



Town of Chester Solar PV

Response to Request for Proposal (RFP 06-OCT-23)
for
Municipal Solar Development

November 21, 2023

ReVision Energy Inc.
An Employee-Owned Solar company
New Hampshire, Maine & Massachusetts
www.ReVisionEnergy.com
(603) 679-1777



November 21, 2023

Municipal Solar Project
RFP 06-OCT-23
Town of Chester
84 Chester Street
Chester, NH 03036
Attn: Debra Doder, Town Administrator

Dear Debra,

ReVision Energy is grateful for the opportunity to submit the attached proposal in response to the Town of Chester's *Request for Proposal (RFP) for a Municipal Solar Project in the Town of Chester, New Hampshire*. We have examined multiple municipal sites since we began working with the Town on solar options in 2021, and we believe the 50 Town Dump Road and 101 Town Dump Road properties have significant potential for harvesting solar energy. ReVision Energy is the ideal partner for the Town of Chester to complete development, engineering, procurement, construction, and ongoing operations and maintenance for a municipal solar project, given our deep experience and established track record.

As you review our proposal, I would highlight four areas where ReVision Energy stands out and that will prove essential to success.

- **Local Knowledge:** ReVision Energy is local, with our primary NH branch located a mere 15 minutes away in Brentwood. ReVision is intimately familiar with the Chester terrain and the local Eversource distribution grid based on site visits, our past exploration of a solar project with Chester, as well as dozens of private and public-sector solar projects we have installed in the vicinity. Our local solar experience includes municipal solar ground-mount projects awarded via competitive RFP/RFQ and other mechanisms in the municipalities of Hooksett, Exeter, Jaffrey, Keene, Durham, North Conway, Winchester, Lebanon, and Bedford.
- **Technical Excellence:** ReVision is the leading developer of municipal, commercial, and residential solar in New Hampshire and the region. Our design and engineering process seeks to optimize clients' financial goals, system reliability and longevity, and environmental performance. As a full-service EPC contractor, our certified electricians, engineers, project managers, site supervisors, procurement specialists, and operations leadership (all ReVision co-owners) are adept at handling the full spectrum of design and installation challenges that arise on large-scale solar projects. ReVision has been listed in Solar Power World's Top 500 North American Solar Contractors list every year since 2014 and named #1 Rooftop Solar Installer in New England for the last five years.
- **Permitting & Utility Interconnection Expertise:** ReVision's in-house team has successfully shepherded thousands of solar projects through local, state, and federal permitting processes. In addition to local permitting, our experienced commercial project managers work closely with the NH Dept. of Environmental Services on Alteration of Terrain permits and related stormwater management and wetlands requirements. Our team also takes direct responsibility for filing utility interconnection applications and securing approvals to interconnect to the local distribution company. We have successfully obtained interconnection agreements for hundreds of commercial

projects in Eversource service territory, and we maintain close working relationships with their key distributed generation personnel.

- Solar Financing Capabilities:** ReVision Energy is the leading provider of solar Power Purchase Agreements (PPAs) in northern New England, with over 200 custom PPA projects engineered, financed, installed, and maintained since 2010 for municipalities and other tax-exempt institutions. ReVision is positioned to offer highly competitive PPA financing by engaging our network of mission-motivated solar investors. We also have a successful track record engaging impact investment partners to finance the development of larger, direct generation (1-5MW) arrays on leased lands. Thanks to our many years of experience implementing such projects in the challenging solar markets of Maine, New Hampshire and Massachusetts, we are able to efficiently raise requisite capital and negotiate contracts, with minimal demands on our municipal partners.

After completing detailed site visit and desktop analyses of the Chester municipal properties listed in the RFP, and in consideration of interconnection requirements and NH's current net metering policy, ReVision Energy is pleased to propose several municipal solar project scenarios for the Town's consideration. Each of the options offers compelling solar generation, municipal revenue and energy savings opportunities for the Town of Chester.

The **50 Town Dump Road property** (Tax Map 013-005) is suitable for a medium-scale solar farm. ReVision is pleased to offer two options that would provide significant energy cost savings, lease revenue and other benefits to the Town of Chester. The project would be financed through a Power Purchase Agreement (PPA), at no cost to the Town, by ReVision's mission-driven local investors. According to our preliminary project design and financial modeling, the Town could purchase the solar electricity for significantly less than Eversource rates and realize immediate savings in addition to receiving lease and PILOT revenues. After five years, the Town would have the option to acquire the entire array from the impact investor at a substantial discount, or the Town may continue to accrue annual savings through the PPA arrangement. Following is a financial summary of the two PPA options described in the proposal:

PPA Financial Summary for 50 Town Dump Road	Scenario 1a	Scenario 1b
System Size	371.7 kW DC 300.0 kW AC	512.1 kW DC 400.0 kW AC
Year 1 Generation Estimate (kWh)	473,555	621,164
Term PPA Savings/Revenue to Chester (without buyout)	\$2,489,000	\$3,287,000
40-Year Net Savings/Revenue to Chester (with Yr. 6 buyout)	\$3,290,000	\$4,339,000
Annual CO2 Emissions Offset (lbs.)	464,084	608,741

The **101 Town Dump Road property** (Tax Map 013-003) is suitable for a large-scale or Distributed Generation solar farm. ReVision is pleased to offer the Town of Chester two Land Lease options that would provide significant lease revenue and other financial benefits. The Town would lease out the land for 25 years, with two 5-year extension options, and receive associated annual lease payments and PILOTs from the array owner. The array would be developed, built and maintained by ReVision Energy,



and owned and operated by a third-party investor. There are no costs to the town. In Scenario 2a, ReVision could structure the project as a residential community solar farm where residents of Chester could have the first opportunity to become shareholders and thereby offset their power usage from the solar project while realizing significant electricity cost savings. In scenario 2b, the Town and School could be eligible to participate in ReVision Energy's *Community Solar Rebate Program*, through which they would receive payments for subscribing to a ReVision-built community solar farm. Following is a financial summary of the two Land Lease options described in the proposal:

Land Lease Financial Summary for 101 Town Dump Road	Scenario 2a	Scenario 2b
System Size	1,260 kW DC 950 kW AC	2,350 kW DC 1,750 kW AC
Year 1 Generation Estimate (kWh)	1,530,270	2,773,705
Net Revenue to Chester over 25-Year Term	\$566,477	\$1,057,000
Net Revenue to Chester over Extended 35-Year Term	\$871,613	\$1,629,000
Annual CO2 Emissions Offset (lbs.)	1,499,665	2,718,231

ReVision Energy would be pleased to partner with the Town of Chester to develop a municipal solar project at either or both 50 Town Dump Road or 101 Town Dump Road. Regardless of the pathway Chester selects, the financial and environmental benefits to the local community will be very substantial.

All of us at ReVision Energy deeply admire the Town of Chester's leadership in the effort to lower the town's electricity expenses and generate solar project revenues, while simultaneously reducing New England's carbon footprint and aiding our region's transition to clean energy. We hope to work together on this exciting opportunity. As a locally-based, employee-owned Benefit Corporation, we are committed to creating the better future we know is possible by investing in the communities where we live and work.

I am honored to serve as ReVision Energy's primary contact for this project and can be reached at 603-491-7848 or via email at mzankel@revisionenergy.com. Thank you very much for your time and consideration. Please let us know if we can provide any additional information.

Sincerely,

Mark Zankel

Mark Zankel
Director of Community Solar Farms

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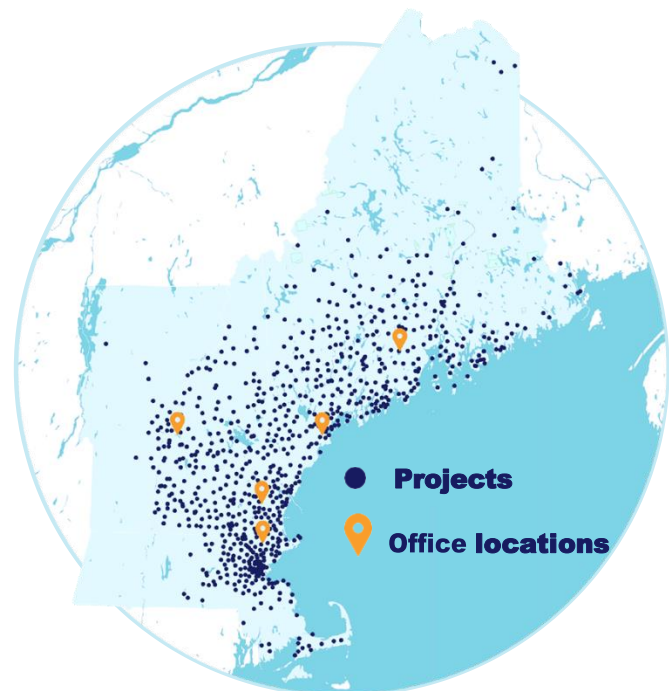
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1. Company Profile

ReVision Energy is New England's most experienced solar design, installation, and service company with more than 460 in-house solar professionals (including 110 in NH) and more than 15,000 clean energy installations in New Hampshire, Maine, and Massachusetts since 2003. In the last three years, ReVision has completed approximately 3,000 solar installations, including more than 100 PPA projects for municipalities and nonprofits and several hundred turnkey systems for commercial and industrial clients. As of the end of 2022, we have nearly 200 megawatts (MW) worth of solar projects in operation and an additional 100 MW under contract.

Founded in Liberty, ME in 2003, ReVision established its New Hampshire headquarters in 2010 at 7 Commercial Drive in Brentwood, NH, where we now operate a full warehouse with eight solar installation crews serving southern and central NH every day. We also have full-service operations centers in Enfield, NH (serving western NH and VT); Portland, ME (serving southern ME and parts of northern NH); Liberty, ME (serving central-northern ME); and North Andover, MA (serving MA). Our companywide headquarters are located at 758 Westbrook Street in South Portland, ME.

In 2015, ReVision Energy became a Certified B-Corporation as an expression of our commitment to use business as a force for good by leading New England's clean energy transition. In 2017, we transitioned to 100% employee-ownership through an ESOP Trust, thereby ensuring that every member of our team shares in the financial success of the company while committing to long-term sustainability. ReVision also established affiliated companies ReVision Investments LLC and ReVision Solar Impact Partners in 2017 to deploy below-market investment capital to local municipalities and nonprofits through innovative and flexible Power Purchase Agreements (PPAs).



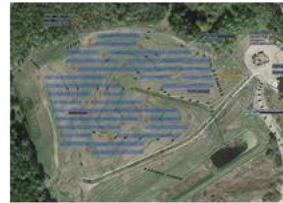
Since launching our PPA program a decade ago, ReVision Energy's in-house engineering, development, and installation teams have successfully financed and installed dozens of solar PPA projects for tax-exempt institutions throughout New Hampshire.

We are proud to call municipalities like Brentwood, Durham, Stratham, Newfields, Nottingham, Epping, Concord, Claremont, Keene, Lebanon, and Nashua our clients and partners, alongside leading educational and nonprofit organizations such as Dartmouth College, Woods Hole Oceanographic Institution, Colby-Sawyer College, Proctor Academy, Capitol Center for the Arts, Palace Theatre, and Phillips Exeter Academy

ReVision Energy has been listed in Solar Power World's Top 500 North American Solar Contractors list every year since 2014 and named #1 Rooftop Solar Installer in New England for each of the last five years. We were also named the 2018 "Business of the Year" by Business NH Magazine for the Real Estate, Construction, and Engineering sector (the first time a solar company has received the coveted award) and "Best Solar Company in New Hampshire" by NH Business Review in 2018. In 2019, we were recognized as "Clean Energy Company of the Year" by the Northeast Clean Energy Council (NECEC). We have also been recognized as a "Best for the World" company for the past three years, meaning we are in the top 5% of B Corps worldwide.

ReVision is committed to expanding opportunities for young people in the trades through ReVision Energy Technical Center, the first in-house solar electrical apprenticeship school in the country, which we launched in 2018. We are also proud to count many women, veterans, and people from disadvantaged backgrounds among our employee owners, each enjoying a full and equal stake in the success of the company.

