INDIANAPOLIS POWER & LIGHT COMPANY

2019 LOCAL GREEN POWER ADVISORY COMMITTEE

February 22, 2019

MEETING AGENDA

9:00: Welcome, Safety Message & Introductions
9:25: Overall Advisory Committee Goals
9:40: Local Green Power (LGP) Advisory Committee 2016 & 2017 Recap
10:10: Break
10:25: Update to Solar Economic Model
10:55: Design Factors Worksheet
11:25: Next Steps

SAFETY MESSAGE

- Evacuation and Severe Weather Procedures
- Winter Safety Tips – Snow Shoveling

- Warm up
- Push rather than lift
- Choose your shovel wisely
- Hit the pause button
- Consider multiple trips
- Keep up with the snowfall
- Wear layers
- Stay hydrated

MEET DAN FAHRNER

Big Tempo, LLC Roles:

- Guide discussion
- Facilitate exercises
- Encourage sharing
- Maintain meeting flow

INTRODUCTIONS

- Name
- Organization

OVERALL GOALS OF THE ADVISORY COMMITTEE

Cause # 45029 IURC Order:

Community Solar. IPL agrees to reconvene the Local Green Power Advisory Committee for a minimum of two meetings within six months of receiving a Final Order in Cause No 45029 approving this Settlement Agreement and will work in good faith with this Committee to develop a community solar pilot proposal within one year. The meetings with the Local Green Power Advisory Committee will be open to all interested stakeholders.

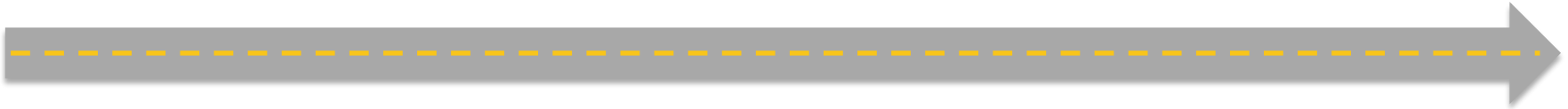
OVERALL GOALS OF THE ADVISORY COMMITTEE

- Leverage work from 2016 & 2017 LGP AC
- Gather input from Advisory Committee
- Develop goals and desired outcomes for a community solar pilot proposal
- Determine key parameters of community solar pilot proposal

Today:

- Recap 2016 & 2017 Advisory Committee efforts
- Gather input to develop draft pilot proposal options
- Establish next steps

ADVISORY COMMITTEE ROADMAP



Meeting #1

February 2019

-Introductions
-AC Goals
-2016 & 2017 AC recap
-Economic Model Update
-Input from AC

Meeting #2

April 2019

-Review design factors worksheet submissions from AC members
-Review other community solar programs
-Discuss draft pilot proposal options

Meeting #3

TBD

Pilot proposal

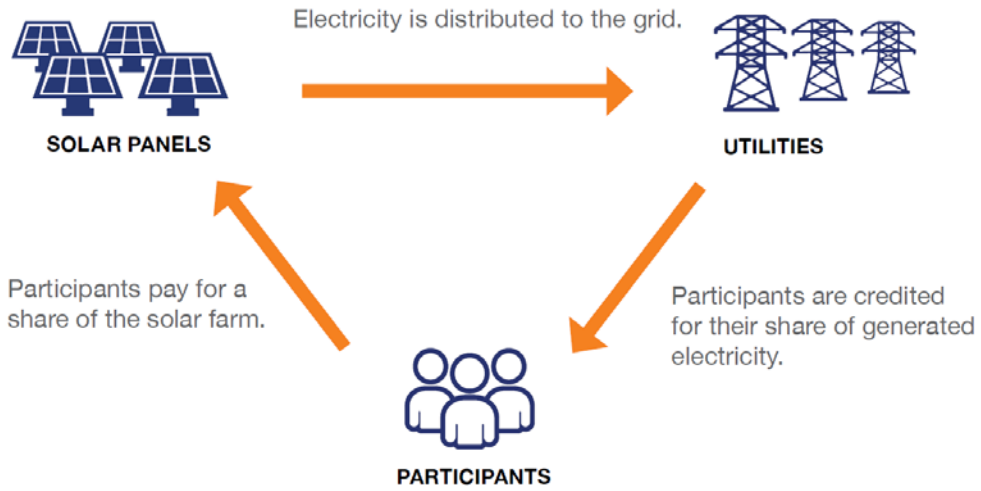
End of November 2019

LOCAL GREEN POWER (LGP) ADVISORY COMMITTEE 2016 & 2017 RECAP

LGP COMMITTEE – 2016 & 2017 RECAP PACKET

- Please reference “2016-2017 LGP AC Recap Packet” for further information on previous LGP AC work with IPL and stakeholders.

