

Town of Barrington

Response to Request for Proposals
for Barrington's Town Hall Municipal Photovoltaic (PV) Installation

February 1st, 2024

ReVision Energy Inc.
An Employee-Owned Solar Company
Brentwood & Enfield, NH
www.ReVisionEnergy.com
(603) 679-1777

Certified



Corporation

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Cover Letter

Dear Town of Barrington,

ReVision Energy is New Hampshire's leading solar design, installation, and service company successfully completing more than 18,000 clean energy system installations since 2003. We are committed to accelerating the region's transition to clean, renewable energy while saving our customers money on their energy expenses. We are a local employee-owned certified B. Corp staffed with offices in Brentwood and Enfield, New Hampshire; South Portland and Montville, Maine; and North Andover, Massachusetts. Our frequent inter-office collaboration ensures the highest level of technical expertise found in the Northeast. ReVision's installations currently span New Hampshire, Maine, Massachusetts, and Vermont. To ensure maximum performance and longevity in a relatively harsh northern climate, each system is designed by our in-house engineering team trained at top universities (including Dartmouth, MIT, Brown, UMaine, and UNH) and installed by our own team of licensed, certified, and highly trained solar technicians operating out of each branch. ReVision Energy has been listed in Solar Power World's Top 500 North American Solar Contractors list since 2014 and in 2022 was named #1 Solar Contractor in ME and NH and #9 nationwide. With the recent acquisition of SunBug Solar in Massachusetts, we currently have over 450 full-time employee-owners in our five locations ensuring unparalleled in-house expertise in all aspects of solar development, design, and installation.

ReVision Energy's unmatched experience installing commercial and municipal solar arrays in New Hampshire makes us the prime candidate to design and install the solar electric system outlined in Barrington's recent Request for Proposals. With the experience of over 350 commercial and municipal solar installations in NH, we understand the technical aspects, motivating factors, and code compliance for New Hampshire commercial and municipal facilities to install PV solar. ReVision Energy is incredibly proud of the numerous solar energy systems we have installed for large municipalities in NH including Keene, Lebanon, Hanover, Nashua, Hooksett, Claremont, Dover, Durham, and North Conway. The systems we install are on schedule and completed with a high attention to detail resulting in quality craftsmanship.

ReVision Energy is proposing a 43.6kW DC / 34.2kW AC system for Barrington's Town Hall. The proposed system will feed an estimated 41,149kWh of clean energy into the building's existing Eversource electric service annually. We are willing to honor our pricing for the referenced 90 days, and once under contract (with deposit in hand) our Development and Project Management Teams will be able to hit the ground running, setting us up for a hopeful early summer 2024 installation.

The clean energy transformation of northern New England would not be possible without forward-thinking entities like the Town of Barrington leading the way and making green energy part of the standard municipal planning process. We would be honored to be chosen as Barrington's trusted solar partner and bring our experience working with New Hampshire commercial, municipal, and residential clients to complete the project in a timely and cost-effective manner.

We look forward to discussing our proposal with you further, and if you have any questions, we are more than happy to provide additional information.

David Webb
Employee-Owner, C&I Sales Lead
ReVision Energy, a Certified B-Corp
7 Commercial Dr. Brentwood, NH 03833

Executive Summary

Project Design Summary

With information provided in the RFP Documents, data collected during a site visit to 4 Signature Drive in Barrington, and guidance from ReVision Energy's in-house engineering team; we have designed a 43.6kW DC / 34.2kW AC flush mounted rooftop solar array for the new Town Hall that will generate an estimated 41,149kWh of clean energy for the town in the first year.

The proposed roof mounted array will utilize an IronRidge racking system with a flashed foot attachment point. We are proposing two rows of modules on each of the array/roof sections to avoid any snowshed issues/need for snowguards, while also allowing plenty space for future maintenance on rooftop equipment and vents. This design approach ensures a cleaner looking array, since the roof has so many existing obstructions. The roof mounted design utilizes Tier-1 UL Listed REC solar modules at 400-watt efficiency; three SolarEdge Inverters; SolarEdge Optimizers, Revenue-Grade Meter; and associated equipment for roof mounted PV systems interconnecting to a commercial single-phase service. Major system components are summarized below along with warranty periods and projected lifespans. Our design assumes no utility upgrades are required with an interconnection into the existing 400A single-phase electric service. The array's design will meet all required building, electrical, and fire codes.

Our in-house Engineering team uses industry leading HelioScope software and the latest available satellite and LIDAR imagery to custom design each system and model production on an hourly, daily, monthly, and annual basis utilizing the nearest TMY federal weather dataset for New Hampshire. Our Year 1 production estimates for the system are based on the specific pitch, azimuth, and other design details (including pictures from the site visit). Annual system output degradation is conservatively modeled at 0.5% based on NREL analysis of 40-year-old existing solar assets as well as our own experience installing and monitoring thousands of solar arrays in the region. We are being VERY conservative modeling tree shading and are hopeful that production ends up higher than currently modeled (depending on how many of those tall pines were thinned during clearing).

Major Equipment	Warranty Period	Commercial Lifespan
REC 400W Solar Modules	25 years	40+ years
SolarEdge Inverters	12 years	15+ years
IronRidge Rooftop Racking System	25 years	40+ years
Workmanship	5 Years	

Financial Overview

Turnkey Purchase

The turnkey fully installed project cost of the 43.6kW DC / 34.2kW AC solar array for Barrington is \$124,796. The turnkey project cost includes design, structural review, project management, interconnection, permitting, installation, procurement, and commissioning. Thanks to the Inflation Reduction Act of 2022 (details in next section), the town is now eligible for a direct payment of the Investment Tax Credit for solar installations. This federal reimbursement, worth 30% of project cost or ~\$37,000, plus a modest state rebate of \$6,840, would bring the net investment for Barrington down to \$80,956.

The proposed 43.6kW DC array will generate an estimated 41,149kWh/year, offsetting ~97% of the Town Hall's historic annual kWh usage (usage numbers from electric bill shared for July of 2023). For our proposal below, we are conservatively modeling savings based off the Nextera supply rate of \$.09442/kWh shown on your July bill. The 24-month Eversource average for non-supply rate (Transmission, Distribution, etc.) is modeled at \$.0342. Comparing the historic usage vs. our proposed array's generation numbers shows that ~78% of generation will be used "behind the meter" monthly, with the remaining 22% of annual generation being exported or net-metered to the grid. A kWh used behind the meter is modeled to hold the full value of \$.1286/kWh (\$.09442 supply + \$.0342 other charges), while an exported kWh is modeled at \$.115/kWh. This brings the blended value of solar down to \$.1256/kWh generated. This should be a very conservative model, since the Eversource 24-month averages run much higher than your current 3rd party supply rate. If it is helpful, we are happy to adjust these assumptions to make sure the town is comparing savings numbers/proposals accurately. As a side note, the town will want to return to Eversource's default supply rate once solar is installed.

A helioscope production model can be shared upon request (trying to keep it under 25 pages here!)

Inflation Reduction Act of 2022

Late in 2022, the federal government passed a historic piece of climate legislation. The Inflation Reduction Act of 2022 (IRA) represents the largest-ever federal government commitment to tackling climate change and accelerating the clean energy transition. Included in the act are several provisions to boost access to the incentives for renewable energy projects that may be of interest to Belknap County.

Since it was first introduced in 2006, the solar investment tax credit (ITC) has enabled taxpaying entities to reduce their federal income tax liability by up to 30% (stepping down each year to 10% in 2024 and beyond) of the basis-eligible cost of a solar investment while also taking advantage of MACRS and/or Bonus depreciation. Non-taxpaying entities have lacked access to the ITC except by indirect means of a PPA, financed by taxpaying investors.

Now, tax-exempt nonprofit entities like municipalities and nonprofits may access the ITC via a new "direct pay" provision by receiving a 100% government rebate for the ITC value (increased to 30% for the next 10 years at least).

The Treasury Department has started to provide guidelines for how this process will work. Our Legal team is dedicated to fully understanding the guidelines, and helping our nonprofit customers go through the process to ensure the 30% payment. We are closely monitoring the rulemaking process and are happy to keep Barrington informed of the rules and options as more details emerge.

