



“Refresh” of the Administratively Determined Incentive (ADI) Program

December 2, 2022 – 2 pm

Webinar Instruction Page

- All attendees will be automatically muted
- Questions? Please use the “Q &A” function in Zoom
- We will address clarifying questions at the end of each section
- Please note that the “Chat” function in Zoom is not available for this meeting, other than to broadcast the registered speakers “on deck”
- This meeting is being recorded. A copy of the recording and slides will be made available on the BPU website:

<https://www.nj.gov/bpu/newsroom/public/>

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All viewers are responsible for ensuring that they rely only on current legal authority regarding the matters covered in the presentation.

Written Stakeholder Comment Guidelines

- The deadline for comments on the ADI Refresh is 5:00 p.m. ET on December 9, 2022
- Please submit comments directly to Docket No. **QO20020184** using the “Post Comments” button on the Board’s Public Document Search tool.
- Comments are considered “public documents” for purposes of the State’s Open Public Records Act and any confidential information should be submitted in accordance with the procedures set forth in N.J.A.C. 14:1-12.3.
- Written comments may also be submitted to:

Acting Secretary of the Board
44 South Clinton Avenue, 1st Floor
Post Office Box 350
Trenton, NJ 08625-0350
Phone: 609-292-1599
Email: board.secretary@bpu.nj.gov

Agenda

Time	Agenda Item
2:00 PM – 2:10 PM	Opening Remarks Review of the Day's Agenda
2:10 PM – 2:30 PM	Presentation and Q&A: Approach <ul style="list-style-type: none">▪ ADI Market Segment Performance to Date▪ Overview of Incentive Modeling Approach▪ Overview of System Advisor Model (SAM)
2:30 PM – 3:00 PM	Presentation and Q&A: Variable Adjustments <ul style="list-style-type: none">▪ Capex▪ Opex▪ Investment Tax Credit and Interest Rates
3:00 – 4:00	Stakeholder Comments & Questions

Live Stakeholder Comments (this meeting)

- Speaking time per person is limited to 5 minutes—please be respectful of other speakers.
- The next five speakers are posted in the chat. We will call on speakers in order. If your name is not showing (only a phone number), please raise your hand when it is your turn to speak.
- Phone controls for participants
 - The following commands can be entered via DTMF tones using your phone's dial pad while in a Zoom meeting:
 - *6 - Toggle mute/unmute
 - *9 - [Raise hand](#)
- At the conclusion of our pre-registered speakers list, we will invite additional speakers to raise their hands to speak.

ADI Market Segment Performance to Date

Original ADI Capacity Blocks by Market Segment

Market Segments	System Size	MW (dc) Capacity Blocks
Net-Metered Residential	All Sizes	150 MW
Net Metered Non-Residential	All sizes at or below 5 MW (dc)	150 MW
Community Solar including LMI and Non-LMI	All sizes at or below 5 MW (dc)	150 MW
Interim Subsection (t) Grid	All Sizes	75 MW or approximately 3 months from the CSI Program's first solicitation, whichever occurs first

^ Established by Order dated July 28, 2021

Energy Year 2022 ADI Program Subscription by Market Segment

Market Segment	Capacity Block (dc)	Capacity Subscribed (dc)	Capacity Available (dc)
Net Metered Residential	150,000 kW	123,903 kW	26,097 kW
Net Metered Non-Residential	150,000 kW	7403 kW	142,597 kW
Community Solar (Non-LMI and LMI)	150,000 kW	0 kW	150,000 kW
Interim Subsection (t) Grid	75,000 kW	0 kW	75,000 kW

^ <https://njadi.programprocessing.com/> accessed May 31, 2022

ADI Market Segment Performance to Date (cont'd)

