June 10, 2026

BOROUGH OF PERKASIE

DISTRIBUTED SOLAR SOLICITATION

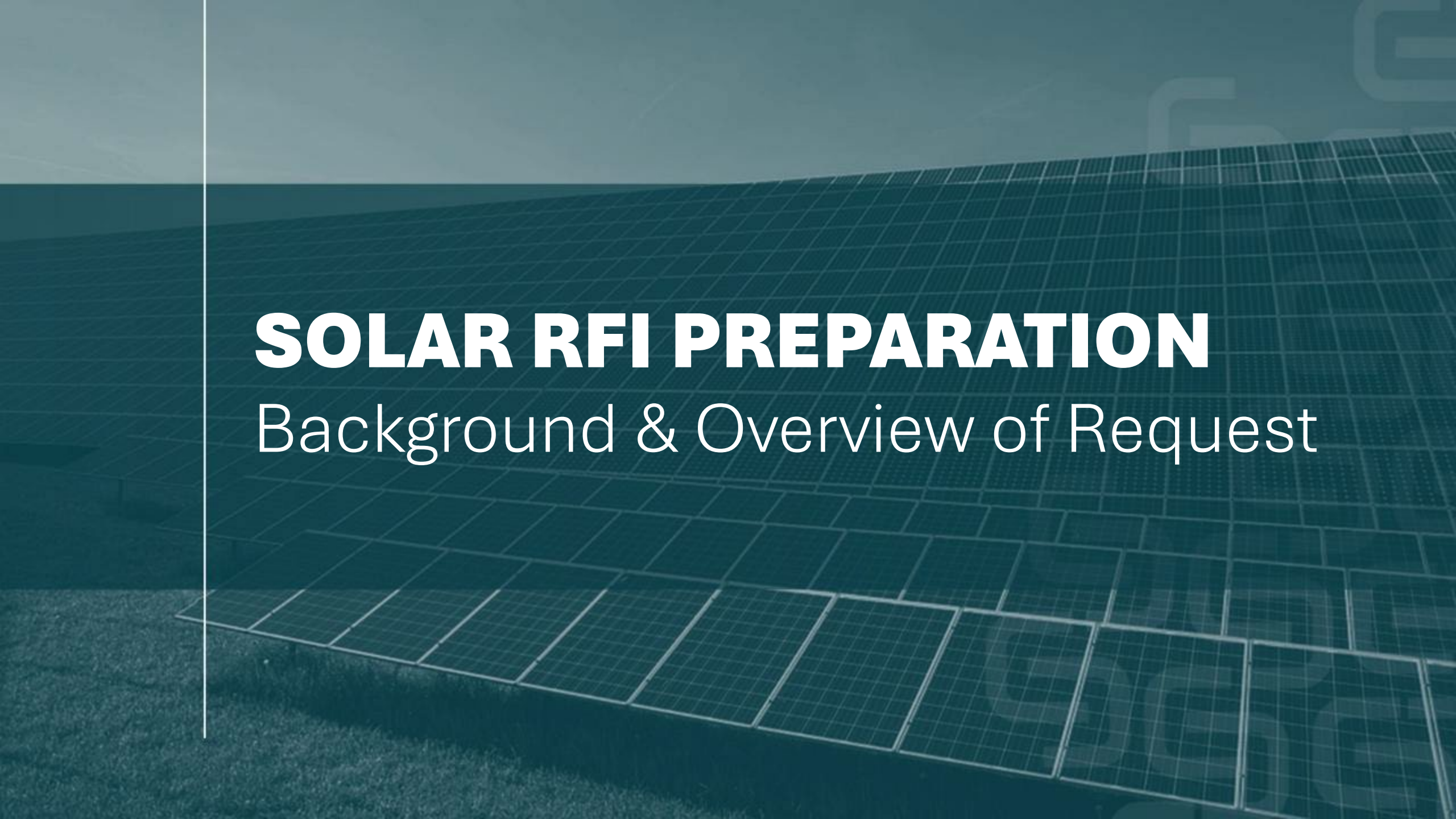
AGENDA

i. Solar RFI Preparation

ii. Project Diligence & Supplementary Costs

iii. Proposal Summary

iv. Key Takeaways & Recommendations



SOLAR RFI PREPARATION

Background & Overview of Request

REQUEST FOR INFORMATION

Goal: support cost-benefit analysis, site-level and portfolio pricing review, and selection of a single preferred respondent.

Sought proposals for solar on Borough-owned properties.

- Issued May 5, Proposals due May 26, with award anticipated in June.
- Ground mount and parking lot solar canopies across four sites.
- Distributed to 10 vendors* with relevant experience and purchasing eligibility**
- Received a sole response from Exact Solar.

Procurement structure that captures ITC value and supports future ownership transfer to Perkasie.

Respondents must demonstrate relevant experience, contracting capability, and prudent project planning.

*Exact Solar, Ameresco, Brewer-Garrett, DCO Energy, Forefront Power, McClure, Mledtech, Veregy, Verde Solutions, Solar Liberty
**Registered in Pennsylvania for cooperative purchasing eligibility

SCOPE OF WORK & RESPONSIBILITIES

Proposal Requirements (Respondent Scope):

- Provide operational installation, covering all requirements (design, fabrication, etc.)
- Provide graphical user interface for data monitoring/analysis
- Structure proposal to monetize tax credits & then transfer ownership
- Demonstrate past project experience & qualifications
- Offer pricing through cooperative purchasing program
- Comply with Act 422, PA Prevailing Wage Act
- Etc.

Perkasie Requirements/Scope:

- Site preparation (vegetation/tree removal, grading, & earthwork)
- Provide metered delivery point & electrical interconnection
- Geotechnical investigations as required
- Provide fiber optic network
- Obtain and pay for all permits, licenses, certificates, & inspections
- Be responsible for the utility connection beyond the POI
- Etc.

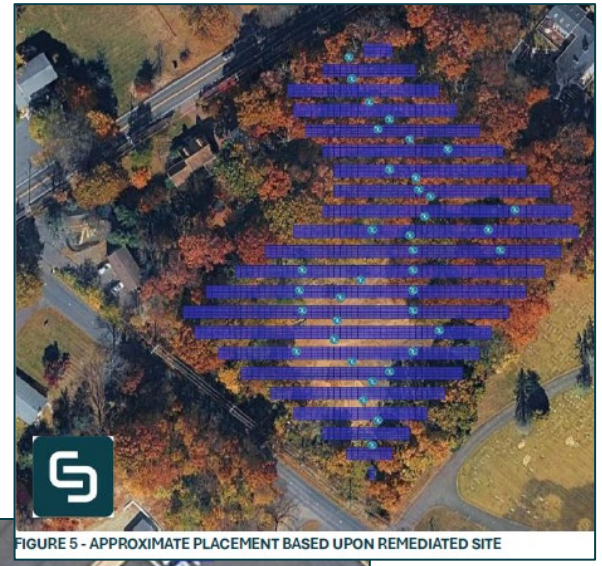


FIGURE 5 - APPROXIMATE PLACEMENT BASED UPON REMEDIATED SITE

FIGURE 2 - APPROXIMATE PLACEMENT OF SOLAR CANOPIES

PROJECT DILIGENCE & ANCILLARY COSTS

LANDFILL SITE REMEDIATION

Remediation Process Overview (Gilmore & Associates Report):

- **Mitigate geotechnical risk:** Unstable, uncontrolled fill likely requires excavation and engineered replacement; long-term stability uncertain due to buried organic materials causing settlement.
- **Design and next steps:** Use ballasted foundations with expected periodic adjustments; subsurface testing (test pits) is required to confirm conditions and further define remediation.
- **Estimated Cost:** $572k inclusive of land clearing, grading, compacting material, provide fencing around site, storm water management, permitting

Site Analysis & Design Phase

Technical groundwork incl. surveys, feature plans, & design efforts for remediation/stormwater management

Permitting & Approvals Phase

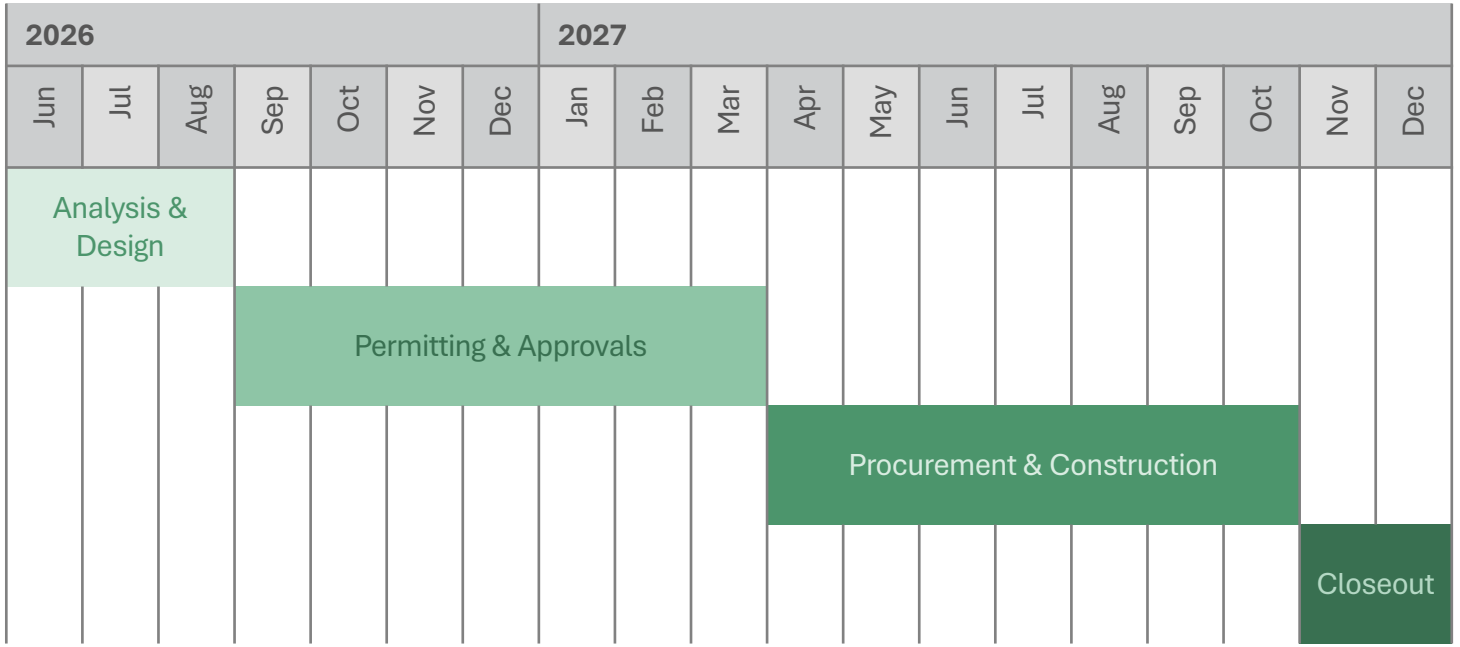
Longest phase with overlapping tasks involving permits & regulatory reviews, highlighting risks from external agencies

Procurement & Construction Phase

Transition from planning to execution with bidding, site prep, & solar array installation following permit approvals

Closeout & Commissioning Phase

Final testing, commissioning, and payment activities to conclude the project



INVESTMENT TAX CONSIDERATIONS

The OBBBA, passed July 5, 2025 phases out eligibility for new solar projects.