Turn-key Project Proposal



Town of Barrington Solar

For Contract Proposal for Barrington's Town Hall Solar RFP

Solar Design Summary

Project Size (DC)	109 Panels	43.6 kW
Project Size (AC)	2 Inverters	34.2 kW
Annual Generation (kWh)		41,149

Investment Summary

Turnkey System Cost (incl. Allowances)	\$124,796
Permitting & Site Preparation Allowance	\$2,353
Utility Applications & Upgrades Allowance	\$500
Average Annual O&M cost (Recommended)	\$0
Investment Tax Credit	-\$37,000
Depreciation Benefits	\$0
Rebate/Grant (Estimate)	-\$6,840
Net Investment	\$80,956

Pricing guaranteed for 30 days. Financing and lease options available.

Engineer's Rendering

For Contract Proposal Date
January 31, 2024



4 Signature Drive Barrington, NH 03825 (Satellite Data)

Project Savings/Revenue

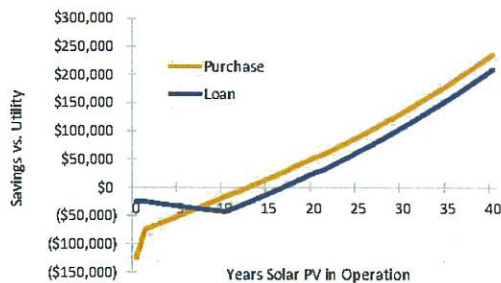
Energy Savings (Year 1)	\$5,169
Renewable Energy Credits (Year 1)	\$1,034
Simple Payback (Years)*	13
Purchase 25-Year Internal Rate of Return*	6.21%
25-Year Net Savings (Warranty Period)	\$89,872
40-Year Net Savings (Commercial Lifespan)	\$235,936

*Analysis assumes energy savings invested back into company (untaxed)

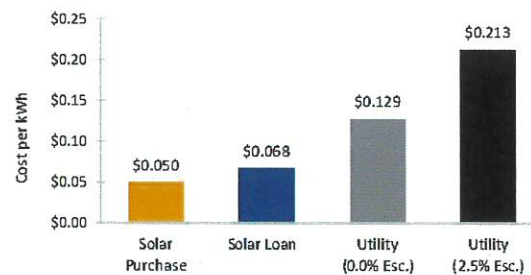
Environmental Benefits

Annual CO ₂ e Offset (pounds)	40,326
<i>Equivalent To...</i>	
Gallons of Gasoline Not Burned	2,058
Passenger Cars Removed From the Road	4
Pounds of Coal Not Burned	20,154
Tons of Waste Recycled	6

Solar Savings vs. Utility



Levelized Cost of Energy (40 Years)



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REVISION ENERGY

Turkey Solar Project Cash Flow - Town of Barrington

for Contract Proposal Date: 1/31/24

System Design & Pricing	
System Size in kW (DC)	43.60
System Size in kW (AC)	34.20
Annual kWh Generation (Year 1)	41,149
Annual Generation Derate	0.5%
Turkey System Cost	\$124,796
Permitting & Site Preparation Allowance	\$2,353
Utility Applications & Upgrades Allowance	\$500
Total System Cost incl. Allowances	\$124,796
Tax Credit-eligible Portion	\$0

Tax Assumptions	
State Tax Exempt Investment Tax Credit (ITC)	NH
Bonus Depreciation	Yes
Federal Tax Rate	30%
State Tax Rate	0%
Total Effective Tax Rate	0.0%
Total Depreciation Benefit	0.0%
Tax on Solar Project Income	No

Project Income	
Value of Solar (Y1)	\$0.1256
Utility Escalator	2.5%
Tariff Rate (\$/kWh)	\$0.1150
Tariff Term (years)	0
Y1 REC Volume	0
REC Price (\$/MWh)	\$90.00
REC Term (years)	10
REC Depreciation	5%
Y1 REC Management Fee	\$2.00
Total REC/Incentive Value	\$7.715

Annual Project Expenses	
Operators & Maintenance (O&M) 6 year average	\$0
Insurance	FALSE
Property Tax (generally exempt)	\$0
Land Lease (third party owned)	\$0
Meeting Fees, MISO (Maine)	\$0
Inverter Replacement (Year 21 only)	\$2,616

Loan Assumptions	
Loan Amount	\$99,837
Loan Term	10
Down Payment	\$24,959
Interest Rate	7.00%
Year 2 Reamortization	Yes

Net Metering/NEB Assumptions:	
Utility Company	Entireno
Utility Rate Class	G
Retail Electricity Rate (on-site)	\$0.1286
Net Metering/NEB Rate	\$0.1150
Net Metering/NEB Percent	22%