Energy Year 2023 ADI Capacity Blocks by Market Segment

Market Segments	System Size	MW (dc) Capacity Blocks
Net-Metered Residential	All Sizes	150 MW
Net Metered Non-Residential	All sizes at or below 5 MW (dc)	150 MW plus and unused EY2022 capacity
Community Solar including LMI and Non-LMI	All sizes at or below 5 MW (dc)	150 MW
Interim Subsection (t) Grid	All Sizes	75 MW or approximately 3 months from the CSI Program's first solicitation, whichever occurs first

Energy Year 2023 ADI Program Subscription by Market Segment

Market Segment	Capacity Block (dc)	Capacity Subscribed (dc)	Capacity Available (dc)
Net Metered Residential	150,000 kW	125,373 kW	24,627 kW
Net Metered Non-Residential	287,834 kW	61,772 kW	226,065 kW
Community Solar (Non-LMI and LMI)	150,000 kW	0 kW	150,000 kW
Interim Subsection (t) Grid	75,000 kW	5,190 kW	69,810 kW

^ <https://njadi.programprocessing.com/> accessed November 29, 2022

CADMUS

NEW JERSEY SOLAR TRANSITION

Administratively Determined Incentive Program

ONE-YEAR CHECKUP STAKEHOLDER WORKSHOP

THE CADMUS GROUP LLC

DECEMBER 02, 2022



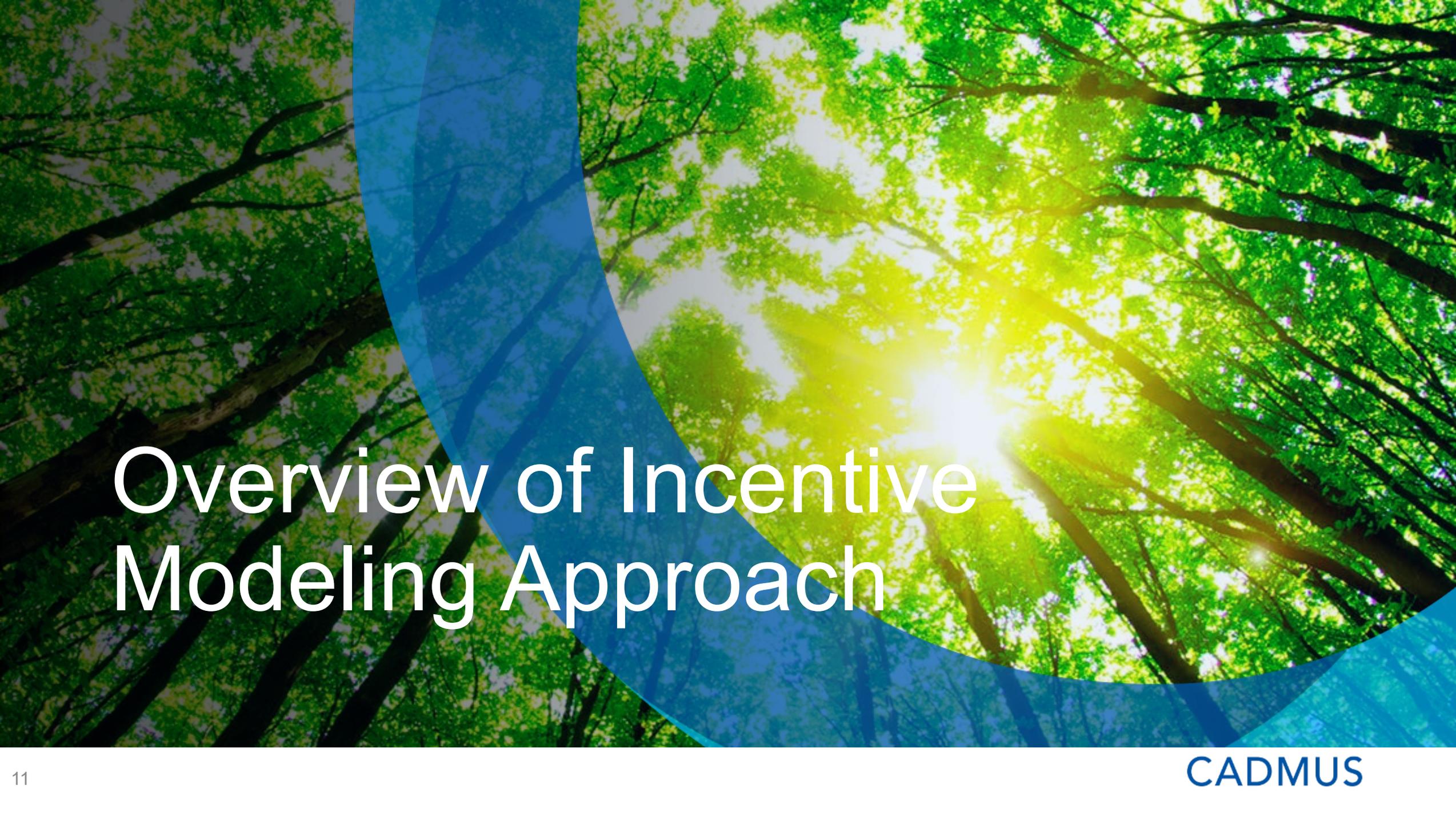
Consulting Team Supporting Modeling



CHAD LAURENT
Principal Investigator



EDWARD GALVIN
Modeling Lead



Overview of Incentive Modeling Approach

Modeling Approach

2021: Cadmus modeled performance-based incentives (PBI) needed for specific project return requirements

2023 Update: leverages 2021 base scenario modeling methodology with updated economic inputs

Updates keeping other variables constant:

- Capex based on actual (2020 – 2022) project data and inflation
- Opex based on inflation
- Interest rate changes in 2022
- Tax credits in light of the Inflation Reduction Act

2023 Update: single incentive type and term

Modeling Approach

