

#### Rhode Island Renewable Energy Growth Program: Research, Analysis, & Discussion in Support of 2<sup>nd</sup> Draft 2022 Program Year Ceiling Price Recommendations

September 8, 2021 Sustainable Energy Advantage, LLC Mondre Energy, Inc.

## Changes in Cost/Performance Assumptions to Incorporate Stakeholder Feedback (from 1<sup>st</sup> Draft)



## Subdivision of Solar Renewable Energy Classes

- Stakeholders suggested interest in considering a range of the Options shared on July 27, with Solar developers favoring Options C through E (which would have resulted in more subdivision), while the DPUC favored Option C
  - No stakeholders suggested adopting Options A or B (which would have limited the scope of existing subdivisions or made proxy sizes within existing subdivisions more aggressive)
- Greatest overlap in preferences between the two key groups was Option C, which introduces a new subdivision to the Medium Solar category
- Multiple Modeling Implications (M.I.s):
  - **Provisionally adopt <u>Option C</u>, resulting in the following >25 kW Solar renewable energy classes:** 
    - Medium I (26-150 kW bin w/150 kW proxy size)
    - Medium II (151-250 kW bin w/250 kW proxy size)
    - Commercial I & Commercial I CRDG (251-500 kW bin w/500 kW proxy size)
    - Commercial II & Commercial II CRDG (501-999 kW bin w/999 kW proxy size)
    - Large Solar (1-5 MW, 5 MW proxy size)
  - Medium Solar capital cost inputs based on: 1) 50<sup>th</sup> percentile of bid and state database (DB) values for 26-250 kW range (Medium I) and 2) 25<sup>th</sup> percentile of bid/state DB values for 26-250 kW range (Medium II)
  - Commercial Solar capital cost inputs based on 1) 50<sup>th</sup> percentile bid/state DB values for 251-500 kW range (Commercial I) and 2) 25<sup>th</sup> percentile bid/state DB values for 501-999 kW range (Commercial II)

## Proposed Ceiling Price Categories

#### 2022 REG Program: Proposed Technology, Size & Tariff Length Parameters **Eligible System Size Eligible Technology Modeled Size Tariff Length** Range Small Solar I 5.8 kW<sub>DC</sub> ≤15 kW<sub>DC</sub> 15 Years Small Solar II $25 \text{ kW}_{DC}$ >15 to 25 kW<sub>DC</sub> 20 Years **Medium Solar I** $150 \text{ kW}_{\text{DC}}$ >25 to 150 kW<sub>DC</sub> 20 Years

Medium Solar II	250 kW <sub>DC</sub>	>150 to 250 kW <sub>DC</sub>	20 Years
Commercial Solar I	500 kW <sub>DC</sub>	>250 to 500 kW <sub>DC</sub>	20 Years
Commercial Solar I – Community Remote DG (CRDG)	500 kW <sub>DC</sub>	>250 to 500 kW <sub>DC</sub>	20 Years
Commercial Solar II	999 kW <sub>DC</sub>	>500 to 1,000 kW <sub>DC</sub>	20 Years
Commercial Solar II – Community Remote DG (CRDG)	999 kW <sub>DC</sub>	>500 to 1,000 kW <sub>DC</sub>	20 Years
Large Solar	5,000 kW <sub>DC</sub>	>1 to 5 MW <sub>DC</sub>	20 Years
Large Solar - CRDG	5,000 kW <sub>DC</sub>	>1 to 5 MW <sub>DC</sub>	20 Years
Wind	3,000 kW <sub>AC</sub>	≤5 MW <sub>AC</sub>	20 Years
Anaerobic Digestion	750 kW <sub>AC</sub>	≤5 MW <sub>AC</sub>	20 Years
Hydropower	500 kW <sub>AC</sub>	≤5 MW <sub>AC</sub>	20 Years

**NOTE:** Red text = Proposed changes relative to 1<sup>st</sup> Draft of 2022 Ceiling Prices

#### Potential for Administratively-Set Pricing for Certain Medium Solar Projects

- At present, the Medium Solar category is subject to competitive procurement, which is allowed (but not required) under the Renewable Energy Growth Act
- Stakeholders have frequently suggested that SEA consider recommending that the PUC re-adopt an administratively-set price for Medium Solar projects, arguing that the infrequent nature of Open Enrollments add an element of time and uncertainty that can make finalizing deals much more difficult
- M.I.: OER has advised SEA that it is not currently considering adjustments to the approach for compensating/soliciting projects in the Medium Solar category