SHARED SOLAR SIMPLY STATED



Source: Solar Electric Power Association (SEPA), Community Solar Program Design Models

IPL'S 2016 & 2017 LGP IDEAS

- Local renewable resource
- Voluntary offering for all customer classes
- Self-sustaining subscription-based
- IPL owned and operated – competitively sourced
- 1 MW project size
  (7 to 10 acres per MW)
- Customer transaction based on energy produced
- May include "anchor" corporate subscribers

SOLAR LGP PROVIDES SIGNIFICANT BENEFITS

Customer Benefits

- Additional customer choice
- Overcomes barrier that many homes are not conducive for rooftop PV
- All customers, not just homeowners, may participate
- Lower capital cost than dispersed small scale renewables (i.e. rooftop)
- Solar production is optimized

Utility Benefits

- Proactive approach to market disruptions
- Positive customer and community engagement
- Control power quality
- Potential to mitigate impact of future CO_2 regulations
- Eases grid integration

REVIEW OF 2016 LGP AC MEETINGS

- Focused on education of renewable costs, benefits, challenges led to solar as likely option
- Discussed Key Performance Indicators (KPI)
- Stakeholders ranked top 5 KPIs:
  - Financial – cost of project
  - Access & equity – affordable for all customers
  - Displacement of fossil fuels/ emission reductions
  - Number of subscribers
  - Customer satisfaction
- Costs were prohibitive to move forward

SEPA TECHNICAL ASSISTANCE FOR MARKET RESEARCH

- IPL successfully secured $20,000 of Community Solar Technical Assistance funding from SEPA* to support market research
- The US Department of Energy provides the funds to SEPA to administer
- SEPA supported:
  - Customer surveys for residential customers and small Commercial & Industrial (C&I) customers
  - Three focus groups:
    - Residential customers who rent their homes
    - Residential homeowners
    - Small C&I customers

*Smart Electric Power Alliance

REVIEW OF 2017 LGP AC MEETINGS

- Engaged LGP AC stakeholder group to collaborate on market research
  - Stakeholders assisted with survey question development and participated in the viewing of customer focus groups
  - IPL conducted interviews with C&I customers
- IPL updated the illustrative solar economic model
- Concluded with discussion on ideas to consider for further details on important program design elements and research questions

