

FILED  
February 12, 2021  
INDIANA UTILITY  
REGULATORY COMMISSION

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF INDIANAPOLIS )  
POWER & LIGHT COMPANY ("IPL") FOR (1) )  
ISSUANCE TO IPL OF A CERTIFICATE OF )  
PUBLIC CONVENIENCE AND NECESSITY FOR )  
THE ACQUISITION AND DEVELOPMENT BY A )  
WHOLLY-OWNED IPL SUBSIDIARY OF A )  
SOLAR POWER GENERATING FACILITY TO )  
BE KNOWN AS HARDY HILLS SOLAR ("THE )  
HARDY HILLS PROJECT"); (2) APPROVAL OF )  
THE HARDY HILLS PROJECT, INCLUDING A )  
JOINT VENTURE STRUCTURE BETWEEN AN )  
IPL SUBSIDIARY AND ONE OR MORE TAX )  
EQUITY PARTNERS AND A CONTRACT FOR )  
DIFFERENCES BETWEEN IPL AND THE )  
PROJECT COMPANY THAT HOLDS AND )  
OPERATES THE SOLAR GENERATION ASSETS, )  
AS A CLEAN ENERGY PROJECT AND )  
ASSOCIATED TIMELY COST RECOVERY )  
UNDER IND. CODE § 8-1-8.8-11; (3) APPROVAL )  
OF ACCOUNTING AND RATEMAKING FOR )  
THE HARDY HILLS PROJECT, INCLUDING AN )  
ALTERNATIVE REGULATORY PLAN UNDER )  
IND. CODE § 8-1-2.5-6 TO FACILITATE IPL'S )  
INVESTMENT IN THE HARDY HILLS PROJECT )  
THROUGH A JOINT VENTURE; AND (4) TO )  
THE EXTENT NECESSARY, ISSUANCE OF AN )  
ORDER PURSUANT TO IND. CODE § 8-1-2.5-5 )  
DECLINING TO EXERCISE JURISDICTION )  
OVER THE JOINT VENTURE, INCLUDING THE )  
PROJECT COMPANY, AS A PUBLIC UTILITY. )

IURC  
PETITIONER'S  
EXHIBIT NO. 2  
DATE 5-12-21 REPORTER LR

CAUSE NO. 45493

PETITIONER'S SUBMISSION OF DIRECT TESTIMONY OF  
G. AARON COOPER

Indianapolis Power & Light Company ("IPL" or "Petitioner"), by counsel, hereby  
submits the direct testimony and attachments of G. Aaron Cooper.

Respectfully submitted,



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**CERTIFICATE OF SERVICE**

The undersigned certifies that a copy of the foregoing was served this 12th day of February, 2021, by electronic transmission or United States Mail, first class, postage prepaid on:

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ATTORNEYS FOR PETITIONER  
INDIANAPOLIS POWER & LIGHT COMPANY

**VERIFIED DIRECT TESTIMONY**

**OF**

**G. AARON COOPER**

**ON BEHALF OF**

**INDIANAPOLIS POWER & LIGHT COMPANY**

**SPONSORING IPL CONFIDENTIAL ATTACHMENTS GAC-1 AND GAC-2**

**VERIFIED DIRECT TESTIMONY OF G. AARON COOPER  
ON BEHALF OF  
INDIANAPOLIS POWER & LIGHT COMPANY**

**1. INTRODUCTION**

**Q1. Please state your name, employer and business address.**

**A1.** My name is G. Aaron Cooper. My business address is One Monument Circle, Indianapolis, Indiana 46204.

**Q2. What is your position with IPL?**

**A2.** I am employed by AES US Services, LLC, as Chief Commercial Officer, US Utilities.

**Q3. On whose behalf are you submitting this direct testimony?**

**A3.** I am submitting this testimony on behalf of IPL.

**Q4. Please describe your duties as Chief Commercial Officer, US Utilities.**

**A4.** In my current position, I am responsible for commercial strategy for the US utilities, IPL and the Dayton Power and Light Company, and my responsibilities include managing and directing the commercial operations and resource planning departments of IPL. Given my extensive commercial experience with electric generation and associated plant economics that I will further describe in Q/A 6 below, I worked with the team that developed the IPL All-Source Request for Proposals (“RFP”) and coordinated the evaluation of the resulting proposals received and selection of proposals. I am also a member of the due diligence and contract negotiation core team.

**Q5. Please summarize your educational and professional qualifications.**

1   **A5.**   I received a Bachelor of Science degree, summa cum laude, from Miami University in  
2           1991. I have over 30 years of utility experience ranging from T&D Operations to  
3           Regulatory Operations, and extensive Commercial Operations experience.

4   **Q6.   What is your previous work experience?**

5   **A6.**   I assumed the role of Chief Commercial Officer, US Utilities, in January 2021. Most  
6           recently I was Director, Regulatory and Financial Activities - T&D Investments, for AES  
7           US Services, LLC. For over a decade, I was the Director of Fuel Supply in Commercial  
8           Operations, first for the Dayton Power & Light Company (“DP&L”) generating assets  
9           located in Ohio and subsequently for all non-IPL, AES-owned solid fuel generating stations  
10          in the US, where I was responsible for fuel planning and procurement, logistics and  
11          contract administration. I previously worked in DP&L’s Regulatory Operations as  
12          Manager of Retail Pricing, as a Manager and Account Manager in DPL Inc.’s unregulated  
13          retail electric service subsidiary DPL Energy Resources, and in the DP&L distribution  
14          business in major customer account management and supervision of various operational  
15          functions including electric construction, field service and meter reading.

16   **Q7.   Have you previously testified before this Commission?**

17   **A7.**   No. However, I have provided testimony supporting DP&L’s Fuel Adjustment Clause  
18          before the Public Utilities Commission of Ohio in Case No. 11-5730-EL-FAC and Case  
19          No. 12-2881-EL-FAC.

20   **Q8.   What is the purpose of your testimony in this proceeding?**

21   **A8.**   My testimony describes the RFP, the evaluation of the resulting proposals received and  
22          selection of a proposed solar generation facility to be known as Hardy Hills Solar (“Hardy

Hills” or “Hardy Hills Project” or “Project”). I also discuss the terms of the Membership Interest Purchase, Project Development and Construction Management Agreement (“MIPA”) and IPL’s proposed Capacity Agreement and Contract for Differences (“CfD”). I describe IPL’s rights to Renewable Energy Certificates (“RECs”) and any other generation benefits. I also present the best estimate of the cost of the Hardy Hills Project.

