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IDAHO PUBLIC
UTILITIES COMMISSION

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION)
OF IDAHO POWER COMPANY TO)
IMPLEMENT SOLAR INTEGRATION) CASE NO. IPC-E-14-18
RATES AND CHARGES.)
_____)

IDAHO POWER COMPANY

DIRECT TESTIMONY

OF

MICHAEL J. YOUNGBLOOD

1 Q. Please state your name and business address.

2 A. My name is Michael J. Youngblood and my
3 business address is 1221 West Idaho Street, Boise, Idaho.

4 Q. By whom are you employed and in what capacity?

5 A. I am employed by Idaho Power Company ("Idaho
6 Power" or "Company") as the Manager of Regulatory Projects
7 in the Regulatory Affairs Department.

8 Q. Please describe your educational background.

9 A. In May of 1977, I received a Bachelor of
10 Science Degree in Mathematics and Computer Science from the
11 University of Idaho. From 1994 through 1996, I was a
12 graduate student in the Executive MBA program of Colorado
13 State University. Over the years, I have attended numerous
14 industry conferences and training sessions, including
15 Edison Electric Institute's "Electric Rates Advanced
16 Course."

17 Q. Please describe your work experience with
18 Idaho Power.

19 A. I began my employment with Idaho Power in
20 1977. During my career, I have worked in several
21 departments of the Company and subsidiaries of IDACORP,
22 including Systems Development, Demand Planning, Strategic
23 Planning, and IDACORP Solutions. From 1981 to 1988, I
24 worked as a Rate Analyst in the Rates and Planning
25 Department where I was responsible for the preparation of

1 electric rate design studies and bill frequency analyses.
2 I was also responsible for the validation and analysis of
3 the load research data used for cost-of-service
4 allocations.

5 From 1988 through 1991, I worked in Demand Planning
6 and was responsible for the load research and load
7 forecasting functions of the Company, including sample
8 design, implementation, data retrieval, analysis, and
9 reporting. I was responsible for the preparation of the
10 five-year and twenty-year load forecasts used in revenue
11 projections and resource plans, as well as the presentation
12 of these forecasts to the public and regulatory
13 commissions.

14 From 1991 through 1998, I worked in Strategic
15 Planning. As a Strategic Planning Associate, I coordinated
16 the complex efforts of acquiring Prairie Power Cooperative,
17 the first acquisition of its kind for the Company in 40
18 years. From 1996 to 1998, as a part of a Strategic
19 Planning initiative, I helped develop and provide two-way
20 communication between customers and energy providers using
21 advanced computer technologies and telecommunications.

22 From 1998 to 2000, I was a General Manager of
23 IDACORP Solutions, a subsidiary of IDACORP, reporting to
24 the Vice President of Marketing. I was directly
25 responsible for the direction

1 and management of the Commercial and Industrial Business
2 Solutions division.

3 In 2001, I returned to the Regulatory Affairs
4 Department and worked on special projects related to
5 deregulation, the Company's Integrated Resource Plan
6 ("IRP"), and filings with both the Idaho Public Utilities
7 Commission ("IPUC" or "Commission") and the Public Utility
8 Commission of Oregon.

9 In 2008, I was promoted to the position of Manager
10 of Rate Design for Idaho Power. In that position I was
11 responsible for the management of the rate design
12 strategies of the Company, as well as the oversight of all
13 tariff administration.

14 In January of 2012, I became the Manager of
15 Regulatory Projects for Idaho Power, which is my current
16 position. In this position, I provide the regulatory
17 support for many of the large individual projects and
18 issues currently facing the Company. Most recently that
19 has included providing regulatory support for the inclusion
20 of the Langley Gulch power plant investment in rate base
21 and supporting the Company's efforts to address numerous
22 issues involving Qualifying Facilities ("QF") as defined
23 under the Public Utility Regulatory Policies Act of 1978
24 ("PURPA"), including the Company's efforts in Case No. GNR-
25 E-11-03, the review of PURPA QF contract provisions.