2023 Update: Re-model selected 10 project variants to refresh incentives

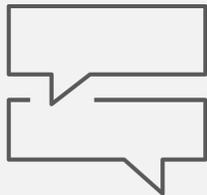
Project Variant	Abbreviation	Capacity Tier if applicable	Modeled Capacity (kW)
Large Commercial Direct Owned Ground Mount	Comm_DO_Ground_Ig	1 MW and greater	3,500
Medium Commercial Direct Owned Ground Mount	Comm_DO_Ground_med	100 kW up to 1 MW	500
Large Commercial Direct Owned Roof Mount	Comm_DO_Roof_Ig	1 MW and greater	2,000
Medium Commercial Direct Owned Roof Mount	Comm_DO_Roof_med	100 kW up to 1 MW	350
Large Commercial Third-Party Owned Ground Mount	Comm_TPO_Ground_Ig	1 MW and greater	3,500
Large Commercial Third-Party Owned Roof Mount	Comm_TPO_Roof_Ig	1 MW and greater	2,000
Medium Commercial Third-Party Owned Roof Mount	Comm_TPO_Roof_med	100 kW up to 1 MW	250
Floating	Floating		3,500
Direct Owned Residential Roof Mount	Resi_DO_Roof		8
Third-Party Owned Residential Roof Mount	Resi_TPO_Roof		8

Highlighted projects preliminarily modeled for today's presentation

The Floor is Open



Clarifying Questions?



Please add your questions to the meeting Q&A:

We will address questions in the order that they are received & provide opportunity for clarification.



Overview of System Advisor Model

Introduction to System Advisor Model (SAM)

SAM: techno-economic model to facilitate decision-making, developed by the National Renewable Energy Laboratory (NREL)

- PVWatts performance model estimates project energy production
- Estimates project financials through cost and revenue inputs
- Identifies PBI necessary to meet developer-required return (internal rate of return or payback year)

SAM Inputs | Key Financial Inputs

Third Party Ownership (TPO)

Key drivers to determine PBI:

- IRR Target and Target PPA rate

Assumptions and modeling method:

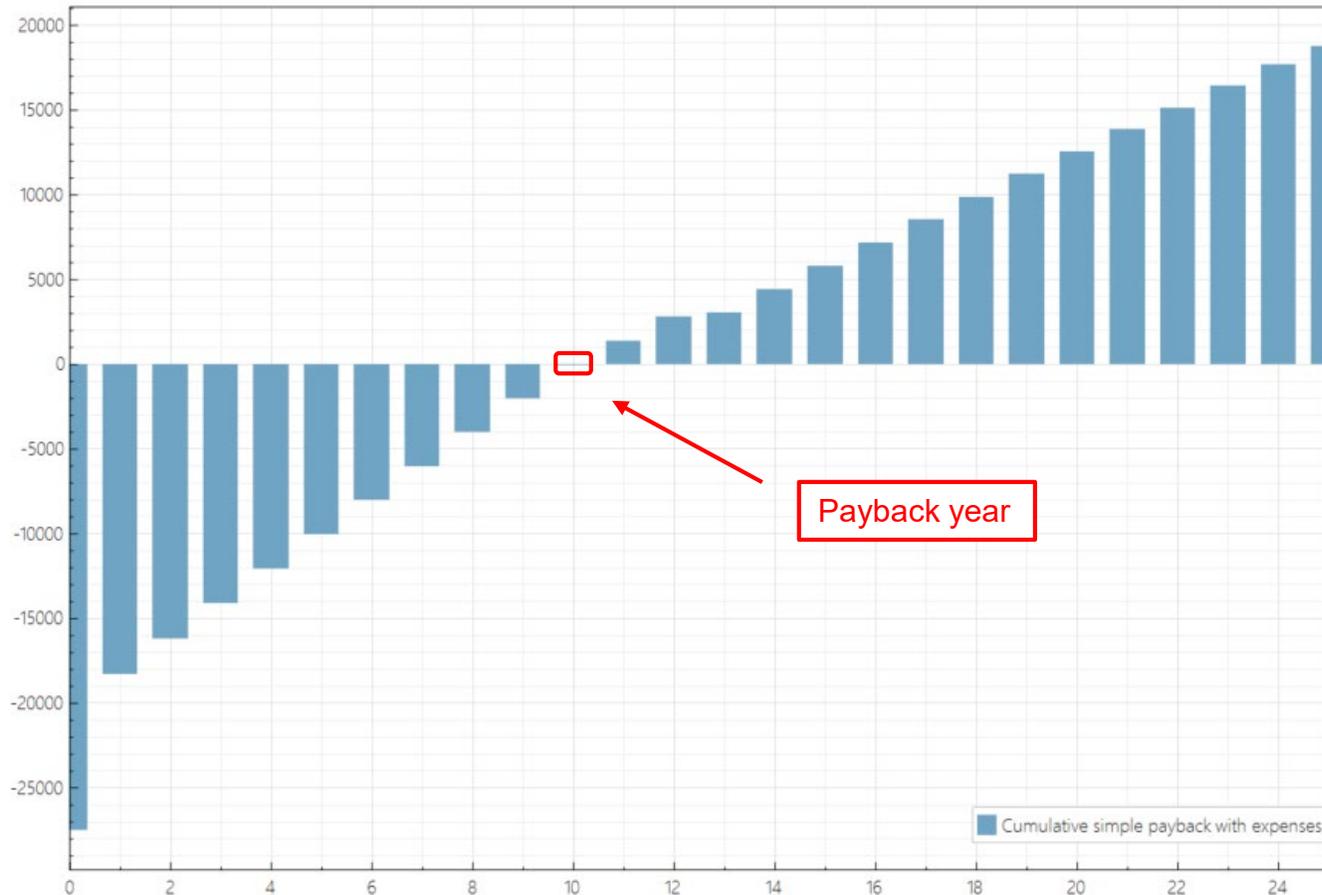
- Target PPA rates: 15% discount to electricity prices
- IRR target held constant and the PBI adjusted until target PPA rate achieved

Solution Mode	
<input checked="" type="radio"/> Specify IRR target	IRR target <input type="text" value="11"/> % IRR target year <input type="text" value="20"/>
<input type="radio"/> Specify PPA price	PPA price <input type="text" value="0.1"/> \$/kWh Escalation Rate: PPA price escalation <input type="text" value="1"/> %/year
	Inflation does not apply to the PPA price.