**Q9. Are you sponsoring any attachments?**

**A9.** I am sponsoring the following attachment(s):

<u>IPL Confidential Attachment GAC-1</u>	Membership Interest Purchase, Project Development and Construction Management Agreement (“MIPA”)
<u>IPL Confidential Attachment GAC-2</u>	IPL’s proposed Capacity Agreement and Contract for Differences (“CfD”)

**Q10. Were these attachments prepared or assembled by you or under your direction and supervision?**

**A10.** Yes.

## **2. ALL-SOURCE REQUEST FOR PROPOSALS**

**Q11. Why did IPL conduct an All-Source RFP?**

**A11.** IPL’s All-Source RFP solicited bids from qualified third parties to competitively procure replacement electric capacity resources beginning in the 2023-2024 MISO Planning Year. As discussed by IPL Witness Miller, IPL’s updated 2019 IRP analysis identified a need for approximately 250 MW of near-term replacement unforced capacity (UCAP). While the IRP modeling indicated that a combination of wind, solar, storage, and energy efficiency would be the reasonable low-cost option for the replacement capacity, the RFP allowed all

1 generation types to participate. This approach provided a means to evaluate various  
2 generation technologies based on transactable prices and confirm the IRP Preferred  
3 Resource Portfolio Short Term Action Plan is based on the selected resource.

4 **Q12. Please explain the process IPL used to conduct the All-Source RFP.**

5 **A12.** IPL contracted Sargent & Lundy, LLC (“Sargent & Lundy”) to manage the All-Source  
6 RFP process. Sargent & Lundy is an engineering consulting firm providing comprehensive  
7 engineering, energy business consulting, and project services for power generation and  
8 delivery systems. Sargent & Lundy acted as an independent third-party consultant on  
9 behalf of IPL to execute the RFP and provide a preliminary evaluation of the proposals.

10 **Q13. Please generally describe the All-Source RFP process.**

11 **A13.** IPL issued an All-Source RFP for capacity resources, preferably within or connected to,  
12 the IPL service territory. The RFP solicited proposals for all or a portion of IPL’s  
13 forecasted capacity short position. IPL estimated the UCAP for wind and solar resources  
14 based on the methodology described in the MISO Renewable Integration Impact  
15 Assessment Version 6, dated December 2018. Proposed resources must be capable of  
16 delivering capacity to the MISO Local Resource Zone (LRZ) 6. Proposed resources could  
17 include transfer of new or existing assets, power purchase agreements, and demand  
18 response opportunities. The All-Source RFP was issued December 20, 2019 and is further  
19 described by IPL Witness Thibodeau.

20 **Q14. What role did IPL have in the All-Source RFP process?**

21 **A14.** IPL collaborated with Sargent & Lundy to develop the RFP, including the schedule, RFP  
22 documents and requirements, proposal scoring criteria and weighting established for initial

1 proposal evaluation (which was provided in the RFP), and proposal data forms. In order  
2 to ensure impartiality in the evaluation and selection process, Sargent & Lundy performed  
3 all administration, response accumulation, Phase 1 evaluation and reporting in a manner  
4 that maintained the anonymity of the RFP respondents to the IPL team. When Sargent &  
5 Lundy consulted with IPL on responses to respondent questions, all such communications  
6 followed a process that safeguarded the anonymity of the participants. IPL did not submit  
7 a self-build proposal.

### 8 **3. RFP BID EVALUATION**

9 **Q15. Please describe the process used to assess the responses to the All-Source RFP.**

10 **A15.** There were three distinct phases to the evaluation of the All-Source RFP.

11 Phase 1 – as briefly described in response to Q/A 13 and explained in more detail in IPL  
12 Witness Thibodeau’s testimony, Sargent & Lundy issued and managed the RFP process  
13 and performed an independent preliminary evaluation of the proposals received, including  
14 a quantitative Levelized Cost of Energy (“LCOE”) for each of the proposals and a  
15 qualitative analysis based on technical viability, development status, developer experience  
16 and financing plan, and qualifications. The quantitative and qualitative scores were  
17 combined to rank all offers by technology and contract type.

18 Phase 2 – consisted of more refined quantitative, qualitative, and T&D considerations.  
19 This phase was collaboratively conducted with Sargent & Lundy, Concentric Energy  
20 Advisors (“Concentric”), and internal IPL subject matter experts. This phase included  
21 production cost and revenue requirement modeling. As described by IPL Witness Miller,  
22 IPL relied on the same “in-house” production cost modeling tool (PowerSimm) it utilized  
23 in its 2019 IRP. IPL also retained Concentric to conduct a proposal Ranking Analysis

1 using revenue requirements modeling, as described by IPL Witness Powers. As discussed  
2 below, proposals advancing from Phase 2 evaluation moved into Phase 3 for due diligence  
3 and contract negotiations.

4 Phase 3 – IPL assembled a deal team to evaluate the commercial terms and pricing of the  
5 remaining shortlisted proposals. Prior to Phase 3, no one on the IPL evaluation team had  
6 any knowledge of specific bidder identities. Concentric provided analytical services  
7 related to revenue requirement considerations in Phase 3. IPL also retained 1898 & Co., a  
8 Burns & McDonnell Company (“1898 & Co.”), to perform detailed interconnection and  
9 congestion evaluations of the remaining shortlisted proposals as part of the Phase 3  
10 evaluation. The 1898 & Co. analysis is discussed by IPL Witness Lind.

11 **Q16. Please explain the results of the Sargent & Lundy Phase 1 evaluation process.**

12 **A16.** As discussed by IPL Witness Thibodeau, the Sargent & Lundy Phase 1 process led to the  
13 initial culling of proposals and resulted in 38 proposals, including six technology types or  
14 combinations thereof, being moved to Phase 2 for further evaluation. The initial  
15 shortlisting deliberately advanced proposals within buckets by each technology type so that  
16 all proposal types or categories would have the opportunity for more in-depth evaluation  
17 and consideration.

18 **Q17. Please discuss the process IPL undertook to further evaluate the bids short listed by**  
19 **Sargent & Lundy as a result of the Phase 1 evaluation and moved forward to the**  
20 **Phase 2 Evaluation.**

21 **A17.** As noted in response to Q/A 15 above, IPL retained Sargent & Lundy and Concentric to  
22 support the Phase 2 evaluation. Deeper evaluation in Phase 2 necessarily required

1 additional clarification as to the subject proposals. Sargent & Lundy facilitated this process  
2 to maintain the anonymity of respondents and proposals throughout Phase 2. Sargent &  
3 Lundy also refined the Phase 1 qualitative evaluation based on the 12 categories listed  
4 below:

- 5 • Technical Viability
- 6 • Development and Schedule Risk
- 7 • Permitting Risk
- 8 • Environmental Impacts
- 9 • Contract Experience
- 10 • Financing Plan and Qualifications
- 11 • T&D System Integration
- 12 • Site Control
- 13 • Community Impacts and Acceptance
- 14 • O&M Plan
- 15 • Fuel Supply Plan (as applicable)
- 16 • Exceptions to Agreements

17 IPL Witness Thibodeau discusses the results of the Phase 2 Qualitative Evaluation and IPL  
18 Witness Powers discusses the analytical services related to the revenue requirement  
19 calculation.