Under the new requirements, Perkasie has two pathways to capture ITC:

Begin construction by 7/4/26

- Commercial operation by 12/31/30
- 45% Max FEOC content
- 50% Domestic content to achieve 10% Bonus

Complete construction by 12/31/27

- If construction begins after 7/4/26
- 40-45% Max FEOC content
- 50-55% Domestic content to achieve 10% Bonus

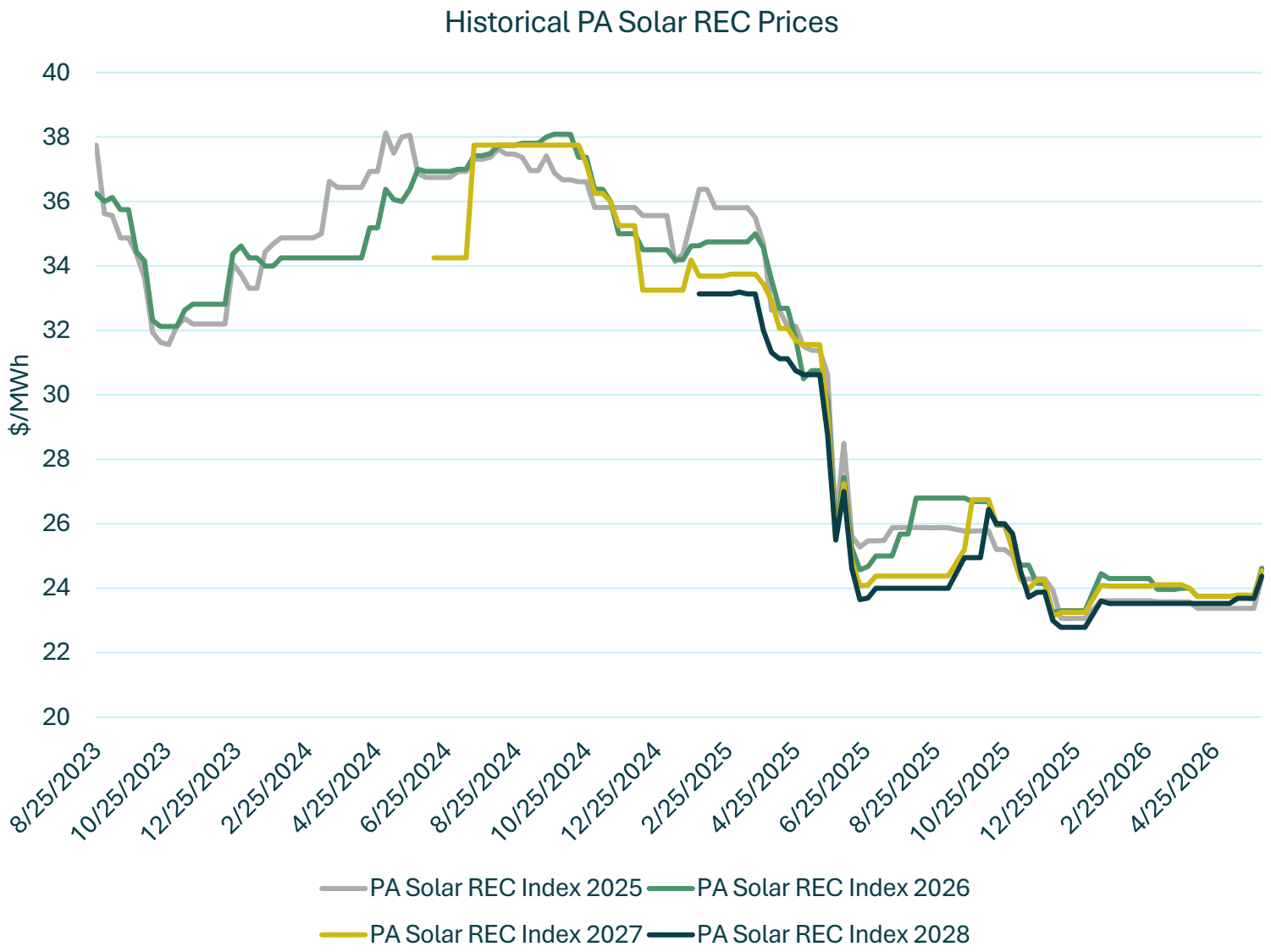
Solar Tax Credits	2026	2027	2028	2029	2030	2031+
Production Tax (45Y) & Investment Tax (48E) Credits						
FEOC Content Limits	45%	40%	35%	30%	25%	25%
10% Domestic Content Bonus Minimums	50%	55%	55%	55%	55%	55%

Projects under 1.5 MWac can Safe Harbor ITC by incurring 5% of the project's cost by 7/4/26, and meeting continuous work requirements.

Panels already procured can be assigned to new projects under the Tax Code

PA SOLAR REC REVENUES

- **Renewable Energy Certificates (RECs) represent the clean energy attributes of renewable generation and can be sold to produce a revenue stream to offset the cost of the installation**
- **1 MWh of generation produces 1 REC**
- **PA has a closed REC market, that previously traded in the $35-40 range, but has since dropped to the mid-$20s**
- **This analysis assumes RECs hold their current value through the first 10 years of ownership, then gradually dropping off**
  - 2028-2037: $24/MWh
  - 2038-2047: $1/MWh decrease per year
  - 2048+: $14/MWh



WHOLESALE COST AVOIDANCES

Perkasie's wholesale power costs include variable & fixed cost contributors

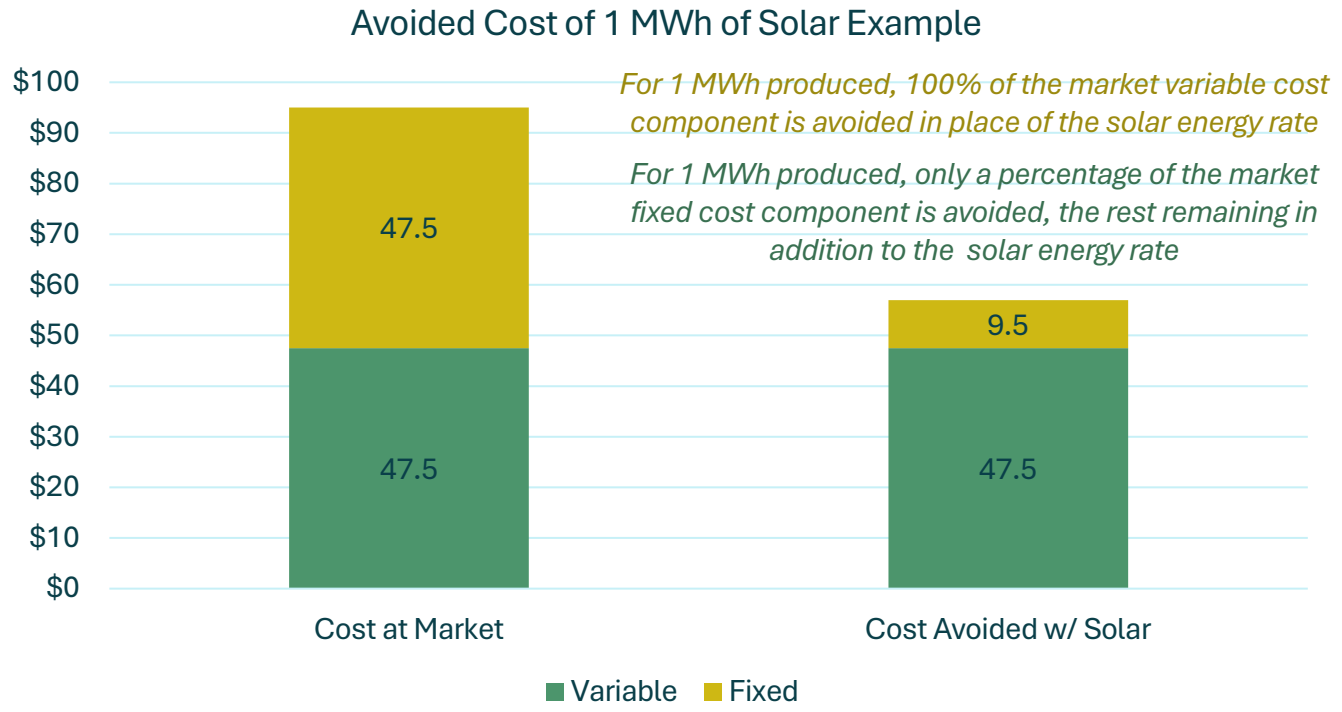
- Variable costs primarily reflect the cost of the energy (MWh), increasing or decreasing at scale with higher and lower consumption
- Fixed costs, allocated based on peak demand (MW) primarily reflect charges associated with use of the transmission system & regional reliability (capacity)

Current all-in wholesale power costs are comprised of roughly 50% fixed & 50% variable costs

- Fixed costs have increased significantly in recent years, while Perkasie's variable costs maintain greater stability

Solar installations have a far greater impact on variable cost contributions than they do fixed cost contributions

- Every 1 MWh of solar avoids the market rate for 1 MWh of energy
- Every 1 MW of nameplate solar installed avoids **a percentage** of the fixed costs associated with 1 MW of demand