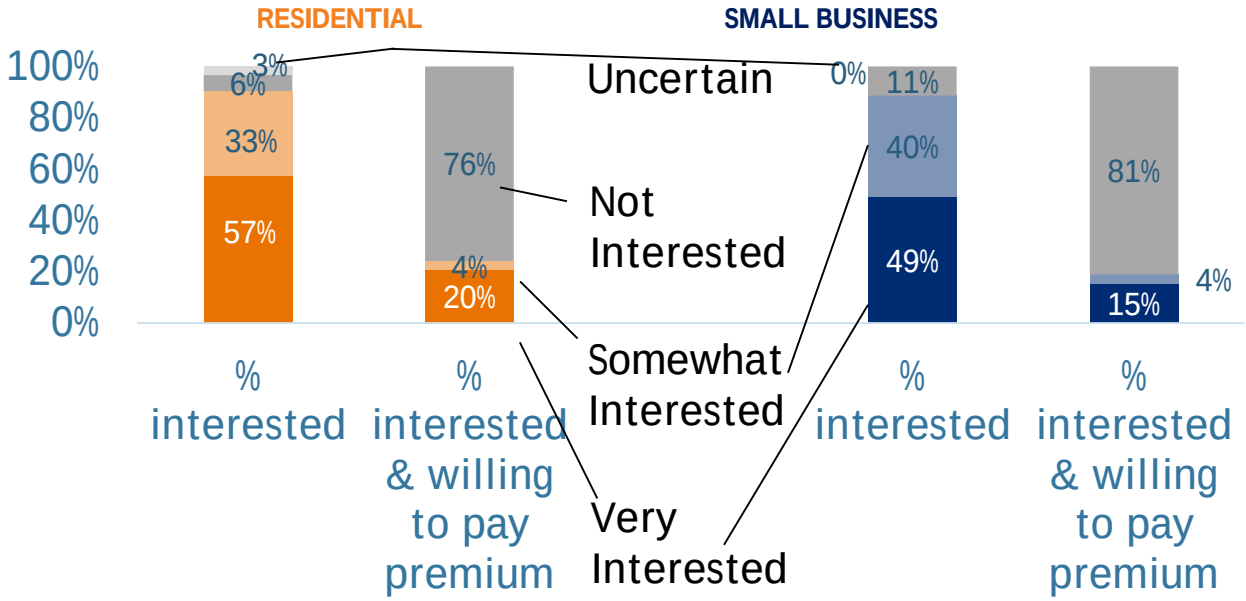
SEPA COMMUNITY SOLAR RESEARCH (1 OF 3)

- (1) Online Surveys
  - Sent electronically via Survey Monkey to 84,000 customers
  - 4,000 Residential Customers Completed the Survey
  - 37 Small Business Customers Completed the Survey

- Key Findings
  - Interest: Customers have strong interest
  - Premium: Customers are less willing to pay a premium
  - Term: Commitment term is a barrier customers ranked

SURVEY RESULTS
CUSTOMER INTEREST

How interested are you in learning more about participating in an IPL community solar program?

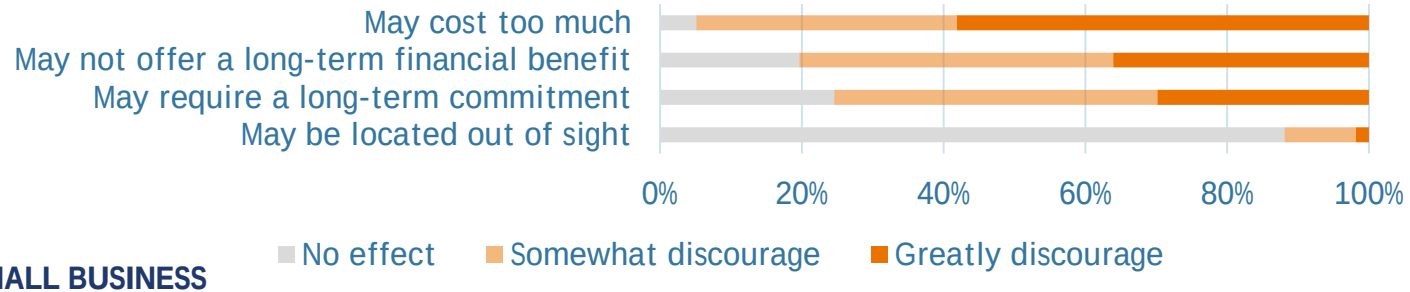


SURVEY RESULTS

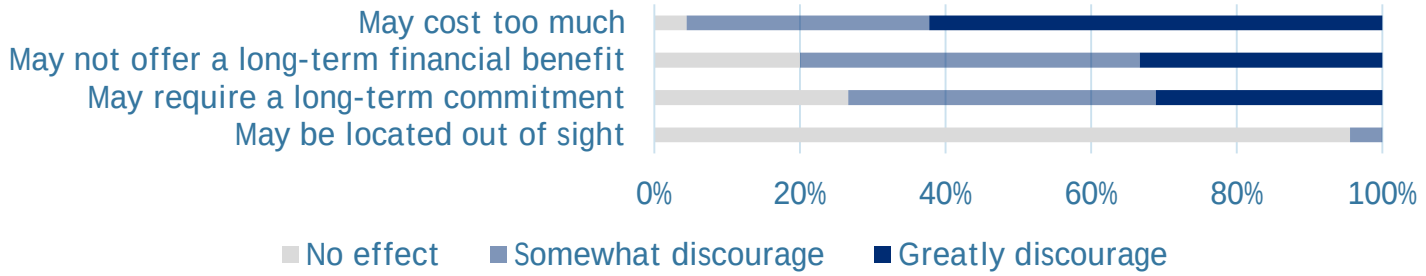
KEY BARRIERS

How much would each of the following potential issues discourage you from participating in an IPL community solar program?