Selected New Hampshire Municipal Clients



Town of Exeter
Exeter Landfill
Ballasted Ground Mount
1.7 MW (in development)



Town of Durham
Sand Pit, Police Dept,
Library, Ice Rink
780 kW (2014-16)



Town of Hanover
Water Department,
WWTF, 5 Rooftops
2 MW (2016-21)



City of Keene
Police Department &
Public Works, WWTP
2.0 MW (2018-22)



City of Lebanon
Wastewater Treatment
Facility + 6 Rooftops
836 kW (2019)



Manchester
Langer Place Parking
Garage (with SNHU);
1MW RFP award (2019)



North Conway
Municipal Water Precinct
Ground Mount
1.0 MW (2020-21)



In addition to solar photovoltaics, ReVision has pioneered a full-service mechanical contracting approach to the design and installation of various complementary clean energy technologies. We provide a complete scope of services from project design and development to installation and ongoing system maintenance, including:

- Grid-Tied Solar Electric (PV) Systems
- Electric Vehicle Charging Stations
- Smart-Grid Storage Technologies
- Solar-Powered Heat Pumps
- Solar-Powered Water Heating
- LED Lighting Design and Installation
- Community Solar Farms
- Solar Project Development
- Solar Project Financing
- Solar Operations & Maintenance
- Land Leasing/Development
- Consulting Services
- Solar Impact Investing

Selected New Hampshire Nonprofit & Commercial Clients



Selected Industry Honors and Associations



Key Qualifications for Chester's Municipal Solar Project

ReVision Energy brings deep experience and an established track record in four areas of solar project development deemed essential to the success of Chester's Municipal Solar Project:

- **Local Knowledge:** ReVision Energy is local, with our primary NH branch located a mere 15 minutes away in Brentwood. ReVision is intimately familiar with the Chester terrain and the local Eversource distribution grid based on site visits, our past exploration of a solar project with Chester, as well as dozens of private and public-sector solar projects we have installed in the vicinity. We have completed a detailed desktop survey of each property's terrain, natural resource features, setbacks, and other site complexities. We have also reviewed our recent Eversource System Impact Studies and Interconnection Agreements for similar projects to inform our inter-connection approach. Our local solar experience includes municipal solar ground-mount projects awarded via competitive RFP/RFQ and other mechanisms in the municipalities of Hooksett, Exeter, Jaffrey, Keene, Durham, North Conway, Winchester, Lebanon, and Bedford. In 2022, we were selected to install New Hampshire's largest municipal solar array, a 4.3 MW (DC) solar farm at the Rockingham County Complex, and in 2023 we were awarded the opportunity to construct New Hampshire's largest solar array to date, a 6.6 MW (DC) solar farm in Kingston that was approved by both Unitil and the NH Public Utilities Commission.
- **Technical Excellence:** ReVision is the leading developer of municipal, commercial, and residential solar in New Hampshire and the region. Our design and engineering 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. Our team also brings extensive in-house project development, financing, operations, and maintenance expertise for maximum longevity and performance. As a full-service EPC contractor, our certified electricians, engineers, project managers, site supervisors, procurement specialists, and operations leadership (all co-owners of ReVision) are adept at handling the full spectrum of design and installation challenges that arise on large-scale solar projects, including managing a team of subcontractors and maintaining NESC and environmental permitting compliance.



As part of our commitment to technical excellence and innovation, ReVision has tested and deployed solar modules from over a dozen BloombergNEF-certified Tier 1 manufacturers in the

United States, Canada, Europe, and Asia. We have seen an extremely low service/recall rate affecting a fraction of one percent of the more than 300,000 modules we have installed in northern New England to date. 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.

- **Permitting & Utility Interconnection Expertise:** Our in-house Permitting & Administration team has successfully shepherded thousands of solar projects through local, state, and federal permitting processes. The team is adept at navigating diverse local permitting requirements on our clients' behalf, including preparing detailed engineering plan sets and appearing before local zoning and 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 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 local distribution company on behalf of our clients in all four of the state's electric utility service territories. We have successfully obtained interconnection agreements for hundreds of commercial projects in Eversource service territory, and we maintain close working relationships with their key distributed generation personnel. 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. We lead the industry in policy and regulatory engagement at the State House, NH Department of Energy, and NH Public Utilities Commission (PUC), where we have worked for years with the Chairs of the House Science, Technology, and Energy Committee; Senate Energy Committee; and DOE/PUC Commissioners and staff. Building on these relationships and experiences, we have been able to overcome permitting and regulatory hurdles that routinely arise on large projects and have helped clients derive the most value from their solar farms under the state's complex net metering statutes.

- **Solar Financing Capabilities:** ReVision Energy is the leading provider of solar Power Purchase Agreements (PPAs) in northern New England, with over 200 custom PPA projects engineered, financed, installed, and maintained since 2010 for municipalities and other tax-exempt institutions. We are committed to providing cost-saving solar solutions to nonprofits: ReVision Energy has invested its own tax equity and in-house expertise in developing and financing over 75 of our solar PPA projects, totaling more than five MW of installed capacity valued at \$15 million. Many of those projects were deemed “un-finance-able” in the private market but our in-house Legal & Financing team was able to lower PPA development costs and unlock low-cost impact investor capital. We consider it our mission as employee-owners to make solar accessible to as many municipal, educational, and nonprofit organizations as possible.

When it comes to larger-scale solar projects, ReVision is positioned to offer highly competitive PPA financing by engaging our network of mission-motivated solar investors. Thanks to our many years of experience implementing such projects in the challenging solar markets of Maine, New Hampshire and Massachusetts, we are now able to efficiently raise requisite capital, negotiate and execute PPA contracts, obtain local permits and site plan approval, and complete utility interconnection and system impact studies with minimal demands on our municipal partners.

Selected Accreditations and Industry Associations

Regional/National

Amicus Solar Cooperative
 Appalachian Mountain Club
 Association for Facilities Engineering
 Conservation Law Foundation
 Independent Schools Assoc. of
 Northern New England
 League of Conservation Voters
 New England ISANNE
 New England Grassroots
 Environmental Fund
 New England Women in Energy &
 the Environment
 New England Solar Energy Market
 Coalition
 Northeast Organic Farming Assoc.
 Northeast Sustainable Energy Assoc.
 Seacoast Women’s Network
 Sierra Club
 Solar Energy Business Assoc. of New
 England

New Hampshire

American Institute of Architects NH
 Bearpaw Land Trust
 Blue Ocean Society
 Clean Energy NH
 Concord Chamber of Commerce
 Dover Children’s Museum
 Enviro. Business Council
 Five Rivers Conservation Trust
 Greater Concord Chamber of Commerce
 Homes For Heroes
 MacDowell Colony
 Nextgen Climate
 NH Audubon
 NH Building Officials
 Nh Businesses for Social Responsibility
 NH Clean Tech Council
 NH Home Builders Association
 NH Preservation Alliance
 Society for the Protection of NH Forests
 NH Public Radio

Industry Licenses and Certification

- North American Board of Certified Energy Practitioners (NABCEP) Certified Solar Photovoltaic (PV) Installers & Solar Thermal Installers (16)
- Master Electricians (8)
- Journeyman Electricians (15)
- Electrical Apprentices (80+)
- Master and Journeyman Plumbers (2)
- Licensed Professional Engineers (4)
- Certified Welders
- Massachusetts Home Improvement Contractor
- Massachusetts Construction Supervisor License
- Department of Labor Certified Electrical Apprenticeship Program
- American Society of Mechanical Engineers (ASME)
- American National Standards Institute (ANSI)
- Emergency Safety and Care Institute (ESCI) AED and CPR Certified
- Occupational Safety and Health Administration (OSHA) Construction Courses
- Hilti and Ramset Power Tool Certifications

2. Project Key Personnel

If ReVision is selected by the Town of Chester for the proposed municipal solar project, the following members of our in-house team of employee owners will have direct involvement in performing the requisite project development and management services, along with our highly qualified solar installers (in-house and contracted) during the final construction phase. Brief resumes of the key project team members are below highlighting relevant experience. Full resumes are available upon request. An organizational chart is omitted because ReVision will manage the entire project in-house with limited contract-based assistance from local contractors such as Doucet Survey (site survey), Horizons Engineering (Alteration of Terrain permitting), and Ayer Electric (electrical subcontractor). ReVision consciously eschews organizational hierarchies by practicing a unique model of distributed leadership and team-based collaboration on key projects like the Town of Chester's municipal solar project.

ReVision's team lead for this project is Mark Zankel, Director of Community Solar Farms, who is based at our Brentwood NH office. He can be reached at (603) 491-7848 or mzankel@revisionenergy.com

Mark Zankel, Director of Community Solar Farms

Mark joined ReVision Energy in 2023 as the Director of Community Solar Farms. Prior to ReVision, Mark spent 28 years working for the nonprofit conservation organization, The Nature Conservancy. He began his TNC career as an ecologist in North Carolina's Blue Ridge Mountains, and in 2000 became the NH Chapter's Director of Conservation Programs. In 2013, Mark was appointed as TNC's New Hampshire State Director, and in his final year served as a Global Strategy Advisor in TNC's Chief Conservation Office. Mark earned a Bachelor of Arts from Dartmouth College, and a Master of Science



from the University of Michigan. He and his wife Susan live in Hopkinton NH, where they raised their two children and proudly power their home with two ReVision-installed ground-mount solar arrays.

- Leads a talented team to develop a distributed network of well-sited 0.5-5MW solar arrays that provide clean, renewable, and affordable energy to individuals, businesses, non-profits and communities
- An alumni and trustee of Leadership NH, sits on Hopkinton's Budget & Energy Committees, and has served on the boards of Capital Center for the Arts and Five Rivers Conservation Trust

Fortunat Mueller, P.E., *Co-Founder and President*

As co-founder and president of ReVision Energy, Fortunat has overseen the company's growth to become the region's largest solar company with approximately 400 employee-owners and \$125 million in annual revenue. Before co-founding Renewable Energy Contractors in 2006 and then ReVision Energy in 2008, Fortunat was a project manager and senior systems engineer at United Technologies Fuel Cells in Hartford, CT. Fortunat received his Masters and BS in Mechanical Engineering from Brown University and is a licensed Professional Engineer.



- Serves on the Board of Directors for the Maine Association of Building Efficiency Professionals (MABEP) and the Northeast Sustainable Energy Association (NESEA)
- Specializes in design, engineering, and operations for residential and commercial applications companywide

James Hasselbeck, *Chief Operations Officer*

James has been involved in the design, engineering, and construction of public and private renewable energy projects since 2006. After graduating from the University of Vermont, he was the Electrical Division project manager of Waterline Industries, a general contractor focused on the design and construction of water and wastewater treatment facilities throughout New England. There he managed infrastructure projects ranging from \$200,000 to \$12 million and taking 3-24 months to complete. Joining ReVision Energy in 2013, James maintains responsibilities for all construction operations companywide.



- Oversees design, estimating, project management, and commissioning for our municipal and commercial installations
- NABCEP certified solar PV installer and has completed over 120 hours of Interstate Renewable Energy Council (IREC) certified Advanced Solar Design courses; Energy Council (IREC) certified Advanced Solar Design courses
- Oversaw the expansion of ReVision's O&M division to more than triple its size and workload.

Sam Lavallee, MBA, Chief Financial Officer

Sam has been involved in the solar energy industry since 2007. After graduating from the University of Vermont, Sam began his professional career at Mercury Solar Systems, Inc., a startup focused on the design and construction of residential, commercial, and utility scale solar. He was responsible for commercial and industrial project pricing, sales operations, management of financial partners, and procurement for projects ranging from \$100,000 to \$10 million. Sam joined ReVision Energy in 2013.

- Oversees company finances, economic forecasting, and financial planning
- Managed the growth of commercial and industrial sales and annual revenue at ReVision from under \$1 million in 2013 to over \$50 million in 2021
- Oversaw the C&I project financing program, including managing ReVision's major project financing partners, project due diligence, and placement of capital for project finance



Rebecca Austin, Design & Estimating Team Leader

Becca provides hands on leadership to ReVision's Design and Estimating team in all aspects of system design for commercial and institutional (C&I) projects. Born and raised in East Millinocket, Becca is a native Mainer with a biology degree from Bowdoin College. In her four years with ReVision, she has served in multiple design roles for both residential and commercial solar PV projects.

- Worked as ReVision Solar Design Specialist managing all aspects of solar design, estimating, and client engagement for residential customers
- Develops municipal solar array designs from preliminary stage to utility interconnection to For Construction stage; creates CAD renderings, electrical one-lines, to meet local code and state permitting requirements
- Oversees development of hundreds of commercial and institutional solar designs by the Design & Estimating team annually



Nate Niles, Director of Development

Nate manages ReVision Energy's Project Development team that oversees planning, design, permitting, and interconnection for commercial and institutional (C&I) projects across northern New England. He grew up in South Freeport, ME and holds an earth sciences degree from Bowdoin College. Nate has nearly a decade of experience in the energy space, first working in consulting for large energy end users with diverse energy portfolios, and now with ReVision Energy since 2017.

- Oversees planning of commercial roof- and ground-mounted arrays in Maine, New Hampshire, and Massachusetts
- Manages third-party development relationships with utilities, surveyors, civil engineers, environmental consultants, and other subject matter experts



John Shanholtz, Director of Commercial Construction & Master Electrician

John has been involved in the electrical construction industry since he began his career in 2001. John grew up in southern Maine and graduated from Southern Maine Technical College with a degree in Industrial Electricity. After graduating, he joined the IBEW apprenticeship program where he focused on commercial construction projects, eventually earning his Master Electrician license. In 2008 John's focus moved to management of large-scale utility projects involving substation, powerline and renewable energy construction. John joined Revision Energy in 2022.