1 Q. What is the purpose of your testimony in this
2 matter?

3 A. Idaho Power is requesting that the IPUC
4 authorize the Company to implement solar integration rates
5 and charges consistent with its solar integration study
6 ("Study" or "2014 Study" or "Solar Study"). The 2014 Solar
7 Study Report ("Study Report") is attached as Exhibit No. 1
8 to the testimony of Philip DeVol. Mr. DeVol's testimony
9 provides a summary of the Solar Study, a description of the
10 Technical Review Committee and process utilized for the
11 Study, and the results of the 2014 Study. The purpose of
12 my testimony is to provide the Commission with the
13 Company's request to implement solar integration rates and
14 charges based upon the costs identified by the Solar Study.

15 Q. Based on the results of the 2014 Study, what
16 is the cost of integrating solar generation on Idaho
17 Power's electrical system?

18 A. As presented in Mr. DeVol's testimony, the
19 Solar Study analyzed four solar build-out scenarios at
20 installed capacities of: 100 megawatts ("MW"), 300 MW, 500
21 MW, and 700 MW. The results of the Solar Study show the
22 integration costs indicated in the following tables:

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**Average Integration Cost per MWh
(2014 cost and dollars)**

Build-out Scenarios	0-100 MW	0-300 MW	0-500 MW	0-700 MW
Integration Cost	\$0.40	\$1.20	\$1.80	\$2.50

**Incremental Integration Cost per MWh
(2014 cost and dollars)**

Penetration Level	0-100 MW	100-300 MW	300-500 MW	500-700 MW
Integration Cost	\$0.40	\$1.50	\$2.80	\$4.40

The costs identified by the Solar Study reflect the costs to integrate solar generation for the calendar year 2014. The costs are reported in 2014 dollars and were rounded to the nearest ten (10) cents. They are not averaged or levelized over the life of the solar project or plant.

Q. What is the difference between the Average Integration Cost and the Incremental Integration Cost described in the 2014 Study?

A. The Average Integration Cost, as shown above, reports an average cost per megawatt-hour ("MWh") for each of the four discrete solar build-out scenarios modeled in the Study. In other words, the Average Integration Cost reflects the average cost per MWh to integrate one block of solar generation, independently, for each penetration level of solar generation: 0-100 MW; 0-300 MW; 0-500 MW; and 0-700 MW. Conversely, the Incremental Integration Cost indicates the cost of integrating solar generation as it

1 would be assigned across the four blocks of solar
2 generation penetration levels, in 200 MW increments.

3 Q. Please provide an example to further explain
4 the distinction between Average Integration Cost and
5 Incremental Integration Cost.

6 A. Certainly. According to the 2014 Study, the
7 Average Integration Cost for all solar generation from 0-
8 700 MW is \$2.50 per MWh. That means that if the total cost
9 of integrating 700 MW of solar were to be spread equally to
10 all 700 MW of solar generation, the cost of integration
11 would be \$2.50 for each MWh generated. However, if that
12 same cost of integrating 700 MW of solar were to be broken
13 up into 100 and 200 MW increments, the Incremental
14 Integration Cost for the first 100 MW of solar generation
15 would be only \$0.40 per MWh. The incremental cost of
16 integration for the next 200 MW of solar generation (from
17 100 MW to 300 MW), assuming that the first 100 MW of solar
18 generation remains at \$0.40 per MWh, would be \$1.50 per
19 MWh. For the next 200 MW (300 MW to 500 MW), again
20 assuming that the cost per MWh for the each of the first
21 two blocks of integration remained unchanged, would be a
22 cost of \$2.80 per MWh. The last 200 MW (500 MW to 700 MW)
23 of solar generation would incur a cost of \$4.40 per MWh.