## Accounting for Project Cost Pressures

- Stakeholders have identified broadly-applicable cost pressures across resource types resulting from COVID-19 pandemic and other economic recovery-related factors
  - Solar stakeholders have suggested a 5%-15% increase across the board for projects under development for next year
  - Independent wind market stakeholders have suggested 2022 project costs are likely to increase 10%
  - Hydro stakeholders have suggested a 30% increase year-on-year
- Drivers are wide-ranging, from high shipping costs/delays, increases in commodity inputs for manufacturing (e.g. polysilicon and steel)
- Multiple M.I.s: Utilize forecasted Producer Price Index (PPI) change from 2020 to 2022 (+10% in the most recent EIA Short-Term Energy Outlook (STEO)) as an adder to non-interconnection installed costs, which is (for Solar only) offset by range of values from NREL ATB "Conservative" and "Moderate" cases (see next page for more detail)

## **Detailed M.I.s for Project Cost Pressure Accounting**

Technology	Category	△ Project Cost Before Impact of PPI	△ Project Cost After Impact of PPI
Solar	Small I / II	-4.3% to -9.9%	0% to 6%
	Medium, Commercial, Comm. CRDG	-4.3% to -8.0%	2% to 6%
	Large, Large CRDG	-4.0% to -7.4%	2.6% to 6%

#### Wind and AD

• 10% increase (per PPI) in non-interconnection installed costs (not offset by cost declines)

- Hydro
  - Set tentatively at 20% increase (average of industry stakeholder estimate and PPI), and request further comments/information from hydro stakeholders

Note: In presented results, we refer to the cases utilizing the Conservative ATB case as "High Cost" and the cases utilizing the Moderate ATB case as "Low Cost"

### Year 1 Capacity Factor Adjustment for Solar <=25 kW

 DPUC filed comments supporting an averaging of estimated (14.0%) and actual values observed by National Grid (12.8%) for Year 1 capacity factors for Small Solar projects, but suggested that National Grid provide more information to support the actual values

No stakeholders other than the DPUC commented on this subject

 M.I.: Utilize average of 2021 CP final CF of 14.0% and National Grid observed figure of 12.8% (resulting in 13.4% value), but subject to change based on further examination of National Grid data, if needed

## **Solar Production Degradation**

- DPUC indicated support for taking the first step of a potential two-step approach to phase in production degradation changes observed in SEA's data analysis of DG projects in Massachusetts
  - Other than the DPUC, no stakeholders commented on degradation percentages
- M.I.: Adopt following degradation percentages:
  - Small I/II: 1.0% (up from 0.5% in 2021 CPs)
  - Medium and Commercial/Commercial CRDG: 0.8% (up from 0.5% in 2021 CPs)
  - Large/Large CRDG: 0.5% (unchanged from 2021 CPs)

## **Post-Tariff Revenue Assumptions**

- State law allows projects to receive net metering compensation following the REG tariff term
  - Initial draft 2022 prices included a 40% discount to net metering revenue earned after the tariff expires, to account for both market and policy-related uncertainty associated with net metering rates and availability.
- Two commenters (including the DPUC) supported smaller discounts (closer to 10%-20%)
- Consulting Team Note: A developer that assumes a smaller discount (especially for non-Small projects) could potentially cause more sophisticated financiers (and especially debt providers) to contribute less capital to a project, given that they may perceive more risk to their revenue streams
  - It is possible that this reduced injection of capital by debt providers could increase (all factors equal) the project's consolidated after-tax IRR by an amount greater than the reduction associated with a smaller haircut (and thus increase the net cost to ratepayers)
- M.I.: No immediate change to 40% discount, but SEA will request comments from stakeholders regarding the interaction of the proposed discount and the availability of investment capital.