Year	Generation (kWh)	Value of Solar (kWh)	Avoided Utility Cost/Revenue	REC Value	O&M	Total Project Expense	Grant or Rebate	Tax Credit	Purchase Tax Benefits	Purchase Annual Cash Flow	Purchase Cum. Cash Flow	Annual Loan Payment	Loan Tax Benefits	Loan Annual Cash Flow	Loan Cum. Cash Flow
0															
1	41,149	\$0.1256	\$5,169	\$1,034	\$0	\$0	\$5,840	\$37,439	\$0	\$50,482	(\$24,796)	(\$13,910)	\$0	\$36,572	(\$24,959)
2	40,944	\$0.1287	\$5,271	\$967	\$0	\$0	\$0	\$0	\$0	\$50,238	(\$24,314)	(\$8,422)	\$0	\$52,183	(\$27,143)
3	40,729	\$0.1320	\$5,376	\$903	\$0	\$0	\$0	\$0	\$0	(\$8,422)	(\$51,797)	(\$8,422)	\$0	(\$2,143)	(\$29,285)
4	40,535	\$0.1353	\$5,483	\$842	\$0	\$0	\$0	\$0	\$0	\$6,326	(\$55,471)	(\$8,422)	\$0	(\$2,096)	(\$31,381)
5	40,332	\$0.1386	\$5,592	\$786	\$0	\$0	\$0	\$0	\$0	\$6,378	(\$49,093)	(\$8,422)	\$0	(\$2,041)	(\$33,426)
6	40,131	\$0.1421	\$5,703	\$732	\$0	\$0	\$0	\$0	\$0	\$6,435	(\$42,659)	(\$8,422)	\$0	(\$1,987)	(\$35,453)
7	39,930	\$0.1457	\$5,816	\$681	\$0	\$0	\$0	\$0	\$0	\$6,497	(\$36,161)	(\$8,422)	\$0	(\$1,931)	(\$37,377)
8	39,732	\$0.1493	\$5,932	\$634	\$0	\$0	\$0	\$0	\$0	\$6,566	(\$29,585)	(\$8,422)	\$0	(\$1,886)	(\$39,192)
9	39,532	\$0.1530	\$6,050	\$589	\$0	\$0	\$0	\$0	\$0	\$6,639	(\$22,938)	(\$8,422)	\$0	(\$1,783)	(\$40,976)
10	39,334	\$0.1569	\$6,170	\$547	\$0	\$0	\$0	\$0	\$0	\$6,717	(\$16,239)	(\$8,422)	\$0	(\$1,680)	(\$42,680)
11	39,138	\$0.1608	\$6,293	\$507	\$0	\$0	\$0	\$0	\$0	\$6,793	(\$9,466)	(\$8,422)	\$0	(\$1,587)	(\$44,307)
12	38,942	\$0.1648	\$6,418	\$468	\$0	\$0	\$0	\$0	\$0	\$6,846	(\$2,528)	(\$8,422)	\$0	(\$1,502)	(\$45,854)
13	38,747	\$0.1689	\$6,546	\$430	\$0	\$0	\$0	\$0	\$0	\$6,893	(\$3,017)	(\$8,422)	\$0	(\$1,423)	(\$47,327)
14	38,553	\$0.1732	\$6,676	\$395	\$0	\$0	\$0	\$0	\$0	\$6,936	(\$3,501)	(\$8,422)	\$0	(\$1,349)	(\$48,724)
15	38,361	\$0.1775	\$6,808	\$364	\$0	\$0	\$0	\$0	\$0	\$6,974	(\$3,981)	(\$8,422)	\$0	(\$1,280)	(\$50,045)
16	38,169	\$0.1819	\$6,944	\$336	\$0	\$0	\$0	\$0	\$0	\$7,008	(\$4,458)	(\$8,422)	\$0	(\$1,216)	(\$51,289)
17	37,978	\$0.1865	\$7,082	\$311	\$0	\$0	\$0	\$0	\$0	\$7,082	(\$4,932)	(\$8,422)	\$0	(\$1,157)	(\$52,456)
18	37,788	\$0.1911	\$7,222	\$288	\$0	\$0	\$0	\$0	\$0	\$7,222	(\$5,405)	(\$8,422)	\$0	(\$1,103)	(\$53,548)
19	37,599	\$0.1959	\$7,366	\$268	\$0	\$0	\$0	\$0	\$0	\$7,366	(\$5,877)	(\$8,422)	\$0	(\$1,054)	(\$54,575)
20	37,411	\$0.2008	\$7,512	\$250	\$0	\$0	\$0	\$0	\$0	\$7,512	(\$6,348)	(\$8,422)	\$0	(\$1,010)	(\$55,544)
21	37,224	\$0.2058	\$7,662	\$233	\$0	\$0	\$0	\$0	\$0	\$7,662	(\$6,818)	(\$8,422)	\$0	(\$961)	(\$56,455)
22	37,038	\$0.2110	\$7,814	\$218	\$0	\$0	\$0	\$0	\$0	\$7,814	(\$7,287)	(\$8,422)	\$0	(\$917)	(\$57,308)
23	36,853	\$0.2162	\$7,969	\$204	\$0	\$0	\$0	\$0	\$0	\$7,969	(\$7,755)	(\$8,422)	\$0	(\$868)	(\$58,102)
24	36,669	\$0.2216	\$8,128	\$191	\$0	\$0	\$0	\$0	\$0	\$8,128	(\$8,222)	(\$8,422)	\$0	(\$814)	(\$58,836)
25	36,485	\$0.2272	\$8,289	\$179	\$0	\$0	\$0	\$0	\$0	\$8,289	(\$8,689)	(\$8,422)	\$0	(\$755)	(\$59,511)
26	36,303	\$0.2329	\$8,454	\$168	\$0	\$0	\$0	\$0	\$0	\$8,454	(\$9,156)	(\$8,422)	\$0	(\$691)	(\$60,126)
27	36,121	\$0.2387	\$8,622	\$158	\$0	\$0	\$0	\$0	\$0	\$8,622	(\$9,622)	(\$8,422)	\$0	(\$622)	(\$60,684)
28	35,941	\$0.2447	\$8,793	\$149	\$0	\$0	\$0	\$0	\$0	\$8,793	(\$10,088)	(\$8,422)	\$0	(\$549)	(\$61,189)
29	35,761	\$0.2508	\$8,968	\$141	\$0	\$0	\$0	\$0	\$0	\$8,968	(\$10,553)	(\$8,422)	\$0	(\$472)	(\$61,636)
30	35,582	\$0.2570	\$9,146	\$134	\$0	\$0	\$0	\$0	\$0	\$9,146	(\$11,018)	(\$8,422)	\$0	(\$381)	(\$62,028)
31	35,404	\$0.2635	\$9,328	\$128	\$0	\$0	\$0	\$0	\$0	\$9,328	(\$11,483)	(\$8,422)	\$0	(\$276)	(\$62,359)
32	35,227	\$0.2703	\$9,512	\$123	\$0	\$0	\$0	\$0	\$0	\$9,512	(\$11,947)	(\$8,422)	\$0	(\$159)	(\$62,624)
33	35,051	\$0.2776	\$9,702	\$119	\$0	\$0	\$0	\$0	\$0	\$9,702	(\$12,410)	(\$8,422)	\$0	(\$30)	(\$62,828)
34	34,876	\$0.2857	\$9,895	\$116	\$0	\$0	\$0	\$0	\$0	\$9,895	(\$12,872)	(\$8,422)	\$0	(\$133)	(\$62,975)
35	34,701	\$0.2948	\$10,092	\$114	\$0	\$0	\$0	\$0	\$0	\$10,092	(\$13,334)	(\$8,422)	\$0	(\$187)	(\$63,069)
36	34,528	\$0.2991	\$10,293	\$113	\$0	\$0	\$0	\$0	\$0	\$10,293	(\$13,795)	(\$8,422)	\$0	(\$251)	(\$63,108)
37	34,355	\$0.3055	\$10,497	\$112	\$0	\$0	\$0	\$0	\$0	\$10,497	(\$14,256)	(\$8,422)	\$0	(\$325)	(\$63,184)
38	34,183	\$0.3132	\$10,706	\$112	\$0	\$0	\$0	\$0	\$0	\$10,706	(\$14,717)	(\$8,422)	\$0	(\$408)	(\$63,200)
39	34,013	\$0.3210	\$10,919	\$112	\$0	\$0	\$0	\$0	\$0	\$10,919	(\$15,178)	(\$8,422)	\$0	(\$500)	(\$63,157)
40	33,843	\$0.3290	\$11,136	\$112	\$0	\$0	\$0	\$0	\$0	\$11,136	(\$15,639)	(\$8,422)	\$0	(\$600)	(\$63,053)

Pricing guaranteed for 30 days. This financial summary is provided for informational purposes only and is not intended to provide, and should not be relied on for, tax, legal or accounting advice.



Town of Barrington Solar

Electricity Load and Solar Analysis for Barrington's Town Hall Solar RFP

Solar Design and Net Metering

Project size (kW DC)	43.60
Year 1 generation (kWh)	41,149
Annual facility consumption	42,374
Annual solar offset	97.1%
Monthly solar net metering (per year)	22%

Utility and Cost Assumptions

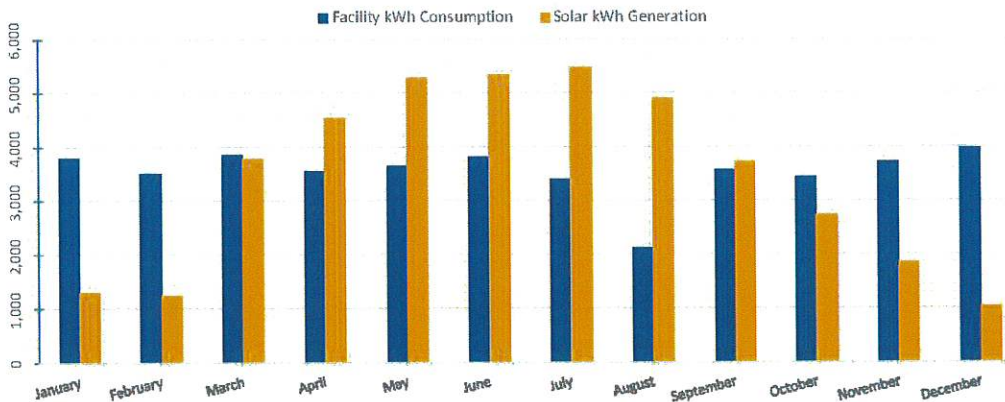
Utility company	Eversource
Utility rate class	G
Mandatory utility rate/kWh	\$0.0342
3rd-party supplier	Nextera
Supply rate/kWh	\$0.0944
Total electricity cost/kWh	\$0.1286
NE utility inflation, 1990-2018	2.6%
Projected inflation, 2018-2040	2.5%

Monthly Cost and Savings Analysis

Month	Facility kWh Consumption	Current Average Cost	Solar kWh Generation	Future Solar Savings*	Future Average Cost	Monthly Solar Offset
January	3,801	\$489	1,305	\$164	\$325	34.3%
February	3,515	\$452	1,241	\$156	\$296	35.3%
March	3,856	\$496	3,780	\$475	\$21	98.0%
April	3,546	\$456	4,530	\$569	-\$113	127.7%
May	3,642	\$468	5,281	\$663	-\$195	145.0%
June	3,808	\$490	5,337	\$670	-\$181	140.2%
July	3,395	\$437	5,471	\$687	-\$251	161.1%
August	2,119	\$273	4,892	\$614	-\$342	230.9%
September	3,568	\$459	3,707	\$466	-\$7	103.9%
October	3,427	\$441	2,730	\$343	\$98	79.7%
November	3,724	\$479	1,846	\$232	\$247	49.6%
December	3,973	\$511	1,030	\$129	\$382	25.9%
Total	42,374	\$5,449	41,149	\$5,169	\$281	97.1%

*Values represent Year 1 savings projections based on expected generation and value of solar. Actual savings may differ.