The user has the option to choose to input a PPA price or have SAM calculate the PPA by setting a developer IRR target. Cadmus chose the IRR target and then created a script that increased the PBI until a target PPA rate was met as well.

SAM Inputs | Key Financial Inputs

Direct Ownership (DO)



Autogenerated graph from SAM detailing example of residential cash flow with payback year of 10 (when cumulative cash flow crosses 0).

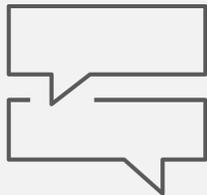
Key drivers of PBI:

- Utility Rate and Payback Year
- Assumption: payback differs for commercial and residential systems

The Floor is Open

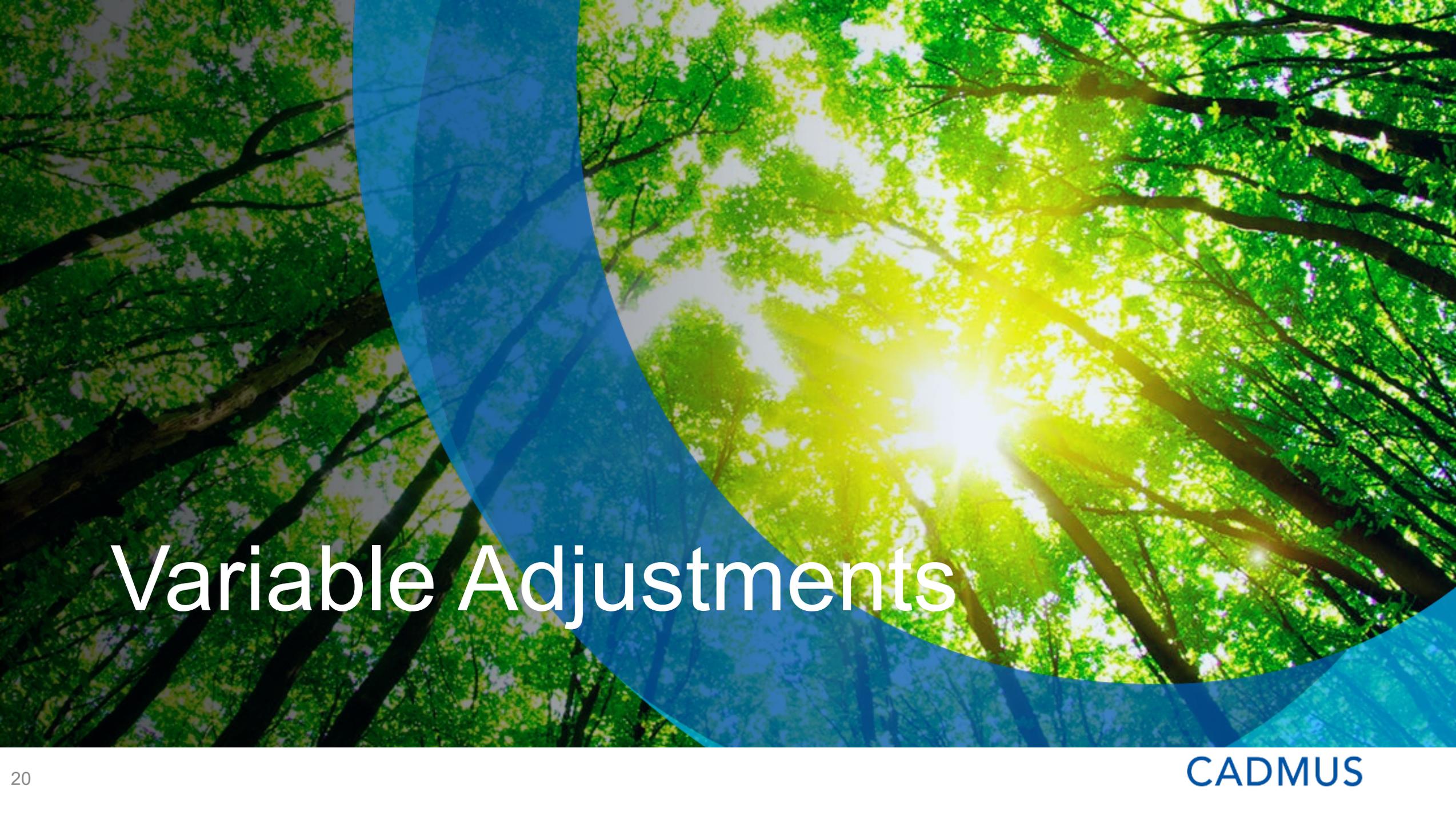


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Variable Adjustments

Variable Adjustments - Capex

Comparison of Capex for 2021 and 2023 Update Projects

Project Variant	2021		Update: 2023		Change \$	Change %
	Modeled Cost (\$/W)		Modeled Cost with Adjustments (\$/W)			
Comm_DO_Ground_lg	\$	1.90	\$	1.92	\$ 0.09	5%
Comm_DO_Ground_med	\$	2.40	\$	2.57	\$ 0.27	12%
Comm_DO_Roof_lg	\$	1.70	\$	2.24	\$ 0.60	37%
Comm_DO_Roof_med	\$	2.10	\$	2.19	\$ 0.17	8%
Comm_TPO_Ground_lg	\$	1.85	\$	1.92	\$ 0.14	8%