## **Project Useful Life Assumptions**

- DPUC has proposed assuming 30-year useful lives for Commercial and Large Solar categories (a move potentially justified by <u>recent LBNL analysis</u>) with 25-year useful lives for Small and Medium projects (citing their typical placement on rooftops that often require replacement more frequently than 30 years)
- However, <u>National Grid data from 2018-2020 presented to the DG Board</u> shows that most Commercial projects are sited on rooftops (and are not ground-mounted)
  - The same National Grid data linked above shows that all Large Solar projects 2018-2020 are ground mounted (obviating the need for a deviation from the 30-year useful life assumption)
- Another Wind stakeholder suggested that because product warranties did not last beyond 15 years that Wind useful lives should not extend to 30 years (despite other <u>related LBNL analysis</u>)
  - We note that Solar project equipment typically has warranties of ~10-15 years (for which extended coverage periods are available at a price that some choose to pay, while others do not).
  - Nevertheless, no other market participants have suggested to us that initial manufacturer warranties should reduce the term of their useful lives to an amount close to (or commensurate with) said warranties.
- Multiple M.I.s: Adopt 30-year useful life for Large Solar/Large CRDG, but continue to assume 25-year useful lives for all Small, Medium and Commercial Solar classes as in the 1<sup>st</sup> Draft of 2022 Ceiling Prices. Also, continue to assume 30-year life for Wind projects.

## **Operating Expense Assumptions (1)**

- Insurance
  - More than one developer provided documented insurance quotes demonstrating increases associated with both liability and property insurance
  - Increases generally understood to correspond to larger number of payouts across insurance industry generally in past several years
  - M.I.: Increase insurance inputs 27% for Solar and 47% for Non-Solar projects
- Project Management
  - A Large Solar/Large CRDG developer has provided documentary evidence of asset management agreement costs ranging from \$4,000-\$5,000/MW
  - M.I.: Adjust Large Solar/Large CRDG project management costs (functionally, asset management agreement costs) to lower end of developer estimate, resulting in annual costs of \$20,000 (from \$12,000)

## **Operating Expense Assumptions (2)**

#### Solar Land/Site Lease

- A Large Solar/Large CRDG developer has provided documentary evidence of a lease with a \$17,000/MW-yr cost
- A Medium Solar developer also provided documentary evidence of a lease with a total cost of \$18,000/project/yr
- A Wind developer further provided documentary evidence of a lease with a total cost of \$22,000/project/yr

#### • Multiple M.I.s:

- Increase lease payment input for Large Solar/Large CRDG to \$67,500 (from \$50,000), representing average of prior input and stakeholder data
- Increase lease payment input for Medium Solar II to \$15,000 (from \$12,000), representing average of prior input and stakeholder data
- Increase lease payment input for Medium Solar I to \$7,500 (half of value for Medium Solar II), to reflect smaller project size / increased probability for roof mounting
- No change to Wind payment (given proxy size used for modeling is for a larger system with much larger (>\$150k/yr) lease payment)

## Small Solar I/II Financing Assumptions

- Consulting team had held open Data Request and Survey in order to collect more information, but no one else responded
- One developer suggested an after-tax equity IRR of 10% is more reasonable
- However, the changes to the Year 1 Capacity Factor and degradation rates will also substantially increase compensation for Small Solar I/II projects (to a level close to a return of 10% relative to prior year prices)
- M.I.: No change from 1<sup>st</sup> round, but additional adjustments may be forthcoming if further Small Solar stakeholders provide information

## Other Issues (1)

- Installed Cost Inputs from New York State
  - One developer suggested that installed costs from NYS were not accurately calculated and should be lower
  - However, developer estimate assumed an <u>average</u> cost, rather than the 75<sup>th</sup> percentile assumption we utilize to balance out the impact of upstate projects with substantially lower land and materials costs (thus out of line with economics in RI)
  - M.I: No change.
- Averaging of 100% bonus and MACRS depreciation for Wind
  - Consulting team inadvertently did not include an averaging of the 100% bonus depreciation and 5-year MACRS cases in 1<sup>st</sup> Round of prices
  - M.I.: Wind and Wind CRDG prices now incorporate averaged value of 100% bonus and 5-year MACRS

## Other Issues (2)

- Affected System Operator (ASO) Study Cost
  - Consulting team has learned that the one-time cost of participating in an ASO study (exclusive of any identified system modifications) is \$6,500/MW
  - M.I.: Study cost is now built into Ceiling Prices for classes with eligible projects larger than 1 MW<sub>AC</sub>, to match with ISO-NE ASO analysis thresholds
- Assumption of Project Debt
  - One developer suggested that it is unreasonable to assume projects can access debt, arguing that some debt providers require investment in a portfolio of projects (rather than just a one-off project)
  - M.I.: No change. It is our understanding that access to debt is not an issue or concern for developers in Rhode Island, and assuming no debt in the capital stack could lead to developer windfalls at the expense of ratepayers