RESIDENTIAL



SMALL BUSINESS



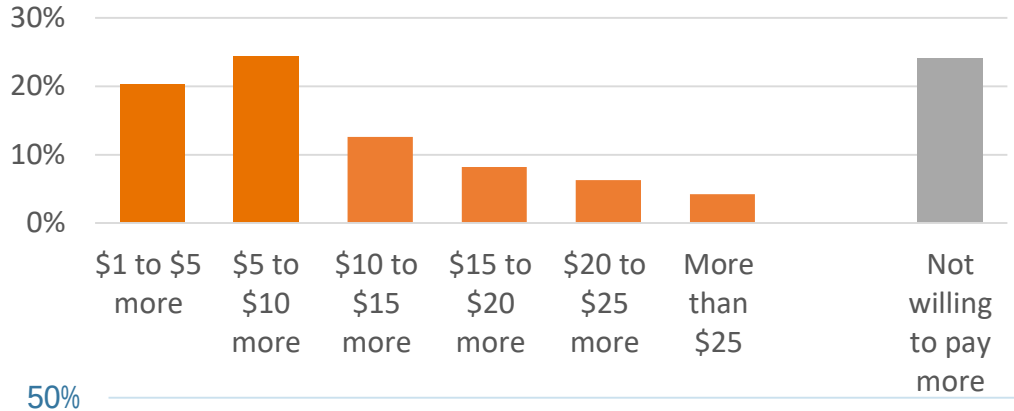
SURVEY RESULTS

PREMIUM AMOUNT

Assuming your bill mirrors the average IPL residential customer bill of $100 a month, what is the highest additional amount you would be willing to pay to power your home with solar energy?

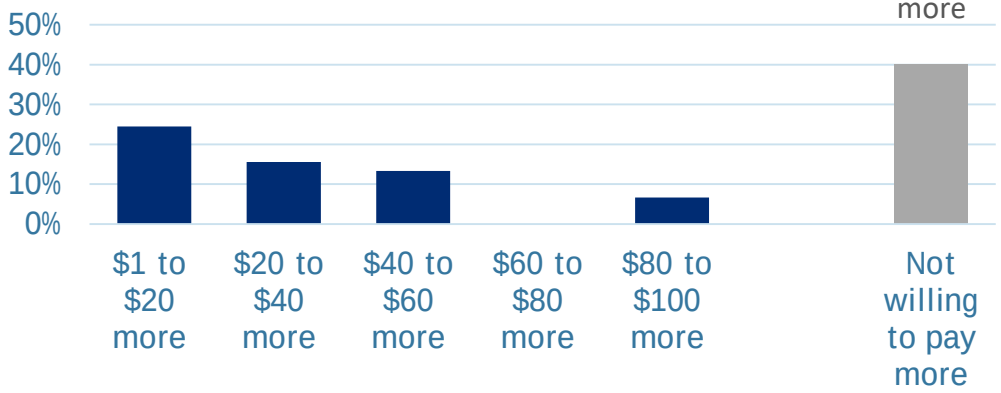
RESIDENTIAL

Sample Average Bill $115
Sample Median Bill $100
Sample Range $20 to $400



SMALL BUSINESS

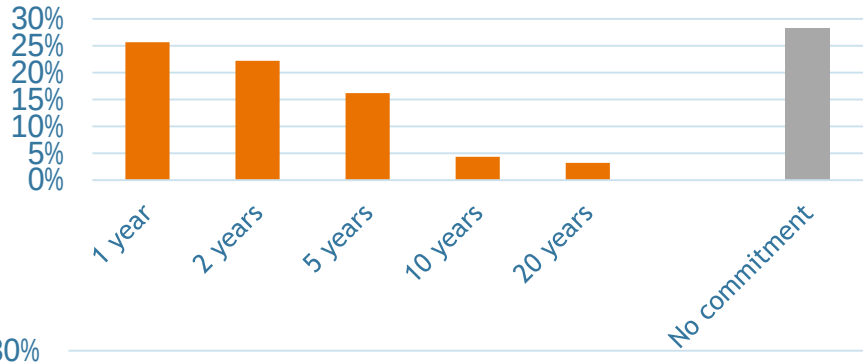
Sample Average Bill $1,180
Sample Median Bill $500
Sample Range $50 to $20,000