- Leads ReVision's Construction Project Manager team
- Oversees all subcontracted work throughout the company



Dana Cole, Director of Operations & Maintenance

Dana has been working in the solar industry for the past 15 years and has been building and leading solar O&M divisions for over a decade. He has managed large, national portfolios that exceed 300 MW in size and include systems spanning from California to northern Maine. He specializes in growth and scaling of O&M divisions and has successfully grown his team's coverage tenfold in a short time span on multiple occasions. Dana joined ReVision Energy in the summer of 2021 and leads commercial service operations for ReVision's Service branch.

- Leads Operations & Maintenance program, including commissioning, asset management, and community solar farms
- Oversees all aspects of commercial service



3. Selected Projects and References

We provide below a list a selection of operational and in-development institutional projects >100kW in New Hampshire and Maine.

SOLAR PROJECTS	LOCATION	CAPACITY	UTILITY	INSTALLATION	YEAR
TUPELO MUSIC HALL	DERRY	100 KW	EVERSOURCE	ROOFTOP	2018
CITY OF PORTLAND/ S. PORTLAND LANDFILLS	MAINE	5.0 MW	CMP	GROUND	2017- 2022
TOWN OF SKOWHEGAN (MULTI-TOWN)	MAINE	4.0 MW	CMP	GROUND	2020- 2021
CITY OF KEENE, NH (PORTFOLIO)	NEW HAMPSHIRE	2.2 MW	EVERSOURCE	GROUND + ROOF	2018- 2021
TOWN OF HANOVER, NH (PORTFOLIO)	NEW HAMPSHIRE	2.0 MW	LIBERTY	GROUND	2019- 2020
CITY OF NASHUA, NH (PORTFOLIO)	NEW HAMPSHIRE	1.6 MW	EVERSOURCE	ROOFTOPS (5)	2019- 2020
DARTMOUTH COLLEGE CAMPUS (PORTFOLIO)	NEW HAMPSHIRE	1.5 MW	LIBERTY	ROOFTOPS (20+)	2017- 2020
MIDCOAST REGIONAL RE- DEVELOPMENT AUTHORITY – BRUNSWICK LANDING	MAINE	1.5 MW	CMP	GROUND	2017- 2018
CITY OF DOVER, NH (HIGH SCHOOL, POOL)	NEW HAMPSHIRE	1.0 MW	EVERSOURCE	ROOFTOPS (3)	2018- 2019
TOWN OF NORTH CONWAY WWTF	NEW HAMPSHIRE	1.0 MW	EVERSOURCE	GROUND	2020- 2021
TOWN OF KENNEBEC WWTF	MAINE	1.0 MW	CMP	GROUND	2018
CARIBOU UTILITIES DISTRICT WWTF	MAINE	1.0 MW	CMP	GROUND	2019
CITY OF BELFAST PUBLIC WORKS	MAINE	1.0 MW	CMP	GROUND	2018
TOWN OF FREEPORT WWTF	MAINE	928 KW	CMP	GROUND	2019
CITY OF LEBANON, NH (PORTFOLIO)	NEW HAMPSHIRE	836 KW	LIBERTY	GROUND + ROOFS	2019
TOWN OF HOOKSETT WWTF	NEW HAMPSHIRE	786 KW	EVERSOURCE	GROUND	2020- 2021
TOWN OF DURHAM (PORTFOLIO)	NEW HAMPSHIRE	771 KW	EVERSOURCE	GROUND + ROOFS	2014- 2017
TOWN OF LIMESTONE WWTF	MAINE	596 KW	CMP	GROUND	2018
PHILLIPS EXETER ACADEMY FIELD HOUSE	NEW HAMPSHIRE	535 KW	LIBERTY	ROOFTOP	2017
TOWN OF WINDHAM	MAINE	503 KW	CMP	GROUND	2019

PROCTOR ACADEMY CAMPUS PORTFOLIO	NEW HAMPSHIRE	485 KW	NHEC	GROUND + ROOFS	2015-2019
TOWN OF CUMBERLAND	MAINE	462 KW	CMP	GROUND	2019
MONADNOCK AFFORDABLE HOUSING CORP.	NEW HAMPSHIRE	435 KW	EVERSOURCE	ROOFTOP	2017-2020
TOWN OF GRAY	MAINE	360 KW	CMP	GROUND	2019
INTER-LAKES HIGH SCHOOL	NEW HAMPSHIRE	346 KW	NHEC	GROUND	2015
HEBRON ACADEMY ATHLETIC CENTER	MAINE	267 KW	CMP	ROOFTOP	2016
VILLAGE DISTRICT OF EASTMAN	NEW HAMPSHIRE	260 KW	LIBERTY	GROUND	2015-2016
THE ECOLOGY SCHOOL	MAINE	257 KW	CMP	ROOFTOP	2019
THE MACDOWELL COLONY	NEW HAMPSHIRE	240 KW	EVERSOURCE	GROUND	2016-2019
FRANKLIN PIERCE UNIVERSITY	NEW HAMPSHIRE	237 KW	EVERSOURCE	ROOFTOP	2020-2021
DERRYFIELD SCHOOL	NEW HAMPSHIRE	192 KW	EVERSOURCE	ROOFTOP	2019
TOWN OF BOW PUBLIC WORKS	NEW HAMPSHIRE	187 KW	EVERSOURCE	ROOFTOP	2019
CITY OF CLAREMONT WWTF	NEW HAMPSHIRE	151 KW	LIBERTY	GROUND	2020
LAKES REGION COMMUNITY DEVELOPERS	GILFORD	105 KW	NHEC	ROOFTOP	2018

Following is a collection of similar (or larger) scale and complexity to the Town of Chester's municipal solar project, including references.

City of Keene Municipal Portfolio

Description: ReVision partnered with the City of Keene on a portfolio of solar projects including a ground mount array at the wastewater treatment facility that utilizes a Power Purchase Agreement (PPA) to reduce the City's energy costs.

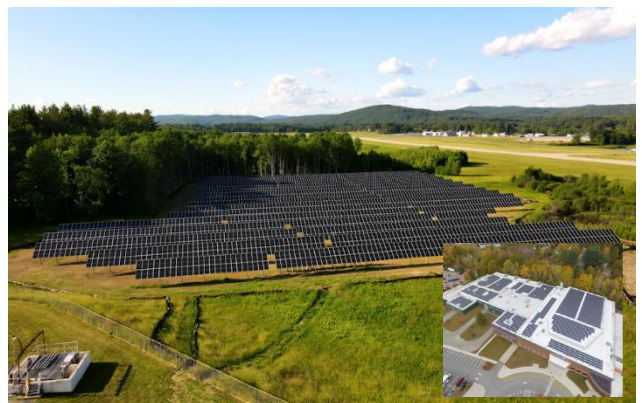
Project Location: Airport Road, Swanzey, NH

Commercial Operation Date: June 30, 2022

Nameplate capacity: 1.362 MW DC, 960 kW AC

Energy generation: 1.70 GWh/year

Reference: Duncan Watson, Assistant Public Works Director, dwatson@ci.keene.nh.us, (917) 445-4131, 350 Marlboro St, Keene, NH 03431



Town of Durham Gravel Pit

Description: Through re-development of the Town of Durham's former gravel pit, ReVision was able to install a solar array to offset its electricity load through a PPA.

Project Location: Packers Falls Road, Lee, NH

Commercial Operation: June 2016

Nameplate capacity: 651 kW DC, 504 kW AC

Energy generation: 859,300 kWh/year

Reference: Todd Selig, Town Administrator, (603) 868-5571, tselig@ci.durham.nh.us 8 Newmarket Rd, Durham, NH 03824



City of South Portland Landfill

Description: This project utilized a closed municipal landfill which was otherwise unusable space to permit and build a flagship PV array for the City of South Portland.

Project Location: 929 Highland Ave, South Portland, ME

Commercial Operation Date: October, 2017; expansion May, 2022

Nameplate capacity: 4.9 MW DC, 3.7 kW AC

Energy generation: 5,798,053 kWh/year

Reference: Julie Rosenbach, Sustainability Director, City of South Portland, jrosenbach@southportland.org, 207-347-4148, 25 Cottage Road, Portland, ME, 04106



Town of Hanover Solar Farm & Rooftops

Description: ReVision Energy was selected via competitive RFP to install rooftop solar arrays at the Hanover Water Reclamation Facility and Hanover Town Hall. After successful completion of the projects, ReVision was awarded 1 MW and 700 kW ground-mounted solar farms near the Hanover Water Department and 180 kW of rooftop systems at the Hanover DPW and Fire Station.

Project Location: Hanover NH Water Department, Grasse Rd, Hanover and Town Rooftops

Commercial Operation Dates: 2016 to 2021

Nameplate capacity: 1,200 kW and 702 kW DC ground mounts; 69.8 kW, 16.6 kW, and 200 kW DC rooftops

Reference: Peter Kulbacki, Public Works Director, Town of Hanover, (603) 643-3371, peter.kulbacki@hanovernh.org, 41 S Main St, Hanover, NH 03755



4. Solar PV Design Options and Site Layout

After completing our detailed site visit and desktop analysis of the Chester municipal solar array properties, ReVision Energy is pleased to propose the following options for the 50 Town Dump Road (Tax Map 013-005) and 101 Town Dump Road (Tax Map 013-003) properties. These parcels offer compelling solar generation, municipal revenue and energy savings opportunities for the Town of Chester. Due to the small size, narrow configuration, northward slope and other constraints (e.g., fields not usable), we are not proposing a municipal solar array for the 84 Chester Street property (Tax Map 005-012) as it will not offer comparable revenue or energy generation.

50 Town Dump Road (Tax Map 013-005)

The 50 Town Dump Road property is suitable for a medium-scale solar farm that would provide significant energy cost savings, lease revenue and other benefits to the Town of Chester. After careful analysis of site conditions, interconnection requirements, and NH's current net metering policy, we are offering the following two scenarios for your consideration.

Scenario 1a: 371.7 kW DC (300.0 kW AC) Community Solar Farm

In consideration of the Town of Chester's 75' wetland, hydric soils and riparian setback requirements and the expressed desire to retain use of the "burn pit" in its current location, the 50 Town Dump Road property can support a 371.7 kW DC (300.0 kW AC) solar array. The system is optimally sized to fully buffer wetlands and streams, and to provide a 65' buffer around the existing burn pit, while generating substantial solar power and energy savings for the Town of Chester. It is designed for direct interconnection to the Eversource distribution grid via a new service drop and utility transformer. This system can fully offset the Town and Library loads while partially offsetting the School's load.

Note that if the Town were interested in moving the burn pit to the south or southeast, the size of the system could be increased by approximately 15% while maintaining 75' wetland, riparian and hydric soil buffers. ReVision would be glad to further explore this option with the Town if selected through the RFP.

Design Specs for 50 Town Dump Road with Full Buffers (also see Figures 1 & 2)

Solar Modules	630 Tier-1, 590W solar modules oriented 180° south and pitched at 35° for optimal year-round electricity generation.
Inverters	6 industry-standard inverters to convert DC electricity to AC onsite for export to the grid (net metering).
Racking	Steel fixed-tilt racking with G115+ galvanized coating for maximum longevity and revenue-grade metering and continuous monitoring equipment.
Production	The system would generate approximately 473,555 kWh of clean solar electricity annually based on the specific engineering design and thirty years of historical weather data for the Concord area - enough to offset 100% of Chester's current Municipal & Library electricity usage and ~35% of the School's load through the on-bill crediting program ReVision helped establish as part of New Hampshire's net metering regulations.

Figure 1. Preliminary Rendering of Scenario 1a: 371.7 kW (DC) Array at 50 Town Dump Road.

