Community Solar Rate Rider: Schedule No. 500

February 13, 2018

Community Solar Agenda

- Design Principles
- Program Highlights
- Pricing Methodology
- Example Customer Impact
- Conclusion
- Next Steps

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Design Principles

- Market Research and focus groups resulted in diverse opinion on program structure and pricing design
- Consistent with Strategic Directive 2:
  - Maintain fair, reasonable and non-discriminatory rates as stated in Nebraska Revised Statute § 70-655
  - Equitably assign costs across and within all customer classes
  - Pursue rate process and structure changes to reflect the cost of energy when it is used
  - Offer flexibility and options; and
  - Ease of understanding

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Design Principles

- Transparent and based on actual production and prior year Southwest Power Pool (SPP) day ahead market pricing
- Valuation is consistent with how the market values current or future OPPD generation assets
- Foundations of the design principles would be scalable to accommodate potential future states of large scale adoption of Distributed Energy Resources
- The Brattle Group agrees the methodology complies with reasonable and prudent ratemaking principles

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Program Highlights

- Program will require a refundable deposit upon enrollment that could be forfeited for early program departure
- Contract term – five, ten or twenty year contract
- Customer chooses offset between 10% - 50% of usage
  - When combined with OPPD's existing and planned wind resources, the program would allow participating customers the ability to achieve approximately a '100% renewable' portfolio on an annual basis by 2021
    - Annual customer kWh consumption would be approximately equal to annual kWh generation from renewable resources
    - Inter hour production will be from OPPDs existing generation portfolio

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Pricing Methodology

- No consistent pricing structure exists at the national, regional or even state level

- Greatest pricing variations are related to the credit value participants receive. Some examples include:
  - **Full retail rate:** consistent with net metering, but results in significant subsidization by non participants
  - **Embedded cost of generation:** simple approach, but gives solar equal capacity credit compared to baseload units
  - **"Value of Solar":** diverse interpretations that lack a uniform calculation methodology

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Pricing Methodology

- A Southwest Power Pool (SPP) market based approach
- The value expected to be received if all energy from the Community Solar Facility were sold into the SPP Market.
  - Energy priced on prior year actual SPP day ahead prices
  - Capacity factor based on SPP accreditation value
  - Capacity value based on the District's next marginal generation
- Structure allows all financial and environmental benefits from a Community Solar Project to be passed on to the customers who participate in the program.

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Pricing Methodology

- Valuation is based on market values from SPP
- The valuation consists of **two value streams:**
  - Energy
    - Actual hourly annual community solar production from the prior year
  - Accredited Capacity
    - Annual levelized value of next marginal generation
- **Credit Calculation: ((D*S)+(V*C))**
  - D: SPP day ahead hourly market prices from previous year
  - S: Hourly production shape for community solar
  - V: Annual levelized value of next marginal generation
  - C: SPP accredited capacity value
- Formula will be updated annually