SURVEY RESULTS
CONTRACT LENGTH

……what is the maximum length of time to which you would be willing to commit?

RESIDENTIAL



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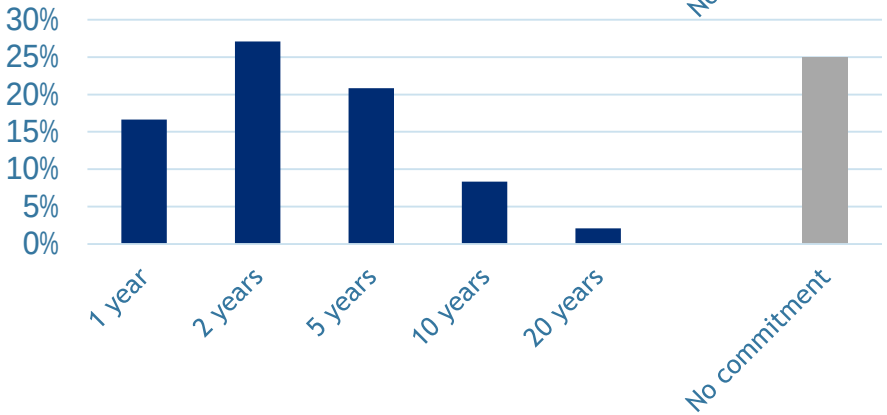


SEPA COMMUNITY SOLAR RESEARCH (2 OF 3)

- (2) Focus Groups
  - Group 1: 10 Small Businesses
  - Group 2: 12 Homeowners
  - Group 3: 12 Renters

- Key Findings
  - Interest: Interest in solar is primarily driven by saving money, followed at a distance by environmental concerns.
  - Premium: Customers were fairly split between interest in paying more and locking in a rate vs paying a bit less.
  - Term: Two to three year program terms were deal breakers for many of the participants.
  - Location: For the most part, customers were not concerned where the solar facility would be located.

SEPA COMMUNITY SOLAR RESEARCH (3 OF 3)

- (3) C&I Customer Interviews
  - Completed five (5) interviews
  - IPL customers from across different industries

- Key Findings
  - Interest: Most interviewed customers have explored investing in on-site solar energy in the past, but did not proceed due to cost.
  - Premium: Paying a premium can be a non-starter… Unless the organization has a history or value of investing in sustainability.
  - Drivers: Beyond cost, achieving sustainability goals and Public Relations value are the main drivers in solar adoption.

BIG TAKEAWAYS FROM RECAP

- Interest across all customer classes
- Location & visibility
- Willingness to pay barrier