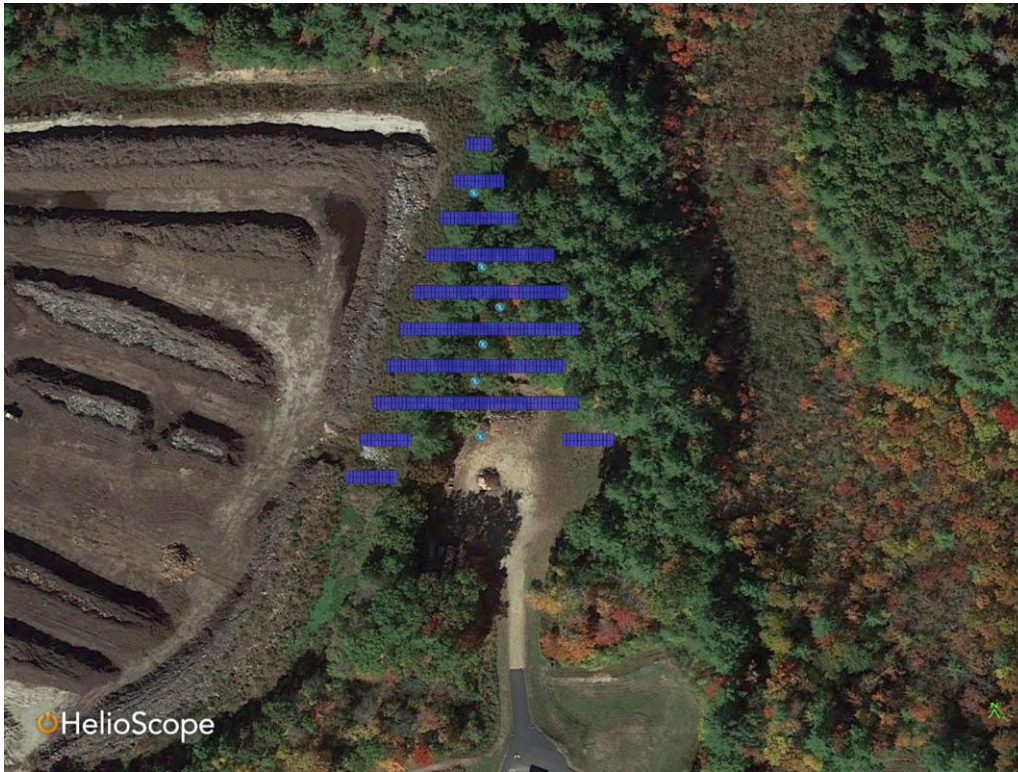
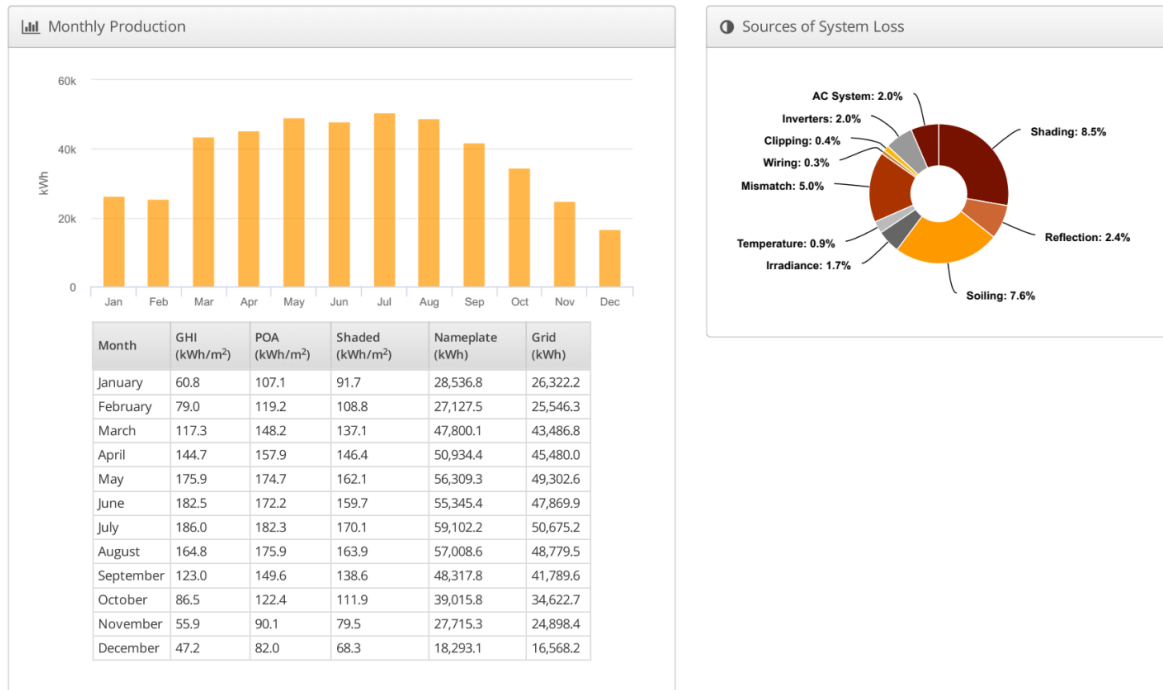


Figure 2: Helioscope Annual Production Report for Scenario 1a.



Scenario 1b: 512.1 kW DC (450 kW AC) Solar Farm

We understand and appreciate the Town of Chester's wetland, hydric soil and riparian buffer requirements. ReVision has seen a number of NH communities waive or reduce buffers to accommodate municipal solar arrays given the relatively pervious nature of solar development. Should Chester wish to consider reducing wetland buffers, the property can support a significantly larger project. With 25' wetland and stream setbacks, and including a 65' buffer around the existing burn pit, the 50 Town Dump Road property can support a 512.1 kW DC (450 kW AC) solar array. The system is optimally sized to maximize power generation and energy revenue for Chester taxpayers, fully offsetting the current Town and Library loads and significantly offsetting the School load. It is designed for direct interconnection to the Eversource distribution grid via a new service drop and utility transformer.

As with Scenario 1a, if the Town were interested in moving the burn pit to the south or southeast, the size of the system could be increased by approximately 10%

Design Specs for 101 Town Dump Road with Reduced Buffers (also see Figures 4 & 3)

Solar Modules	868 Tier-1, 590W solar modules oriented 180° south and pitched at 35° for optimal year-round electricity generation.
Inverters	9 industry-standard inverters to convert DC electricity to AC onsite for export to the grid (net metering).
Racking	Steel fixed-tilt racking with G115+ galvanized coating for maximum longevity and revenue-grade metering and continuous monitoring equipment.
Production	The system would generate approximately 653,559 kWh of clean solar electricity annually based on the specific engineering design and thirty years of historical weather data for the Concord area – enough to offset 100% of Chester's current Municipal & Library electricity usage and ~65% of the School's load through the on-bill crediting program ReVision helped establish as part of New Hampshire's net metering regulations.

Figure 3. Preliminary Rendering of Scenario 1b: 512.1 kW (DC) Array at 50 Town Dump Road.

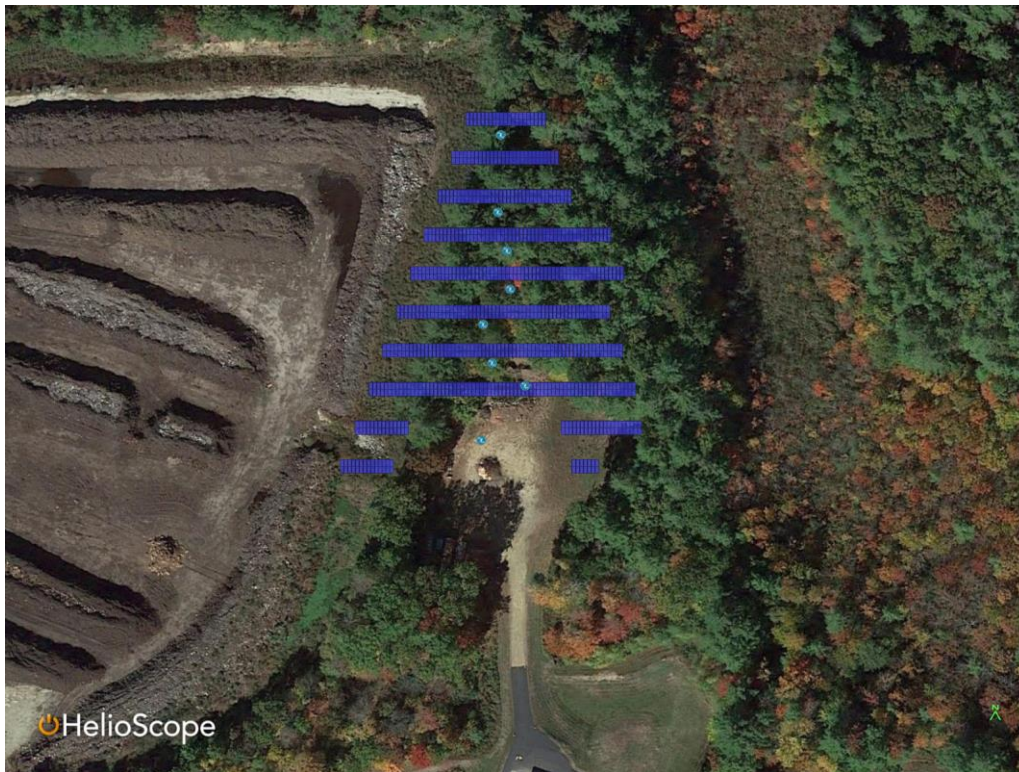
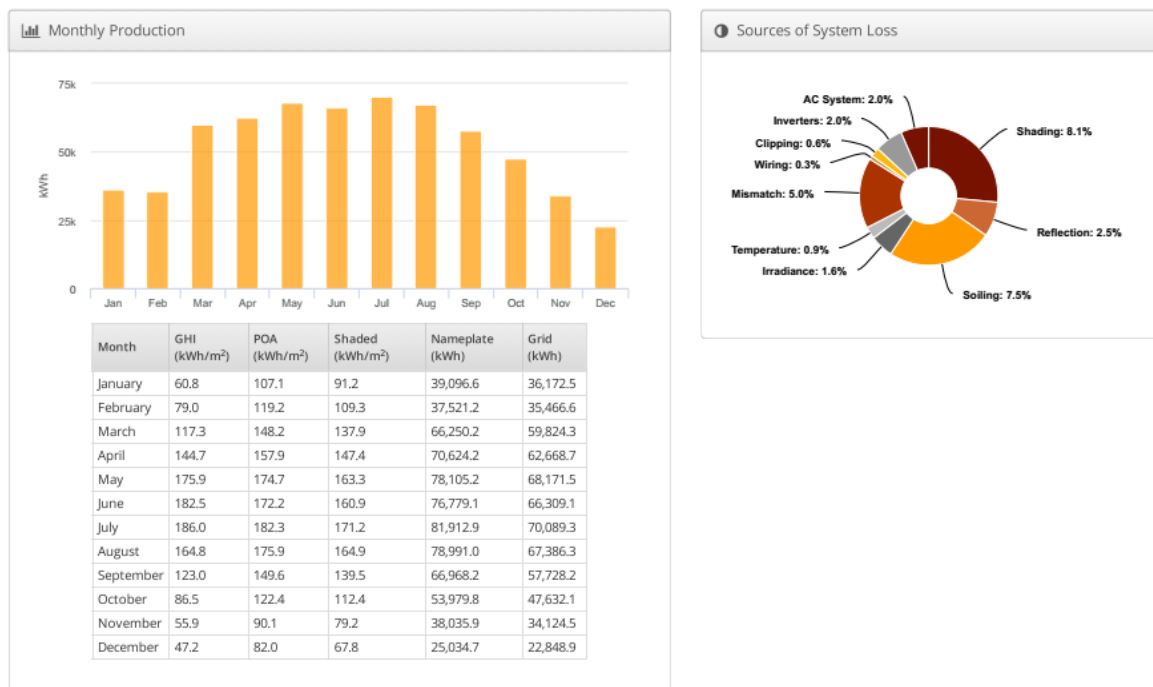


Figure 4: Helioscope Annual Production Report for Scenario 1b:



101 Town Dump Road (Tax Map 013-003)

The 101 Town Dump Road property is suitable for a large-scale or Distributed Generation solar farm that would provide significant lease revenue and other financial benefits to the Town of Chester. After careful analysis of site conditions, interconnection requirements, and NH's current net metering policy, we are offering the following two scenarios for your consideration.

Scenario 2a: 1.32MW DC (1.0 MW AC) Community Solar Farm

In consideration of the Town of Chester's 75' wetland and riparian setback requirements, the property can support a 1.26MW DC (950 kW AC) solar array. The system is optimally sized to fully buffer wetlands and streams while maximizing solar power generation and revenues for the Town of Chester.

A system of this size could optimize current NH net metering policy by establishing the array as a "community solar farm" and allowing the purchase of shares by Chester households and small businesses, affording significant energy savings for residents in addition to the lease revenues paid to the town. At present, NH's net metering policy places a 1.0 MW AC cap on the size of solar farms that serve residential customers. ReVision Energy is currently developing a similar 1 MW project in the Town of Jaffrey, whereby community members will have the first opportunity to acquire shares.