20 The Phase 2 process structure was designed to merge the quantitative revenue requirement  
21 analysis results with the qualitative factors and to explore whether additional critical factors  
22 or sub-factors needed to be considered for the determination of proposals to be advanced  
23 to Phase 3.

1 **Q18. In addition to the quantitative Ranking Analysis, what qualitative factors were**  
2 **considered in selecting proposals to move forward for further analysis?**

3 **A18.** As noted in the response to Q/A 17 above, IPL considered additional factors beyond, or  
4 specific detailed elements within, the Sargent & Lundy Phase 2 qualitative evaluation  
5 categories. IPL identified the following five features for each proposal in Phase 2; the first  
6 three rising to the level of a binary decision hurdle for proposal advancement to Phase 3.

7 1. The specific MISO Definitive Planning Phase (“DPP”) cycle, otherwise generally  
8 addressed in the T&D System Integration, is critical to meeting IPL’s required  
9 timelines for replacement capacity to be in service. Therefore, only proposals that were  
10 in the 2019 DPP cycle, or earlier, were advanced to Phase 3. Proposals that may qualify  
11 for interconnection under the MISO rules corresponding to FERC Order No. 845 were  
12 also advanced.<sup>1</sup>

13 2. Proposals that did not qualify to receive Zonal Resource Credits for MISO LRZ 6 were  
14 not advanced to Phase 3. IPL’s service territory and corresponding capacity obligation  
15 is in MISO LRZ 6. The RFP explicitly stated that “resources must be qualified to  
16 receive Zonal Resource Credits for MISO LRZ 6 consistent with MISO Planning  
17 Resource Auction” (p. 4).

18 3. Given IPL’s extant coal and natural gas resources in the portfolio, fuel diversity was a  
19 necessary feature for proposals to advance to Phase 3.

20 4. Consideration was also given to the customer price variability that would occur after  
21 the expiration of a Purchase Power Agreement (“PPA”). For example, the expected

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<sup>1</sup> FERC Order No. 845 resulted in a MISO Tariff change that modified the generator replacement process, permitting incumbent generators to interconnect replacement generation at existing facilities and avoid the DPP cycle.

1 useful lives for the solar assets evaluated is 30 years. So, proposals for build transfer  
2 would provide predictable rates for customers over that same 30-year period. However,  
3 the PPA proposals received in response to the RFP had terms of 20 years or less, leaving  
4 the customer energy price unhedged for one-third of that 30-year period.

- 5 5. Finally, consideration was given to benefits that would result with IPL management  
6 and control of a build transfer. IPL considered the reliability benefit of direct control  
7 over day-to-day decisions and decisions on operating and maintenance expenditures,  
8 and which also ensures that future cost savings resulting from lower operation and  
9 maintenance expenses will be passed on to customers through rates. IPL can and will  
10 leverage the considerable experience of the AES Corporation and its subsidiaries for  
11 solar PV facility operation. AES, through its subsidiaries, owns nearly 1 GW of solar  
12 generation globally, including over 700 MW of solar in the US.

13 Direct control creates the option for IPL to respond to unexpected changes in supply  
14 conditions, MISO rules and regulatory environments. It creates the opportunity for IPL  
15 and its customers to benefit from advancement in technology by expanding, upgrading  
16 or modifying the Facility to include the potential addition of battery storage, extending  
17 its life through additional investment, modifying operational controls and production  
18 levels.

19 **Q19. Please describe the process to select proposals to advance to Phase 3.**

20 **A19.** As described in Q/A 17, a Ranking Analysis was performed for all Phase 2 proposals and  
21 utilized to compare among the list population on that basis. As described in Q/A 18, certain  
22 critical elements affecting proposal viability in the context of IPL's requirements were used

1 as go/no-go decision factors. The entire population of proposals in Phase 2 that met the  
2 criteria below were advanced to Phase 3:

- 3 • 2019 DPP Cycle or earlier,
- 4 • Qualify to receive Zonal Resource Credits for MISO LRZ 6,
- 5 • Create generation resource diversity in IPL portfolio.

6 No proposals were excluded from Phase 3 based on their Phase 2 Ranking Analysis result.  
7 If a project included a separate proposal with a different deal structure, both deal structures  
8 were advanced to Phase 3 – e.g., if a project was offered as a build transfer proposal that  
9 was selected to advance to Phase 3 and was also offered as a PPA, both proposals were  
10 advanced to Phase 3 as the due diligence would apply to the common project and created  
11 the opportunity for improvement of both offers through negotiation.

12 **Q20. Please describe Phase 3.**

13 **A20.** As stated above, in Phase 3 the IPL team learned the bidder identities, conducted due  
14 diligence, evaluated the commercial terms and pricing of the remaining shortlisted  
15 proposals, assessed development and other risks, and began direct negotiations with  
16 bidders. Concentric provided analytical services related to Ranking Analysis in Phase 3  
17 and 1898 & Co performed detailed interconnection and congestion evaluations. IPL  
18 considered its load forecast and the capacity need in 2023. As the value of the Investment  
19 Tax Credit (“ITC”) is critical to the level of IPL investment and corresponding effect on  
20 customer rates, diligence also focused on ITC safe harbor status.

21 **Q21. Please discuss Concentric’s role in evaluating bid results during Phase 3.**

1   **A21.** As discussed by IPL Witness Powers, Concentric was retained by IPL to assist with the  
2           Phase 2 and 3 evaluations. Their Ranking Analysis work provided analytical services in  
3           the form of revenue requirement calculations to support the evaluation of the responses to  
4           IPL's All Source RFP. This scope builds on Concentric's work in the development of  
5           IPL's 2019 IRP.

6   **Q22.** Please clarify how the information regarding the Hardy Hills Project gained via due  
7           diligence and contract negotiations is reflected in the Phase 3 Ranking Analysis?

8   **A22.** Based on the completion of due diligence and negotiation of contract documents, IPL has  
9           more detailed information regarding Hardy Hills than any of the other proposals in Phase  
10          3. In the Ranking Analysis, certain costs and assumptions for Hardy Hills are based on very  
11          specific knowledge of the project as compared to the other proposals that are in the Phase  
12          3 Ranking Analysis. These costs and assumptions include fully informed project costs,  
13          specific land lease costs, specific tax costs, including tax abatement, decommissioning and  
14          demolition costs, and specific solar resource assessment assumptions and output modeling  
15          details. These specific project details are reflected in the Phase 3 analysis of the Hardy  
16          Hills Project. The same level of detail is not yet known for the other proposals and  
17          consequently the costs and assumptions of these proposals in the Ranking Analysis are  
18          subject to change. While the Ranking Analysis remains a reasonable tool to assess  
19          proposals, the inclusion of proposal specific details can have the effect of increasing or  
20          reducing the comparative Ranking Analysis result.