15 MINUTE BREAK

UPDATE TO SOLAR ECONOMIC MODEL

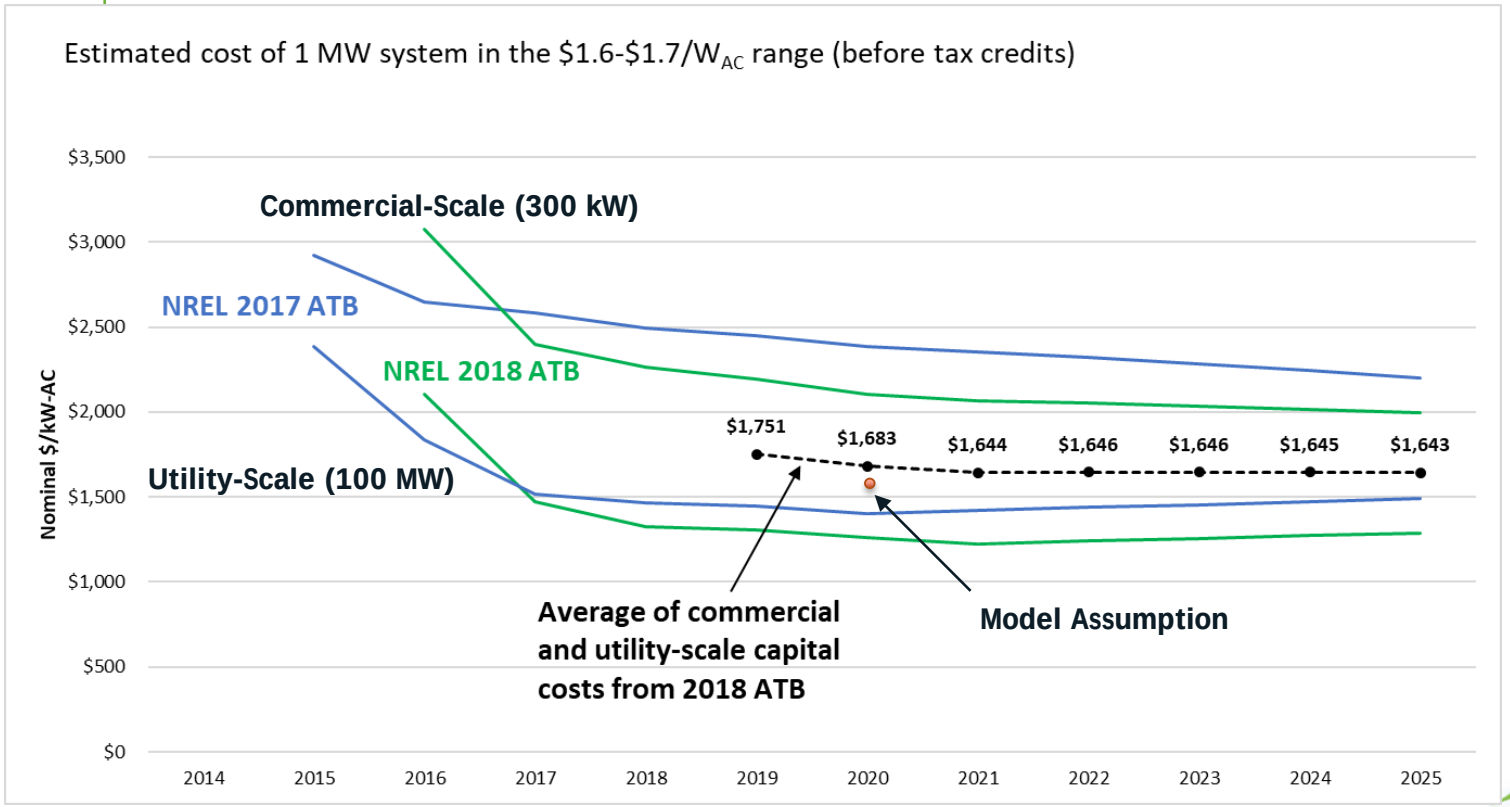
ECONOMIC ANALYSIS OVERVIEW

- Update 2017 model with current data
- Understand major drivers on local green power premium rate
- Gain a high level understanding of the model
- Gather feedback on economic analysis

UPDATED MODEL ASSUMPTIONS

ITEM	2017	2019
PROJECT COSTS		
Size of Solar PV System	1 MW	1 MW
Capacity Factor	18 %	18 %
Capital Cost of Solar	$1.91 $/W - AC	$1.60 $/W - AC
Useful Life (Depreciation)	25 Years	25 Years
Development Capital Costs	10 %	10 %
Federal Tax Credit	30 %	30 %
IPL WACC & PV Discount Rate	6.41 %	6.59 %
Annual O&M	$0.02 per watt	$0.02 per watt
O&M Escalation	2.46 %	2.00 %
Annual Degradation	0.5 %	0.5 %
PROJECT CREDITS		
Avoided Energy Cost (Fuel)	$0.03150 $/kWh	$0.03290 $/kWh
Avoided Energy Cost (Non-Fuel)	$0.00150 $/kWh	$0.00183 $/kWh
Avoided Capacity Cost (Reserve Margin)	7 %	7.9 %
Avoided Capacity Cost	Ranging from ~$96 in 2020 to ~$125 in 2029 $/kW-yr	Ranging from ~$38 in 2020 to ~$108 in 2029 $/kW-yr
Avoided Capacity Credit (Peak Reduction)	47 %	50 %
Avoided Long-Term Distribution Capital Costs	$0.001 $/kWh	$0.001 $/kWh
Avoided T&D Losses	1.80 %	1.80 %