24 In aggregate, the total cost of integrating solar
25 identified by either method, the Average Integration Cost

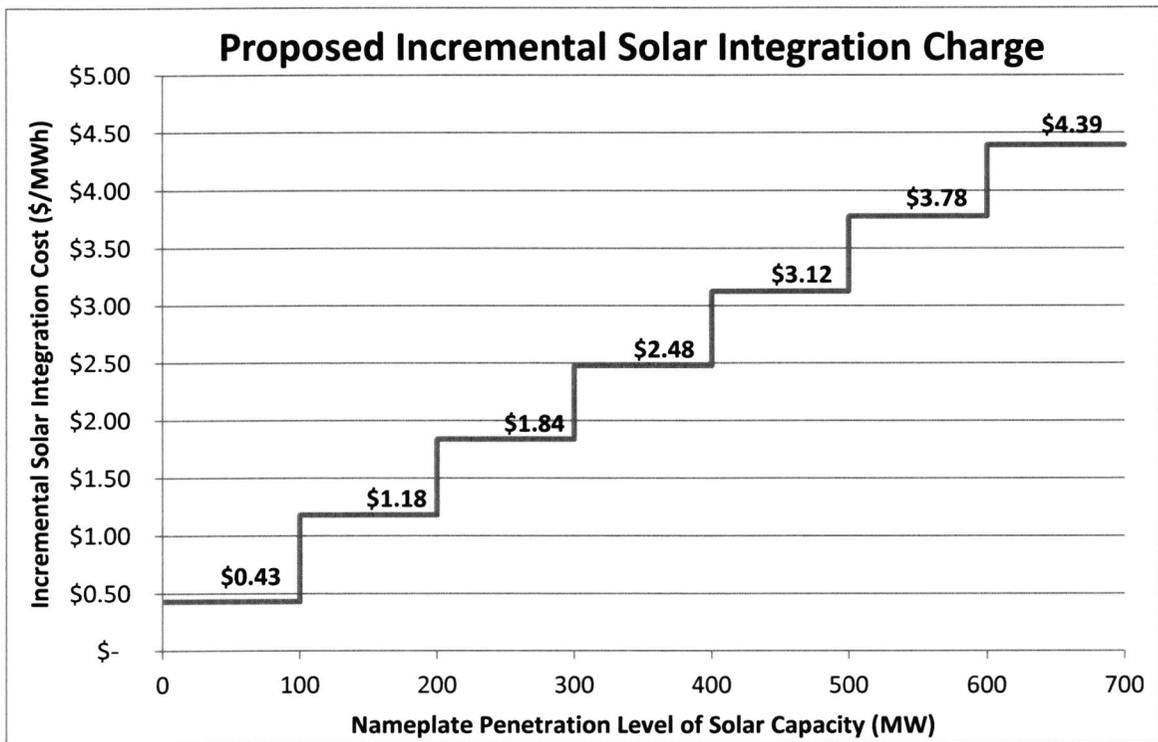
1 or the Incremental Integration Cost, is the same.
2 Essentially, the cost of solar integration increases as the
3 penetration levels of solar increase on the system. The
4 Study identified the discrete cost to integrate solar
5 generation at four discrete penetration levels. However,
6 if costs are assigned on an incremental basis, then costs
7 are more closely assigned with the cause of those costs,
8 and thus the initial generation is assigned a lower cost
9 than the later generation that shows up when it is more
10 costly to integrate.

11 Q. How does the Company propose to implement
12 solar integration cost recovery?

13 A. Idaho Power proposes that a solar integration
14 charge be established to collect the incremental cost of
15 integration at each 100 MW of solar generation penetration.
16 Because there are not currently any solar projects paying
17 any integration charge on Idaho Power's system, the solar
18 integration charge simply starts at zero and increases
19 consistent with the costs of integration identified in the
20 Solar Study, at every 100 MW of solar nameplate capacity
21 penetration level. The proposed solar integration charges
22 are rounded to the nearest penny and are illustrated in the
23 chart on the next page:

24

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12 Q. How does the Company propose that the Solar
 13 Incremental Integration Charge be implemented for solar
 14 generation?

15 A. Similar to what the Company submitted and will
 16 request for the cost recovery of wind integration costs,
 17 Idaho Power recommends that the Commission allocate costs
 18 on a per MWh basis for incremental levels of solar
 19 penetration, and not on a percentage of avoided cost rate
 20 basis, like what was done for the initial wind integration
 21 charge. Idaho Power also proposes that both wind and solar
 22 integration charges are set forth in a tariff schedule,
 23 specifically established for intermittent generation
 24 integration charges.