## **Issues for Final Round of Prices**

- National Electric Code
  - SEA has been apprised that there will be several changes in NEC20 affecting solar installations. These changes would become effective in 2022
  - M.I.: No change for current round, but will investigate for final round
- Tangible Taxes
  - SEA has received compelling evidence that in certain circumstances, municipalities increase the assumed value of land when a renewable energy project is placed upon it in order to collect higher taxes from said project
  - However, SEA has not been able to verify the prevalence of this approach throughout RI
  - M.I.: No change for current round, but plan remains to develop an approach for final round of prices
- Residential Interconnection Costs
  - M.I.: No change, additional information needed prior to making any decision

# 2<sup>nd</sup> Draft 2022 Ceiling Prices



## Summary Results (1): Solar (¢/kWh)

Technology	Tariff Term (Years)	<b>Size Range kW<sub>DC</sub></b> (Modeled Size kW <sub>DC</sub> )	2021 Approved CP	2022 1 <sup>st</sup> Draft Proposed CP (w/ and w/o Year-on- Year (YoY) Solar Capital Cost Adjustment)	2022 2 <sup>nd</sup> Draft Proposed CP (Low-Cost Case)	2022 2 <sup>nd</sup> Draft Proposed CP (High-Cost Case)
Small Solar I	15	1-15 (5.8)	28.75	26.85 - 27.85 (-7% / -3%)	30.45 (6%)	32.25 (12%)
Small Solar II	20	>15-25 (25)	24.35	24.25 - 25.05 (-0.4%/3%)	27.05 (11%)	28.45 (17%)
Medium Solar I	20	>25-150 (150)	21.65	N/A (New RE Class)	26.25 (21%)	26.95 (24%)
Medium Solar II	20	>150-250 (250)	21.65	21.35 - 22.05 (-1%/2%)	24.15 (12%)	24.75 (14%)
Commercial Solar I	20	>250-500 (500)	18.55	17.55 - 18.15 (-5%/-2%)	19.05 (3%)	19.55 (5%)
Commercial Solar I -CRDG	20	>250-500 (500)	21.33	20.18 - 20.87 (-5%/-2%)	21.91* (3%)	22.48* (5%)
Commercial Solar I	20	>501-1,000 (1,000)	15.25	14.55 -15.05 (-5%/-1%)	15.55 (2%)	16.05 (5%)
Commercial Solar II -CRDG	20	>501-1,000 (1,000)	17.54	16.73 - 17.31 (-5%/-1%)	17.88* (2%)	18.46* (5%)
Large Solar	20	>1,000-5,000 (5,000)	11.35	9.95 - 10.35 (-12%/-9%)	10.75 (-5%)	11.25 (-3%)
Large Solar-CRDG	20	>1,000-5,000 (5,000)	13.05	11.44 - 11.90 (-12%/-9%)	12.59* (-5%)	12.94* (-3%)

\*This is the maximum CRDG Ceiling Price allowed by law. The calculated 2022 values are (depending on if the capital cost case is high or low) between 22.55 and 22.05 for Commercial CRDG 251-500, 19.05 and 18.65 for Commercial CRDG 501-999 and 14.85 and 14.55 for Large CRDG. Note, however, that this CP would allow cost-competitive projects (bidding below the CP) access to > a 15% premium compared to actual project costs.

## Summary Results (2): Wind, Hydro & AD (cents/kWh)

Technology	Tariff Term (Years)	Size Range kW <sub>AC</sub> (Modeled Size kW <sub>AC</sub> )	2021 Approved CP	2022 1 <sup>st</sup> Draft Proposed CP	2022 2 <sup>nd</sup> Draft Proposed CP
Wind	20	≤5,000 (3,000)	18.75	20.75 (11%)*	22.05 (18%)
Wind - CRDG	20	≤5,000 (3,000)	21.05	22.85 (9%)*	24.25 (15%)
Hydroelectric	20	≤5,000 (500)	27.35	27.75 (2%)*	36.85 (35%)
Anaerobic Digestion	20	≤5,000 (750)	15.85	22.45 (41%)*	25.15 (59%)

\*Increases in Ceiling Prices for non-Solar technologies driven mainly by the expiration of the PTC and resulting changes in financing assumptions \*\*SEA discovered a modeling error exclusive to our Anaerobic Digestion model that resulted in the 1<sup>st</sup> Draft Proposed CP being erroneously low. The corrected value is displayed above.