Monthly Facility Load and Solar Offset



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Project Schedule

There are a handful of variables that will dictate the install schedule/timeline, but we anticipate the range to be between 4-7 months from contract through completion. If chosen as Barrington's vendor for this solar installation, you could expect to see this rough project timeline.

Execute Contract	February/early March 2024
Schedule Technical Site Visit	March 2024
Submit Interconnection Application	March 2024
Finalize Construction Documents	Spring 2024
Procure Equipment	Spring 2024
Start Installation	Late spring/Summer 2024
Complete Installation and Commissioning	Summer 2024

*Schedule may be delayed by contract delays, permitting approvals, weather, and Utility Interconnection hurdles.

Payment Schedule

We would ask for 1/3rd the total project cost as the deposit, 1/3rd upon mobilization to site, and remaining balance upon mechanical completion.

Project Team Personnel

ReVision Energy's project team for Barrington's solar project brings over a century of combined experience in the relevant areas outlined in the RFP. ReVision consciously eschews organizational hierarchies by practicing a unique model of distributed leadership and team-based collaboration on key projects like this. The following employee-owners will have direct involvement in performing the requisite project development and management services, along with our highly qualified solar electricians and apprentices (in-house and contracted NABCEP-certified installers) during the final construction phase. Brief resumes of the key project team members can be furnished upon request.

Name	Title	Role
David Webb	C&I Sales Lead	Project lead
James Hasselbeck	Chief Operations Officer	Operations team lead
Michelle Tham	Corporate Counsel	Legal/PPA contract lead
Becca Austin	Director of Engineering	Design and engineering lead
Travis Genatossio	Commercial Project Mgr.	Construction lead
Jay Pasanen	Master Electrician	Electrical/O&M lead
Megan Ulin	Permitting & Contracts Mgr.	Permitting/interconnection lead

As noted in the Executive Summary, ReVision's authorized project lead for Barrington's PV project is David Webb, NH C&I Sales Lead, who lives in Merrimack with his wife Jess, son Max, daughter Marley, and furry friend Louie. David can be reached directly at (603) 318-2922 or dwebb@revisionenergy.com.

References

Town of Lee Transfer Station

ReVision Energy installed a 93kW DC solar array on the Transfer Station building in Lee, NH in 2023. The Town of Lee is serviced by two electric utilities, Eversource and NH Electric Co-op (NHEC). The Transfer Station, located in NHEC territory, produces enough electricity to offset the annual electricity usage of all municipal buildings in NHEC through a group net metering agreement. The Town's array was financed through a Power Purchase Agreement (PPA), allowing taxpayers to pursue the solar project at no upfront cost.

Project Location: 11 Recycling Center Road, Lee, NH 03861

Commercial Operation Date: May 2023

Project Details:

- Energy generation: 102,897 kWh/year
- Major equipment: (232) QCELLS 400W solar modules; (1) SolarEdge 50K and (1) SolarEdge 17.3K inverter, Iron Ridge XR100 racking, and SolarEdge monitoring

Reference: Andy Robertson, Town Administrator

Contact details: townadministrator@leenh.org; 603-659-5414, Ext 312; 249 Calef Highway, Lee, NH 03861



Oyster River School District

Oyster River Cooperative School District began their solar journey with ReVision Energy in 2017 when ReVision installed a 22kW array on the district's maintenance building. When it came time to build a new Middle School, the Oyster River Cooperative School District stepped up their sustainability commitments to become a model for what integrated sustainability can look like in public schools. Opened in 2022, the new middle school building is on track to be one of the largest net-positive energy school buildings in New England. ReVision Energy installed 645kW of solar at the school. The project involved ballasted solar arrays on the roof of the building as well as a solar bus port in the parking lot. Combined, they produce 130% of the energy needed of the building.

Project Location: 1 Coe Drive, Durham, NH 03824

Commercial Operation Date: December 2021

Project Details:

- Energy generation: 697,000 kWh/year
- Major equipment: (1450) REC445 solar modules; (5) CPS SCA50, (2) SE 100K, and (1) SE33.3K inverters, Ecofoot 2+ ballasted racking and RBI carport racking, Power Dash RGM
- Completed on budget and, despite delays outside of our control on the bus port steel, the overall project was completed within stated timelines.

Reference: Dr James Morse, Superintendent

Contact details: jmorse@orcscd.org; 603-868-5100; 36 Coe Drive, Durham, NH 03824



Nashua Municipal & School District Portfolio

ReVision installed three rooftop solar arrays totaling 641 kW (DC) for the City of Nashua in Fall 2019 after winning a competitive RFP in Spring 2019. The systems at the City Transit Garage, Lake Street Fire Station, and Conway Ice Arena constitute the first of multiple phases of planned solar installations by the City and School District to meet its stated goal of 100% carbon-neutral by 2050. The first two school arrays, 660kW at Fairgrounds Middle School and 200kW at Dr. Crisp Elementary School, were installed in 2020. Each of the arrays utilizes a different type of mechanical attachment to match the different roof types (flat rubber membrane, flat corrugated metal, pitched standing seam). The projects were financed by a Nashua-based impact investor through ReVision Solar Impact Partners under a standard PPA, which generates immediate cost savings for taxpayers.

Project Locations: 5 Stadium Drive / 9 Riverside Street / 177 Lake Street, Nashua / 50 Arlington St / 27 Cleveland St

Commercial Operation Dates: December 2019, December 2020

Project Details:

- Energy generation: 674,196 kWh/year (municipal), 987,000kWh/year (schools)
- Major equipment: REC 320W and 350W solar modules, SolarEdge three-phase inverters and RGM, Ecolibrium Ecofoot 2+ ballasted and IronRidge pitched racking.
- Completed on budget and on schedule.

References:

Municipal Buildings: Doria Brown, Nashua Energy Manager, brownd@nashuanh.gov, (551) 795-5502, 229 Main Street, Nashua, NH 03060

School District: Shawn Smith, Facilities Manager, smithsha@nashua.edu, (603) 589-2785



Solar PV Qualifications

Design, Engineering, and Procurement

ReVision Energy's Design & Engineering team has completed designs for over 7,000 commercial, industrial, and institutional (CI&I) solar projects, including permitting and construction plan sets for hundreds of fully installed arrays since 2003. Our design process seeks to optimize clients' financial goals, system reliability and longevity, and environmental performance by using industry standard Helioscope production modeling software, GIS mapping and physical/drone site surveys, CAD electrical design tools, client electricity load profiles, and decades of federal weather data for the local area. We ensure every project meets or exceeds standards set by the National Electric Code (NEC), the North American Board of Certified Energy Practitioners (NABCEP), and local inspectors.

As part of our commitment to technical excellence and innovation, ReVision has tested and deployed solar modules from over a dozen Bloomberg NEF-certified Tier 1 manufacturers in the United States, Canada, Europe, and Asia. These Tier 1 solar cells enjoy the industry-leading 25-year production warranty. We have seen an extremely low service/recall rate affecting a fraction of one percent of the more than 200,000 modules we have installed in northern New England to-date. Our solar manufacturing partners include but are not limited to: QCELLS, a solar energy company headquartered in Germany and South Korea with manufacturing across the world, including the largest solar factory in the Western Hemisphere located in Dalton, Georgia, USA; and Renewable Energy Corporation (REC Group), a vertically-integrated European solar energy company headquartered in Norway with manufacturing in Singapore.