Comm_TPO_Roof_lg	\$	1.65	\$	2.14	\$ 0.55	34%
Comm_TPO_Roof_med	\$	2.05	\$	2.30	\$ 0.33	17%
Floating		n/a	\$	2.08	n/a	n/a
Resi_DO_Roof	\$	3.45	\$	4.49	\$ 1.24	38%
Resi_TPO_Roof	\$	3.45	\$	3.58	\$ 0.33	10%

- 2022 actual and pipeline costs reviewed by average, weighted average, and median to determine representative capex by project variant
- 6.9% inflation factor applied to project costs

Variable Adjustments - Opex

Comparison of Fixed Opex for 2021 and 2023 Update Projects

Project Variant	ADI 2021		Update: 2023			
	Total Opex		Project Mgt. Costs	Property Tax/PILOT	Site Lease	Total Opex
Comm_DO_Ground_lg	\$ 5,000	\$	5,456	exempt	n/a	\$ 5,456
Comm_DO_Ground_med	\$ 3,000	\$	3,274	exempt	n/a	\$ 3,274
Comm_DO_Roof_lg	\$ 5,000	\$	5,456	exempt	n/a	\$ 5,456
Comm_DO_Roof_med	\$ 3,000	\$	3,274	exempt	n/a	\$ 3,274
Comm_TPO_Ground_lg	\$ 60,000	\$	5,456	exempt	\$ 60,015	\$ 65,471
Comm_TPO_Roof_lg	\$ 60,000	\$	5,456	exempt	\$ 60,015	\$ 65,471
Comm_TPO_Roof_med	\$ 11,625	\$	1,773	exempt	\$ 10,912	\$ 12,685
Floating	n/a	\$	6,915	\$ 35,000	\$ 70,927	\$ 112,842
Resi_DO_Roof	\$ 17	\$	18	exempt	n/a	\$ 18
Resi_TPO_Roof	\$ 17	\$	18	exempt	n/a	\$ 18