## Revised Modeling Parameters



## Summary: Cost & Production Assumptions (Solar)

	Small I	Small II	Medium I	Medium II	Comm'l I	Comm'l I (CRDG)	Comm'l II	Comm'l II (CRDG)	Large	Large CRDG
Nameplate Capacity (kW)	5.8 [5]	25	150	250	500	500	1,000 [900]	1,000 [900]	5,000 [4,500]	5,000 [4,500]
Capacity Factor	13.4% [14.0%]	13.4% [14.0%]	14.5%	14.5%	14.6%	14.6%	14.6%	14.6%	15.10%	15.10%
Annual Degradation	1.0% [0.5%]	1.0% [0.5%]	0.8% [0.5%]	0.8% [0.5%]	0.8% [0.5%]	0.8% [0.5%]	0.8% [0.5%]	0.8% [0.5%]	0.5%	0.5%
Useful Life (Years)	25	25	25 [20]	25 [20]	25 [20]	25 [20]	25 [20]	25 [20]	30 [25] [20]	30 [25] [20]
Total Cost w/ Low Cost Adjustment^ (\$/kW)	<b>\$3,310</b> [\$3,195] [\$3,146]	<b>\$3,042</b> [\$2,935] [ <b>\$2,883</b> ]	\$2,739 [N/A] [N/A]	\$2,361 [\$2,211] [\$2,332]	\$2,068 [\$1,936] [\$2,097]	\$2,168 [\$2,036*] [\$2,247*]	\$1,901 [\$1,780] [\$1,869]	\$2,001 [\$1,880*] [\$2,019*]	<b>\$1,411</b> [\$1,313] [\$1,492]	<b>\$1,511</b> [\$1,413*] [\$1,642*]
Total Cost w/ High Cost Adjustment^ (\$/kW)	<b>\$3,510</b> [\$3,311] [\$3,146]	<b>\$3,224</b> [\$3,042] [ <b>\$2,883</b> ]	\$2,846 [N/A] [N/A]	\$2,454 [\$2,315] [\$2,332]	\$2,149 [\$2,027] [\$2,097]	\$2,249 [\$2,127*] [\$2,247*]	\$1,975 [\$1,863] [\$1,869]	\$2,075 [\$1,963*] [\$2,019*]	<b>\$1,458</b> [\$1,375] [ <b>\$1,492</b> ]	[\$1,558 \$1,475*] [\$1,642*]
Fixed O&M (\$/kW-yr)	\$29 [\$35]	\$24 [\$35]	\$14.57	\$14.57	\$12.03	\$34.03 [\$37.03]	\$12.03	\$34.03 [\$37.03]	\$8.00 [\$12.03]	\$30.00 [\$37.03]
O&M Escalation Factor	2.0%	2.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Non-O&M Escalation %	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Insurance (% of Cost)	0.0%	0.0%	0.34% [0.27%]	0.34% [0.27%]	0.57% [0.45%]	0.57% [0.45%]	0.57% [0.45%]	0.57% [0.45%]	0.57% [0.45%]	0.57% [0.45%]
Project Management (\$/yr)	\$0	\$0	\$3,000	\$3,000	\$4,000	\$4,000	\$4,000	\$4,000	\$20,000 [\$12,000]	\$20,000 [\$12,000]
Site Lease (\$/yr)	\$0	\$0	\$7,500 [\$12,000]	\$15,000 [\$12,000]	\$20,000	\$20,000	\$20,000	\$20,000	\$67,500 [\$50,000]	\$67,500 [\$50,000]

Values in [Blue Brackets] represent 2021 ceiling price inputs, Values in [Green Brackets] represent Draft 1 inputs that were revised for Draft 2

\* Reflects installed cost of non-CRDG project from same category, plus estimated cost of customer acquisition (\$100/kW, previously \$150/kW)

^ Total cost includes interconnection cost

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#### Summary: Cost & Production Assumptions Wind, Hydro, and AD

	Wind	Large Wind - CRDG	Hydroelectric	Anaerobic Digestion
Nameplate Capacity (kW)	3,000	3,000	500	725
Capacity Factor	21.00%	21.00%	55.00%	92% <sup>1</sup>
Annual Degradation	0.5%	0.5%	0.0%	0.0%
Total Cost (\$/kW)	\$3,102 [\$2,820]	\$3,202 [\$2,970]	\$11,824 [\$9,931]	\$11,150 [\$10,150]
Fixed O&M (\$/kW-yr)	\$26.50	\$48.50 [\$51.50]	\$2.00	\$600
O&M Inflation	2.0%	2.0%	2.0%	2.0%
Insurance (% of Cost)	0.29% [0.20%]	0.29% [0.20%]	4.0% [2.7%]	1.5% [1.0%]
Project Management (\$/yr)	\$18,000	\$18,000	\$3,000	\$75,000
Site Lease (\$/yr)	\$162,000	\$162,000	\$8,750	\$35,000