ReVision also deploys industry-leading inverters and power optimizers from SMA, SolarEdge, and Chint Power Systems (CPS), and the most durable mounting and racking equipment on the market from RBI Solar, IronRidge, PanelClaw, and Ecolibrium. To share best practices and ensure consistent access to the most recent solar equipment on the market, ReVision co-founded the nationwide Amicus Solar Cooperative, through which we negotiate directly with solar equipment manufacturers in the United States and abroad.

Policy Engagement & Workforce Development

As the leading full-service solar developer and installer in New Hampshire, ReVision Energy is actively engaged in policy advocacy with state lawmakers and the Public Utilities Commission (PUC) to remove as many artificial barriers to clean energy deployment in state as possible for the benefit of ratepayers, taxpayers, and the renewables industry.

ReVision is also deeply committed to addressing local workforce challenges and providing living-wage clean tech jobs that can keep our young people in state and provide meaningful career opportunities for those who may not seek or be able to afford a traditional college degree. In Fall 2018, we launched the ReVision Energy Technical Center, a first-in-the-nation in-house training program for solar electricians. More than fifty full-time electrical apprentices currently participate in the four-year program to become a certified electrician while earning a strong wage and enjoying the full benefits of employee-ownership at ReVision.

Permitting & Utility Interconnection

Our in-house permitting and administration team has successfully shepherded thousands of solar projects through the local, state, and/or federal permitting process in a majority of New Hampshire's 234 cities and towns. The team is adept at navigating the diverse local permitting requirements on our clients' behalf, including preparing detailed engineering plan sets and appearing before local zoning, planning boards, historic district commissions, fire commissions, etc. when appropriate.

In addition to local permitting, our experienced commercial project managers work closely with the NH Department of Environmental Services (DES) on Alteration of Terrain permits and related stormwater management, shoreline protection, and wetlands requirements. Where necessary, we contract with experienced NH-based civil and environmental engineering firms, such as Horizons Engineering and Doucet Survey, to expedite the permitting process.

Our team also takes direct responsibility for filing utility interconnection applications and securing approvals to interconnect to the LDC distribution system on behalf of our clients in all four of the state's electric utility service territories. We maintain close working relationships with key distributed generation personnel at Eversource, Liberty, Unitil, and NHEC. Design and interconnection strategies are informed by ReVision's careful analyses of clients' historic electricity load and resulting financial models for onsite consumption vs. net metering. We are accustomed to navigating complex interconnection challenges on behalf of clients with larger ground-mounted systems, including designing and managing utility service upgrades/service drops, transformer upgrades, etc.

Finally, ReVision secures state Renewable Energy Fund rebates for each of our eligible clients from the NH Public Utility Commission, where we also engage in various solar regulatory dockets on behalf of the NH solar industry.

Site Mobilization & Installation

ReVision Energy's in-house installation teams of licensed electricians and apprentices have installed hundreds of commercial, industrial, and institutional (CI&I) solar energy systems across New Hampshire, Massachusetts, and Maine since 2003 as part of our growing portfolio of over 18,000 commercial and residential clean energy systems.

ReVision's commercial project managers (certified master/journeyman electricians) begin the CI&I construction process by conducting detailed technical site evaluations to verify electrical infrastructure, roof or ground site conditions, staging locations, interconnection strategies, etc. Once the final design and engineering, procurement, and permitting are complete, the commercial project managers mobilize to site with the installation foreman and team, who follow detailed OSHA safety protocols and construction plans specific to each project.

Our installation professionals are also trained to meet or exceed the latest industry standards under the National Electrical Code for every aspect of construction, including wire management, trenching, cable raceways and interconnection to transformers and the utility distribution grid. The active installation period can last from one week to four months, depending on scale and complexity of a given project.

The project manager provides day-to-day oversight from contract through commissioning and coordinates closely with the client's facility personnel to determine the best available staging and installation strategies that will not interfere with regular onsite operations of the facility. Following installation, we manage the final inspections, commissioning, and REC aggregation process so that all installed systems are placed into commercial operation without delay.

Operations & Maintenance

ReVision's in-house Operations and Maintenance (O&M) service division actively monitors and serves more than 250 commercial solar energy systems installed throughout northern New England, including the dozens of large-scale municipal projects we have installed to date and numerous systems owned by third-party investors. As part of the final design and project closeout, we develop a detailed, site-specific O&M plan to maximize system longevity and productivity. Our O&M technicians (certified master electricians) all have multiple years of experience installing and maintaining solar energy systems and have access to the resources of an organization with hundreds of years of combined solar experience.

Our standard O&M process is to monitor system performance every month and quickly mobilize service personnel to address any issues. Organizations such as Dartmouth College and New Hampshire municipalities like Claremont, Dover, Durham, Hanover, Keene, Lebanon, and Nashua all rely on ReVision for maintenance services on their solar systems.

A detailed listing of our O&M Service Offerings is available upon request.

Each ReVision solar energy system comes standard with detailed production monitoring and reporting capabilities enabled by our SMA, Solar Edge, and other industry-leading inverters that our installation team sets up on behalf of each client. By applying module-level monitoring, we make it possible for our clients to track the real-time system performance of each individual solar panel and rapidly identify any performance issues that may occur from time to time. In addition to the standard monitoring offers available on any internet-connected device, certain clients opt for public display monitors and/or websites, which we are pleased to provide through our Marketing department as a means of public/community engagement. Our O&M department also provides real-time remote monitoring and onsite inspections for our portfolio of hundreds of municipal and commercial solar arrays and can dispatch service technicians around the clock to meet clients' needs.

Community Investment

As a Certified B Corporation, ReVision Energy is committed to operating our business as a force for positive social change. We carefully select the members of our team based not only on their skill and expertise but also on their commitment to our mission of solving the environmental problems caused by fossil fuels while alleviating economic and social injustice. All employee owners have paid volunteer hours to devote to community causes of their choosing and the company tackles larger charitable initiatives such as:

- ReVision supported the Harbor Homes Veterans Housing project in Plymouth, NH with a \$100,000 pledge through CDFA
- ReVision supported NH Solar Shares, a low-income community solar project, by pledging \$25,000 through CDFA and providing design and installation support
- ReVision donated over 100 solar panels to enable the 101 kW (DC) solar array for the Children's Museum of New Hampshire in Dover
- ReVision fundraised and committed company resources to donate fully-installed solar energy systems to Nashua PAL and the Crossroads House shelter in Portsmouth
- ReVision's in-house PPA program, ReVision Solar Impact Partners, has provided below-market financing and secured grants for dozens of New Hampshire nonprofits including public housing developments, mobile home communities, soup kitchens, and schools

O&M Package details for 43kW System



OPERATIONS AND MAINTENANCE

Service Packages 2023

1 kW DC to 50 kW DC

ReVision's O&M service packages are designed to optimize system performance and protect the quality and longevity of your solar energy investment. We do this in a cost-effective manner by offering customized packages specific to the size of your solar energy system that include the appropriate frequency of preventative system inspections and remote performance monitoring.

"Major" System Inspections focus both on enhancing the system's structural and electrical integrity AND optimizing system performance. "Minor" System Inspections are less intensive and focus solely on optimizing system performance.

By incorporating Minor System Inspections into maintenance schedules, system owners can maximize the benefits of their solar energy system by minimizing maintenance costs while feeling confident that their system is performing optimally.

Performance Package

This maintenance package includes weekly performance monitoring and has a Major System Inspection every six years with no preventative inspections in between.

Performance Package Maintenance Schedule

SERVICE ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Major System Inspection	✓					
Weekly Performance Monitoring	✓	✓	✓	✓	✓	✓
Remote Troubleshooting	✓	✓	✓	✓	✓	✓
Guaranteed Response Time	✓	✓	✓	✓	✓	✓
Annual Production Report	✓	✓	✓	✓	✓	✓
Annual Price*	\$1,620	\$390	\$390	\$410	\$410	\$410

6-YEAR AVERAGE ANNUAL PRICE: \$805

Premium Package

This maintenance package includes weekly performance monitoring and has a Major System Inspection every three years with no preventative inspections in between.