- Inflation factor applied to historical costs

Variable Adjustments - Opex

Comparison of variable Opex (fees) for 2021 and 2023 Update Projects

Project Variant	O&M Fee (\$/kW-yr)	
	2021	Update: 2023
Comm_DO_Ground_lg	\$ 12.00	\$ 13.09
Comm_DO_Ground_med	\$ 14.00	\$ 15.28
Comm_DO_Roof_lg	\$ 12.00	\$ 13.09
Comm_DO_Roof_med	\$ 14.00	\$ 15.28
Comm_TPO_Ground_lg	\$ 12.00	\$ 13.09
Comm_TPO_Roof_lg	\$ 12.00	\$ 13.09
Comm_TPO_Roof_med	\$ 14.00	\$ 15.28
Floating	n/a	\$ 12.77
Resi_DO_Roof	\$ 35.00	\$ 38.19
Resi_TPO_Roof	\$ 35.00	\$ 38.19

- O&M fees calculated by applying inflation factor to Previous assumptions

Variable Adjustments

Interest Rates Adjustment Example for Comm_DO_Roof_Ig

Index Name	Previous Index Rate (03/13/2020)	Current Index Rate (11/29/2022)	Adjustment (Per 2021 Stakeholder Survey)	Update 2023
10-Year US Treasury Bond	1.1%	3.7%	+6%	9.7%
LIBOR	0.9%	5.6%	+3%	8.6%
Prime	4.3%	7.0%	+1%	8.0%
Prime	4.3%	7.0%	+2%	9.0%
Average (rounded)				9.0%

- 2023 Update adjustment leverages insights from 2021 stakeholder feedback
- 2021 stakeholder survey responses referenced market interest rates relative to indices
- 2023 Update applied stakeholder adjustments to updated index interest rates

Variable Adjustments

Interest Rates

Project Variant	Not Adjusted for 2023 Update			2021	2023 Update
	IRR Target (%) / Payback Year	Debt Share (%)	Loan term (years)	Annual Interest Rate	
Comm_DO_Ground_lg	12.5%	52.5%	15	6.0%	9.0%
Comm_DO_Ground_med	12.5%	52.5%	15	6.0%	9.0%
Comm_DO_Roof_lg	12.5%	52.5%	15	6.0%	9.0%
Comm_DO_Roof_med	12.5%	52.5%	15	6.0%	9.0%
Comm_TPO_Ground_lg	9.7%	52.5%	12	6.0%	9.0%
Comm_TPO_Roof_Lg	9.7%	52.5%	12	6.0%	9.0%
Comm_TPO_Roof_Med	9.7%	52.5%	10	6.0%	9.0%
Floating	9.7%	52.5%	12	6.0%	9.0%
Resi_DO_Roof	10	47.5%	13	5.5%	8.5%
Resi_TPO_Roof	9.7%	47.5%	10	6.5%	9.5%