1. Note: For Anaerobic Digestion we use an Availability Factor

Values in [Blue Brackets] represent 2021 ceiling price inputs, Values in [Green Brackets] represent Draft 1 inputs that were revised for Draft 2

## Summary: Financing Assumptions (Small Solar)

	Sm	all I	Small II		
	2021 Final	2022 1 <sup>st</sup> Draft & 2 <sup>nd</sup> Draft	2021 Final	2022 1 <sup>st</sup> Draft & 2 <sup>nd</sup> Draft	
Federal Investment Tax Credit (%)	26%	<b>26%</b>	26%	<b>26%</b>	
% Debt	71%	60%	60%	50%	
Debt Term (years)	13	13	10	10	
Interest Rate on Term Debt	6.3%	6.3%	7.0%	7.0%	
Lender's Fee (% of total borrowing)	4.25%	4.25%	2.3%	2.3%	
Target After-Tax Equity IRR	5.2%	7%	13.0%	12.5%	

## Summary: Financing Assumptions (Solar >25 kW)

	Medium		Comm'l & Comm'l CRDG		Large & Large CRDG	
Assumption Set	2021 Final	2022 1 <sup>st</sup> Draft & 2 <sup>nd</sup> Draft	2021 Final	2022 1 <sup>st</sup> Draft & 2 <sup>nd</sup> Draft	2021 Final	2022 1 <sup>st</sup> Draft & 2 <sup>nd</sup> Draft
Federal Investment Tax Credit (%)	26%	26%	26%	26%	26%	26%
% Debt	55%	55%	55%	55%	55%	53%
Debt Term (years)	15	15	15	15	15	15
Interest Rate on Term Debt	6.0%	6.6%	5.25%	5.85%	5.25%	5.85%
Lender's Fee (% of total borrowing)	1.0%	1.0%	1.0%	1.0%	2.0%	2.0%
% Equity Share of Sponsor Equity	25%	25%	25%	25%	25%	25%
Target After-Tax Equity IRR (Sponsor Equity, Levered Return)	13.5%	13.0%	12.5%	12.0%	11.5%	11.0%
% Equity Share of Tax Equity	75%	75%	75%	75%	75%	75%
Target After-Tax Equity IRR (Tax Equity, Levered Return)	9.5%	9.5%	9.5%	9.5%	9.5%	9.5%
Depreciation Approach	5-Year MACRS	5-Year MACRS	5-Year MACRS	5-Year MACRS	5-Year MACRS	5-Year MACRS

## Summary: Financing Assumptions (Non-Solar)

	Wind & Wind CRDG		Hydroe	electric	Anaerobic Digestion	
Assumption Set	2021 Final	2022 1 <sup>st</sup> Draft & 2 <sup>nd</sup> Draft	2021 Final	2022 1 <sup>st</sup> Draft & 2 <sup>nd</sup> Draft	2021 Final	2022 1 <sup>st</sup> Draft & 2 <sup>nd</sup> Draft
Federal Investment Tax Credit	18%	0% (Expiring 1/1/2022)	0% (Available but not Monetizable)	0% (Expiring 1/1/2022)	30%	None (Expiring 1/1/2021)
% Debt	60%	60%	70%	70%	45%	45%
Debt Term (years)	15	15	20	20	15	15
Interest Rate on Term Debt	6.0%	6.6%	6.25%	7.15%	6.25%	6.85%
Lender's Fee (% of total borrowing)	1.0%	1.0%	1.88%	1.88%	1.5%	1.5%
% Equity Share of Sponsor Equity	25%	60%	100%	80%	20%	60%
Target After-Tax Equity IRR (Sponsor Equity, Levered Return)	12.5%	12.0%	12.5%	12.0%	12.5%	12.0%
% Equity Share of Tax Equity	75%	40%	0%	20%	0%	40%
Target After-Tax Equity IRR (Tax Equity, Levered Return)	9.0%	9.5%	9.0%	9.5%	9.0%	9.5%
Depreciation	5-Year MACRS	Average of 100% bonus and 5- Year MACRS	7-year MACRS	7-year MACRS	5-year MACRS	5-year MACRS



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