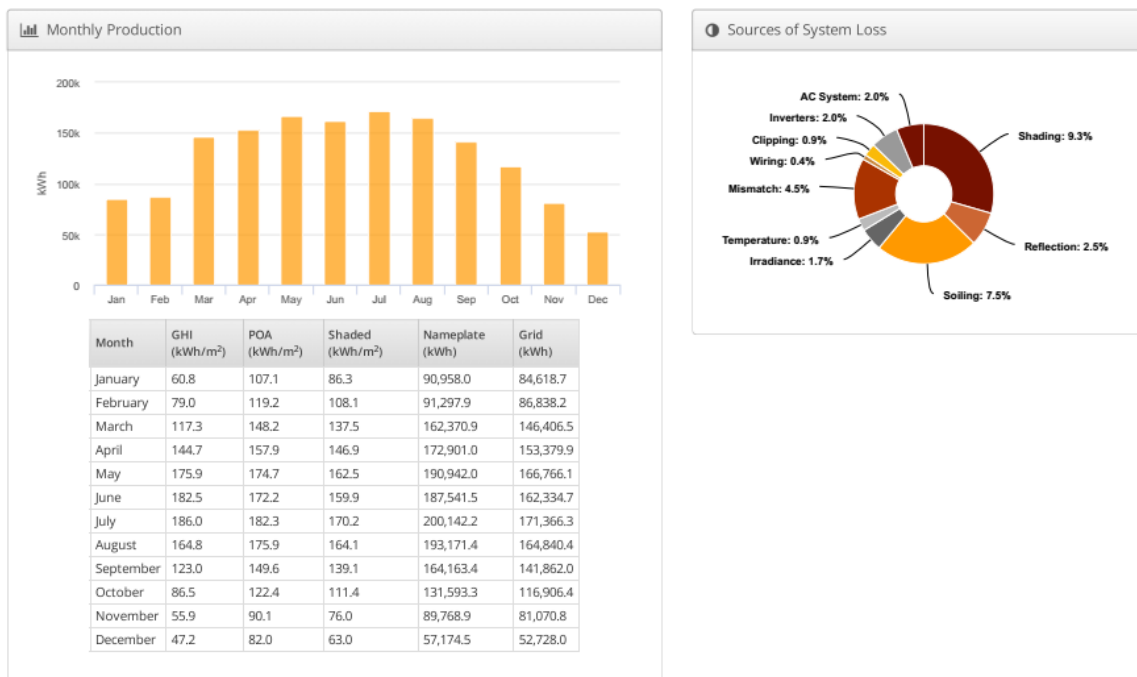
Design Specs for 101 Town Dump Road with Full Buffers (also see Figures 5 & 6)

Solar Modules	2,134 Tier-1, 590W solar modules oriented 180° south and pitched at 35° for optimal year-round electricity generation.
Inverters	19 industry-standard inverters to convert DC electricity to AC onsite for export to the grid (net metering).
Racking	Steel fixed-tilt racking with G115+ galvanized coating for maximum longevity and revenue-grade metering and continuous monitoring equipment.
Production	The system would generate approximately 1,529,000 kWh of clean solar electricity annually based on the specific engineering design and thirty years of historical weather data for the Concord area.

Figure 5. Preliminary Rendering of Scenario 2a: 1,100 kW (DC) Array at 101 Town Dump Road.



Figure 6: Helioscope Annual Production Report for Scenario 2a:



Scenario 2b: 2.35 MW DC (1.6 MW AC) Solar Farm

As noted above under Scenario 1b, if the Town were to consider waiving or reducing mandatory wetland buffers, the property could support a significantly larger project. With 30' wetland and stream setbacks, a 2.1 MW DC (1.75 MW AC) solar array could be developed. This system is sized to maximize power generation and solar lease revenue for Chester taxpayers.

In addition, this system could offer additional revenue to the town in the form of community solar rebates that utilize New Hampshire's newly expanded municipal group net metering policy. We would be pleased to further explore this opportunity should ReVision be selected through this RFP.

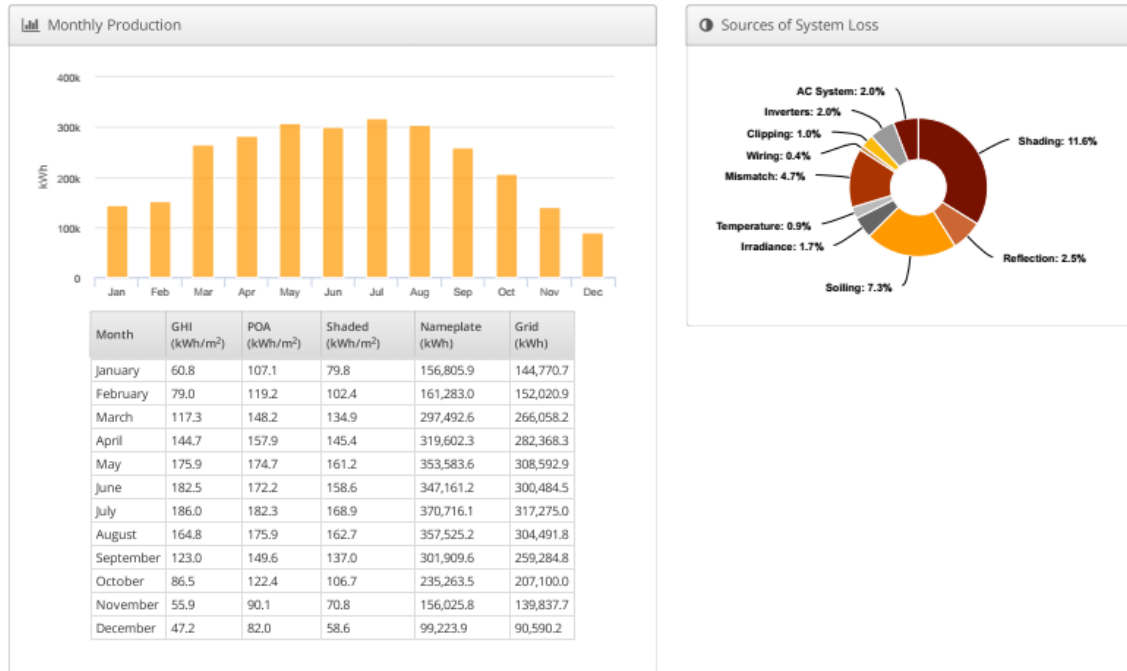
Design Specs for 101 Town Dump Road with Reduced Buffers (also see Figures 7 & 8)

Solar Modules	3,982 Tier-1, 590W solar modules oriented 180° south and pitched at 35° for optimal year-round electricity generation
Inverters	35 industry-standard inverters to convert DC electricity to AC onsite for export to the grid (net metering);
Racking	Steel fixed-tilt racking with G115+ galvanized coating for maximum longevity and revenue-grade metering and continuous monitoring equipment.
Production	The system would generate approximately 2,773,000 kWh of clean solar electricity annually based on the specific engineering design and thirty years of historical weather data for the Concord area

Figure 7. Preliminary Rendering of Scenario 2b: 2120 kW (DC) Array at 101 Town Dump Road.



Figure 8: Helioscope Annual Production Report for Scenario 2b.



5. Pricing Proposal

ReVision is pleased to offer the following Power Purchase Agreement options for Scenarios 1a & 1b at 50 Town Dump Road, and Land Lease options for Scenarios 2a & 2b at 101 Town Dump Road.

Our pricing estimates for the Land Lease and PPA project options are based on the current market pricing for similar projects in our region as well as site-specific considerations and utility interconnection study fees. Pricing assumes that the system will connect directly to the Eversource grid through a new utility service and 100% net metering at the preferential Eversource G rate class, but does not include any mandated utility interconnection costs as those cannot be known until completion of a System Impact Study.

PPA Pricing – 50 Town Dump Road

ReVision is pleased to offer Power Purchase Agreement (PPA) options for Scenarios 1a & 1b at 50 Town Dump Road. There is no upfront cost to the town - project financing is provided by ReVision's growing community of local, mission-aligned investors. The PPA rates we offer are determined based on fair market value and our impact investors' willingness to accept a single digit return on investment. Although the standard PPA term is 25 years with two 5-year extension options, ReVision and our impact investors allow flexible early buyout opportunities at a substantial discount off the upfront system cost based on fair market value. Even without direct ownership of the project, the lower PPA rates we offer are expected to provide significant savings to the Town of Chester. The savings will increase substantially if the Town were to exercise its buyout option starting in Year 6.

Since ReVision has installed and financed over 200 PPA projects with our impact investor partners, we have substantial flexibility in PPA rate design and would be glad to model alternative scenarios, such as fixed or reduced upfront rates paired with higher buyout amounts, if the current proposal does not suit Town's needs well. We have worked closely with the NH Community Loan Fund over the last several years to facilitate low-interest loans for municipalities, schools, nonprofits and businesses seeking to go solar and are confident they or other mission-aligned lenders would provide favorable financing if the Town chose to exercise its buyout option.

The Solar PPA will establish a contractual relationship between the Town of Chester and ReVision's Impact Investor Partner, whereby the parties will have the following primary responsibilities:

Town of Chester:

- Authorizes the use of its land at 50 Town Dump Road to host the solar array;
- Purchases the solar electricity generated by the array according to the price schedule;
- Enters into a utility interconnection agreement arranged by ReVision Energy; and,
- (Optional, at the Town's discretion) Beginning in Year 6 or later, purchases the solar array at a significantly reduced price.

The Impact Investor:

- Owns and operates the installed solar system for the duration of the PPA term, subject to the Town of Chester's option to exercise a buyout at Year 6 or later;

- Maintains the system while under its ownership (no maintenance costs to the Town of Chester); and,
- Fully insures the system for both property and liability risks.

A complete PPA agreement will be made available for the Town's review if ReVision is selected in the RFP process.

As shown in Figure 9, a PPA for 50 Town Dump Road would generate significant energy savings and revenues. Please note the following:

- ReVision is pleased to be able to offer a lower PPA rate for Scenario 1b due to the economies of scale that come with larger system size;
- Annual PILOT Payment based on \$2,000/MW nameplate capacity;
- Term PPA savings/revenue reflects Town purchase of system after 35 years at "salvage" value;
- The financial summary below does not include potential utility upgrade costs, which cannot be known until completion of a System Impact Study.

Figure 9: Financial Comparison of Scenarios 1a and 1b

PPA Financial Summary for 50 Town Dump Road	Scenario 1a	Scenario 1b
System Size	371.7 kW DC 300.0 kW AC	512.1 kW DC 400.0 kW AC
Year 1 Generation Estimate (kWh)	473,555	621,164
Upfront Cost Financed by Investor Partner	\$993,125	\$1,312,713
Year 1 PPA Rate (per kWh), 2% annual escalator	\$0.1095	\$0.1050
PPA Term (before optional 10-yr extension)	5-25 years	5-25 years
Year 1 Lease Rate (\$/kW), 2% annual escalator	\$10.00	\$10.00
Year 1 Lease Revenue	\$3,717	\$5,121
Annual PILOT Revenue	\$743	\$1,024
Year 6 Early Buyout Cost Estimate (optional)	\$625,699	\$827,009
PPA Projected Savings/Revenue & Environmental Benefits		
Term PPA Savings/Revenue to Chester (without buyout)	\$2,489,000	\$3,287,000
40-Year Net Savings/Revenue to Chester (with Year 6 buyout)	\$3,290,000	\$4,339,000
Annual CO2 Emissions Offset (lbs.)	464,084	608,741

Land Lease Pricing - 101 Town Dump Road

ReVision Energy is pleased to offer Land Lease options for Scenarios 2a and 2b at 101 Town Dump Road. The Town would lease out the land for 25 years, with two 5-year extension options, and receive associated annual lease revenues and PILOTs from the array owner. The array would be developed, built and maintained by ReVision Energy, and owned and operated by a third-party investor. There are no costs to the town.

In Scenario 2a, ReVision could structure the project as a residential community solar farm where residents of Chester could have the opportunity to become shareholders and thereby offset their power usage from the solar project while realizing significant electricity cost savings. In Scenario 2b, the Town and School could be eligible to participate in ReVision Energy's *Community Solar Rebate Program*, through which they would receive payments for subscribing to a ReVision-built community solar farm.

A Land Option and a Lease Agreement are used to establish a contractual relationship, whereby the parties will have the following primary responsibilities:

Town of Chester:

- Authorizes the use of its land at 101 Town Dump Road to host the solar array;
- Provides ReVision with a 4 Year Option Agreement, enabling ReVision to undertake the necessary utility interconnection, permitting, and other project development activities;
- Executes the Lease Agreement once all required interconnection, design and permitting is complete;
- Receives option payments and annual lease rent and PILOTs;
- (Optional, at the Town and School District discretion) Participates in ReVision's NH Solar Rebate Program to receive payments for subscribing to a solar group net metering project.

ReVision Energy:

- Develops the solar project – interconnection, design, engineering, permitting;
- Makes annual option payments to the Town during the option period;
- Lines up project financing and energy offtakers;
- Constructs the project; and,
- Provides operations and maintenance (if contracted by array owner).

Impact Investor/Array Owner:

- Finances project development and construction;
- Owns and operates the installed solar system;
- Makes annual lease and PILOT payments to the Town;
- Maintains the system while under their ownership (no maintenance costs to the Town of Chester);
- Decommissions the system upon termination of the lease period; and,
- Fully insures the system for both property and liability risks.

As shown in Figure 10, a land lease for 101 Town Dump Road would generate significant options, lease, and PILOT revenues.

Figure 10. Financial comparison of Scenarios 2a and 2b.