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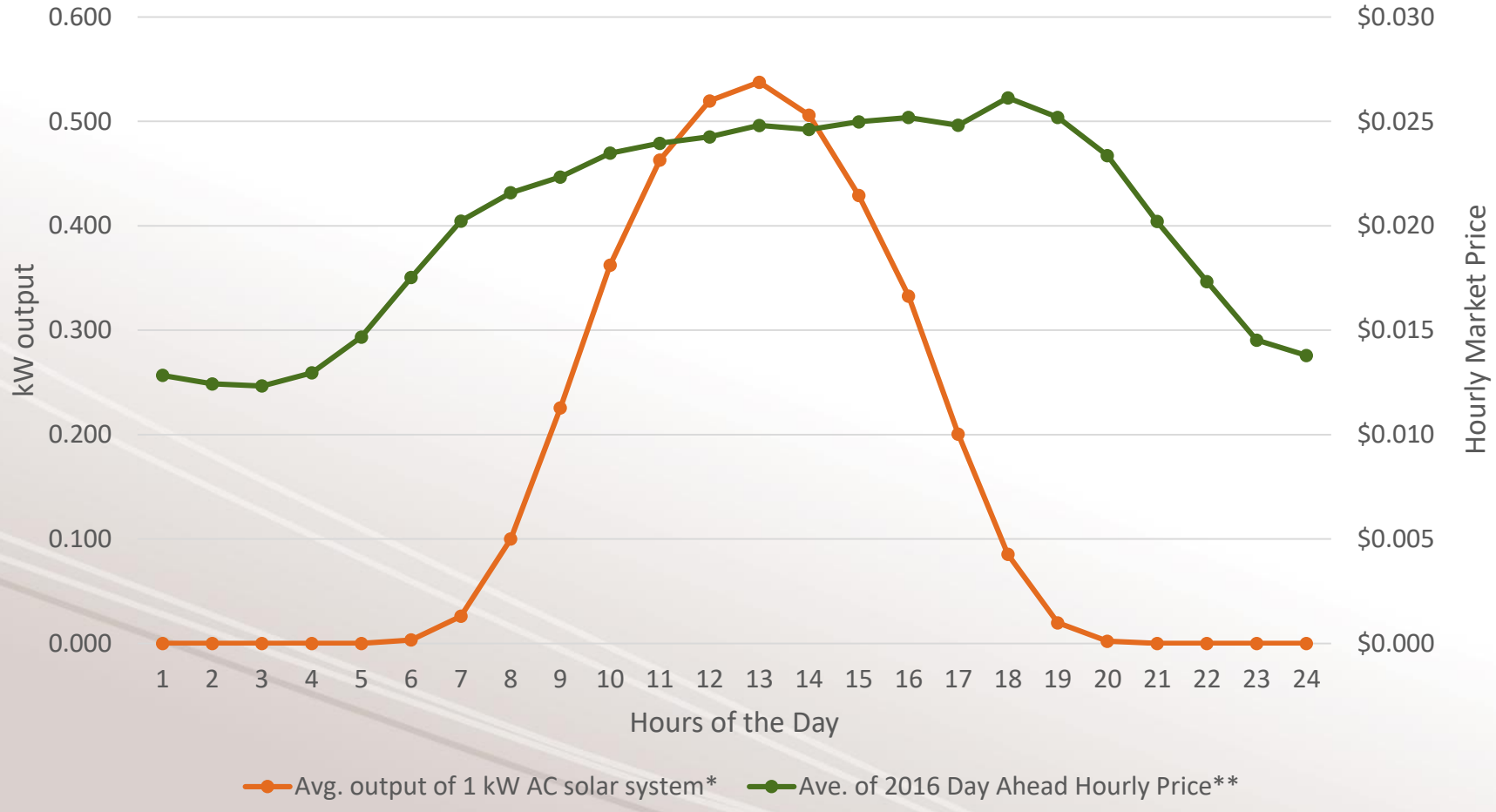
Production Shape to Average Hourly SPP Price



*Average NREL Production shape for OPPD service territory
**2016 SPP Day Ahead Annual Hourly Pricing