For 1 MWh produced, 100% of the market variable cost component is avoided in place of the solar energy rate

For 1 MWh produced, only a percentage of the market fixed cost component is avoided, the rest remaining in addition to the solar energy rate

Example illustration of solar avoided market rate:

Cost Contributor	Market Rate	Solar Equivalent Market Rate
Total	**$95.0/MWh**	**$57.0/MWh**
Variable *(Energy Based)*	$47.5/MWh	$47.5/MWh
Fixed *(Demand Based)*	$47.5/MWh	$9.5/MWh

BEHIND THE METER COST AVOIDANCES

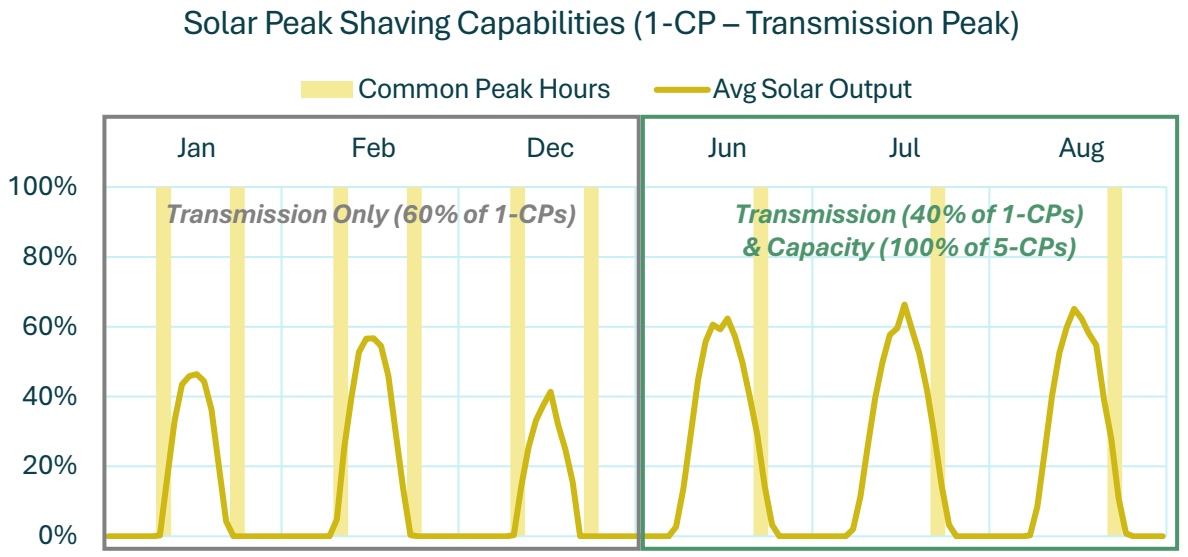
Local generation can lower capacity- and transmission-related wholesale power costs

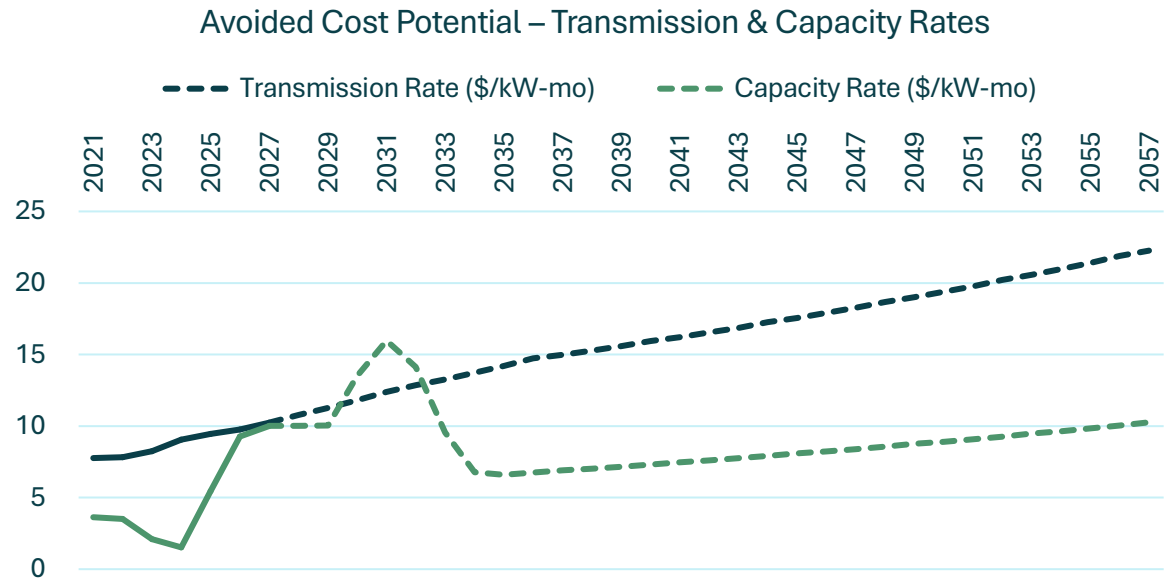
- Capacity and transmission are among Perkasie's highest cost contributors
- Current market rules allow utilities to use distributed generation to reduce their contributions to zonal and system-wide peak demands that dictate the share of costs they are allocated each year
- To qualify, gen must operate and reduce load during the respective peak hours

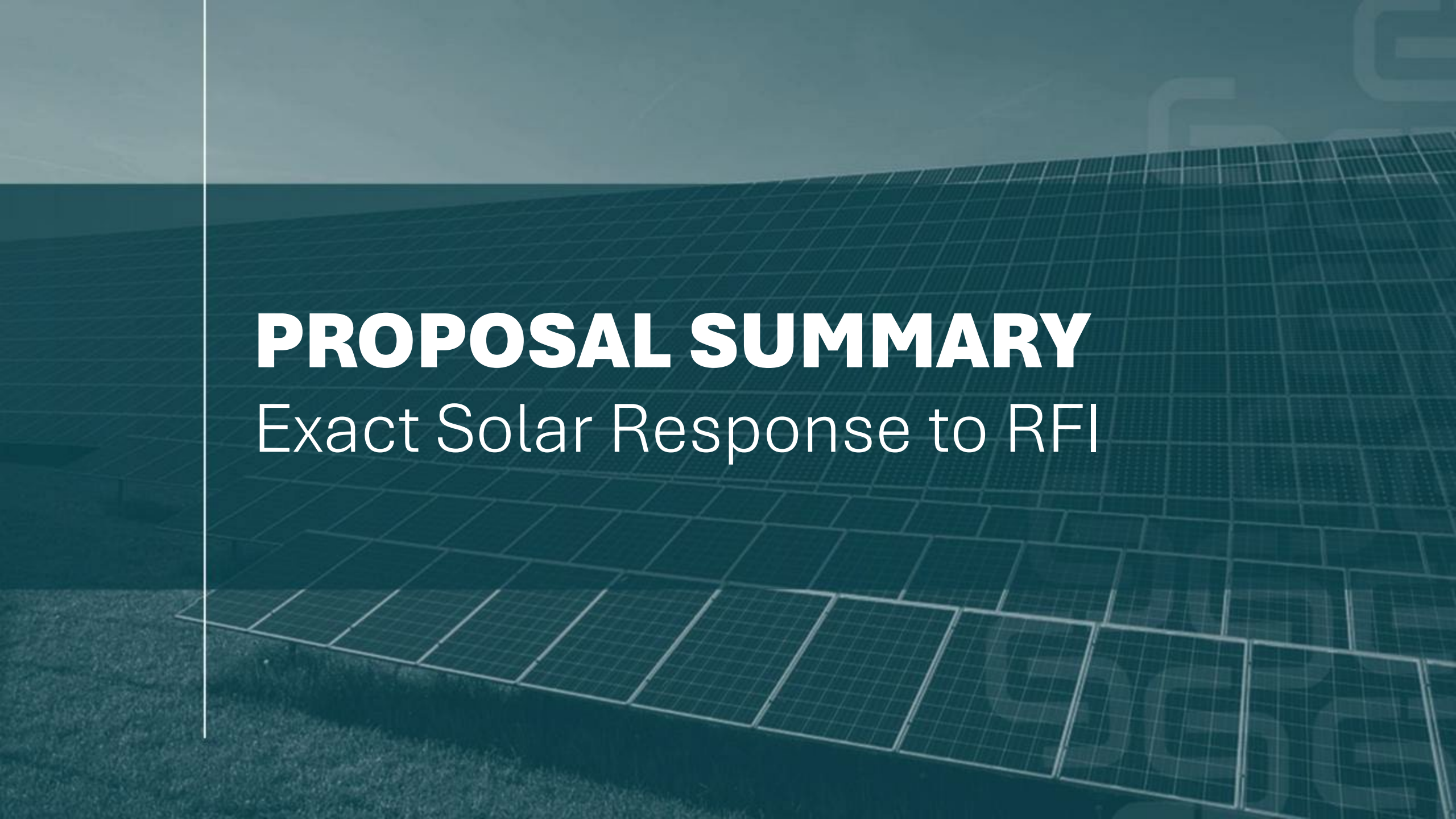
Solar is more effective at reducing capacity peaks and associated charges, as compared to transmission

- At present, Capacity charges are allocated based on contributions to summer-occurring peaks, while transmission peaks can occur in either summer or winter
- Summer peaks often occur while solar is still operational, while winter peaks often occur outside of solar operating hours
  - Over the past decade 60% of transmission peaks occurred in the winter

Per 1 MW of solar resulting from this RFI, it is expected to reduce capacity peaks by an average of roughly 27% and transmission peaks by an average of roughly 12%







PROPOSAL SUMMARY

Exact Solar Response to RFI

COMPANY OVERVIEW:

- Privately held company founded in 2005
- Based in Newtown, PA currently serving Pennsylvania, New Jersey, and Delaware
- Workforce in engineering, installation, and operations (~50 employees)
- Familiarity with local permitting, utility interconnection, and incentive programs
- More than 2,500 installations totaling >15MW
- Maintains experience with major equipment platforms
- Registered with COSTARS cooperative purchasing program

Exact Solar is an established PA solar contractor with a strong project track record & regional expertise, making it a qualified candidate pending standard financial and contract review