Land Lease Financial Summary for 101 Town Dump Road		Scenario 2a	Scenario 2b
System Size		1,260 kW DC 950 kW AC	2,350 kW DC 1,750 kW AC
Year 1 Generation Estimate (kWh)		1,530,270	2,773,705
Term of Option (yrs.)		4	4
Option Payment (total over option term)		\$4,000	\$4,000
Term of Lease (not including optional 10-yr extension)		25 yrs.	25 yrs.
Year 1 Lease Rate (\$/MW), 2% annual escalator		\$12.50	\$12.50
Year 1 Lease Revenue		\$15,750	\$29,375
Annual PILOT Revenue		\$2,520	\$4,700
Land Lease Projected Revenues & Environmental Benefits			
Net Revenue to Chester over 25-Year Term		\$566,477	\$1,057,000
Net Revenue to Chester over Extended 35-Year Term		\$871,613	\$1,629,000
Annual CO2 Emissions Offset (lbs.)		1,499,665	2,718,231

6. Power Production Estimates and Annual Degradation

ReVision's in-house Engineering team uses industry-standard Helioscope software and the latest available satellite data to design each system and model production on hourly, monthly, and annual bases. The year 1 monthly production estimates and sources of system loss shown above for each of the four municipal solar project scenarios incorporate the specific pitch, azimuth (180° South), and other design features, as well as external factors such as irradiance, soiling conditions, and temperature derived from the nearest TMY2 federal weather dataset (Concord Municipal Airport). The primary source of system loss comes from snow soiling based on historic winter precipitation patterns in southern New Hampshire; future snow losses are expected to continue decreasing due to warming winter temperatures linked to global climate change.

Although Q-Cells and other manufactures of Tier 1 bifacial modules estimate gains as high as 20 percent compared to traditional modules for ground-mounted solar arrays, ReVision takes a more conservative approach given limited available independent data since bifacial modules were recently introduced at scale. To ensure future performance matches or exceeds expectations, we currently include a 4 percent solar generation gain with bifacial modules. Annual system output degradation is conservatively modeled at 0.5% based on the module manufacturer's production warranty, NREL analysis of 40-year-

old solar assets, and ReVision’s own experience installing and monitoring thousands of solar arrays in the region. The resulting production curve for the full anticipated 40-year commercial lifespan of the Scenario 1 solar array (317.7 kW DC system at 50 Town Dump Road) is shown below in Figure 11 as an example. Annual production and degradation estimates for each Scenario are included in Appendix A.

Figure 11: 40-year Power Production Estimates and Degradation for 317.7 kW DC system at 50 Town Dump Road.

Year	Annual Degradation	Annual Estimate		Year	Annual Degradation	Annual Estimate
1	0.5%	473,555		21	0.5%	428,383
2	0.5%	471,187		22	0.5%	426,241
3	0.5%	468,831		23	0.5%	424,110
4	0.5%	466,487		24	0.5%	421,989
5	0.5%	464,155		24	0.5%	419,879
6	0.5%	461,834		26	0.5%	417,780
7	0.5%	459,525		27	0.5%	415,691
8	0.5%	457,227		28	0.5%	413,612
9	0.5%	454,941		29	0.5%	411,544
10	0.5%	452,666		30	0.5%	409,487
11	0.5%	450,403		31	0.5%	407,439
12	0.5%	448,151		32	0.5%	405,402
13	0.5%	445,910		33	0.5%	403,375
14	0.5%	443,681		34	0.5%	401,358
15	0.5%	441,462		35	0.5%	399,351
16	0.5%	439,255		36	0.5%	397,355
17	0.5%	437,059		37	0.5%	395,368
18	0.5%	434,873		38	0.5%	393,391
19	0.5%	432,699		39	0.5%	391,424
20	0.5%	430,535		40	0.5%	389,467

7. Impacts on Land, Adjacent Town Operations and Abutters

As a local, employee-owned and mission-driven company, ReVision takes great care to minimize and thoughtfully manage the impacts of solar development and operation. Following is an overview of how the proposed solar projects would impact each property along with adjacent town operations and abutters.

During construction (~6-9 months)

- Deliveries of panels, racking and other materials will travel on 18-wheel trucks through the existing roads on site – we will work with the town authorities to define the best route for construction traffic.
- Noise and vibration can be expected during clearing, site preparation and construction.
- There are no close/abutting homeowners so noise and vibration should not be a material impact away from the property.

During operation (25+ years)

- The perimeter of the solar array will be fenced in accordance with electrical code.
- For the life of the project, operations will be silent and little access will be necessary.
- Access to the site's entry gate will be plowed in winter.
- 24/7 access to the site must be available, which can be arranged with the Town.
- Operations and Maintenance will include annual inspections, vegetation management by mowing or grazing, maintenance access and other activities as needed.
- There will be no anticipated impacts on adjacent property owners.

8. Relationship to Current and Future 3rd Party Electricity Supply Agreements

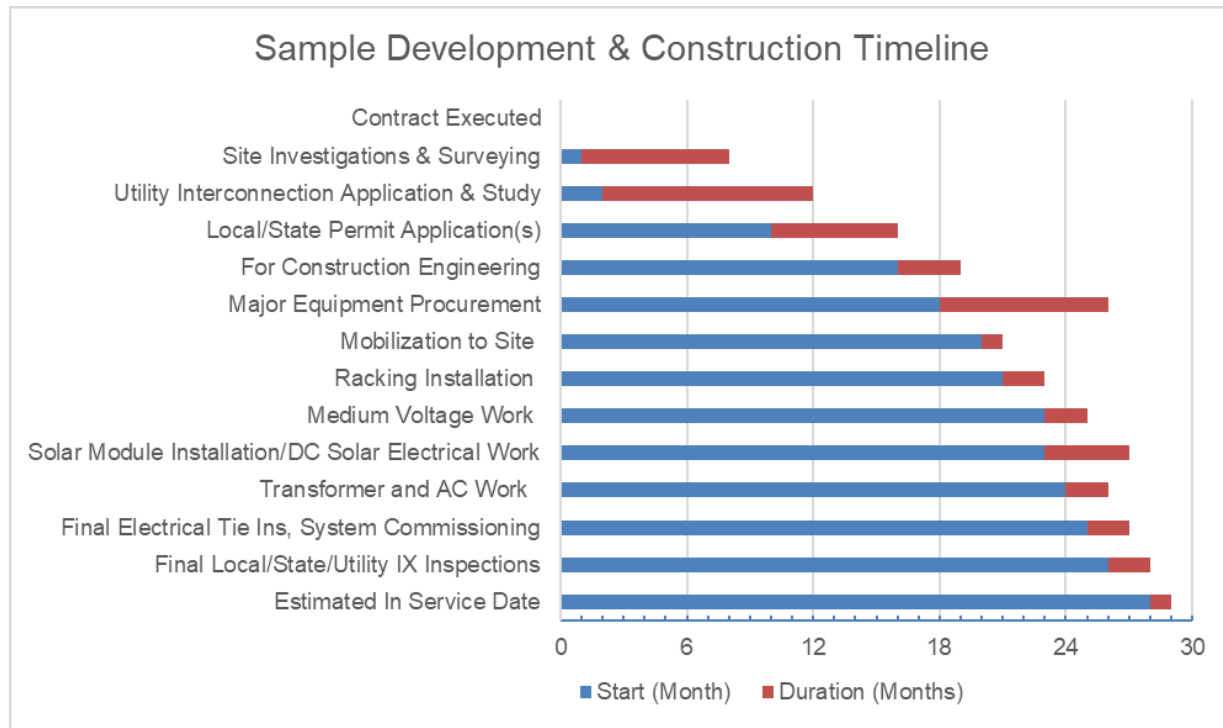
The proposed solar projects would not interfere in any way with the Town's ability to procure discounted third-party electricity supply for its existing utility accounts, such as its current 2-year contract with Constellation. (This is the result of legislation ReVision helped pass that removed the previous requirement that group net metering members revert to utility default supply.) Should the Town pursue a PPA contract for the purchase of solar electricity and then sell that generated power at the higher default service rate to the utility, those contracts would be entirely independent of its third-party supply agreements. ReVision has a longstanding relationship with the Town's electricity broker, Standard Power of America, with whom we regularly collaborate on similar projects and policy.

9. Installation schedule

As a founding member of the Amicus Solar Purchasing Cooperative, one of the largest solar buyers comprising leading regional solar companies across the United States, ReVision negotiates directly with major suppliers for preferential pricing and schedules. Even during the most challenging periods of the Covid global supply chain crisis in 2020-21, ReVision did not experience any major delays affecting our scope of work or delaying our ability to reach Mechanical Completion, although utility system upgrades were a source of delay reaching Final Completion on certain large projects.

Through our Amicus purchasing group, ReVision places bulk orders for tens of megawatts of solar modules approximately two times per year and would include the Chester Municipal Solar Project order at the most advantageous time after contract signing to avoid any potential equipment delays.

Figure 12: Approximate Construction Timeline for 1 MW (AC) Solar Project. Schedule includes 12-week construction gap (January-March) for winter conditions. Blue Line Represents Activity Start Date Timeline. Red Line Represents Activity Duration. All Dates and Durations are Subject to Change



10. Major Equipment Specifications

Modules

ReVision Energy designs systems with high-efficiency Tier 1¹ solar modules. Even though the RFP has specifically asked for all-black modules to be used for this project, it is important to note that black modules are common with residential installation and not for commercial installation at this scale. Additionally, if ReVision is selected for this project, we will undertake a glare study to ensure that the installation would not cause glare to neighboring homes, roads, and highways. With that said, current research on PV system glare has shown that PV modules exhibit less glare than windows and water. Also, from our own experience, PV modules are specifically designed to minimize reflection, as reflected light cannot be converted into electricity.

We use 78 cell and 66 cell solar modules for our system designs. These measure approximately 87"x40" and 79"x40" respectively. Our module selection depends on the racking system (flush roof, ballasted roof, ground mount), local snow and wind loads, and maximum installation efficiency. The solar modules for this system are from QCells, a leading Tier 1 solar manufacturer established in 1999 with a major manufacturing presence in the US. QCells modules are ranked among the highest performers in the industry with no severe degradation nor sign of failure through 4-stage independent testing regimes. They come with a 25-year product warranty for material defects, Hot-Spot protect and Anti PID

Technology. In addition, they include a 25-year performance warranty guaranteeing at least 98% of the nominal power within the first year. Thereafter, a decrease of the power output will not exceed 0.5% per annum and a minimal nominal rated power after 25 years at 86%.

Inverters

Proper inverter selection is paramount to ensuring that a solar system will run efficiently and reliably for the life of the solar inverter (approximately 20 years), with minimum downtime and maximum production. The inverter is generally considered as the workhorse of a solar system as it is responsible for converting all the direct current (DC) electricity generated from the solar modules into grid quality single or three phase alternating current (AC) electricity. Additionally, the solar inverters often provide the foundation for the data acquisition system (DAS) used for monitoring and operations and maintenance planning. When selecting inverters, ReVision Energy prioritizes working with manufacturers that have a proven track record regarding equipment reliability as well as technical and warranty support on installed equipment. This set of criteria generally excludes the lowest cost inverter options.

For this and other large-scale solar projects, ReVision utilizes Chint Power Systems 3-phase string inverters. Chint Power Systems (CPS) is a leading global inverter manufacturer and ranks among the most bankable inverter brands on the market. Based in Dallas, Texas since 2009, CPS American inverters feature high efficiency (98%), high reliability for maximum system uptime, and a user-friendly interface for monitoring, operations, and maintenance. String inverters are the most common inverter configuration in the industry. Advantages include the ability to mount the inverters on the solar array racking, which frees up space for the array (compared to central inverters). If a single inverter fails, the other system inverters remain online and a ReVision technician can easily replace an inverter, minimizing production loss and downtime. When integrated into string inverters, array monitoring and power optimization have significantly improved resolution compared to central inverters. The disadvantage to string inverters is that they are slightly more expensive than central inverters in first cost, though the gap has narrowed in recent years.

Mounting Systems

ReVision Energy's system design and installation expertise encompasses all types of solar installations, including fixed-tilt ground mounts, pitched roof flush mounts, flat roof ballasted mounts, carports, and single- and dual-axis tracking systems. ReVision typically uses driven piles, earth screws, and gabion baskets as foundations for ground-mounted systems. Our in-house Engineering and Operations teams work with multiple US-based and industry-leading racking manufacturers to meet the individual requirements of each project.

11. Production Monitoring and Reporting

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 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, some of our 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 more than 100 installed municipal and commercial solar arrays and can dispatch service technicians around the clock to meet clients' needs.

12. Warranty Information

ReVision consistently sources all its products and associated equipment from Tier-1 manufacturers in the solar industry. All our major components are covered by warranty. The warranties vary by product, but generally have an average term of nearly half or more than half of the system commercial lifespan. This solar system is designed with modules from QCells. QCells is a Tier-1 solar modules manufacturer and has been producing solar modules for over three decades. QCells has a manufacturing presence in the USA located in Dalton, Georgia. QCells modules are ranked among the highest performers in the industry with no severe degradation nor sign of failure through 4-stage independent testing regimes.

QCells warrants that the actual power of the product will reach at least 98% of the nameplate power output in Year 1 and start to decline annually by no more than 0.5% per year for a period of 24 years and by the end of the 25th year, the anticipated output shall be at least 86% of the nameplate power output specified in the product.