21   **Q23.** Please further describe the work completed by 1898 & Co. during Phase 3.

22   **A23.** IPL retained 1898 & Co. to complete transmission system impact studies of shortlisted  
23          proposals advancing into Phase 3. For each shortlisted proposal in this Phase, this work

1 included system impact studies and congestion analyses for the proposed interconnection.  
2 None of the subject proposals have completed DPP Phase 3, so additions, modifications,  
3 and upgrades required at or beyond the point at which the proposal would connect to the  
4 transmission system were otherwise unknown or not independently validated. These types  
5 of network upgrades can have material costs affecting proposal economics and can also  
6 expose the proposal to risk of delay.

7 The congestion analysis description is included in the Interconnection Reliability and  
8 Congestion Report (p. 21) sponsored by IPL Witness Lind:

9 Each of the short-list selections were evaluated using ABB's PROMOD IV  
10 (PROMOD) to simulate security-constrained unit commitment (SCUC) and  
11 security-constrained economic dispatch (SCED) across the MISO footprint and  
12 neighboring regions. PROMOD simulations calculate the locational marginal price  
13 (LMP) for every bus, including generator and load nodes, within the study region.  
14 Each LMP represents the marginal price of electricity at a specific location on the  
15 grid and varies hourly in PROMOD's day ahead dispatch. One component of the  
16 LMP is the congestion component, which is caused by a limitation in the  
17 transmission system to effectively deliver the most efficient and lowest cost sources  
18 of generation to load. These limitations in the transmission system can cause  
19 congestion costs, impact LMPs and effect generation assets dispatch, curtailment,  
20 and associated revenues.

21 **Q24. Please describe the development and other risks assessed by IPL in Phase 3.**

22 **A24.** Development risk is important across a number of dimensions.

- 23 • IPL needs capacity for the 2023-24 MISO planning year. Only proposals that were  
24 in the 2019 DPP cycle, or earlier, and proposals that may qualify for interconnection  
25 under the MISO rules corresponding to FERC Order No. 845 were advanced to  
26 Phase 3.
- 27 • As described in Q/A 20, ITC value is important to comparative economics of solar  
28 resources compared to other resources, to the level of IPL investment and to the

1 corresponding effect on customer rates. ITC safe harbor status is essential and the  
2 proposal being in service by a date certain affects eligibility, making development  
3 plan feasibility key to proposal efficacy. In the due diligence process IPL has  
4 confirmed the safe harbor status for Hardy Hills.

5 • Given the impacts resulting from a proposal failing to achieve commercial  
6 operation, proposal control and oversight are key, and best achieved by a deal  
7 structure based on IPL ownership.

8 • IPL will need to complete at least two proposals to achieve the required level of  
9 UCAP. Focusing on proposal execution risk reduction, IPL also considered the  
10 merits of contracting with two or more developers versus a single developer for  
11 multiple proposals.

12 • IPL evaluated each Phase 3 proposal's permitting plans and any issues that may  
13 affect proposal completion and the commercial operation date ("COD"). IPL is not  
14 aware of any local pushback to the Hardy Hills Project in Clinton County, Indiana  
15 that would prevent or delay permitting or necessary approvals.

16 I discuss counterparty credit risk in Q/A 32.

17 **Q25. Did IPL consider purchase of power to fill its Short Term Action Plan capacity need?**

18 **A25.** Yes. The All-Source RFP explicitly invited the submission of PPA proposals. Phase 3  
19 included a PPA offered as two different proposals. As the other proposals in Phase 3 are  
20 subject to ongoing negotiations, I cannot specifically address the relative merit of other  
21 proposals. I do generically address the advantages of build transfer proposals relative to  
22 PPAs in Q/A 18 and Q/A 24. The IURC has a direct and extensive regulatory relationship

1 with IPL. An IPL wholly-owned subsidiary will be the managing member of the Joint  
2 Venture LLC that will own the Project Company that owns the solar generation assets.

3 **Q26. What is the status of IPL's Phase 3 process?**

4 **A26.** IPL has completed negotiations in connection with one solar proposal. This solar proposal  
5 is the subject of the Petition in this Cause and is identified below. This solar proposal  
6 represents one of the short-listed assets available to IPL from the RFP within the time frame  
7 needed to address the capacity need in 2023 and therefore plays a role in satisfying the  
8 Company's 2019 IRP Short Term Action Plan.

9 **4. OVERVIEW OF THE HARDY HILLS PROJECT**

10 **Q27. Please describe the Hardy Hills Project.**

11 **A27.** Invenergy Solar Development North America LLC ("Invenergy") is developing Hardy  
12 Hills, through Hardy Hills Solar Energy LLC, a special purpose entity (also referred to as  
13 ProjectCo).

14 Hardy Hills is a 195 MWac, 240.9MWdc, solar facility utilizing approximately 581,594  
15 solar panels over an approximately 1,780 acre solar panel farm located in Clinton County,  
16 Indiana. Transmission and substation facilities are planned to be located in Clinton County.  
17 The Project will tap Duke Energy Indiana's New London – Frankfort 230 kV line adjacent  
18 to the site. Hardy Hills will contribute 97.5 MW of UCAP. Hardy Hills is expected to  
19 have an approximate net capacity factor of 23.2 percent and generate approximately 396.2  
20 GWh in its first year of operation. The Project will utilize Tier 1, bifacial solar modules  
21 with single-axis ground mount tracker racking. Hardy Hills is designed to qualify for 30%

1 ITC. The commercial operation date (“COD”) for the Project is the second quarter of 2023,  
2 prior to the start of the 2023-2024 MISO Planning Year.