PROPOSAL OVERVIEW

Technical Approach & Specifications

- ITC safe harbored panels & inverters – already purchased
  - Domestically produced panels (QCells 590W Bifacial) & FEOC-compliant inverters (SolarEdge String)
  - **No explicit safe harbor guarantee – Who bears the cost if ITC cannot be secured?**
- 10-Yr workmanship warranty covers installation labor & materials, manufacturers warranties & warranty support
- Exact perform project turnkey, including all engineering, procurement, and construction up to the point of interconnection

Lifetime Performance

- **No explicit production guarantees (standard in utility-scale contracts to mitigate long-term performance risk)**
  - Solar typically evaluated over a 25-30 yr useful life – major failure modes (e.g. moisture ingress into PV modules) generally emerging in later years of operation rendering plant inoperable
- **No explicit mention of lifetime O&M included in base pricing**
  - Analysis includes O&M* adder reflecting administrative overhead, scheduled maintenance labor, vegetation/site management, major component replacements over a 30-year technical life, and end-of-life equipment removal and disposal

Permitting & Interconnection

- The Borough leads permitting with support from Exact regarding site specifications
- Exact to coordinate with PPL on interconnection requirements such as grid protection and controls

Payment structure

- Financed by Borough (20-yr), full payment due up front to Exact
- Additional costs (interconnection, development, O&M, etc) fall under Borough responsibility & are added to buy-down for all-in cost analysis

*National Lab of the Rockies Annual Technology Baseline Report, Commercial Solar Fixed O&M rates ($17.96/kW-year)

LANDFILL

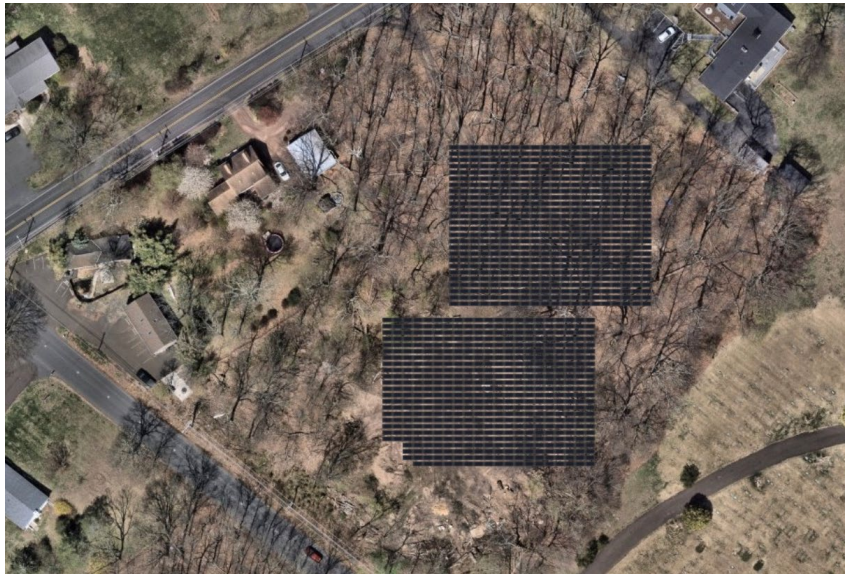
Project Stats:

- Ground mount installation
- 500 kWac (0.5 MWac)
  - Largest site
- ~740 MWh/yr (25 yr avg)
  - Serves ~1.3% of BOP load
- ~17% capacity factor
  - Highest output

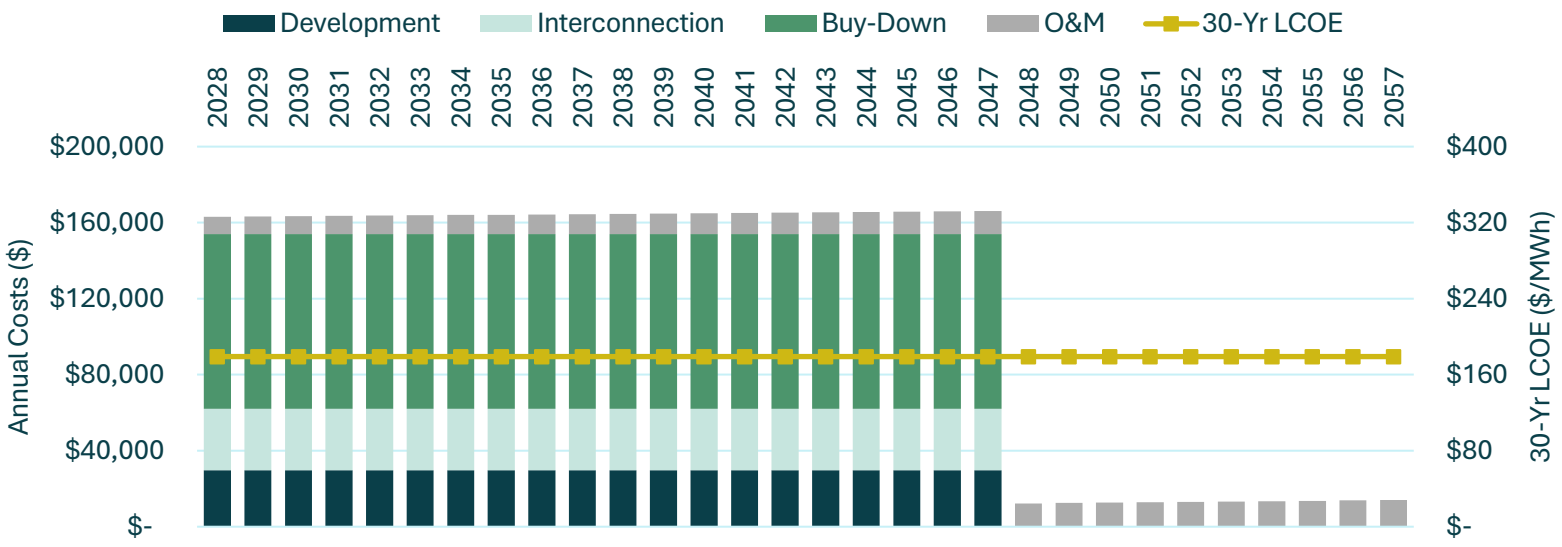
Mitigate geotechnical risk: Unstable fill requires excavation and engineered replacement; long-term stability uncertain due to buried organic materials causing settlement

Design: Use ballasted foundations with expected periodic adjustments; subsurface testing (test pits) is required to confirm conditions and further define remediation

Estimated Remediation Cost: $572k inclusive of land clearing, grading, compacting material, provide fencing around site, storm water management, permitting



Annual Costs (*Before SREC Revs + BTMG Cost Avoidances*)



Economic Assumptions	Landfill Site
25 year LCOE ($/MWh)	**$194.52**
30 year LCOE ($/MWh)	**$179.05**
Energy over 30-yr Useful Life (MWh)	21,897
Capability (kW-AC)	500.0
Capability (kW-DC)	598.9
DC/AC Ratio	1.20
O&M Rate ($/kW-yr)	$17.96
O&M Price Escalation (%)	1.5%
Financing Rate (%)	4.115%
Discount Rate (%)	4.115%
Payment Period (yrs)	20
Buydown amount ($ COD)	$1,238,491
Production Degradation (%/yr)	0.45%
IPR Cabinet ($ yr 0)*	$126,316
Interconnection Costs ($ yr 0)**	$308,505
Remediation Costs ($ yr 0)	$572,245

**300K distributed across projects based on capacity share of total*
*** Interconnection total includes $98K in Labor from Borough employees ($8.5/MWh – 30 Yr LCOE, $7.8/MWh – 25 Yr LCOE)*

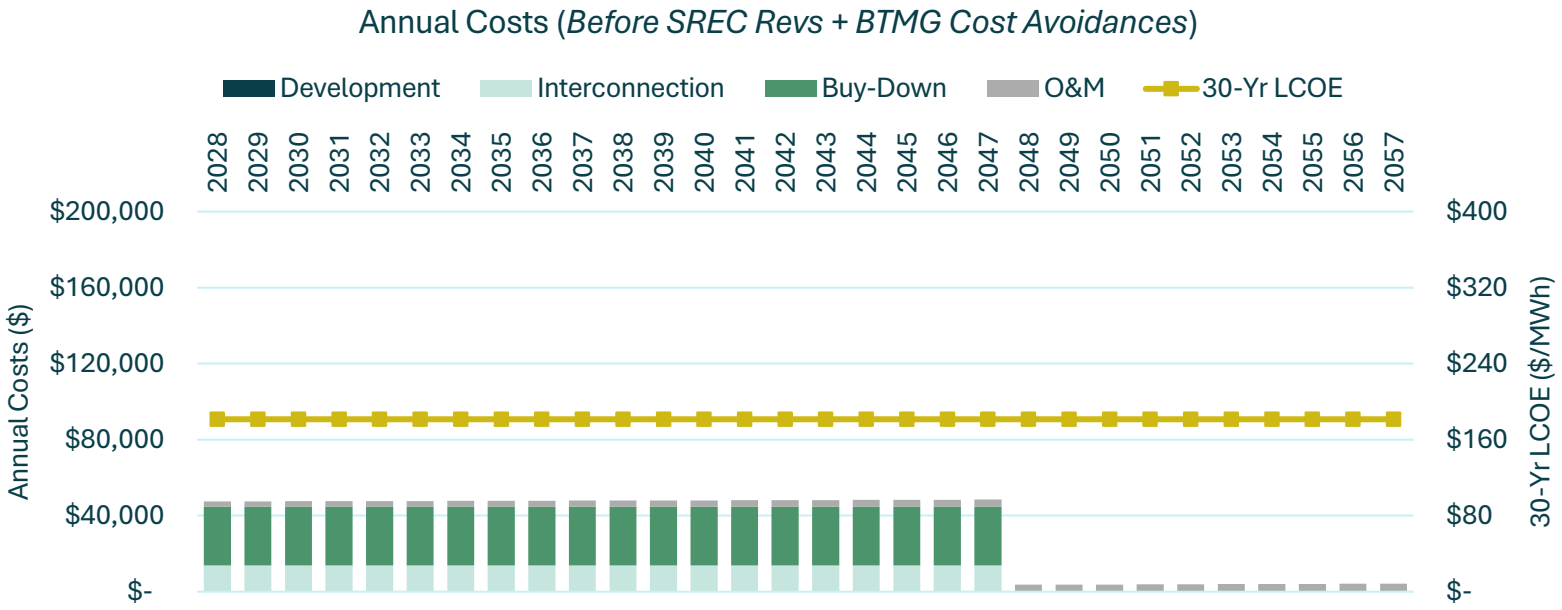
REVIVALS

Project Stats:

- 150 kWac (0.15 Mwac)
- ~210 MWh/yr (25 yr avg) – Serves ~0.4% of BOP load
- ~16% capacity factor

Site Considerations:

- One Parking canopy array combined with two ground-mount arrays to optimize space and cost
- Interconnection voltage 480v within developer scope



Economic Assumptions	Revivals Site
25 year LCOE ($/MWh)	**$197.07**
30 year LCOE ($/MWh)	**$181.45**
Energy over 30-yr Useful Life (MWh)	6,299
Capability (kW-AC)	150.0
Capability (kW-DC)	171.1
DC/AC Ratio	1.14
First Year O&M ($/kW-yr)	$17.96
O&M Price Escalation (%)	1.5%
Financing Rate (%)	4.115%
Discount Rate (%)	4.115%
Payment Period (yrs)	20
Buydown amount ($ BOY 6)	$416,295
Production Degradation (%/yr)	0.45%
IPR Cabinet ($ yr 0)*	$37,895
Interconnection Costs ($ yr 0)**	$148,378

**300K distributed across projects based on capacity share of total*
*** Interconnection total includes $76K in Labor from Borough employees ($22.9/MWh – 30 Yr LCOE, $20.9/MWh – 25 Yr LCOE)*

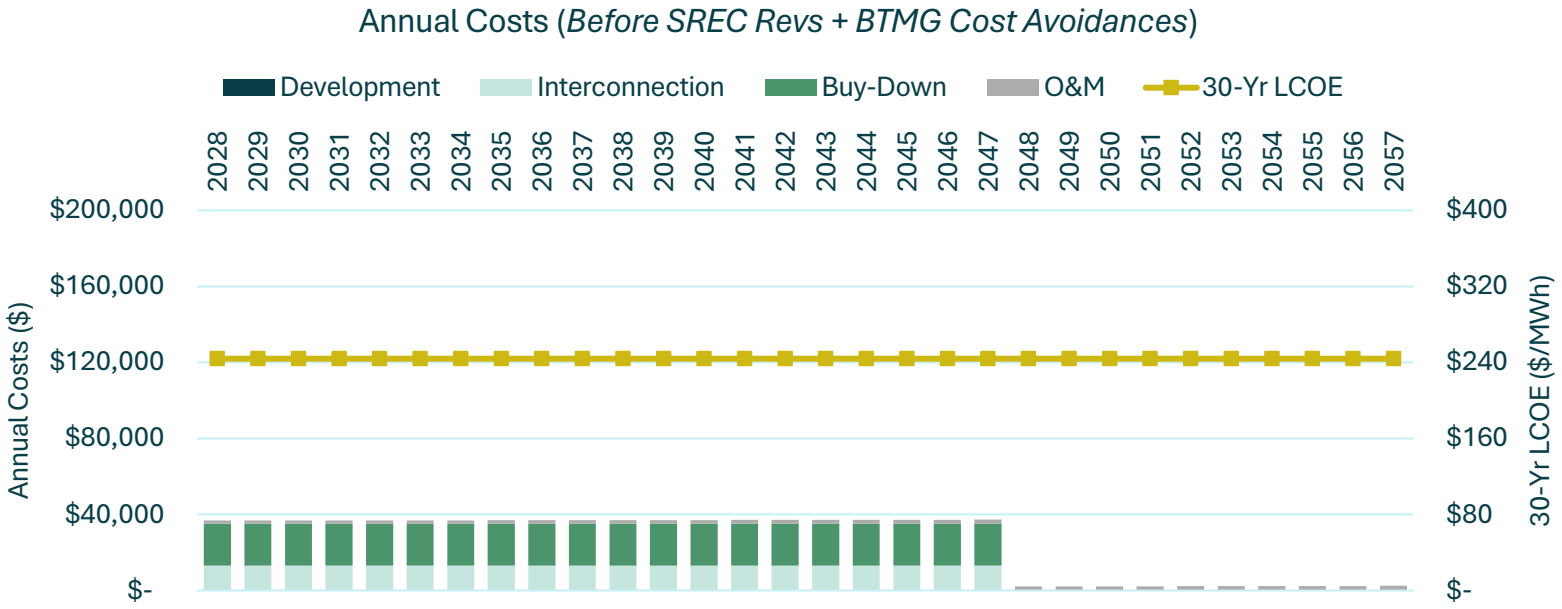
7TH STREET

Project Stats:

- 87.5 kWac (0.09 MWac) – Smallest site
- ~120 MWh/yr (25 yr avg) – Serves ~ 0.2% of BOP load
- ~16% capacity factor

Site Considerations:

- Parking canopy don't restrict access and provide shaded parking
- Interconnection voltage 480v within developer scope



Economic Assumptions	7th Street Site
25 year LCOE ($/MWh)	**$265.63**
30 year LCOE ($/MWh)	**$243.97**
Energy over 30-yr Useful Life (MWh)	3,600
Capability (kW-AC)	87.5
Capability (kW-DC)	100.3
DC/AC Ratio	1.15
First Year O&M ($/kW-yr)	$17.96
O&M Price Escalation (%)	1.5%
Financing Rate (%)	4.115%
Discount Rate (%)	4.115%
Payment Period (yrs)	20
Buydown amount ($ BOY 6)	$296,046
Production Degradation (%/yr)	0.45%
IPR Cabinet ($ yr 0)*	$22,105
Interconnection Costs ($ yr 0)**	$155,154

**300K distributed across projects based on capacity share of total*
*** Interconnection total includes $79K in Labor from Borough employees ($42.0/MWh – 30 Yr LCOE, $38.3/MWh – 25 Yr LCOE)*

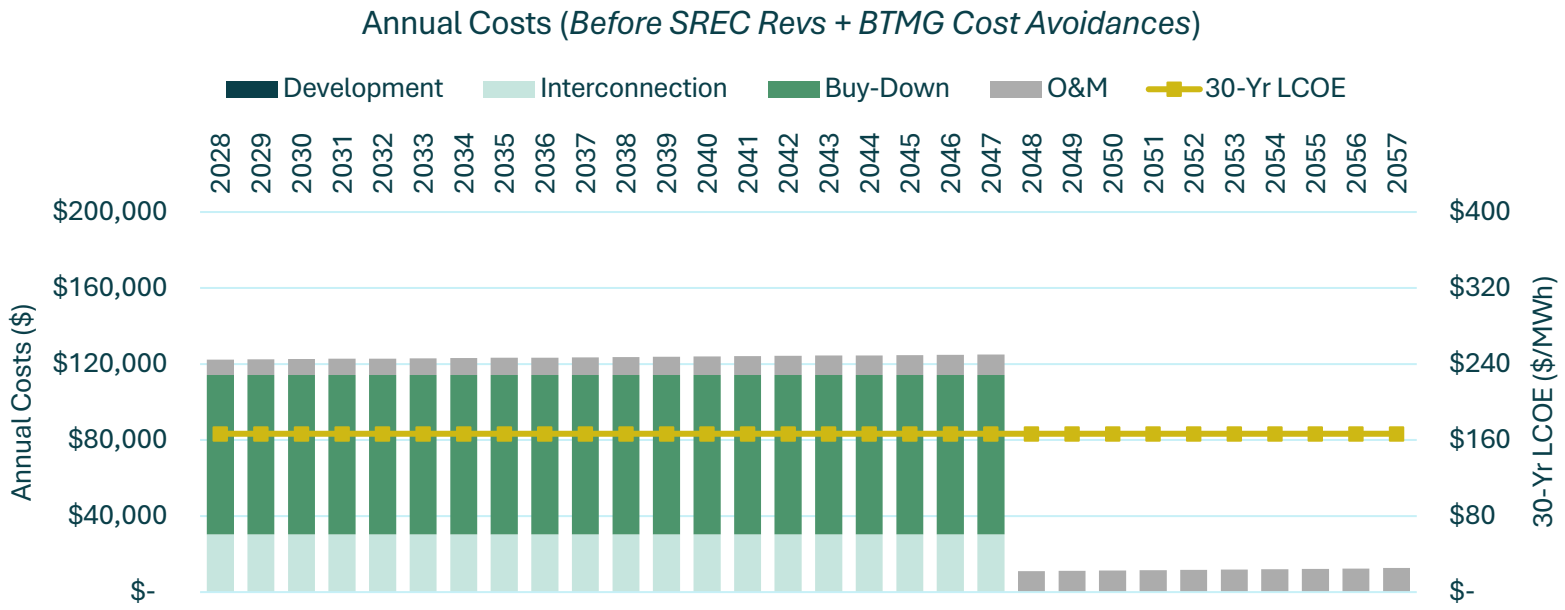
LENAPE PARK

Project Stats:

- 450 kWac (0.45 MWac) – Second largest site
- ~600 MWh/yr (25 yr avg) – Serves ~1.0% of BOP load
- ~15% capacity factor

Site Considerations:

- Canopy arrays plus ground mount arrays optimizes space and cost
- Interconnection voltage 480v within developer scope



Economic Assumptions	Lenape Site
25 year LCOE ($/MWh)	**$180.71**
30 year LCOE ($/MWh)	**$166.66**
Energy over 30-yr Useful Life (MWh)	17,745
Capability (kW-AC)	450.0
Capability (kW-DC)	519.2
DC/AC Ratio	1.15
First Year O&M ($/kW-yr)	$17.96
O&M Price Escalation (%)	1.5%
Financing Rate (%)	4.115%
Discount Rate (%)	4.115%
Payment Period (yrs)	20
Buydown amount ($ BOY 6)	$1,127,788
Production Degradation (%/yr)	0.45%
IPR Cabinet ($ yr 0)*	$113,684
Interconnection Costs ($ yr 0)**	$294,525