Additionally, ReVision's inverters are procured from a leading manufacturer, Chint Power Systems America. CPS is a global leader in inverters which are designed to enhance power production. CPS guarantees 12–20 years product warranty for its inverters.

ReVision Energy warrants its workmanship supplied in connection with equipment purchased from and installed by ReVision. ReVision will repair, at no cost to the customer, equipment sold to the customer by ReVision in accordance with the terms of the equipment manufacturer's warranty. After 5 years, ReVision shall service warranties of manufacturers of equipment sold to the customer by ReVision, but the customer shall be responsible for paying the cost of standard labor rates. Figure 13 shows the major equipment and warranty periods.

Figure 13: Major Equipment and Warranties

Major Equipment	Manufacturer	Warranty	Lifespan
QCells Peak Duo Bifacial Panels	QCells	25 years	40+ years
CPS Inverters	Chint Power Systems	10-20 years	15-20 years
IronRidge Racking Systems	IronRidge	20-25 years	40+ years
SolarEdge Data Monitoring System	SolarEdge	5-10 years	15-25 years
Standard Wiring	AWG Copper	5-10years	40 + years

13. Proposed Operation and Maintenance

As part of the final system design for the proposed Chester Municipal Solar Project, ReVision will develop a detailed, site-specific Operations & Maintenance (O&M) plan to maximize system longevity and productivity. The standard maintenance plan features are summarized at right. Our O&M plan will include daily monitoring of system performance so we can quickly mobilize our in-house service personnel to address issues that may arise, either remotely or onsite in accordance with guaranteed response times. The plan also includes 80-point annual electrical and mechanical inspections and associated preventive maintenance, accompanied by a detailed inspection and production report. A detailed description and checklist of regular maintenance activities is available upon request.

Maintenance Plan Features	Frequency
Mechanical Site Inspection	Annual
Electrical Site Inspection	Annual
Standard preventive Maint.	Annual
Production Report	Annual
Onsite Troubleshooting	As needed
Remote Troubleshooting	As needed
Thermal Imaging Inspection	Annual
Alarm Monitoring	Continuous
Production Monitoring	Continuous
Inverters Replacement	Year 20

Each ReVision solar array also comes standard with comprehensive production monitoring and reporting capabilities via our industry-standard data acquisition systems, which our project manager sets up on behalf of each client. In addition to the standard monitoring offers available on any internet-connected device, we would be pleased to assist the Town of Hooksett with promotion of its solar array production data via online platforms, as appropriate, as a means of public/community engagement.

ReVision is the leading provider of solar O&M services in Northern New England and a founding member of the national Amicus O&M Cooperative, a collection of top-ranked solar companies across the United States that has developed O&M best practices with funding from the SunShot Initiative at the U.S. Department of Energy. ReVision's in-house O&M Service Division actively monitors and serves more than 250 commercial solar energy systems installed throughout northern New England. Our O&M technicians (certified 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. We also provide on-the-ground training and resources to facilities staff and deliver trainings to public safety officials on emergency procedures relating to solar.

14. Insurance

ReVision Energy maintains comprehensive insurance coverages consistent with its work in the comparatively high-risk field of construction. The following is a summary of ReVision's insurance policies. More information is available on request.

Automobile
Zurich American Insurance

Broker: Murphy Agency

General Liability
Liberty Mutual

\$2 million aggregate, \$1 million per occurrence Broker: United Insurance

GL Commercial Umbrella
Liberty Mutual

\$5 million annual aggregate, \$5 million per occurrence Broker: United Insurance

Professional Liability & Pollution
Incident Liability
Evanston Insurance Company

\$2 million aggregate, \$2 million per claim

Broker: Murphy Agency

Inland Marine
Acadia Insurance

Broker: United Insurance

Workers Compensation
Zurich American Insurance

Covered in ME, MA, and NH

Broker: Murphy Agency

15. Decommissioning

The system owner will be responsible for decommissioning at the end of the PPA or lease agreement. ReVision is committed to decommissioning in accordance with industry best practices and consistent with our investor partner's contractual obligations, which include removing all above-ground components of the solar array including steel piles and restoring the site to its former condition. Only fully encased below-grade conduits that present no environmental risk are typically left in place after decommissioning, leaving no visible sign of the array.

16. Community Engagement Opportunities

In keeping with our longstanding belief that education is critical to accelerating the clean energy transition and the need to rapidly scale the clean energy workforce, ReVision Energy co-owners provide educational presentations and enrichment activities for students and community members throughout our service territory.

We would be glad to work with the Town of Chester to develop a comprehensive partnership plan that meets the needs of your community. Such a plan could include:

- Hands-on tours and technical/financial performance monitoring of the completed solar array by our Master Electricians and Commercial Project Managers;
- Touch-A-Truck events, where members of the public can explore the tools of the trade with our installers;



- Lunch and learn presentations on the technical, environmental, and policy/regulatory aspects of solar, energy storage, and beneficial electrification of transportation and thermal loads by ReVision's subject matter experts.

ReVision would also be eager to offer our latest educational engagement tool, the Tiny Climate Classroom, which provides hands-on learning experiences for students of all ages delivered by our dedicated educator; it was launched on Earth Day 2022 along with our expanded online educational offerings via www.Sunsquatch.com.



Of course, ReVision is also pleased to partner with the Town of Chester on public ribbon cuttings, signage, drone photography, case study videos, comprehensive data monitoring systems, and custom monitoring and information webpages for ongoing community engagement. Our data acquisition systems provide real-time solar performance monitoring for all solar arrays (available on any internet-connected device) and have various educational applications for employees or community groups. In addition to signage and educational programming, we can offer prominent monitors showing current and historic solar production and resulting environmental benefits in terms of trees planted, number of homes powered, etc., to highlight our clients' progress toward environmental sustainability.

Finally, ReVision would be pleased to consider a solarize discount program for the Town of Chester employees featuring residential solar, battery, heat pump, and other clean energy installations, and can offer the Town electric vehicle charging stations for community benefit with accompanying educational signage.

Appendix A: Power Production Estimates

Power Production Estimate						
50 Town Dump Road						
371.7 kW DC System						
Year	Annual Degradation	Annual Estimate		Year	Annual Degradation	Annual Estimate
1	0.5%	473,555		21	0.5%	428,383
2	0.5%	471,187		22	0.5%	426,241
3	0.5%	468,831		23	0.5%	424,110
4	0.5%	466,487		24	0.5%	421,989
5	0.5%	464,155		24	0.5%	419,879
6	0.5%	461,834		26	0.5%	417,780
7	0.5%	459,525		27	0.5%	415,691
8	0.5%	457,227		28	0.5%	413,612
9	0.5%	454,941		29	0.5%	411,544
10	0.5%	452,666		30	0.5%	409,487
11	0.5%	450,403		31	0.5%	407,439
12	0.5%	448,151		32	0.5%	405,402
13	0.5%	445,910		33	0.5%	403,375
14	0.5%	443,681		34	0.5%	401,358
15	0.5%	441,462		35	0.5%	399,351
16	0.5%	439,255		36	0.5%	397,355
17	0.5%	437,059		37	0.5%	395,368
18	0.5%	434,873		38	0.5%	393,391
19	0.5%	432,699		39	0.5%	391,424
20	0.5%	430,535		40	0.5%	389,467

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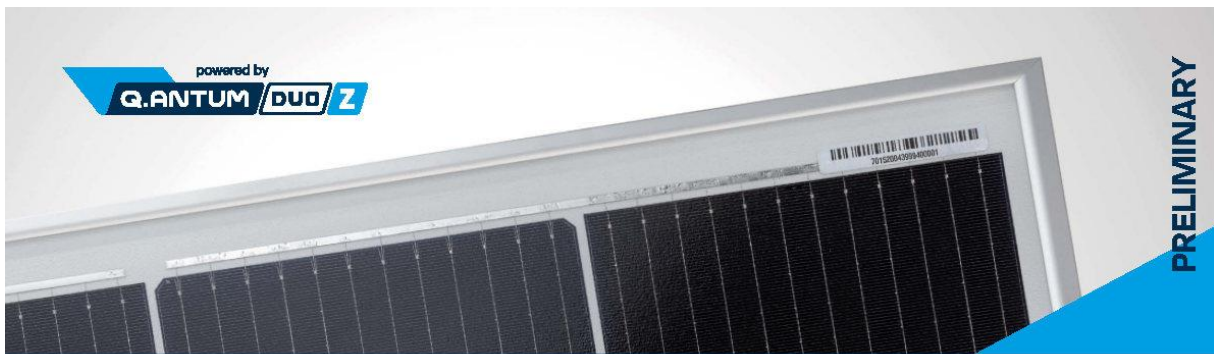
Power Production Estimate						
50 Town Dump Road						
512.1 kW DC Array						
Year	Annual Degradation	Annual Estimate		Year	Annual Degradation	Annual Estimate
1	0.5%	621,164		21	0.5%	561,911
2	0.5%	618,058		22	0.5%	559,102
3	0.5%	614,968		23	0.5%	556,306
4	0.5%	611,893		24	0.5%	553,525
5	0.5%	608,834		24	0.5%	550,757
6	0.5%	605,789		26	0.5%	548,003
7	0.5%	602,760		27	0.5%	545,263
8	0.5%	599,747		28	0.5%	542,537
9	0.5%	596,748		29	0.5%	539,824
10	0.5%	593,764		30	0.5%	537,125
11	0.5%	590,795		31	0.5%	534,440
12	0.5%	587,841		32	0.5%	531,767
13	0.5%	584,902		33	0.5%	529,109
14	0.5%	581,978		34	0.5%	526,463
15	0.5%	579,068		35	0.5%	523,831
16	0.5%	576,172		36	0.5%	521,212
17	0.5%	573,292		37	0.5%	518,606
18	0.5%	570,425		38	0.5%	516,013
19	0.5%	567,573		39	0.5%	513,432
20	0.5%	564,735		40	0.5%	510,865

Power Production Estimate						
101 Town Dump Road						
1260 kW DC Array						
Year	Annual Degradation	Annual Estimate		Year	Annual Degradation	Annual Estimate
1	0.5%	1,530,270		21	0.5%	1,384,298
2	0.5%	1,522,619		22	0.5%	1,377,377
3	0.5%	1,515,006		23	0.5%	1,370,490
4	0.5%	1,507,431		24	0.5%	1,363,637
5	0.5%	1,499,893		24	0.5%	1,356,819
6	0.5%	1,492,394		26	0.5%	1,350,035
7	0.5%	1,484,932		27	0.5%	1,343,285
8	0.5%	1,477,507		28	0.5%	1,336,569
9	0.5%	1,470,120		29	0.5%	1,329,886
10	0.5%	1,462,769		30	0.5%	1,323,236
11	0.5%	1,455,455		31	0.5%	1,316,620
12	0.5%	1,448,178		32	0.5%	1,310,037
13	0.5%	1,440,937		33	0.5%	1,303,487
14	0.5%	1,433,732		34	0.5%	1,296,969
15	0.5%	1,426,564		35	0.5%	1,290,485
16	0.5%	1,419,431		36	0.5%	1,284,032
17	0.5%	1,412,334		37	0.5%	1,277,612
18	0.5%	1,405,272		38	0.5%	1,271,224
19	0.5%	1,398,246		39	0.5%	1,264,868
20	0.5%	1,391,255		40	0.5%	1,258,543

Power Production Estimate						
101 Town Dump Road						
2350 kW DC Array						
Year	Annual Degradation	Annual Estimate		Year	Annual Degradation	Annual Estimate
1	0.5%	2,773,705		21	0.5%	2,509,123
2	0.5%	2,759,836		22	0.5%	2,496,577
3	0.5%	2,746,037		23	0.5%	2,484,094
4	0.5%	2,732,307		24	0.5%	2,471,674
5	0.5%	2,718,646		24	0.5%	2,459,315
6	0.5%	2,705,052		26	0.5%	2,447,019
7	0.5%	2,691,527		27	0.5%	2,434,784
8	0.5%	2,678,069		28	0.5%	2,422,610
9	0.5%	2,664,679		29	0.5%	2,410,497
10	0.5%	2,651,356		30	0.5%	2,398,444
11	0.5%	2,638,099		31	0.5%	2,386,452
12	0.5%	2,624,908		32	0.5%	2,374,520
13	0.5%	2,611,784		33	0.5%	2,362,647
14	0.5%	2,598,725		34	0.5%	2,350,834
15	0.5%	2,585,731		35	0.5%	2,339,080
16	0.5%	2,572,803		36	0.5%	2,327,384
17	0.5%	2,559,939		37	0.5%	2,315,747
18	0.5%	2,547,139		38	0.5%	2,304,169
19	0.5%	2,534,403		39	0.5%	2,292,648
20	0.5%	2,521,731		40	0.5%	2,281,185

Appendix B:

PV Module, Inverter, & Racking Spec Sheets



PRELIMINARY

Q.PEAK DUO XL-G11.2 570-590

ENDURING HIGH
PERFORMANCE



BREAKING THE 21 % EFFICIENCY BARRIER

Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 21.7%.