25

1 Q. Have you provided an example of what an
2 integration tariff might look like?

3 A. Yes. Exhibit No. 2 to my testimony is a draft
4 Schedule 87, Variable Generation Integration Charges, that
5 I have prepared. The integration charges from Schedule 87
6 would be deducted from the avoided cost rates established
7 for and set out in a PURPA contract.

8 Q. Can you describe the proposed Schedule 87,
9 Variable Generation Integration Charges, you provide in
10 Exhibit No. 2?

11 A. Yes. Schedule 87 is a draft of a new tariff
12 which is intended to provide the incremental integration
13 charges to be assessed to QFs whose generation resource is
14 variable and intermittent in nature, like wind or solar.
15 Schedule 87 would provide the wind and solar integration
16 charges consistent with the most recent Commission-approved
17 integration study applicable to both wind and solar
18 generation. The draft of Schedule 87 submitted as Exhibit
19 No. 2 contains only the proposed incremental integration
20 charges for solar generation based upon the 2014 Study, and
21 contains a placeholder for the inclusion of the appropriate
22 wind integration charges, once they are determined by the
23 Commission. The charges set forth in Schedule 87 are the
24 amounts to be deducted from avoided cost rates each year,
25 beginning in the year the project comes online, based on

1 the nameplate capacity of installed solar generation at the
2 scheduled operation date of the proposed project. Being
3 tariff-based would allow integration costs to be updated
4 for new contracts as additional solar generation is added
5 to the system, or whenever a new solar integration study is
6 completed and identifies a change in integration costs.
7 Having the costs set forth in Schedule 87 provides
8 transparency for the developers as to what the appropriate
9 integration charges would be based upon the scheduled
10 operation date of the proposed project.

11 Q. Can you describe the format in which the
12 integration charges are set out in Schedule 87?

13 A. Yes. Idaho Power has formatted the
14 integration charges to appear in the same format as that
15 used by the Commission to post the published avoided cost
16 rates. Each penetration level (each 100 MW increment) has
17 its own table clearly identified and set forth in Schedule
18 87, and discloses both the levelized integration charge, as
19 well as the non-levelized stream of integration charge
20 amounts listed by year. Just like published avoided cost
21 rates, the scheduled operation date for the proposed
22 generation project is used as the starting point in the
23 table, and each yearly amount through the term of the
24 proposed contract is set out accordingly.

25 Q. Does this conclude your testimony?

26 A. Yes it does.

1 **ATTESTATION OF TESTIMONY**

2
3
4 STATE OF IDAHO)
5) ss.
6 County of Ada)
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8

9 I, Michael J. Youngblood, having been duly sworn to
10 testify truthfully, and based upon my personal knowledge,
11 state the following:

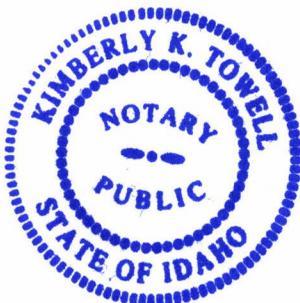
12 I am employed by Idaho Power Company as the Manager
13 of Regulatory Projects in the Regulatory Affairs Department
14 and am competent to be a witness in this proceeding.

15 I declare under penalty of perjury of the laws of
16 the state of Idaho that the foregoing pre-filed testimony
17 and exhibit are true and correct to the best of my
18 information and belief.

19 DATED this 1st day of July 2014.

20
21 Michael J. Youngblood
22 Michael J. Youngblood
23

24 SUBSCRIBED AND SWORN to before me this 1st day of
25 July 2014.



Kimberly K. Towell
Notary Public for Idaho
Residing at: Star, Idaho
My commission expires: 12-20-2015



**BEFORE THE
IDAHO PUBLIC UTILITIES COMMISSION
CASE NO. IPC-E-14-18**

IDAHO POWER COMPANY

**YOUNGBLOOD, DI
TESTIMONY**

EXHIBIT NO. 2

SCHEDULE 87
INTERMITTENT GENERATION INTEGRATION CHARGES

APPLICABILITY

This schedule is applicable to all qualifying facility ("QF") generators interconnected to the Company that have generation of an intermittent nature, such as wind and solar generation. The initial charges within this schedule are to be assessed to intermittent generation based upon the total nameplate capacity of a specific type of intermittent generation interconnected to Company's system.