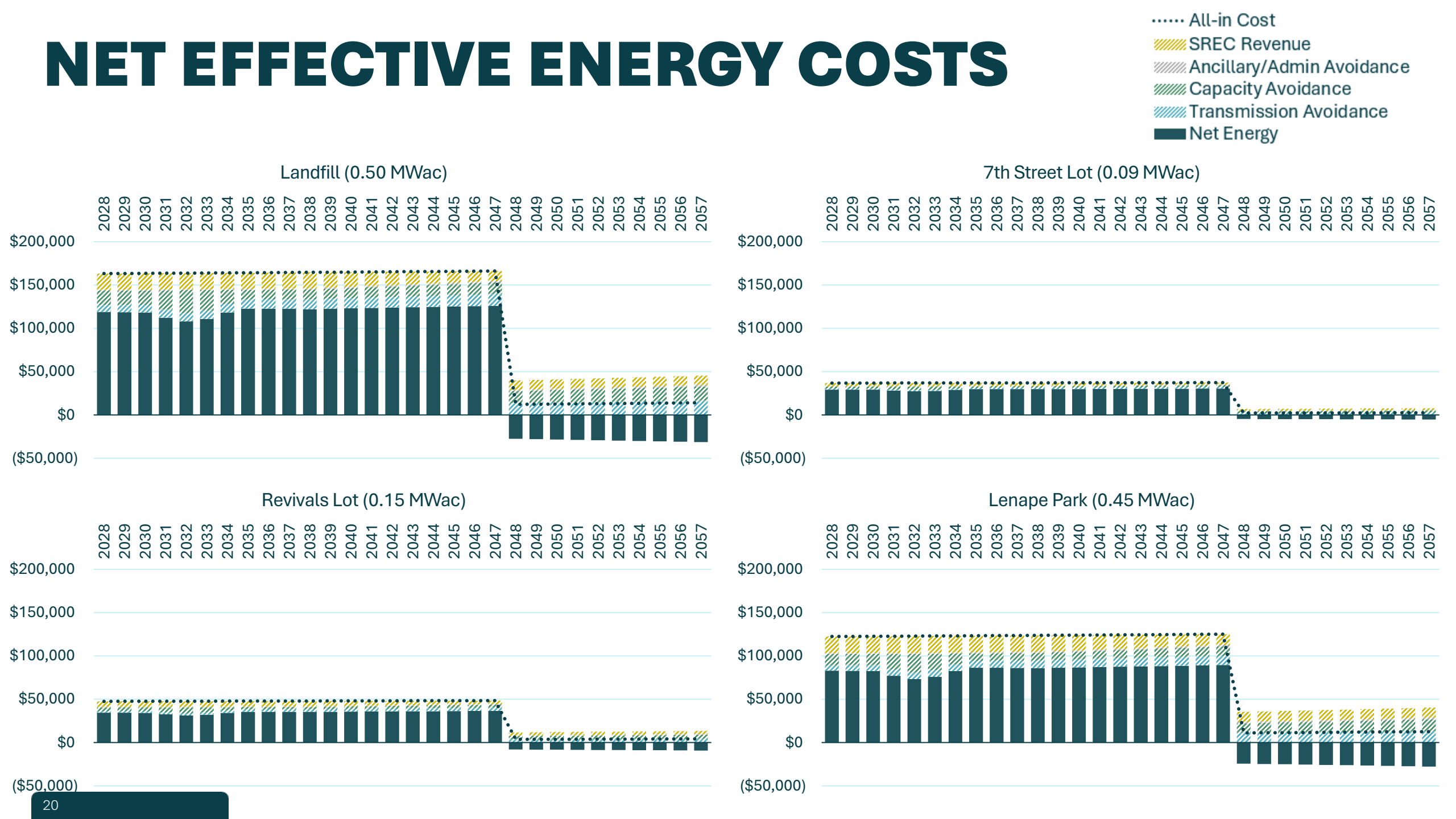
**300K distributed across projects based on capacity share of total*
*** Interconnection total includes $99K in Labor from Borough employees ($10.7/MWh – 30 Yr LCOE, $9.7/MWh – 25 Yr LCOE)*

ALL-IN PROJECT COST SUMMARY

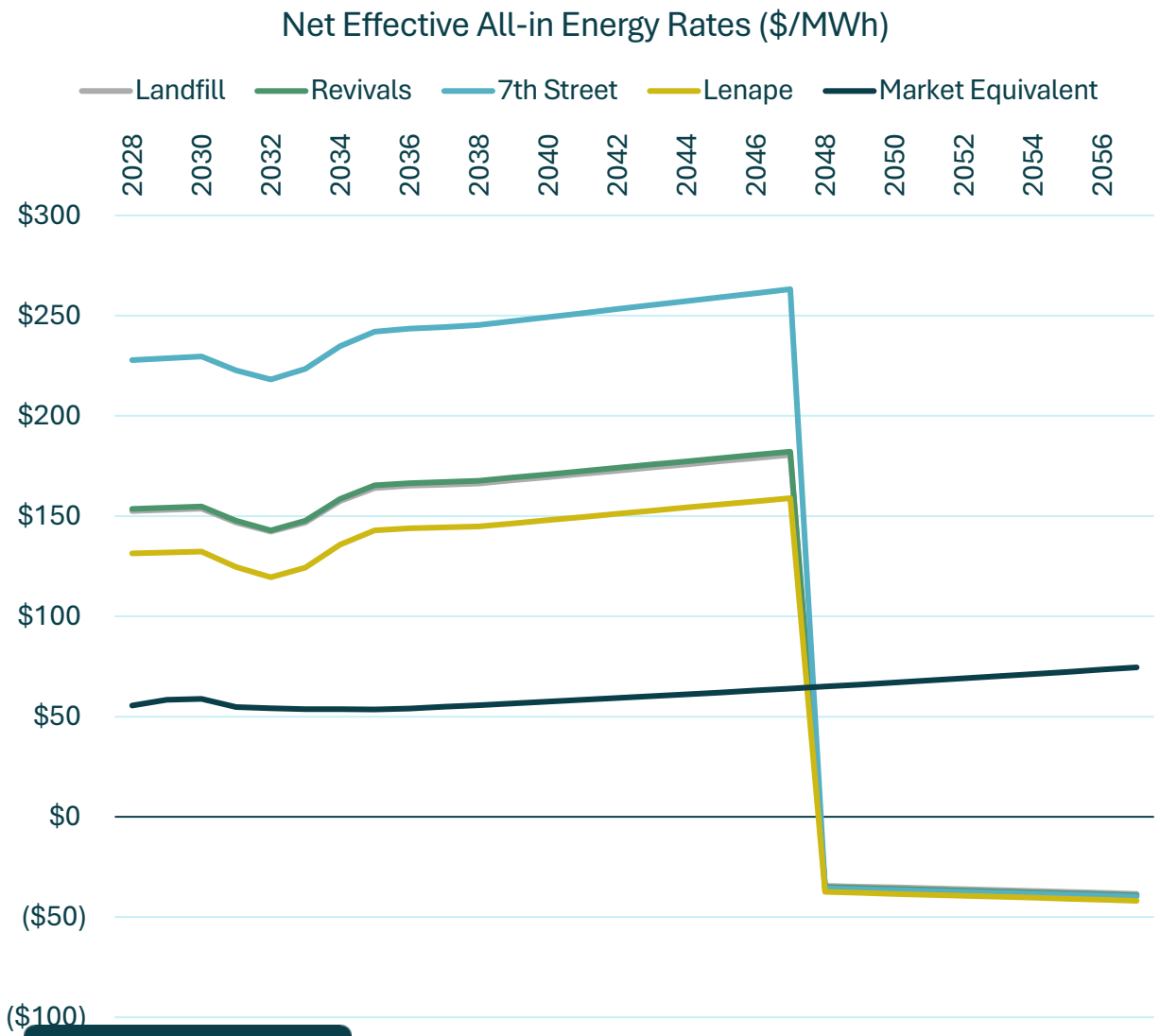
LEVELIZED COST OF ENERGY

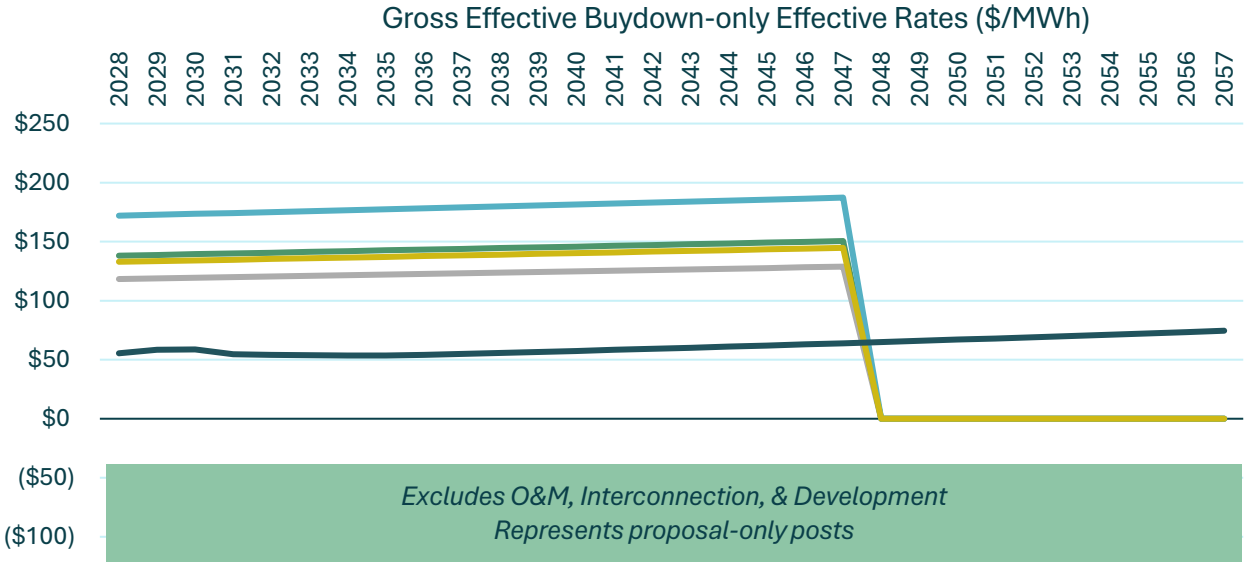
Landfill interconnection total includes $98K in Labor from Borough employees ($8.5/MWh – 30 Yr LCOE, $7.8/MWh – 25 Yr LCOE)
Revivals interconnection total includes $76K in Labor from Borough employees ($22.9/MWh – 30 Yr LCOE, $20.9/MWh – 25 Yr LCOE)
7th Street interconnection total includes $79K in Labor from Borough employees ($42.0/MWh – 30 Yr LCOE, $38.3/MWh – 25 Yr LCOE)
Lenape interconnection total includes $99K in Labor from Borough employees ($10.7/MWh – 30 Yr LCOE, $9.7/MWh – 25 Yr LCOE)