3 **Q28. Please describe the process by which IPL selected Hardy Hills.**

4 **A28.** As noted above, all Phase 2 proposals meeting the criteria described in Q/A 19 advanced  
5 to Phase 3 for direct due diligence and negotiation with the developer RFP respondents.  
6 This short list initially included Invenergy’s Fairbanks Solar Energy Center (“Fairbanks”)  
7 proposal. In direct negotiations, Invenergy immediately informed IPL that the Fairbanks  
8 proposal was no longer available and offered that the Hardy Hills proposal be considered  
9 as a substitute. Due to the anonymity of bidders through Phase 1 and 2 of the evaluation,  
10 IPL was not aware that Hardy Hills had been the first solar-only asset transfer proposal that  
11 fell outside the cutoff for the category to advance to Phase 2. The Hardy Hills proposal  
12 would have been included in Phase 2 and advanced to Phase 3 if Fairbanks had not been  
13 offered or was withdrawn earlier, and through negotiation the Hardy Hills proposal price  
14 was improved as compared to its original level. The certainty associated with executing  
15 an agreement is a significant value for fulfilling IPL’s capacity obligation at a market-  
16 competitive cost because project completion during 2023 affects ITC eligibility. Hardy  
17 Hills is advanced in terms of development and permitting – it is a palpable project at this  
18 point. Lease and purchase option agreements are signed and filed, a tax abatement has  
19 been obtained reducing tax expense for the Project, and there is appropriate and proactive  
20 engagement with county and other necessary authorities.

21 **Q29. Was any other analysis performed to assess the reasonableness of the Hardy Hills**  
22 **Project cost?**

1   **A29.** Yes. IPL engaged Leidos Engineering, LLC (“Leidos”) to assess the Hardy Hills Project  
2       costs. IPL Witness Moe presents the Leidos report, titled: Comparative Levelized Cost of  
3       Energy Analysis of Indianapolis Power & Light Company’s Proposed Hardy Hills Solar.  
4       This evaluation helped IPL assess reasonableness of the Hardy Hills Project costs including  
5       the transmission interconnection and network upgrades cost.

6       Good locations for solar depend on attributes such as insolation and available acreage.  
7       Such locations are not always a good match for interconnection on the existing  
8       transmission system. As renewables proliferate, finding ideal interconnections is getting,  
9       and will continue to get, more difficult. From IPL’s perspective we should not shy away  
10      from solar generation sites based solely on interconnection and network upgrade costs.  
11      Rather, these trade offs warrant analysis and consideration of other costs and benefits  
12      stemming from the facility.

13      The analysis conducted by Leidos leads to the conclusion that the total Hardy Hills Project  
14      costs fall within the range of reasonableness.

15      Qualitative factors also support the Hardy Hills Project. The IPL RFP expressed a  
16      preference for Indiana resources. This preference reasonably reflects consideration of  
17      deliverability, reliability, resiliency, and Indiana energy security. Further, Hardy Hills is  
18      located near the IPL service territory. Its location is beneficial due to its proximity to the  
19      IPL system and load. Its location facilitates IPL’s ability, through the IPL Sponsor member  
20      of the Joint Venture, to manage operations and maintenance at the Project. I would also  
21      add that investing in a utility scale solar facility near our service area showcases a Central  
22      Indiana commitment to clean energy resources and this in turn supports economic  
23      development in IPL’s service area.

1 **Q30. How does Hardy Hills fit with IPL's near-term replacement UCAP need?**

2 **A30.** In addition to being at a relatively advanced development stage and expected to achieve  
3 commercial operation in time for the 2023-24 capacity planning year, Hardy Hills' size,  
4 195 MW (97.5 MW UCAP), creates flexibility in the ongoing resource planning and  
5 selection process.

6 **Q31. Please briefly describe Invenergy and their experience in the renewable generation**  
7 **business and with solar generation in particular.**

8 **A31.** Invenergy is an Illinois limited liability company specializing in the development of large-  
9 scale renewable and other clean energy generation and storage facilities worldwide.  
10 Invenergy is headquartered in Chicago, Illinois. Invenergy has developed more than 27,600  
11 megawatts ("MW") of large-scale renewable projects throughout North America, Latin  
12 America, Europe and Asia, and currently has approximately 8,800 MW of developed  
13 renewable projects in the Midwest.<sup>2</sup>

14 **Q32. Please discuss Invenergy's creditworthiness.**

15 **A32.** Invenergy's, and more specifically Invenergy's subsidiary, Hardy Hills Solar Energy  
16 Holdings LLC's ("Seller"), financial ability to complete construction of the Project and  
17 transfer it to Purchaser is important to Invenergy and IPL. [REDACTED]

18 [REDACTED] Further, IPL's due diligence  
19 when evaluating Invenergy's creditworthiness during the RFP process included collection

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<sup>2</sup> Caisse de dépôt et placement du Québec ("CDPQ") has an ownership interest in Invenergy Renewables LLC. A wholly-owned subsidiary of La Caisse de dépôt et placement du Québec, CDP Infrastructures Fund G.P., has a minority ownership interest in IPALCO Enterprises, Inc. ("IPALCO"), IPL's immediate parent company, and in AES U.S. Investments, Inc., IPALCO's immediate parent company.

1 and review of Invenenergy's credit information. [REDACTED]

2 [REDACTED]

3 [REDACTED] The MIPA requires that [REDACTED]

4 [REDACTED]<sup>3</sup>

5 **Q33. What is the status of Hardy Hills interconnection to MISO?**

6 **A33.** Hardy Hills was entered in the April 2018 MISO DPP. As noted above, it will interconnect  
7 to the New London-Frankfort 230 kV line adjacent to the Project site. Hardy Hills has  
8 received MISO queue number J1063 (NRIS). It is currently in DPP Phase 2. As shown in  
9 Q/A 23 the interconnection and system mitigation costs are understood and included in the  
10 Ranking Analysis calculation and best estimate. Currently there is no expectation of delay  
11 to the Project commercial operation date.

12 **Q34. Did IPL assess Hardy Hills' ability to reach commercial operation?**

13 **A34.** Yes. Invenenergy is an experienced and credible renewable energy developer. As discussed  
14 in Q/A 28, Hardy Hills is at an advanced stage of development and permitting. All  
15 necessary land is under lease or purchase option agreements. Invenenergy has demonstrated  
16 appropriate and proactive engagement with county and other necessary authorities. There  
17 is, however, always a risk that a project might not achieve commercial operation. IPL's  
18 investment in the Project as provided in the MIPA (discussed below) provides very direct  
19 level of oversight to mitigate the risk and ensure, to the degree possible, that the project  
20 will reach commercial operation on time.

21 **5. HARDY HILLS DEVELOPMENT**

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<sup>3</sup> MIPA at Section 17.1.

1   **Q35. Has IPL entered into an agreement to develop Hardy Hills?**

2   **A35.** IPL, through a wholly-owned subsidiary, AES Indiana Devco Holdings 1, LLC (“IPL  
3       DevCo”) has entered into a Membership Interest Purchase, Project Development and  
4       Construction Management Agreement (“MIPA”) with Seller in respect of the sale of the  
5       membership interests in ProjectCo (the special purpose entity created by the Invenergy to  
6       begin the development of Hardy Hills). A copy of the MIPA is included with my testimony  
7       as Confidential IPL Attachment GAC-1.