Premium Package Maintenance Schedule

SERVICE ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Major System Inspection	✓			✓		
Weekly Performance Monitoring	✓	✓	✓	✓	✓	✓
Remote Troubleshooting	✓	✓	✓	✓	✓	✓
Guaranteed Response Time	✓	✓	✓	✓	✓	✓
Annual Production Report	✓	✓	✓	✓	✓	✓
Annual Price*	\$1,620	\$390	\$390	\$1,701	\$410	\$410

6-YEAR AVERAGE ANNUAL PRICE: \$820

*Prices include escalators to account for inflation. Additional costs apply to systems that are located more than one hour from ReVision's nearest location or take additional time/equipment to access system components safely. ReVision's O&M team will provide final pricing.

An Employee-Owned Solar Company



Certificate of Insurance



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
1/8/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Dennis F. Murphy - Groton 201 Main Street Groton MA 01450		CONTACT NAME: Certificate Request Team PHONE (A/C No. Extn): 800-222-8711 FAX (A/C. No.): E-MAIL ADDRESS: certificateofinsurance@dfmurphy.com	
		INSURER(S) AFFORDING COVERAGE	
		INSURER A : Ohio Casualty Insurance Co.	NAIC # 24074
		INSURER B : Princeton Excess and Surplus Lines Insurance	10786
		INSURER C : Evanston Insurance Company	35378
		INSURER D : Union Insurance Co.	25844
		INSURER E : Acadia Insurance Co.	31325
		INSURER F : Houston Casualty Company	42374

COVERAGES **CERTIFICATE NUMBER:** 181628613 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVLD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER:	Y	Y	BKS59719598	7/1/2023	7/1/2024	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 15,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
D	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY	Y	Y	CAA5555813-10 MAA5556767-10	7/1/2023 7/1/2023	7/1/2024 7/1/2024	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ 1,000,000 PROPERTY DAMAGE (Per accident) \$ \$
B	UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ n	Y	Y	82A3FF0003048-02	7/1/2023	7/1/2024	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
E	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETARY/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y	N/A	WCA5555628-10	7/1/2023	7/1/2024	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
C F	Excess Liability Pollution Liability Professional Liab (E&O)			MCGX100842-00 HCC2370757 HCC2370757	7/1/2023 12/16/2023 12/16/2023	7/1/2024 12/16/2024 12/16/2024	5,000,000 2,000,000ea condition 2,000,000ea condition 5,000,000aggregate 5,000,000aggregate

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 pol MCGX100842-00 is excess over General Liability policy and Primary excess pol 82A3FF0003048-02. MCGX100842-00 is not excess over auto. ReVision Community Impact Partners LLC is a named insured on General Liab, Auto Liab, and Excess Liability policies
 Pollution and Professional Liability policy #HCC2370757 has a Policy Aggregate limit of 5,000,000.

the general liability and the Princeton Ins Co umbrella policy can provide additional insured status on a primary & noncontributory basis. the automobile, general liability, workcomp and the Princeton Ins Co policies can provide a waiver of subrogation

CERTIFICATE HOLDER Revision energy inc	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
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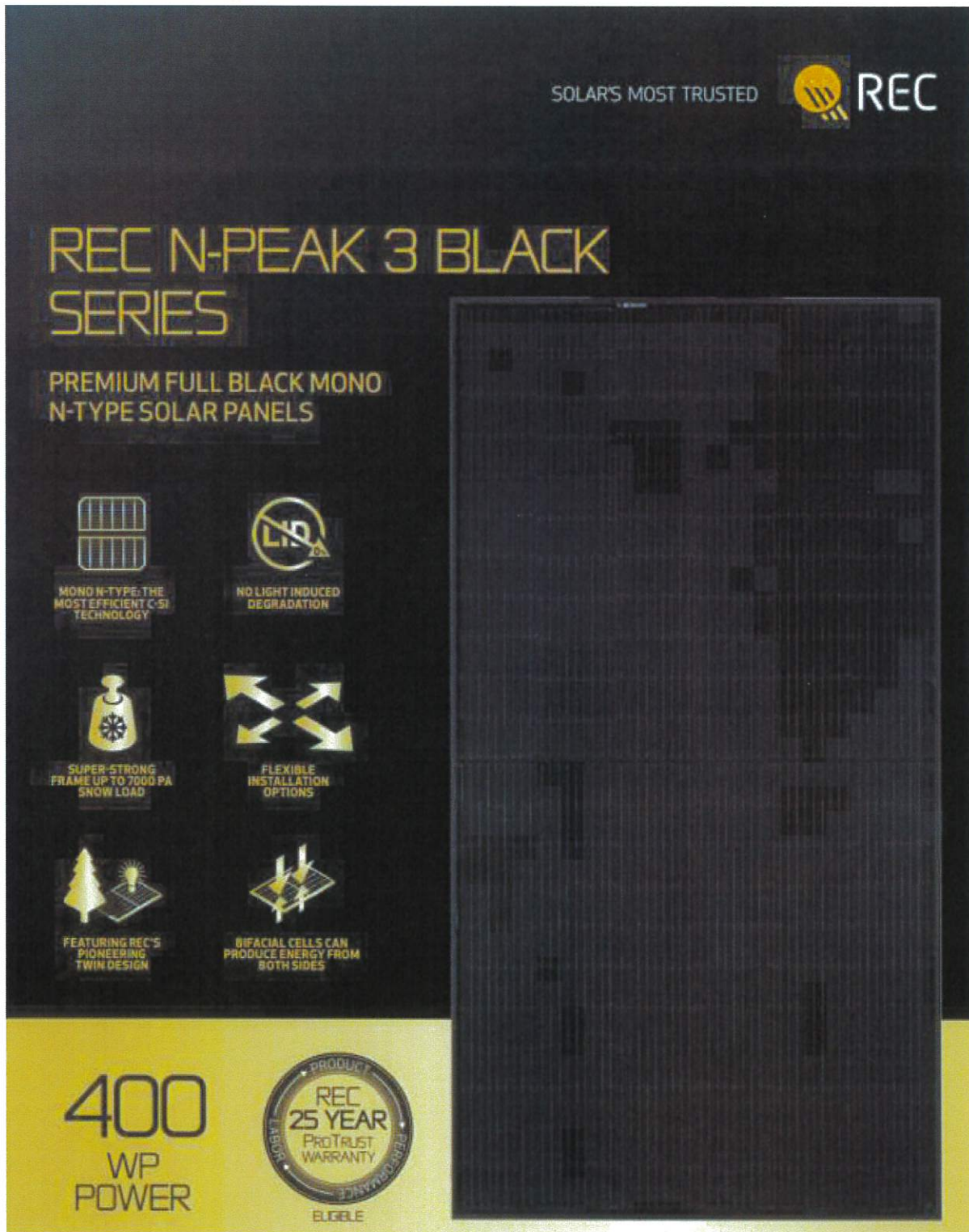
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ACORD 25 (2016/03)

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Cut Sheets for Select Major Components






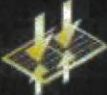
Modules




SOLAR'S MOST TRUSTED  **REC**

REC N-PEAK 3 BLACK SERIES

PREMIUM FULL BLACK MONO N-TYPE SOLAR PANELS

-  **MONO N-TYPE: THE MOST EFFICIENT C-SI TECHNOLOGY**
-  **NO LIGHT INDUCED DEGRADATION**
-  **SUPER-STRONG FRAME UP TO 7000 PA SNOW LOAD**
-  **FLEXIBLE INSTALLATION OPTIONS**
-  **FEATURING REC'S PIONEERING TWIN DESIGN**
-  **BIFACIAL CELLS CAN PRODUCE ENERGY FROM BOTH SIDES**