NET EFFECTIVE ENERGY COSTS

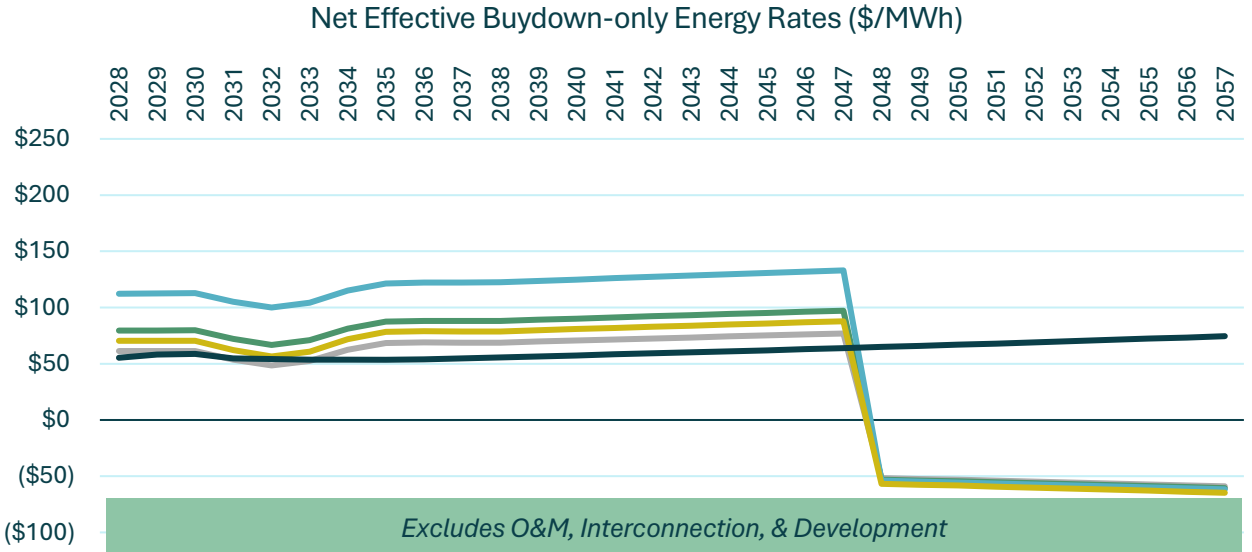


SOLAR VS. MARKET EQUIVALENT ENERGY





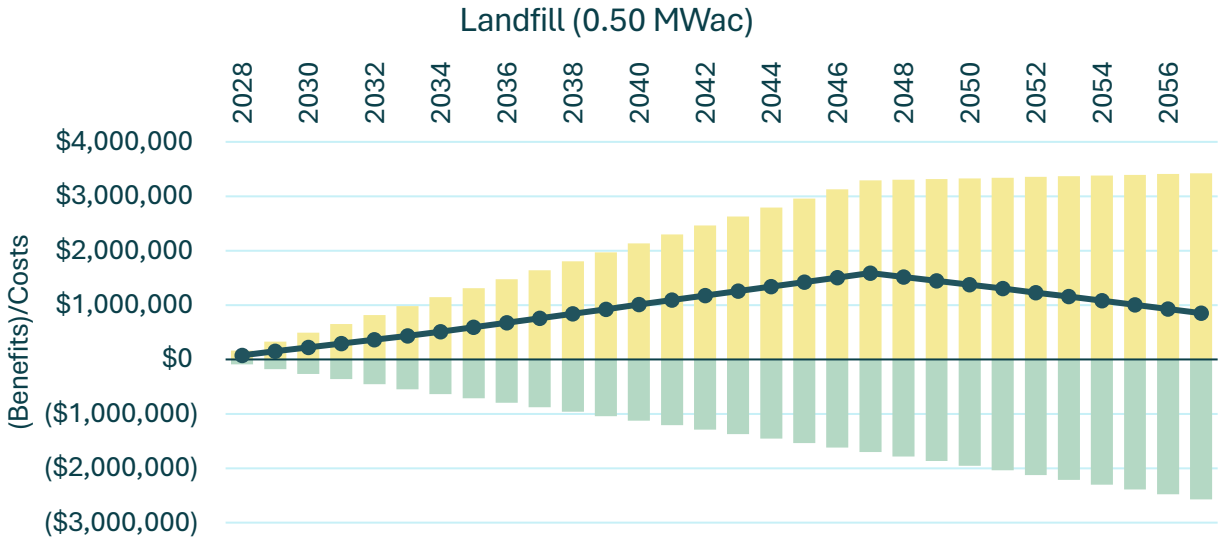
Excludes O&M, Interconnection, & Development
Represents proposal-only posts

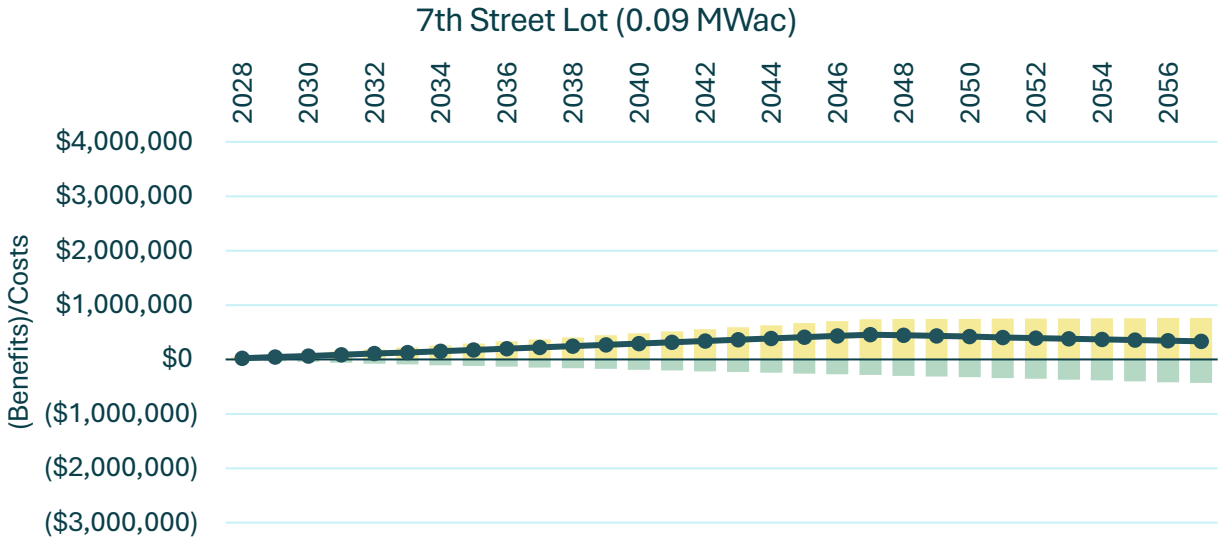


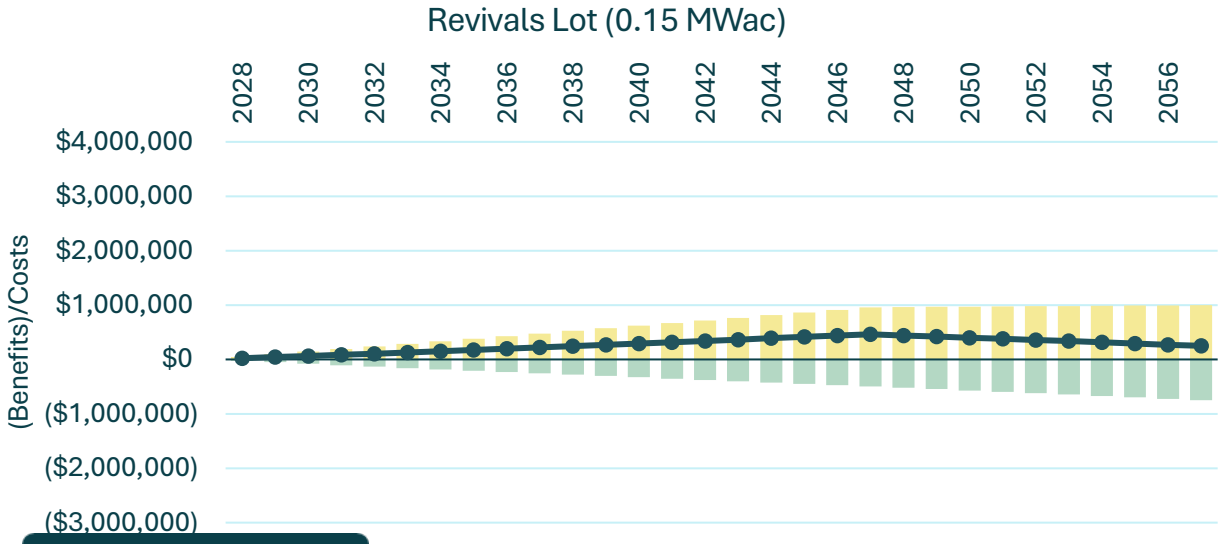
Excludes O&M, Interconnection, & Development
Represents proposal-only costs, net of assumed SREC Revenues & BTMG Cost Avoidances