8   **Q36. Please briefly summarize the terms of the MIPA.**

9   **A36.** IPL, through IPL DevCo (Purchaser), has entered into a MIPA with Seller pursuant to  
10       which Purchaser will acquire the ProjectCo once all land rights, permits, authorizations,  
11       and material contracts (including the necessary interconnection services agreements)  
12       required for Hardy Hills have been secured by ProjectCo.

13       Under the MIPA, Seller will manage all engineering, procurement, and construction  
14       activities for the Hardy Hills Project subject to a pre-agreed scope of work and minimum  
15       specifications. Seller will put in place the necessary equipment supply and construction  
16       contracts to conform with these specifications and, in certain instances, pre-agreed forms  
17       of agreement. IPL will pay for construction spend against progress milestones similar to  
18       those under a standard Engineering, Procurement and Construction (“EPC”) contract.  
19       Seller will pay liquidated damages for delays in achieving substantial completion and/or  
20       failure to achieve a minimum guaranteed capacity.

21   **Q37. Does Invenergy provide any financial assurance that it will meet its obligations under**  
22       **the MIPA?**

**A37.** Yes. See Q/A 32.

**Q38. Are any FERC filings and approvals required for the Hardy Hills Project?**

**A38.** Yes. The Hardy Hills Project will be self-certified as an Exempt Wholesale Generator (“EWG”).<sup>5</sup> As the Project nears completion, a request under Section 205 of the Federal Power Act<sup>6</sup> for any authorizations required to sell the electrical output from the Hardy Hills facility into the wholesale market will be made to FERC.

**Q39. What will happen to Hardy Hills once it is developed?**

**A39.** Once the Project nears commercial operation, IPL DevCo will sell the ProjectCo to a Joint Venture between an IPL subsidiary and one or more tax equity partners (“TEP”).

## 6. JOINT VENTURE

**Q40. Please describe the Joint Venture.**

**A40.** The Joint Venture structure includes a limited liability company (Joint Venture, LLC) operating as a partnership that owns ProjectCo which, in turn owns the solar generation assets. The Joint Venture, LLC will be jointly owned by the IPL Sponsor member and by the TEP member. This transaction is detailed by IPL Witness Salatto. His testimony also includes an illustration of the transaction structure. See IPL Attachment FJS-1.

<sup>4</sup> See MIPA at Exhibit S included with IPL Confidential Attachment GAC-1.

<sup>5</sup> 18 C.F.R. § 366.7.

<sup>6</sup> 16 U.S.C. § 824d.

1                    **7. CAPACITY AGREEMENT AND CONTRACT FOR DIFFERENCES**

2    **Q41. What is a contract for differences?**

3    **A41.** A contract for differences is a financial instrument entered into by two parties wherein the  
4        buyer agrees to settle with the seller the difference between the current value of an asset  
5        and its value at the time of the contract. At settlement, if the market price is higher than  
6        the contract for differences fixed price, the seller pays the difference to the buyer; if the  
7        market price is lower than the contract for differences fixed price, the buyer pays the  
8        difference to the seller. In energy markets, a contract for differences provides one party a  
9        fixed price for electric energy when a party is not physically transacting in the underlying  
10       commodity (i.e. electric energy).

11   **Q42. Please describe the terms of IPL's proposed Capacity Agreement and Contract for**  
12       **Differences ("CfD").**

13   **A42.** The CfD is a contract between IPL and the Project Company that holds and operates the  
14        energy generating facility (ProjectCo). The CfD is effectively a fixed-price energy hedge  
15        equivalent to that provided by traditional IPL-owned generation. The CfD establishes a  
16        fixed price for the facility energy output. ProjectCo is the market participant and sells all  
17        the energy from the facility into the MISO market. The CfD is settled between IPL and  
18        the ProjectCo to provide the ProjectCo predictable cash revenue and the certainty of a fixed  
19        price for IPL customers. For example, if the MISO price is greater than the CfD price, the  
20        difference is credited to IPL; conversely, if the MISO price is less than the CfD price, the  
21        difference is paid by IPL to the ProjectCo. IPL buys its load obligation from MISO at the  
22        LMP and the CfD settlement between IPL and ProjectCo offsets the MISO purchase so  
23        that financially the corresponding purchase of energy is at the CfD fixed price.

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1 The CfD also directly assigns the MISO LRZ 6 credits to IPL, along with the RECs created  
2 by the Hardy Hills Project. IPL is credited the net of Ancillary Services associated with  
3 the facility and any other generation benefits the ProjectCo receives under the Generator  
4 Interconnection Agreement.

5 IPL's analysis contemplates the term of the CfD will be approximately [REDACTED] years.

6 A copy of the CfD is provided as IPL Confidential Attachment GAC-2. This contract  
7 remains subject to negotiation and is expected to be completed once the TEP is known.

8 **Q43. Why is a CfD being used for this transaction?**

9 **A43.** As just discussed, the CFD is a "financial" rather than a "physical" contract. As explained  
10 by IPL Witness Salatto, by utilizing the CfD, IPL and TEP as partners in the JV, LLC, are  
11 able to avoid the potential negative tax implications that would exist if a Purchase Power  
12 Agreement were used, and this in turn allows IPL to utilize the tax benefits of the Hardy  
13 Hills Project for the benefit of IPL's customers.

14 **Q44. What is the estimated pricing for the CfD for Hardy Hills?**

15 **A44.** The [REDACTED] price under the CfD for Hardy Hills is estimated to be approximately [REDACTED]  
16 per MWh [REDACTED] As  
17 described in Q/A 45, the price is the result of a computation designed to achieve a targeted  
18 return on investment of the acquired Project based on each party's underlying investment  
19 profile and characteristics. The final CfD price is subject to negotiation with the tax equity  
20 investor.

21 **Q45. How was the pricing for the CfD determined?**

1 **A45.** The price of the CfD is determined by calculating, on a \$/MWh basis, an amount that  
2 enables both the TEP and the IPL Sponsor of Joint Venture, LLC to achieve a targeted  
3 return on investment of the acquired Project based on each party's underlying investment  
4 profile and characteristics.<sup>7</sup> TEP's membership interests in Joint Venture, LLC will enable  
5 the TEP to receive a specific percent of the ITCs and tax losses generated by the Project  
6 along with distributions of up to a specific percent of any excess cash generated by the  
7 Project. Once TEP has attained an internal rate of return ("IRR") as specified in the Joint  
8 Venture, LLC Agreement, the allocation of taxable income, loss, gain and deductions  
9 changes as between IPL Sponsor and TEP and the allocation of such taxable income, loss,  
10 gain and deductions to the TEP drops. At this point, IPL Sponsor member of Joint Venture,  
11 LLC will have the option to acquire the TEP interest for fair market value as defined in the  
12 Joint Venture, LLC Agreement. If IPL Sponsor acquires the TEP interest, IPL can  
13 consolidate the Project and eliminate the need for the CfD.