Variable Adjustments

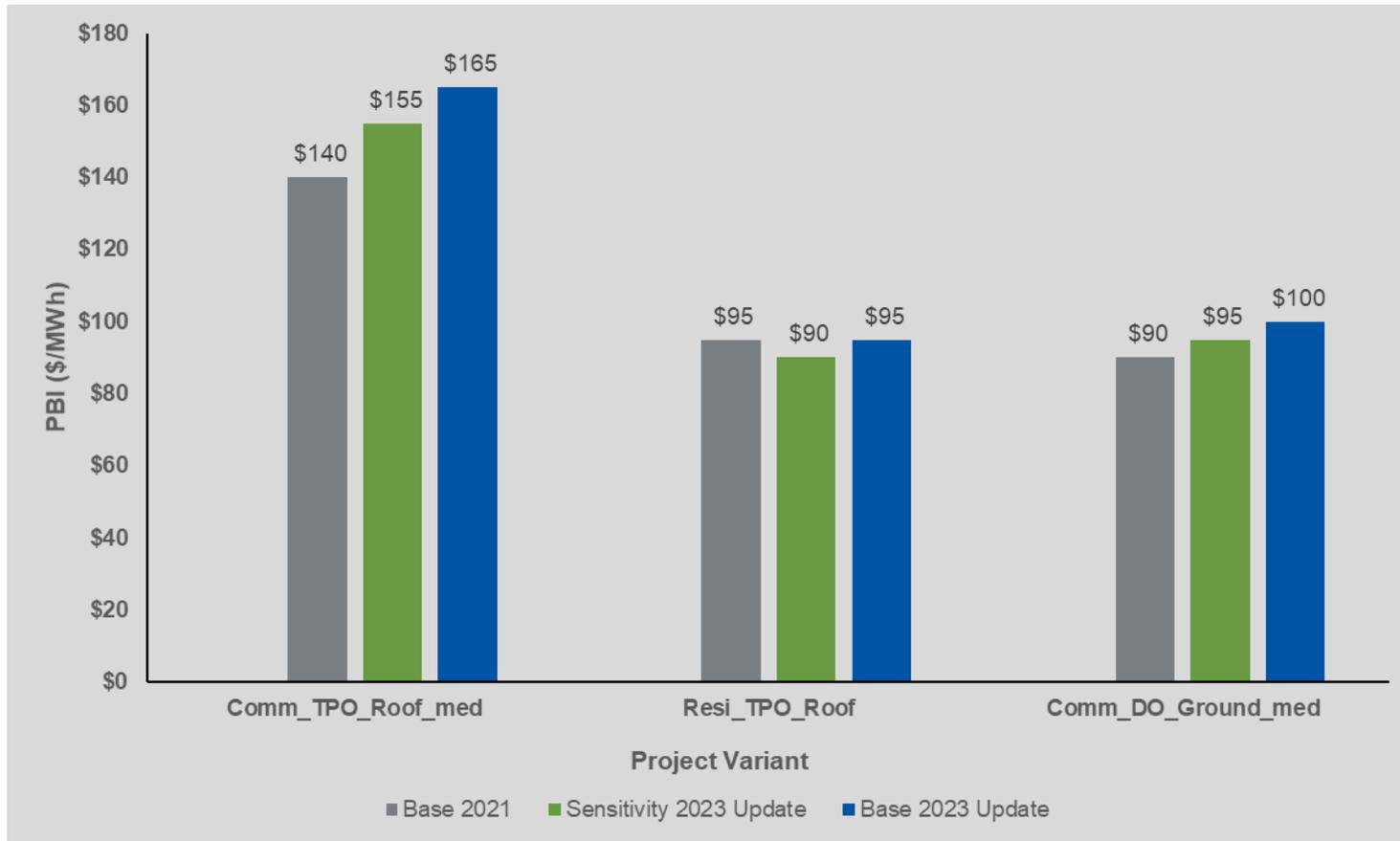
Investment Tax Credit (ITC)

Project Variant	2021	2023 Update
	Investment Tax Credit	
Comm_DO_Ground_Ig	22%	30%
Comm_DO_Ground_med	22%	30%
Comm_DO_Roof_Ig	22%	30%
Comm_DO_Roof_med	22%	30%
Comm_TPO_Ground_Ig	22%	30%
Comm_TPO_Roof_Lg	22%	30%
Comm_TPO_Roof_Med	22%	30%
Floating	22%	30%
Resi_DO_Roof	22%	30%
Resi_TPO_Roof	22%	30%

- Increase ITC from 22% to 30%
 - Assumed that wage and apprenticeship standards will be met for full 30% ITC
- Assume bonus ITC adders are not included

Preliminary Modeling Results

2023 update based on variable adjustments reviewed today



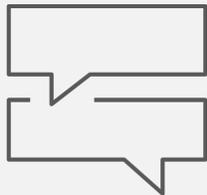
Sensitivity Scenario

- 1% subtraction in interest rate from Base 2023 value

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Clarifying Questions?



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Stakeholder Comments and Questions



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Thank You