PART 1 – WIND INTEGRATION CHARGES

The following tables are applicable to all QF wind generation contracts that come online after Month, Day, Year:

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PART 2 – SOLAR INTEGRATION CHARGES

The following tables are applicable to all QF solar generation contracts that come online after August 1, 2014:

SCHEDULE 87
INTERMITTENT GENERATION INTEGRATION CHARGES
 (Continued)

SOLAR INTEGRATION CHARGES (Continued)

0 - 100 MW Solar Capacity Penetration Level			
LEVELIZED		NON-LEVELIZED	
ON-LINE YEAR	20 YEAR CONTRACT TERM LEVELIZED RATES	CONTRACT YEAR	NON- LEVELIZED RATES
2014	0.54	2014	0.43
2015	0.56	2015	0.44
2016	0.58	2016	0.46
2017	0.59	2017	0.47
2018	0.61	2018	0.48
2019	0.63	2019	0.50
		2020	0.51
		2021	0.53
		2022	0.54
		2023	0.56
		2024	0.58
		2025	0.60
		2026	0.61
		2027	0.63
		2028	0.65
		2029	0.67
		2030	0.69
		2031	0.71
		2032	0.73
		2033	0.75
		2034	0.78
		2035	0.80
		2036	0.82
		2037	0.85
		2038	0.87
		2039	0.90

SCHEDULE 87
INTERMITTENT GENERATION INTEGRATION CHARGES
 (Continued)

SOLAR INTEGRATION CHARGES (Continued)

101 - 200 MW Solar Capacity Penetration Level			
LEVELIZED		NON-LEVELIZED	
ON-LINE YEAR	20 YEAR CONTRACT TERM LEVELIZED RATES	CONTRACT YEAR	NON- LEVELIZED RATES
2014	1.49	2014	1.18
2015	1.53	2015	1.22
2016	1.58	2016	1.25
2017	1.63	2017	1.29
2018	1.68	2018	1.33
2019	1.73	2019	1.37
		2020	1.41
		2021	1.45
		2022	1.50
		2023	1.54
		2024	1.59
		2025	1.63
		2026	1.68
		2027	1.73
		2028	1.79
		2029	1.84
		2030	1.89
		2031	1.95
		2032	2.01
		2033	2.07
		2034	2.13
		2035	2.20
		2036	2.26
		2037	2.33
		2038	2.40
		2039	2.47

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SCHEDULE 87
INTERMITTENT GENERATION INTEGRATION CHARGES
 (Continued)

SOLAR INTEGRATION CHARGES (Continued)

201 - 300 MW Solar Capacity Penetration Level			
LEVELIZED		NON-LEVELIZED	
ON-LINE YEAR	20 YEAR CONTRACT TERM LEVELIZED RATES	CONTRACT YEAR	NON- LEVELIZED RATES
2014	2.32	2014	1.84
2015	2.39	2015	1.89
2016	2.46	2016	1.95
2017	2.54	2017	2.01
2018	2.61	2018	2.07
2019	2.69	2019	2.13
		2020	2.20
		2021	2.26
		2022	2.33
		2023	2.40
		2024	2.47
		2025	2.55
		2026	2.62
		2027	2.70
		2028	2.78
		2029	2.87
		2030	2.95
		2031	3.04
		2032	3.13
		2033	3.23
		2034	3.32
		2035	3.42
		2036	3.52
		2037	3.63
		2038	3.74
		2039	3.85

SCHEDULE 87
INTERMITTENT GENERATION INTEGRATION CHARGES
 (Continued)

SOLAR INTEGRATION CHARGES (Continued)