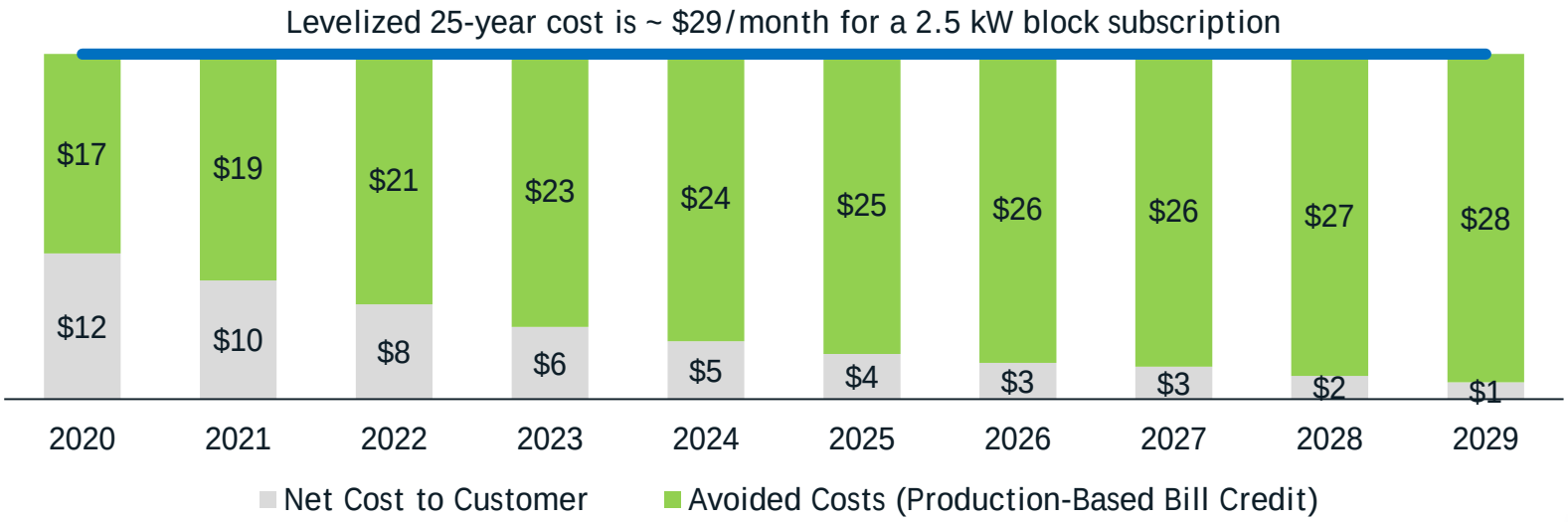
COST OF SOLAR CONTINUES TO DECLINE



UPDATED POTENTIAL SOLAR COSTS & CREDITS

Cost of Project Lowered by Avoided Costs

Premium estimated to be $1-12/month



**The analysis presented is a snapshot in time and is for discussion purposes ONLY and not intended for a regulatory filing.