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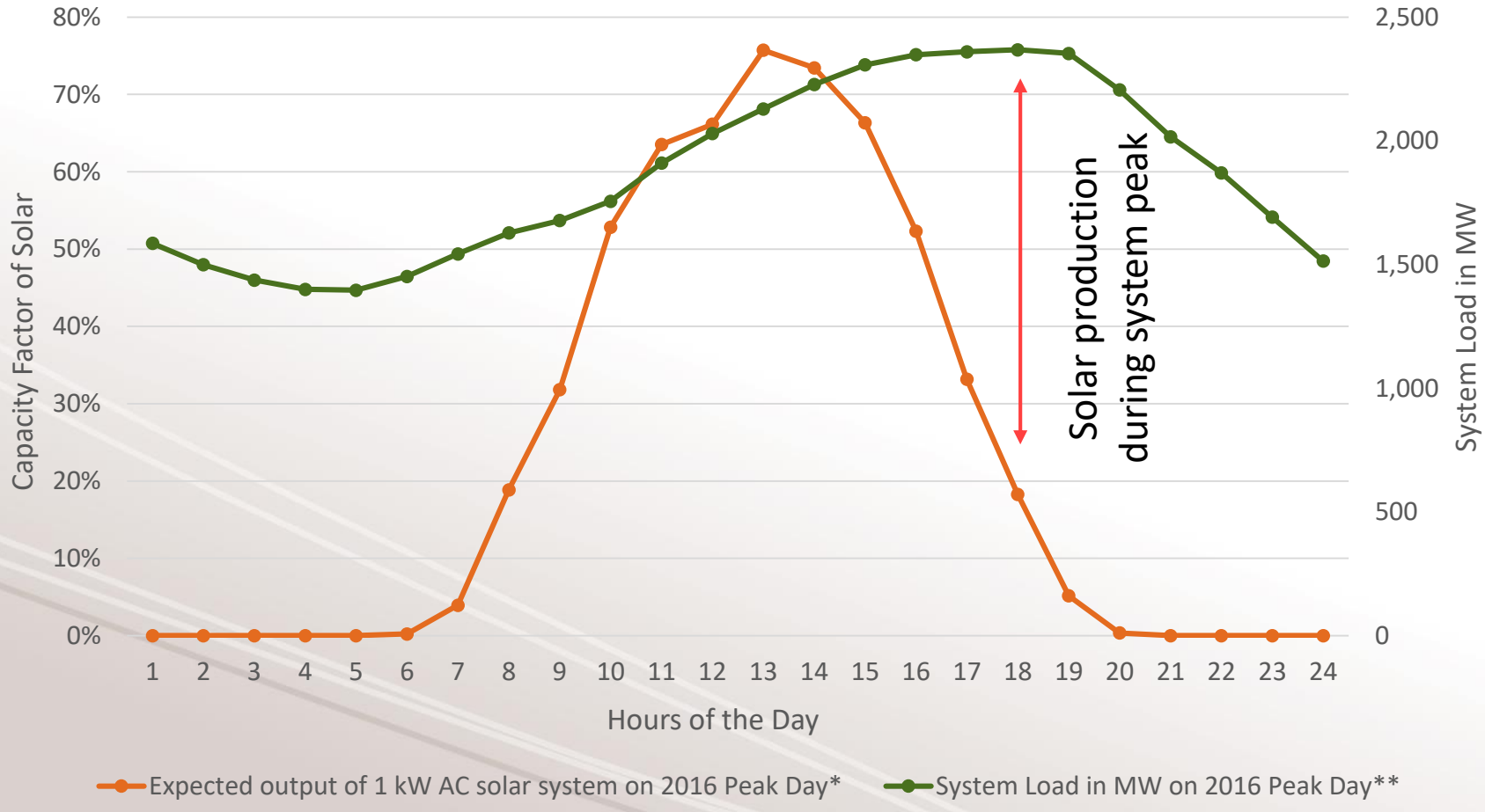
Production Shape to Load on Peak



*NREL Production shape for OPPD service territory on 8-11-16
**2016 OPPD system load on Peak Day 8-11-16