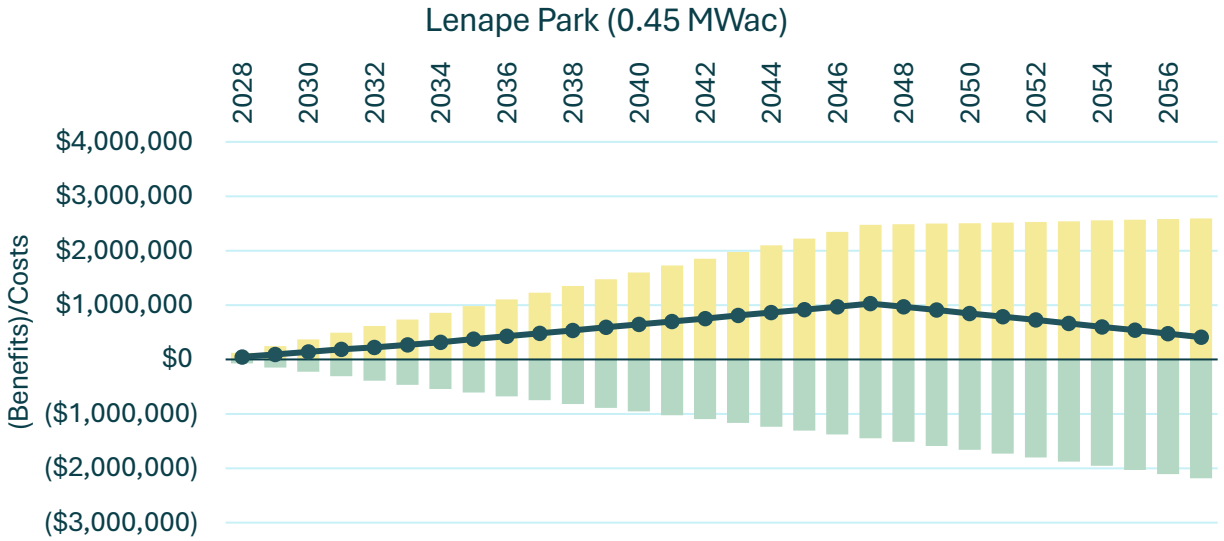
CUMULATIVE CASH FLOWS

+ All-in Solar Installation Costs
- SREC Revenues
- Avoided Capacity & Transmission Charges
- Avoided Energy Purchases
= Net Cost/(Benefit)



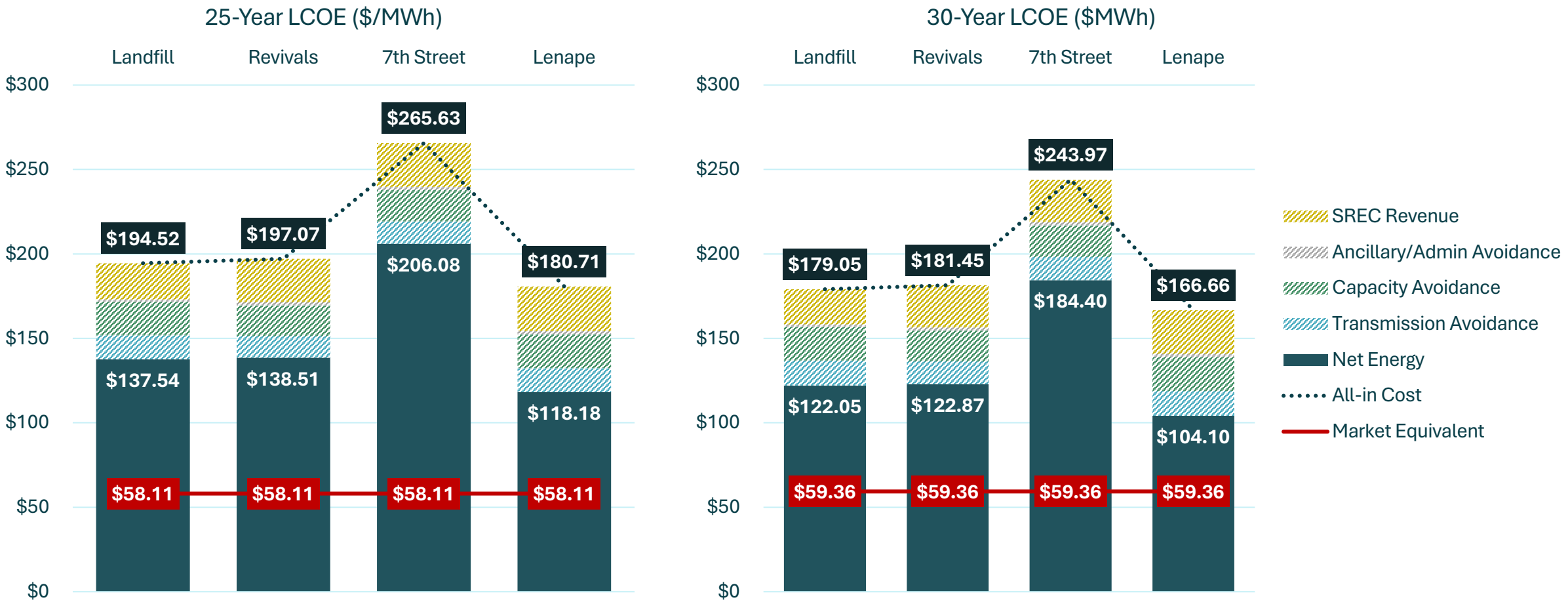






NET ENERGY COST SUMMARY

LEVELIZED COST OF ENERGY



Landfill interconnection total includes $98K in Labor from Borough employees ($8.5/MWh – 30 Yr LCOE, $7.8/MWh – 25 Yr LCOE)
Revivals interconnection total includes $76K in Labor from Borough employees ($22.9/MWh – 30 Yr LCOE, $20.9/MWh – 25 Yr LCOE)
7th Street interconnection total includes $79K in Labor from Borough employees ($42.0/MWh – 30 Yr LCOE, $38.3/MWh – 25 Yr LCOE)
Lenape interconnection total includes $99K in Labor from Borough employees ($10.7/MWh – 30 Yr LCOE, $9.7/MWh – 25 Yr LCOE)

SUMMARY AND KEY TAKEAWAYS

Economic feasibility – the solar installations provided come at a significant premium to market, when all costs are included

- Generation output is not enough to justify all the supplemental costs required to install operational solar
- Excluding O&M, interconnection, and site remediation (Landfill), the larger sites (Landfill & Lenape) LCOEs are comparable to market
  - Assumes PJM will continue to allow BTMG cost avoidances in their current form for 20-30 years
  - Assumes SREC revenues + Ancillary & Admin cost avoidances will offset rates by an average ~$20/MWh over the next 30 years

Qualitative considerations

- Project benefits include clean, local, energy, partnership with a trusted local vendor, PJM cost avoidances & SREC revenue streams
- Limited future opportunities to receive tax incentives for solar developments
- Project risks include lack of performance guarantees, regulatory uncertainty tied to BTMG revenue streams, and land development/interconnection costs

From an economic perspective, GDS does not recommend pursuing these installations given the availability of lower-cost supply alternatives

- High financial risks to achieve projects that will serve 0.2-1.3% of annual energy requirements
- BOP holds regulatory risk surrounding PJM BTMG cost avoidance rules, risks related to low performance or post-warranty maintenance issues, and potentially with the risks associated with ITC/domestic content achievements

Given the economics, if the Borough elects to pursue a local demonstration project, GDS recommends limiting overall expenditures through a smaller-scale distributed site

Appendix

SOLAR SITE ANALYSIS PROCESS

GDS developed preliminary designs and applied a structured evaluation framework to qualitatively assess project sites.

- 27 Solar layout designs completed for 22 sites received
- Sites ranked based on four risk-factor criteria (cost, size, development risk, and Aesthetics and Community Risk

Gilmore and Associates estimated landfill remediation costs

Utility Engineers developed estimated interconnection costs

- Planning-level engineering evaluation of probable interconnection approaches, recommended service voltages, utility infrastructure impacts, and preliminary interconnection costs.

FIGURE 5 - APPROXIMATE PLACEMENT BASED UPON REMEDIATED SITE

FIGURE 2 - APPROXIMATE PLACEMENT OF SOLAR CANOPIES

*Helioscope© Solar Modeling Software utilized, Incorporated Tier One equipment selection, Local weather data

THIRD-PARTY PLANNING EXPENSES INCURRED

Vendor	Inv# / Date	Billing Period	Description	YTD Expenses
Gilmore & Associates	Inv#2602592 3/10/26	2/23/26-2/27/26	Analyze floodplain maps; Review East Rockhill Twp. and PB Ordinances in reference to installation of solar panels	$ 2,342.25
	Inv#2604020 4/9/26	3/2/26-3/24/26	Geotechnical and Structrual review and analysis of potential sites	$ 21,479.57
	Inv#2600279 5/18/26	3/30/26-4/30/26	Prepare EOPC for Landfill Site remediation; Analyze PB Ordinances in reference to solar installation at 790 W. Park Ave.	$ 2,308.50
				$ 26,130.32
GDS Associates			Project Kickoff, circuit loads & Sizing; Site evaluation & preliminary modeling & design; commentary on tax credit incentives	$ 9,670.00
	Inv# 0247975 3/23/26	1/31/26-2/27/26	Detailed review of sites, draft layout and potential output. Developing next steps for securing quotes from solar providers and commentary on tax credit incentives	$ 24,173.17
	Inv# 0248668 4/15/26	2/28/26-3/27/26	Site evaluation & selection; preliminary modeling & design and prepare RFI	$ 7,560.00
	Inv# 0249484 5/14/26	3/28/26-4/24/26	Site evaluation, modeling and design, preparation of RFI	$ 8,259.00
				$ 49,662.17
Utility Engineers	PERK26.01-001	1/1/26-1/31/26	Solar Committee Meeting	$ 537.34
				$ 537.34
			Total Incurred Expenses through 4/30/26	**$ 76,329.83**
	Estimated Additional Costs			
Utility Engineers	***Proposal Estimate***		Prepare site by site interconnection narratives, planning, pricing and recommended next steps	$ 8,400.00

CURRENT PORTFOLIO

CONTRACTED RESOURCES & EXISTING PURCHASES

Resource	Allocation		Term
NYPA Hydro	0.6 MW	$24.49 (2026 Cap Plan)	On-going
AMP Bright Mountain Solar	2 – 3 MW (Estimated)	$73.19-78.19 (Estimated Gross)	2028-2052

Term	Supplier	Size	Type	Delivery	Price $/MWh	Execution
2021-2027	CITI	1.5 MW	7x24	PPL Res. Agg.	$29.20/MWh	Fall 2018
2026-2030	Evergy	1.0 MW	7x24	PPL Zone	$25.98/MWh	Spring 2020
2028-2030	Evergy	1.5 MW	7x24	PPL Zone	$26.35/MWh	Spring 2020
2026-2030	BP	1.0 MW	7x24	PPL Zone	$42.58/MWh	Fall 2023
2026-2030	BP	1.5 MW	5x16	PPL Zone	$48.58/MWh	Fall 2023
2026-2028	Shell	Varies	Monthlies	PPL Zone	$50.65/MWh	Spring 2025