LOW ELECTRICITY GENERATION COSTS

Higher yield per surface area, lower BOS costs and up to 175 watts more module power than standard 144 half-cell modules.



ENDURING HIGH PERFORMANCE

Long-term yield security with Anti LID Technology, Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.



EXTREME WEATHER RATING

High-tech aluminium alloy frame, certified for high snow (5400Pa) and wind loads (2400Pa).



A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance warranty².



STATE OF THE ART MODULE TECHNOLOGY

Q.ANTUM DUO combines cutting edge cell separation and innovative 12-busbar design with Q.ANTUM Technology.

¹ APT test conditions according to IEC/TS 62804-1:2015, method B (-1500V, 168h)
² See data sheet on rear for further information.



THE IDEAL SOLUTION FOR:

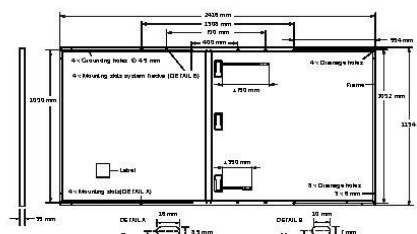


Ground-mounted
solar power plants

Engineered in Germany

Q CELLS

Format	2416 mm × 1134 mm × 35 mm (including frame)
Weight	31.3 kg
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Anodised aluminium
Cell	6 × 28 monocrystalline Q ANTUM solar half cells
Junction box	53-101 mm × 32-60 mm × 15-18 mm Protection class IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥750 mm, (-) ≥350 mm
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4; IP68

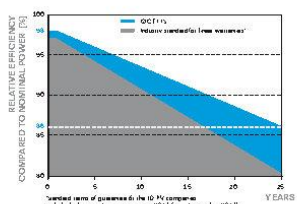


Drawing not to scale

POWER CLASS			570	575	580	585	590
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ² (POWER TOLERANCE +5 W / -0 W)							
Minimum	Power at MPP ¹	P _{MPPT} [W]	570	575	580	585	590
	Short Circuit Current ¹	I _{sc} [A]	13.49	13.51	13.54	13.57	13.59
	Open Circuit Voltage ¹	V _{OC} [V]	53.59	53.62	53.64	53.67	53.70
	Current at MPP	I _{MPPT} [A]	12.82	12.87	12.92	12.97	13.01
	Voltage at MPP	V _{MPPT} [V]	44.46	44.68	44.90	45.12	45.33
	Efficiency ¹	η [%]	≥ 20.8	≥ 21.0	≥ 21.2	≥ 21.4	≥ 21.5
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²							
Minimum	Power at MPP	P _{MPPT} [W]	427.6	431.4	435.1	438.9	442.6
	Short Circuit Current	I _{sc} [A]	10.87	10.89	10.91	10.93	10.95
	Open Circuit Voltage	V _{OC} [V]	50.54	50.56	50.59	50.62	50.64
	Current at MPP	I _{MPPT} [A]	10.09	10.13	10.17	10.22	10.26
	Voltage at MPP	V _{MPPT} [V]	42.39	42.58	42.77	42.96	43.14

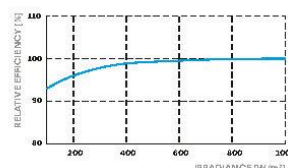
¹Measurement tolerances $P_{U_{ref}} \pm 3\%$; I_{sc} ; $V_{oc} \pm 5\%$ at STC: 1000 W/m^2 , $25 \pm 2^\circ \text{C}$, AM 1.5 according to IEC 60904-3 · 800 W/m^2 , NMOT, spectrum AM 1.5

PERFORMANCE AT LOW IRRADIANCE



At least 98% of nominal power during first year. Thereafter max. 0.5% degradation per year. At least 93.5% of nominal power up to 10 years. At least 86% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.



Typical module performance under low irradiance conditions in comparison to STC conditions (25°C, 1000W/m²).

TEMPERATURE COEFFICIENTS						
Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]
Temperature Coefficient of P_{MPP}	γ	[%/K]	-0.34	Nominal Module Operating Temperature	NMOT	[°C]
						43±3

Maximum System Voltage	V_{sys} [V]	1500	PV module classification	Class II
Maximum Reverse Current	I_R [A]	20	Fire Rating based on ANSI / UL 61730	C / TYPE 1
Max. Design Load, Push / Pull	[Pa]	3600 / 1600	Permitted Module Temperature on Continuous Duty	-40°C - +85°C
Max. Test Load, Push / Pull	[Pa]	5400 / 2400		

EC 61215 2D16,
IEC 61730 2D16
This data sheet complies
with DIN EN 50380



Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Harwha Q CELLS GmbH

Sonnenallee 17-21, 06766 Bitterfeld-Wolfen, Germany | **TEL** +49 (0)3494 66 99-23444 | **FAX** +49 (0)3494 66 99-23000 | **EMAIL** sales@q-cells.com | **WEB** www.q-cells.com

Specifications subject to technical changes © Q CELLS Q PEAK DUC XL-GTT 2 S70-S9D 2020-11 Rev01 EN

100/125kW, 1500Vdc String Inverters for North America



The 100 & 125kW high power CPS three phase string inverters are designed for ground mount applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 99.1% peak and 98.5% CEC, wide operating voltages, broad temperature ranges and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 100/125kW products ship with the Standard or Centralized Wire-box, each fully integrated and separable with AC and DC disconnect switches. The Standard Wire-box includes touch safe fusing for up to 20 strings. The CPS FlexOM Gateway enables communication, controls and remote product upgrades.

Key Features

- NFPA 70, NEC 2014 and 2017 compliant
- Touch safe DC Fuse holders adds convenience and safety
- CPS FlexOM Gateway enables remote FW upgrades
- Integrated AC & DC disconnect switches
- 1 MPPT with 20 fused inputs for maximum flexibility
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- Advanced Smart-Grid features (CA Rule 21 certified)
- kVA Headroom yields 100kW @ 0.9PF and 125kW @ 0.95PF
- Generous 1.87 and 1.5 DC/AC Inverter Load Ratios
- Separable wire-box design for fast service
- Standard 5 year warranty with extensions to 20 years



100/125KTL Standard Wire-box



100/125KTL Centralized Wire-box



This device complies with
part 15 of the FCC Rules

© CHINT POWER SYSTEMS AMERICA 2021/02-MKT NA

Chint Power Systems America
6800 Koll Center Parkway, Suite 235 Pleasanton, CA 94566
Tel: 855-584-7168 Mail: AmericaSales@chintpower.com Web: www.chintpowersystems.com



Model Name	CPS SCH100KTL-DO/US-600		CPS SCH125KTL-DO/US-600
DC Input			
Max. PV Power	187.5kW		
Max. DC Input Voltage	1500V		
Operating DC Input Voltage Range	960-1450Vdc		
Start-up DC Input Voltage / Power	900V / 250W		
Number of MPP Trackers	1		
MPPT Voltage Range ¹	870-1300Vdc		
Max. PV Input Current (Isc x1.25)	275A		
Number of DC Inputs	20 PV source circuits, pos. & neg. fused (Standard Wire-box) 1 PV output circuit, 1-2 terminations per pole, non-fused (Centralized Wire-box)		
DC Disconnection Type	Load-rated DC switch		
DC Surge Protection	Type II MOV (with indicator/remote signaling), Up=2.5kV, In=20kA (8/20uS)		
AC Output			
Rated AC Output Power	100kW	125kW	
Max. AC Output Power ²	100kVA (111kVA @ PF>0.9)	125kVA (132kVA @ PF>0.95)	
Rated Output Voltage	600Vac		
Output Voltage Range ³	528-660Vac		
Grid Connection Type ⁴	3Φ / PE / N (Neutral optional)		
Max. AC Output Current @600Vac	96.2/106.8A	120.3/127.0A	
Rated Output Frequency	60Hz		
Output Frequency Range ³	57-63Hz		
Power Factor	>0.99 (±0.8 adjustable)	>0.99 (±0.8 adjustable)	
Current THD	<3%		
Max. Fault Current Contribution (1-cycle RMS)	41.47A		
Max. OCPD Rating	200A		
AC Disconnection Type	Load-rated AC switch		
AC Surge Protection	Type II MOV (with indicator/remote signaling), Up=2.5kV, In=20kA (8/20uS)		
System			
Topology	Transformerless		
Max. Efficiency	99.1%		
CEC Efficiency	98.5%		
Stand-by / Night Consumption	<4W		
Environment			
Enclosure Protection Degree	NEMA Type 4X		
Cooling Method	Variable speed cooling fans		
Operating Temperature Range	-22°F to +140°F / -30°C to +60°C (derating from +113°F / +45°C)		
Non-Operating Temperature Range ⁵	-40°F to +158°F / -40°C to +70°C maximum		
Operating Humidity	0-100%		
Operating Altitude	8202ft / 2500m (no derating)		
Audible Noise	<65dBA@1m and 25°C		
Display and Communication			
User Interface and Display	LED Indicators, WiFi + APP		
Inverter Monitoring	Modbus RS485		
Site Level Monitoring	CPS FlexOM Gateway (1 per 32 inverters)		
Modbus Data Mapping	SunSpec/CPS		
Remote Diagnostics / FW Upgrade Functions	Standard / (with FlexOM Gateway)		
Mechanical			
Dimensions (WxHxD)	45.28x24.25x9.84in (1150x616x250mm) with Standard Wire-box 39.37x24.25x9.84in (1000x616x250mm) with Centralized Wire-box		
Weight	Inverter: 121lbs / 55kg; Wire-box: 55lbs / 25kg (Standard Wire-box); 33lbs / 15kg (Centralized Wire-box)		
Mounting / Installation Angle	15 - 90 degrees from horizontal (vertical or angled)		
AC Termination	M10 Stud Type Terminal [3Φ] (Wire range: 1/0AWG - 500kcmil CU/AL, Lugs not supplied) Screw Clamp Terminal Block [N] (#12 - 1/0AWG CU/AL)		
DC Termination	Screw Clamp Fuse Holder (Wire range: #12 - #6AWG CU) - Standard Wire-box Busbar, M10 Bolts (Wire range: #1AWG - 500kcmil CU/AL [1 termination per pole], #1AWG - 300kcmil CU/AL [2 terminations per pole], Lugs not supplied) - Centralized Wire-box		
Fused String Inputs	20A fuses provided (Fuse values of 15A or 20A acceptable)		
Safety			
Safety and EMC Standard	UL 1741-SA-2016, CSA-C22.2 NO.107.1-01, IEEE1547a-2014; FCC PART15		
Selectable Grid Standard	IEEE 1547a-2014, CA Rule 21, ISO-NE		
Smart-Grid Features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAR, Freq-Watt, Volt-Watt		
Warranty			
Standard ⁶	5 years		
Extended Terms	10, 15 and 20 years		

1) See user manual for further information regarding MPPT Voltage Range when operating at non-unity PF

2) "Max. AC Apparent Power" rating valid within MPPT voltage range and temperature range of -30°C to +40°C (-22°F to +104°F) for 100kW PF ≥0.9 and 125kW PF ≥0.95

3) The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard.

4) Wye neutral-grounded, Delta may not be corner-grounded.

5) See user manual for further requirements regarding non-operating conditions.

6) 5 year warranty effective for units purchased after October 1st, 2019.



Our adjustable and durable frame features less hardware, integrated electrical bonding, and included wire management resulting in reduced labor hours. Installation times are shortened by up to 36% through simplified connections, agile parts, and seasoned field teams. Foundation consultation from an unbiased partner, based on your unique project site. No matter the terrain or weather, we'll provide the right solution. Our versatile design enables numerous configurations allowing us to meet your unique needs and bring solar to more fields.



Portrait up to 3 high x 12 wide



Landscape up to 4 high x 6 wide
Bifacial compatible

Benefits

- Less hardware for faster installation and reduced labor hours
- Simplified hardware featuring 2-piece bolt stacks and only two types of hardware
- Adapts to steep slopes
- Foundations for any terrain
- Included wire management
- Lighter, stiffer components for less freight costs
- Versatile with numerous configurations
- Durable, tolerating up to 170 MPH winds and 100 PSF ground snow loads
- Landscape orientation is bifacial compatible to maximize potential backside power yield

Specifications

Module orientation	Portrait or Landscape
Module mounting	Bottom mount / Integrated electrical bonding
Tilt angle	5° - 35°
Wire management	Incorporated in structure – NEC compliant
Configuration	Portrait: up to 3 high x 12 wide / Landscape: up to 4 high x 6 wide
Slopes	East or West facing, up to 30% / North or South facing, up to 36%
Load capacities	Project specific: up to 170 MPH wind speed and 100 PSF ground snow load
Foundations	Ground screws / Driven piles
Warranty	20 year limited warranty
Certifications	UL2703, edition 1; CPP wind tunnel tested