400 WP POWER

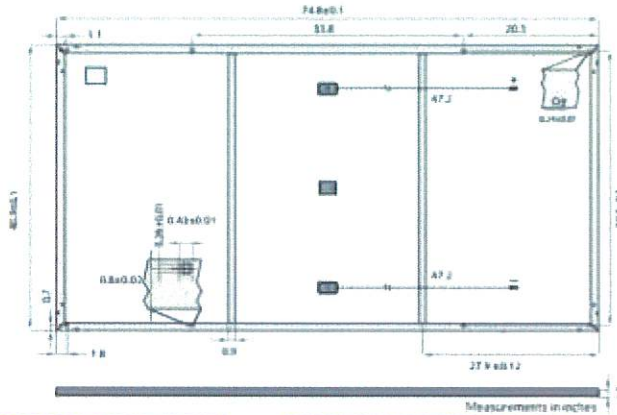
 **REC 25 YEAR PROTRUST WARRANTY**
ELIGIBLE

REC N-PEAK 3 BLACK SERIES PRODUCT SPECIFICATIONS



GENERAL DATA

Cell type:	132 half-cut mono c-Si n-type cells 6 strings of 22 cells in series
Glass:	0.03 solar glass with anti-reflective surface treatment in accordance with EN12150
Back sheet:	Highly resistant polymer (black)
Frame:	Anodized aluminum (black) with silver support bars
Junction box:	3-part, 3 bypass diodes, lead-free IP68-rated, in accordance with IEC 62790
Connectors:	Siemens MC4PV-KBT4/KST4 (4 mm ²) in accordance with IEC 62852, IP68 only when connected
Cable:	12 AWG (4 mm ²) PV wires, 47.2 ± 47.2 in in accordance with EN50618
Dimensions:	74.8 × 40.9 × 1.2 in (19.7 sq-ft)
Weight:	47.0 lbs
Origin:	Made in Singapore



ELECTRICAL DATA

Product Code: RECxxxNP3 Black

STC

Power Output - P _{max} (Wp)	390	400
Watt Class Sorting - (W)	0/+10	0/+10
Nominal Power Voltage - V _{mp} (V)	36.8	37.6
Nominal Power Current - I _{mp} (A)	10.60	10.64
Open Circuit Voltage - V _{oc} (V)	44.8	45.0
Short Circuit Current - I _{sc} (A)	11.31	11.39
Panel Efficiency (%)	19.8	20.3

NMOT

Power Output - P _{max} (Wp)	295	302
Nominal Power Voltage - V _{mp} (V)	34.4	35.2
Nominal Power Current - I _{mp} (A)	8.56	8.59
Open Circuit Voltage - V _{oc} (V)	41.9	42.1
Short Circuit Current - I _{sc} (A)	9.13	9.20

Values at standard test conditions (STC, air mass AM1.5, irradiance 1000 W/m² (1000 W/m²) temperature 77°F (25°C) based on a production spread with a tolerance of P_{max}, V_{mp}, & I_{mp} ±3% within one watt class. Nominal module operating temperature (NMOT, air mass AM1.5, irradiance 800 W/m², temperature 68°F (20°C), wind speed 3.3 m/s (8 mph) * Where xx indicates the nominal power class P_{max} at STC above.

CERTIFICATIONS (PENDING)

IEC 61215:2016, IEC 61730:2016, UL 61730
IEC 62804 PID
IEC 61701 Salt Mist
IEC 62716 Ammonia Resistance
UL 61730 Fire Type Class 2
IEC 62782 Dynamic Mechanical Load
IEC 61215-2:2016 Hailstone (1.37in)
ISO 14001, ISO 9001, IEC 45001, IEC 62941



TEMPERATURE RATINGS*

Nominal Module Operating Temperature: 44.3°C (±2°C)
Temperature coefficient of P_{max}: -0.34 %/°C
Temperature coefficient of V_{oc}: -0.26 %/°C
Temperature coefficient of I_{sc}: 0.04 %/°C

*The temperature coefficients stated are linear values

MAXIMUM RATINGS

Operational temperature:	-40 ~ +105°F
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (146 lbs/sq-ft)
Maximum test load (rear):	-4000 Pa (83.5 lbs/sq-ft)
Max series fuse rating:	25 A
Max reverse current:	25 A

* See installation manual for mounting instructions.
Design load = Test load / 1.5 (safety factor)

WARRANTY

	Standard	REC ProTrust	
Installed by an REC Certified Solar Professional	No	Yes	Yes
System Size	All	<25 kW	25-500 kW
Product Warranty (yrs)	20	25	25
Power Warranty (yrs)	25	25	25
Labor Warranty (yrs)	0	25	10
Power in Year 1	98%	98%	98%
Annual Degradation	0.25%	0.25%	0.25%
Power in Year 25	92%	92%	92%

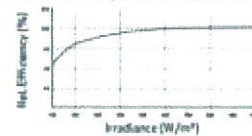
See warranty documents for details. Conditions apply

DELIVERY INFORMATION

Panels per pallet: 33
Panels per 40 ft GP/high cube container: 792 (24 pallets)
Panels per 53 ft truck: TBD

LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC



Available from

Founded in 1996, REC Group is an international pioneering solar energy company dedicated to empowering consumers with clean, affordable solar power. As Solar's Most Trusted, REC is committed to high quality, innovation, and a low carbon footprint in the solar materials and solar panels it manufactures. Headquartered in Norway with operational headquarters in Singapore, REC also has regional hubs in North America, Europe, and Asia-Pacific.



Specific terms subject to change without notice

Rev: PnL-05-11-01-01-01-A 07-22



Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US



INVERTERS

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking 99% weighted efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

solaredge.com





/ Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXXH-XXXXXBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min -Nom -Max (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min -Nom -Max (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.3 ¹⁾							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, Adjustable - 0.85 to 0.85							
GFDL Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380							Vdc
Maximum Input Current @240V ²⁾	8.5	13.5	13.5	16.5	20	27	30.3	Adc
Maximum Input Current @208V ²⁾	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600% Sensitivity							
Maximum Inverter Efficiency	93					99.2		%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

¹⁾ For other regional settings please contact SolarEdge support.

²⁾ A higher current source may be used, the inverter will limit its input current to the values stated.

/ Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US /
SE7600H-US / SE10000H-US / SE11400H-US

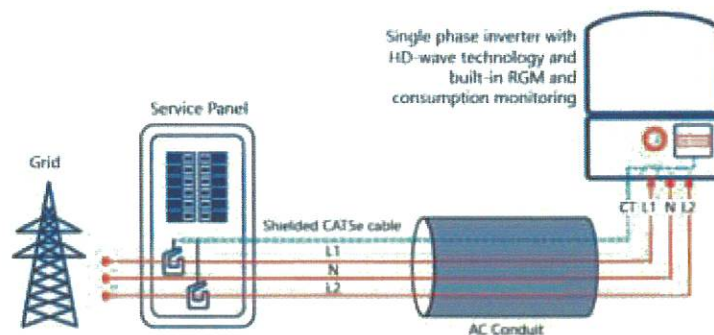
MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US
ADDITIONAL FEATURES							
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)						
Revenue Grade Metering, ANSI C12.20	Optional ¹⁾						
Consumption metering	Optional ²⁾						
Inverter Commissioning	With the SetApp mobile application using built-in Wi-Fi Access Point for Local Connection						
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect						
STANDARD COMPLIANCE							
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to TLI, M-07						
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (F-8)						
Emissions	FCC Part 15 Class B						
INSTALLATION SPECIFICATIONS							
AC Output Conduit Size / AWG Range	1" Maximum / 14-6 AWG				1" Maximum / 14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	1" Maximum / 1-2 strings / 14-6 AWG				1" Maximum / 1-3 strings / 14-6 AWG		
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174				21.3 x 14.6 x 7.3 / 540 x 370 x 185		
Weight with Safety Switch	22 / 10		25.1 / 11.4		26.2 / 11.9		38.8 / 17.6
Noise	< 25				< 50		
Cooling	Natural Convection						
Operating Temperature Range	-40 to +140 / -40 to +60 ³⁾						
Protection Rating	NEMA 4X (Inverter with Safety Switch)						

