replace the ICPA resources." (p. 14, in part, quoting the Proposal for Decision) The Commission noted that this analysis "will further inform the Commission in

INDIANA MICHIGAN POWER COMPANY
MICHIGAN DEPARTMENT OF ATTORNEY GENERAL
DATA REQUEST SET NO. AG DR 7
CASE NO. U-21189

its review of costs associated with the ICPA in future PSCR proceedings.” (p. 19) I&M was similarly order to provide analyses of the ICPA by orders in Case No. U-20591 (settlement of I&M’s last IRP) and Case No. U-20804. In this IRP, I&M has complied with these orders.

c. N/A.

Preparer
Counsel

INDIANA MICHIGAN POWER COMPANY
SIERRA CLUB
DATA REQUEST SET NO. 1
CASE NO. U-21189

DATA REQUEST NO. SC 1-10

Request

Please refer to the Company's March 2022 Request for Proposals ("Final-2022-IM-AllSource-RFP-3-10-2022").

- a. Please provide the bids received after the deadline has passed.
- b. Provide any analyses used by the Company to categorize, select, or reject these bids—as these analyses become available.

Response

I&M objects to the extent this question seeks information that is confidential, proprietary, competitively sensitive and/or trade secret. Subject to and without waiving this objection, I&M responds as follows: (a) Proposals ("bids") are not complete until I&M has had the opportunity to review the offers and ask follow-up questions or seek clarification from the bidders. Proposals are expected to be complete near the end of May 2022, at which point I&M will provide the bid data. (b) Bid analysis and selection will not be completed until late June of 2022, at which point I&M will provide the bid analysis.

Please also refer to Exhibit IM-39 (DAL-1) and "SC 1-10 IM-Pre-RFP-Meeting.pdf".

Both responses, (a) and (b), will be subject to the protective order issued March 23, 2022 in this docket. Please note that I&M/AEP does not have authorization to share bid data with entities, or representatives of entities, who may be competitors with the companies who submitted proposals in response to I&M's 2022 All-Source RFP.

Supplemental Response

I&M objects to the extent this question seeks information that is confidential, proprietary, competitively sensitive and/or trade secret. Notwithstanding this objection, I&M is providing the below response pursuant to the protective order issued March 23, 2022 in this docket.

- a. Please see "SC 1-10 CONFIDENTIAL I&M RFP Proposals Received.pdf" for the proposals received.
- b. Please see "SC 1-10 CONFIDENTIAL IM RFP Summary of Proposals.pdf" for a summary of the proposals received, those that passed the eligibility review, and those that currently remain under consideration by I&M.

As to objection

Counsel

Preparer

Gaul
Lucas

EXHIBIT
SC-6C

EXHIBIT

SC-7C

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of **INDIANA MICHIGAN POWER COMPANY** for approval of its integrated resource plan pursuant to MCL 460.6t, avoided costs and for other relief

U-21189

PROOF OF SERVICE

On the date below, an electronic copy of **PUBLIC Testimony and Exhibits of Tyler Comings on behalf of Sierra Club** was served on the following:

Name/Party	E-mail Address
Administrative Law Judge Hon. Dennis Mack	mackd2@michigan.gov
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The statements above are true to the best of my knowledge, information and belief.

OLSON, BZDOK & HOWARD, P.C.
Counsel for Sierra Club

Date: July 6, 2022

By: _____

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