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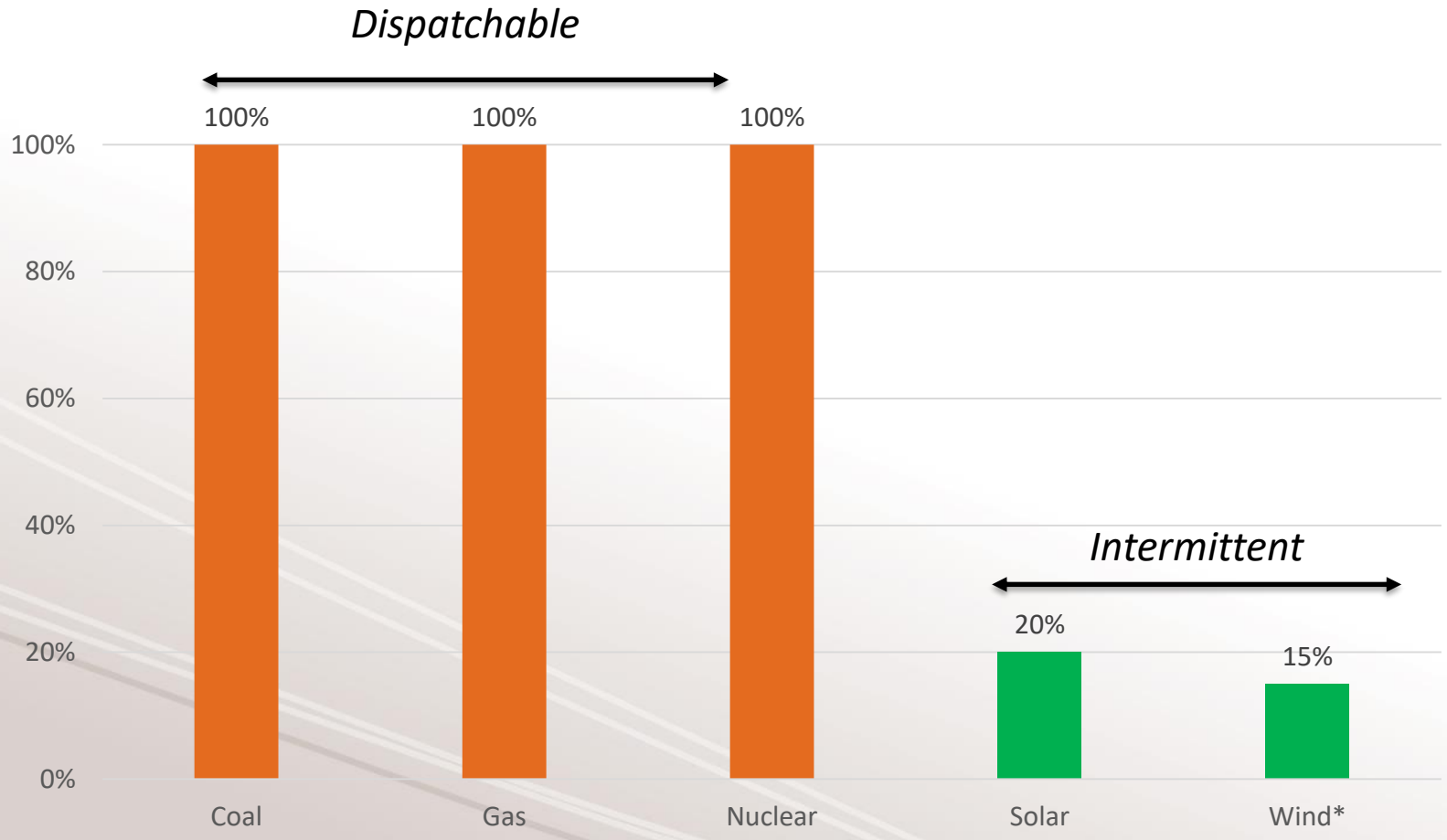
SPP Capacity Accreditation



* Highest current accreditation value for existing OPPD wind facilities in accordance with standing Southwest Power Pool accreditation policies. Wind & solar accreditation policies require three years of production generation.

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Example Cost to Participants

Several factors will influence the cost to participate, including:

- **Cost per kWh**
  - Final cost of community solar project from competing developers, including interconnection
- **Market Values**
  - The market based credit value that will be updated annually
  - Valuation changes are affected by SPP accreditation policies, energy prices and asset performance
- **Tiered Subscription Levels**
  - Customers annual usage
  - How much of their annual usage the customer wants offset with community solar generation

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Example Cost to Participants

Below is an ***illustrative*** examples of each category:

Cost per kWh

- Illustrative cost of the yet to be awarded interconnected community solar project ➔ 7.5 cents per kwh
  - *PPA expected to be executed in Q2 of 2018*
- The approximate market based credit value that will be updated annually ➔ 3.6 cents per kWh

Subscription Level

- Customer annual usage ➔ 11,000 kwh
- How much of their annual usage the customer wants to offset with community solar ➔ 10%

Ranges are representative. In aggregation, the above assumptions would result in a 3% bill increase