301 - 400 MW Solar Capacity Penetration Level			
LEVELIZED		NON-LEVELIZED	
ON-LINE YEAR	20 YEAR CONTRACT TERM LEVELIZED RATES	CONTRACT YEAR	NON- LEVELIZED RATES
2014	3.12	2014	2.48
2015	3.22	2015	2.55
2016	3.32	2016	2.63
2017	3.41	2017	2.71
2018	3.52	2018	2.79
2019	3.62	2019	2.87
		2020	2.96
		2021	3.05
		2022	3.14
		2023	3.23
		2024	3.33
		2025	3.43
		2026	3.53
		2027	3.64
		2028	3.75
		2029	3.86
		2030	3.97
		2031	4.09
		2032	4.22
		2033	4.34
		2034	4.47
		2035	4.61
		2036	4.75
		2037	4.89
		2038	5.03
		2039	5.19

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SCHEDULE 87
INTERMITTENT GENERATION INTEGRATION CHARGES
 (Continued)

SOLAR INTEGRATION CHARGES (Continued)

401 - 500 MW Solar Capacity Penetration Level			
LEVELIZED		NON-LEVELIZED	
ON-LINE YEAR	20 YEAR CONTRACT TERM LEVELIZED RATES	CONTRACT YEAR	NON- LEVELIZED RATES
2014	3.94	2014	3.12
2015	4.06	2015	3.22
2016	4.18	2016	3.31
2017	4.31	2017	3.41
2018	4.44	2018	3.52
2019	4.57	2019	3.62
		2020	3.73
		2021	3.84
		2022	3.96
		2023	4.08
		2024	4.20
		2025	4.32
		2026	4.45
		2027	4.59
		2028	4.72
		2029	4.87
		2030	5.01
		2031	5.16
		2032	5.32
		2033	5.48
		2034	5.64
		2035	5.81
		2036	5.98
		2037	6.16
		2038	6.35
		2039	6.54

SCHEDULE 87
INTERMITTENT GENERATION INTEGRATION CHARGES
 (Continued)

SOLAR INTEGRATION CHARGES (Continued)

501 - 600 MW Solar Capacity Penetration Level			
LEVELIZED		NON-LEVELIZED	
ON-LINE YEAR	20 YEAR CONTRACT TERM LEVELIZED RATES	CONTRACT YEAR	NON- LEVELIZED RATES
2014	4.76	2014	3.78
2015	4.91	2015	3.89
2016	5.05	2016	4.01
2017	5.21	2017	4.13
2018	5.36	2018	4.25
2019	5.52	2019	4.38
		2020	4.51
		2021	4.64
		2022	4.78
		2023	4.93
		2024	5.07
		2025	5.23
		2026	5.38
		2027	5.55
		2028	5.71
		2029	5.88
		2030	6.06
		2031	6.24
		2032	6.43
		2033	6.62
		2034	6.82
		2035	7.02
		2036	7.24
		2037	7.45
		2038	7.68
		2039	7.91

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SCHEDULE 87
INTERMITTENT GENERATION INTEGRATION CHARGES
 (Continued)

SOLAR INTEGRATION CHARGES (Continued)

601 - 700 MW Solar Capacity Penetration Level			
LEVELIZED		NON-LEVELIZED	
ON-LINE YEAR	20 YEAR CONTRACT TERM LEVELIZED RATES	CONTRACT YEAR	NON- LEVELIZED RATES
2014	5.54	2014	4.39
2015	5.71	2015	4.53
2016	5.88	2016	4.66
2017	6.06	2017	4.80
2018	6.24	2018	4.95
2019	6.43	2019	5.09
		2020	5.25
		2021	5.40
		2022	5.57
		2023	5.73
		2024	5.91
		2025	6.08
		2026	6.26
		2027	6.45
		2028	6.65
		2029	6.85
		2030	7.05
		2031	7.26
		2032	7.48
		2033	7.70
		2034	7.94
		2035	8.17
		2036	8.42
		2037	8.67
		2038	8.93
		2039	9.20

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