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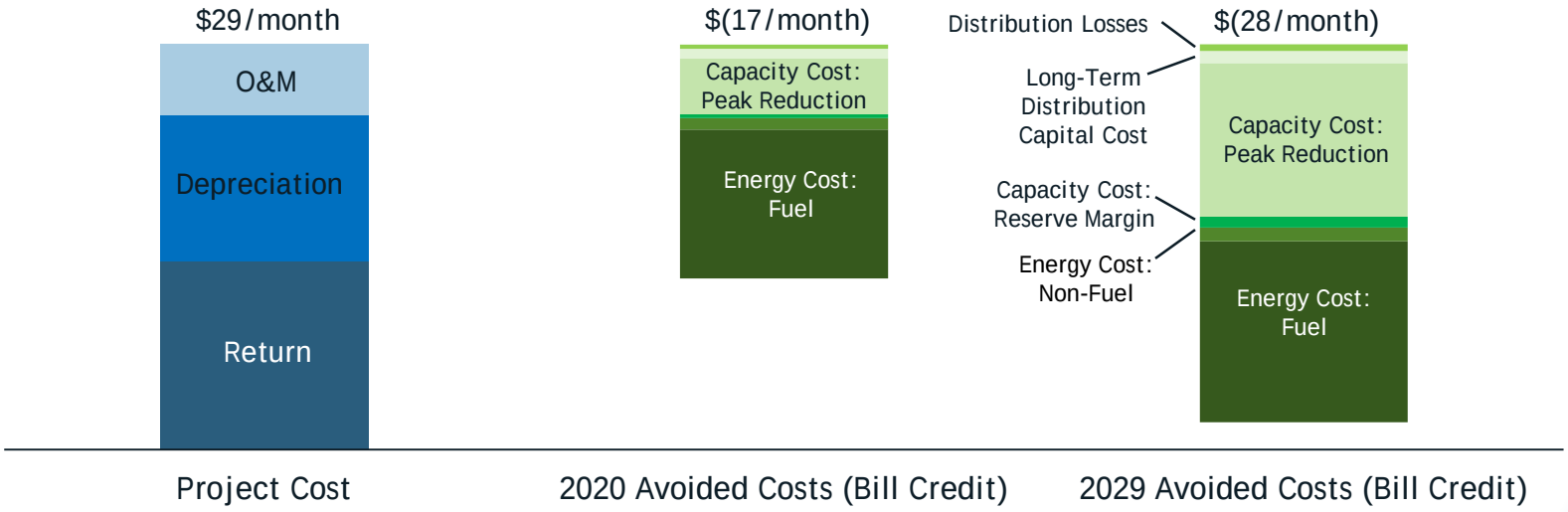

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DESIGN FACTORS WORKSHEET

COMMUNITY SOLAR DESIGN FACTORS

Design Factor	Description
Subscription	How subscribers participate in the program. • Customers subscribe to a portion of the facility based on a fixed monthly ($/block/month) or variable ($/kWh) payment • Most appropriate block size (2.5 kW)
Customer Monthly Credit	Credits that are generated for the solar energy produced by a subscriber's assigned portion of the solar facility each month. • Net result is that the credits lower the community solar premium • What credits should be included? • How often are credits updated to reflect actual costs?

COMMUNITY SOLAR DESIGN FACTORS

Design Factor	Description
Eligible Customers	Criteria to be a subscriber in the program. • Open to all customer classes?
Customer Participation Limit	The amount of a customer's average usage that can be subscribed through the program. • 10%, 25%, 50% or 100% of average usage • Participating limits are implemented to ensure that multiple subscribers can benefit from the program
Minimum Term	Identifies a minimum contract length for the subscriber. • Short vs long term contracts
Subscription Transfers	Subscription management if a customer moves out of the service territory. • Utility management or customer responsibility • How best to manage unsubscribed blocks

COMMUNITY SOLAR DESIGN FACTORS

Design Factor	Description
Unsubscribed Blocks	Treatment of unsubscribed blocks in the program. • Who covers the costs?
Ownership	Who will own the solar facility? • Utility, Third-Party, Shared Ownership
System Size	How large of a facility to build for a pilot project? • Size to fully subscribe
Location of Solar Array	Where should the Solar Facility be located? • Criteria may include visibility, brownfield revitalization, existing utility land, lowest cost, expansion ability, etc.
Program Length	The amount of time a subscriber can receive benefits from the program. • This is a commitment by the project administrator to the subscriber, not the other way around. • Based on asset life (25 years)

NEXT STEPS

- Review and complete Design Factors Worksheet
  - Responses can be sent to ipl.csp@aes.com
  - Due by March 8th
- Next meeting: April 22nd
  - Review AC responses
  - Review other community solar programs
  - Discuss draft pilot proposal options

Questions