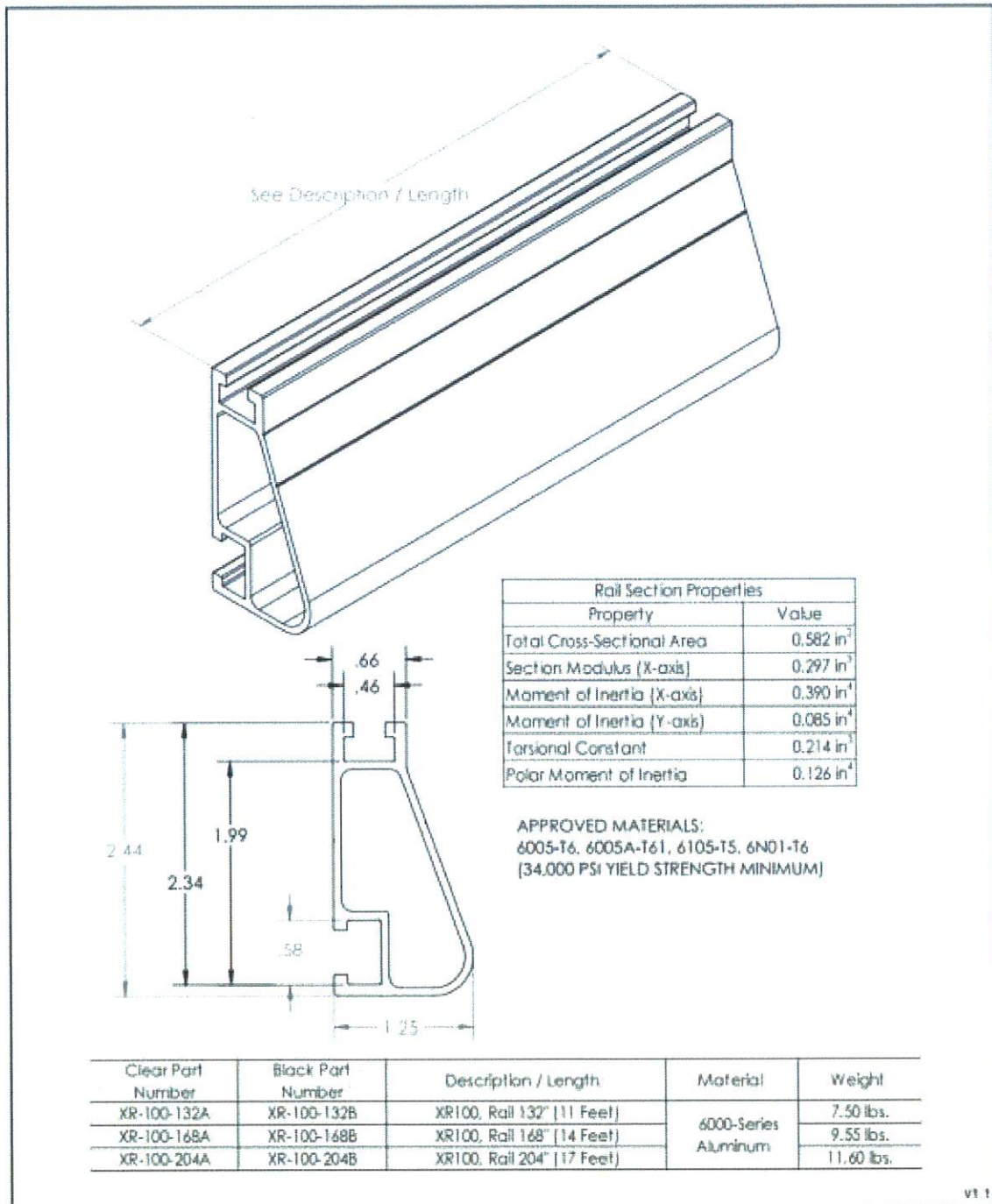
¹⁾ Inverter with Revenue Grade Meter P/N: SExxxxH-US000RNC4, Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxxH-US000R644. For consumption metering, current transformers should be ordered separately. SEACT0750-2001A-20 or SEACT0750-4001A-20, 20 units per box

²⁾ Full power up to at least 50°C / 122°F, for power derating information refer to <https://www.solaredge.com/sites/default/files/ie-temperature-derating-note-na.pdf>

How to Enable Consumption Monitoring

By simply wiring current transformers through the inverter's existing AC conduits and connecting them to the service panel, homeowners will gain full insight into their household energy usage helping them to avoid high electricity bills




XR100® Rail


Power Optimizer For Residential Installations

S440 / S500 / S500B / S650B



POWER OPTIMIZER

Enabling PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Mitigates all types of module mismatch loss, from manufacturing tolerance to partial shading
- Detects abnormal PV connector behavior, preventing potential safety issues*
- Faster installations with simplified cable management and easy assembly using a single bolt
- Module-level voltage shutdown for installer and firefighter safety
- Flexible system design for maximum space utilization
- Superior efficiency (99.5%)
- Compatible with bifacial PV modules



/ Power Optimizer For Residential Installations S440 / S500 / S500B / S650B

	S440	S500	S500B	S650B	UNIT
INPUT					
Rated Input DC Power ⁽¹⁾	440	500		650	W
Absolute Maximum Input Voltage (Voc)	60		125	85	Vdc
MPPT Operating Range	8 – 60		12.5 – 105	12.5 – 85	Vdc
Maximum Short Circuit Current (Isc) of Connected PV Module	14.5		15		A _{dc}
Maximum Efficiency		99.5			%
Weighted Efficiency		98.6			%
Overvoltage Category		II			
OUTPUT DURING OPERATION					
Maximum Output Current		15			A _{ac}
Maximum Output Voltage	60		80		V _{dc}
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)					
Safety Output Voltage per Power Optimizer		1 ± 0.1			V _{dc}
STANDARD COMPLIANCE⁽²⁾					
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3, CISPR11, EN-55011				
Safety	IEC62109-1 (class II safety), UL1741				
Material	UL94 V-0, UV Resistant				
RoHS	Yes				
Fire Safety	VDE-AR-E 2100-712:2018-12				
INSTALLATION SPECIFICATIONS					
Maximum Allowed System Voltage		1000			V _{dc}
Dimensions (W x L x H)	129 x 155 x 30		129 x 165 x 45		mm
Weight	720		790		gr
Input Connector		MC4 ⁽³⁾			
Input Wire Length		0.1			m
Output Connector		MC4			
Output Wire Length		(+) 2.3, (-) 0.10			m
Operating Temperature Range ⁽⁴⁾		-40 to +85			°C
Protection Rating		IP68			
Relative Humidity		0 – 100			%

(1) Rated power of the module at STC will not exceed the Power Optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed.

(2) For details about CE compliance, see [Declaration of Conformity – CE](#).

(3) For other connector types please contact SolarEdge.

(4) Power de-rating is applied for ambient temperatures above +85°C for S440 and S500, and for ambient temperatures above +75°C for S500B. Refer to the [Power Optimizers Temperature Derating Technical Note](#) for details.

PV System Design Using a SolarEdge Inverter ⁽¹⁾		SolarEdge Home Wave Inverter Single Phase	SolarEdge Home Short String Inverter Three Phase	Three Phase for 230/400V Grid	Three Phase for 277/480V Grid
Minimum String Length (Power Optimizers)	S440, S500 S500B, S650B	8	9	16	18
Maximum String Length (Power Optimizers)		25	20	50	
Maximum Continuous Power per String		5700	5625	11,250	12,750
Maximum Allowed Connected Power per String ⁽²⁾ (In multiple string designs, the maximum is permitted only when the difference in connected power between strings is 2,000W or less)		6,800 ⁽³⁾	See ⁽⁴⁾	13,500	15,000
Parallel Strings of Different Lengths or Orientations		Yes			

(1) It is not allowed to mix S-series and P-series Power Optimizers in new installations in the same string.

(2) If the inverter's rated AC power is maximum continuous power per string, then the maximum connected power per string will be able to reach up to the inverter's maximum input DC power. Refer to the [Single String Design Guidelines](#) application note.

(3) For inverters with a rated AC power ≥ 8000W that are connected to at least two strings.

DESIGN

CUSTOMIZE

CREATE



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Proposal for Barrington
Town Hall Solar

 **Staple**
Connect

CONNECT

COMMUNICATE