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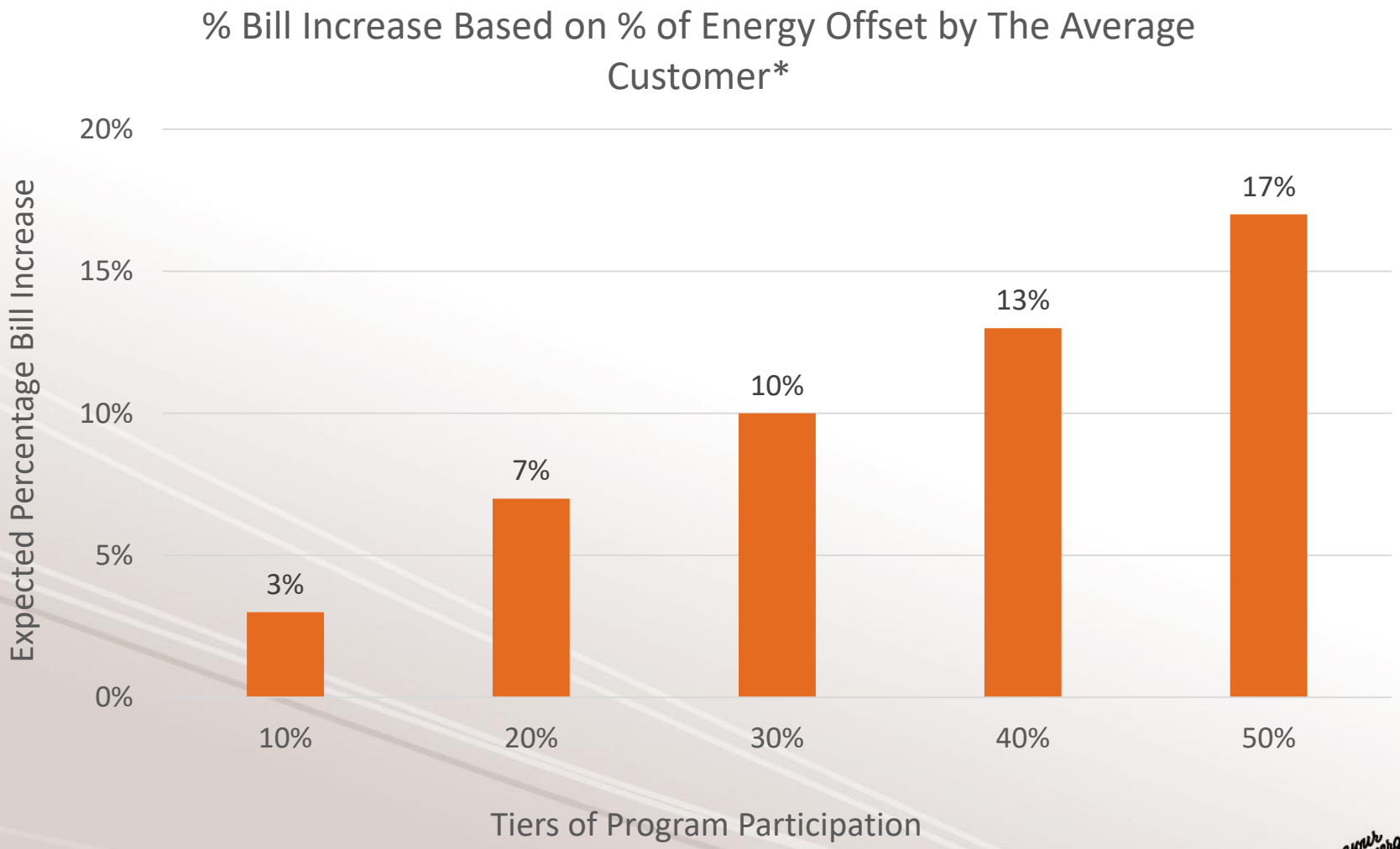
Example Cost to Participants



** Figures are estimates based on representative PPA costs. Actual PPA costs will change outcome of analysis.*

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Conclusion

- Credit value will be tied as closely to SPP market value as possible to pass along all ‘gains and costs’ to participants
- Participation in program is voluntary
- Management’s proposed value is
  - Consistent with Strategic Directives (SD):
    - SD 2 Rates
    - SD 13 Stakeholder Outreach and Communication
  - Lower than some other programs
  - Meets OPPD requirement of a fair, reasonable and non-discriminatory standard
- Proposed pricing lays the foundation for future DER adoption by valuing the assets and energy like the market values the assets and energy

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Next Steps

- Customer comment period begins today and will conclude prior to the next board meeting
  - Via oppdlistens.com
- Public comments will be reported to the Board
- During the March board meeting, Management will report back on public comments and seek a Board Resolution requesting approval of the Community Solar Rate Rider Schedule No. 500

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