14 **Q46. Is this pricing reasonable?**

15 **A46.** The CfD price is considered to be market-based at a level in which the transaction will  
16 attract TEP investment. Attracting the TEP investment is a key component of all solar  
17 projects, whether the project is a build transfer or a PPA.

18 **Q47. What is the cash flow for the settlements and earnings distributions under the CfD?**

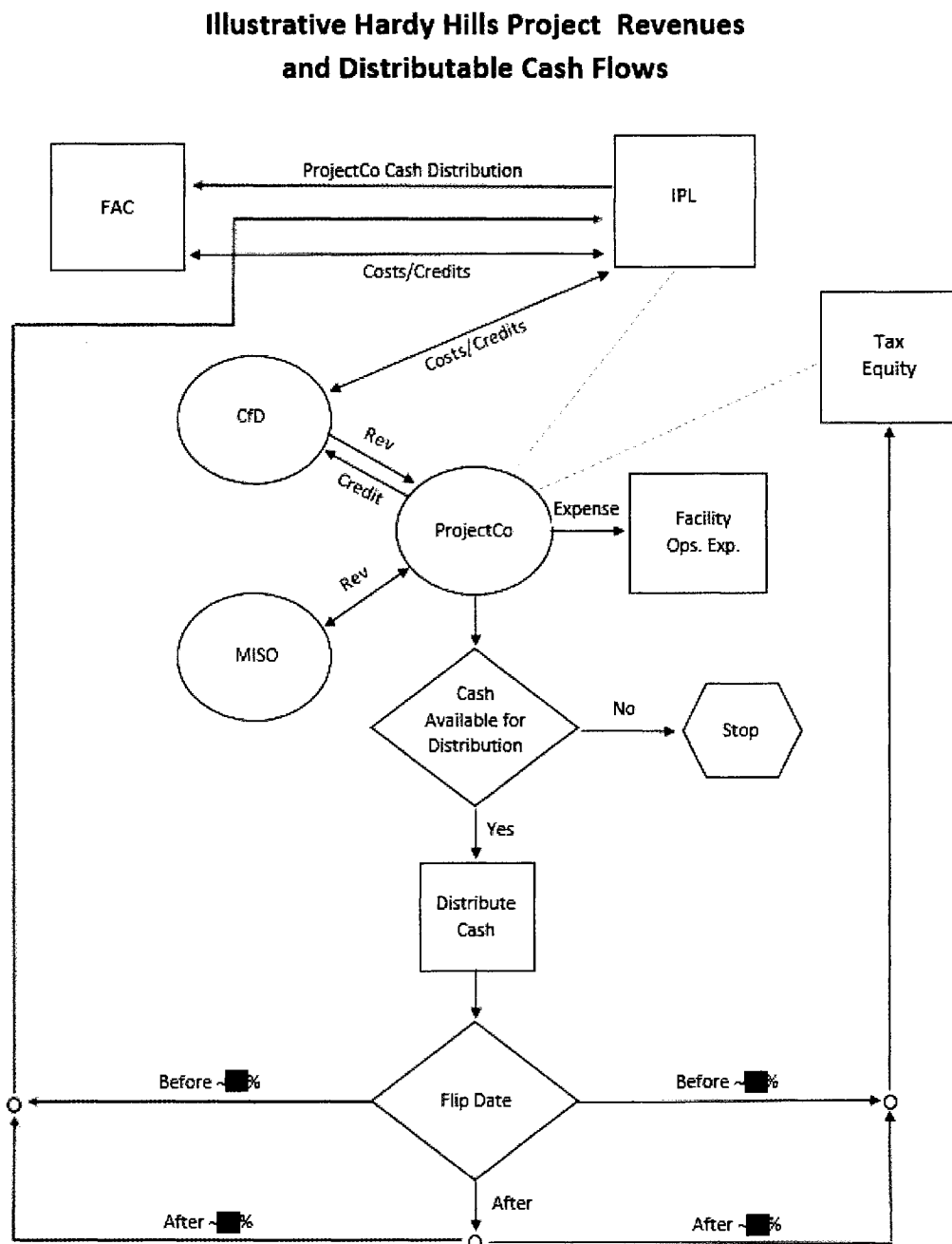
19 **A47.** As described in Q/A 41 and Q/A 42, IPL does not take delivery of the energy from the  
20 ProjectCo under the CFD. Instead, IPL financially settles each month for the difference  
21 between the CFD price and the actual LMP. IPL proposes that amounts paid by IPL to the

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<sup>7</sup> As proposed, distributions to IPL from the ProjectCo will be credited to customers through the FAC.

1 ProjectCo or paid by the ProjectCo to IPL will be charged or credited respectively to the  
2 Fuel Adjustment Clause ("FAC") for timely recovery or crediting to IPL customers.  
3 Similarly, ProjectCo cash distributions will be timely credited to IPL customers through  
4 the FAC. Figure 1 below shows how, at a high level, these charges and credits flow to IPL  
5 customers.

6

**Figure 1. Illustrative Hardy Hills Project Revenues and Distributable Cash Flows<sup>8</sup>**

<sup>8</sup> Does not reflect intermediate holding companies. Does not reflect any tax attributes allocation between IPL and TEP.

1 **Q48. Please discuss how ProjectCo will operate.**

2 **A48.** The IPL Sponsor of the Joint Venture will be responsible for operations and operating  
3 decisions. Operations will be funded by a combination of two revenue sources – MISO  
4 sales and revenue from a Capacity Agreement and Contract for Differences between the  
5 ProjectCo and IPL. It is anticipated that O&M will be performed by IPL under an  
6 intercompany O&M agreement. This approach will leverage IPL's existing facility and  
7 resources efficiently for the benefit of this Project and our customers.

8 **8. RECS**

9 **Q49. What are RECs?**

10 **A49.** A REC is produced when a renewable energy resource generates one MWh of electricity  
11 and delivers it to the grid. For example, if a solar facility produces five MWh of electricity,  
12 it has five RECs to either keep or sell. The exchange of RECs is tracked and recorded.  
13 RECs were created as a means to track progress towards and compliance with states'  
14 Renewable Portfolio Standards. However, any corporation, business, nonprofit or  
15 individual may purchase RECs to meet their renewable energy objectives. IPL expects that  
16 the RECs produced by the Hardy Hills Project will be tracked through the Midwest  
17 Renewable Energy Tracking System ("M-RETS") or similar system.

18 **Q50. How are RECs from Hardy Hills treated in the transaction?**

19 **A50.** As described in Q/A 42, the CfD directly assigns the RECs created by the Hardy Hill  
20 Project to IPL.

21 **Q51. What does IPL plan to do with the RECs?**

**A51.** IPL may either retain the RECs associated with the Hardy Hills Project or sell them. If IPL retains the RECs, IPL may retire them or allow them to expire. If IPL sells the RECs, the value associated with the sale would be credited to customers. IPL will make a good faith effort to discuss its plans with the OUCC.

## 9. BEST ESTIMATE OF HARDY HILLS PROJECT

**Q52. What is the Company's best estimate for the cost of the Hardy Hills Project?**

**A52.** The best estimate for the Hardy Hills Project cost is identified by component in Table 1.

**Table 1. Hardy Hills Best Estimate<sup>9</sup>**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989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**Q53. How was the cost estimate developed?**

**A53.** The cost for Hardy Hills was determined through the competitive RFP and subsequent negotiations with Invenergy. The best estimate for Hardy Hills is then directly from the MIPA and associated documents. See “Base Contract Price”, Exhibit A, Definitions, in IPL Confidential Attachment GAC-1, Membership Interest Purchase, Project Development and Construction Management Agreement (“MIPA”). [REDACTED]

The MISO interconnection and

<sup>9</sup> Best estimate excludes carrying charges. See IPL Witness Rogers Direct Testimony.

1 system upgrade costs reflected in the best estimate are from the 1898 & Co. Interconnection  
2 Reliability and Congestion Evaluation report, Table 12 at p. 15, Cost Allocation, sponsored  
3 by IPL Witness Lind. IPL Witness Salatto explains the basis for the estimated TEP  
4 contribution.

5 **Q54. Is it possible that IPL will make additional investment in the acquisition of the Hardy**  
6 **Hills Project beyond the best estimate of the investment discussed above?**

7 **A54.** Yes. IPL does not anticipate a need for additional investment beyond the best estimate of  
8 the investment discussed above. However, situations such as force majeure, excused  
9 events, increases to transmission interconnection or network upgrade costs, increases in  
10 import tariffs or IPL-initiated change orders, could result in a need for additional  
11 investment. The costs of any such additional investment would be presented by IPL to the  
12 Commission for review and approval prior to recovery through rates.

13 **Q55. In your opinion, is the estimated cost of the Hardy Hills Project reasonable?**

14 **A55.** Yes. The Hardy Hills cost is the result of the competitive RFP process and direct  
15 negotiation. IPL took the additional step to confirm that it is consistent with the market for  
16 similar projects by engaging Leidos to perform a comparative analysis, as discussed in Q/A  
17 29.

18 **Q56. Did IPL comply with Ind. Code § 8-1-8.5-5(e)?**

19 **A56.** Yes. The Commission should find that IPL has satisfied this statutory requirement or  
20 decline to exercise it.

21 In pertinent part, this statutory subpart provides that the Commission must find that the  
22 estimated costs of the proposed facility are, to the extent commercially practicable, the

1 result of competitively bid engineering, procurement, or construction contracts, as  
2 applicable. The statutory provision contains other related provisions relevant to the  
3 competitive procurement of generating facilities.

4 The Commission recently found that the purpose behind this statutory provision is: 1) to  
5 confirm the reasonableness and reliability of the cost estimates that form the basis for the  
6 Commission's best estimate finding; and 2) to assure that the actual costs that are incurred  
7 are, to the extent commercially practicable, based on competitive procurement.<sup>10</sup>

8 Here, the need for the renewable generation for which IPL seeks approval in this filing was  
9 originally defined in IPL's 2019 IRP. IPL issued an All-Source Request for Proposal  
10 ("RFP") in December 2019. Because IPL's proposal to develop Hardy Hills grew out of  
11 the competitive All-Source RFP, the estimated cost of this proposed Project stems from  
12 competitive bids from developers.

13 Developers have relationships with the engineering, procurement, or construction  
14 contractors whose costs are reflected in the overall price for the generation projects in their  
15 RFP response. Respondents to the RFP were motivated to reply with firm and competitive  
16 bids in order to be considered for IPL's investment and the negotiation of an agreement.  
17 In the case of Hardy Hills, Invenergy is using a competitive solicitation to select the EPC  
18 contractor. The EPC contracts have been bid and the results are being evaluated by  
19 Invenergy.

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<sup>10</sup> *Joint Petition of NIPSCO and Rosewater*, IURC Cause No. 45194 at 56 (8/7/2019) .

1 It was commercially practicable to secure the estimated costs of the Hardy Hills Project in  
2 this manner.

3 In sum, the estimated cost of the Hardy Hills Project is reasonable and reliable because it  
4 is the product of the competitive bidding process and a negotiated and executed MIPA.  
5 The Commission should find that the requirements of Ind. Code § 8-1-8.5-5(e) have been  
6 satisfied. In the alternative, the Commission should decline to exercise jurisdiction under  
7 this section.

8 **10. CONCLUSION**

9 **Q57. What is your recommendation to the Commission?**

10 **A57.** I recommend the Commission approve IPL's development of Hardy Hills and the  
11 associated relief sought by the Company in this proceeding.

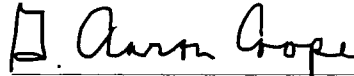
12 **Q58. Does that conclude your prepared verified direct testimony?**

13 **A58.** Yes

## VERIFICATION

I, G. Aaron Cooper, AES US Services, LLC Chief Commercial Officer, US Utilities, affirm under penalties for perjury that the foregoing representations are true to the best of my knowledge, information, and belief.

Dated February 12, 2021.

A handwritten signature in black ink, appearing to read "G. Aaron Cooper", written over a horizontal line.

G. Aaron Cooper

**MEMBERSHIP INTEREST PURCHASE, PROJECT DEVELOPMENT AND  
CONSTRUCTION MANAGEMENT AGREEMENT**

**BETWEEN**

**AES INDIANA DEVCO HOLDINGS 1, LLC**

**(“PURCHASER”)**

**HARDY HILLS SOLAR ENERGY HOLDINGS LLC**

**(“SELLER”)**

**EFFECTIVE AS OF JANUARY 21, 2021**

**HARDY HILLS PROJECT**

**MEMBERSHIP INTEREST PURCHASE, PROJECT DEVELOPMENT AND  
CONSTRUCTION MANAGEMENT AGREEMENT**

[PAGES 2-638 CONFIDENTIAL – NOT REPRODUCED HEREIN]

IPL Confidential Attachment GAC-2  
(Capacity Agreement and Contract for Differences)

[CONFIDENTIAL - NOT REPRODUCED HEREIN]