SOLAR AND STORAGE SERVICES

Benefit from ArcVera’s experience and technical expertise

About ArcVera Renewables

ArcVera Renewables is a leading renewable energy technical advisory and consultancy providing valuable independent engineering due diligence services through the entire project lifecycle. ArcVera’s vast experience stems from a senior team of engineers and atmospheric scientists. ArcVera’s mission is to provide and uphold a high standard using sound methodologies and analysis to inform our clients and stakeholders of the technical viability of solar and energy storage projects.

ArcVera provides reliable solar resource and electric energy evaluations, site due diligence, system design and technology, environmental and permitting, contractual, and proforma analysis to best inform our client’s decision-making and negotiations. ArcVera’s independent engineering services can be relied upon for unbiased results that comprehensively evaluate the technical, contractual and financial attributes of a project. With a technical risk mitigation focus, our work adds value from development through operations.

Our solar experience

ArcVera Renewables has 20 years of solar experience acquired across more than 6-gigawatts of projects – this experience is standing by to help address your projects’ technical challenges.

Since 2001, ArcVera has performed reviews and analyses of a wide range of global solar projects. We will help you navigate the fast-evolving dynamics of the marketplace, advising on the current technology and landscape of investors. ArcVera has supported clients through diverse project types including portfolios, commercial & industrial, distributed generations, and large utility-scale projects.

Hybrid and Energy Storage Systems

Energy systems modernization, technology cost decreases, and a wide range of storage options are enabling our electrical systems to rapidly evolve into more reliable, cleaner, and cheaper power generation. Our extensive experience in the renewable energy industry can help you achieve your goals in a variety of hybrid projects that include storage applications, whether it’s behind-the-meter, in-front-of-the-meter, distributed generation, microgrids, large islanded systems, and others.
Solar Meteorological Station Data Monitoring
- Qualified and complete turnkey services to support solar energy and resource assessments and uncertainty analysis through a measure correlate predict (MCP) analysis

Hybrid and Storage Economic Feasibility
- Economic optimization of utility and distributed generation projects
- Off-grid system feasibility
- Independent power producer (IPP) modeling for energy markets
- Reliability and resiliency
- In-depth analysis of battery rate-dependent losses, temperature effects on the lifetime and capacity, cycling degradation, and economics

Site Pre-feasibility Analysis
- Land parcel constraints
- Terrain topographical conditions
- Construction feasibility analyses
- Identification of buildable areas

Solar Resource and Energy Assessment
- Evaluation and selection advisory of satellite-based solar irradiance models (e.g. SolarGIS, SolarAnywhere, 3Tier, SoliCast, NSRDB) in the absence of or complemented with in-situ measurements for accurate and bankable P50/P75/P90 production estimates
- On-site measurement data analysis (MCP, regression analysis for long-term time-series, and TMY creation with satellite-based models)
- Evaluation of modeling losses
- Production estimates for solar- and solar-plus-storage projects using industry-standard tools such as PVsyst®, SAM, HOMER®
- Evaluation of historical performance

Engineering Design Review
- Detailed design review of electrical, civil, mechanical and structural disciplines related to the the basis of design and applicable codes and standards

Major Equipment and Technology Assessments
- Evaluation and comparison of technical specifications on major equipment (modules, batteries, inverters, transformers and racking systems)
- Review and validation of third party testing, manufacturing audit, and bankability reports
- Assist with procurement and material selection with LCOE-driven comparison of modules, inverters, racking, energy storage components, and equipment safe-harbor ing
- Module technology, e.g., p-type, n-type c-Si, CdTe modules, PERC, bifacial, half-cut

Contractual Review and Support
- Review of construction agreements, warranties, interconnection agreements, power purchase agreements (PPA), tolling agreements, material supply agreements, operations and maintenance agreements, identifying contract responsibilities, and identify commercial and technical risk
- Assist in RFP bids and responses
SOLAR AND STORAGE TECHNICAL CAPABILITIES

Pro-forma Due Diligence

• Technical and financial due diligence of assets for CAPEX, OPEX
• Identify potential risks in connection with contractual arrangements (PPA, IA, revenues, availability, degradation, and others)

Market Evaluations for Solar + Storage

• Use case scenarios
• Energy arbitrage (time of day) dispatch
• Demand charge reduction and utility bill savings
• Optimized system sizing with least cost solution
• In-front-of-the-meter and behind-the-meter economical analysis
• Battery sizing optimization
• Solar+Storage value stacking to increase return on investment
• Coupling of irradiance and pricing forecast

Construction Monitoring

• Perform site visits from pre-construction through operations to observe the quality, schedule, safety, compliance, operations, and budget
• Provide draw payment certificates on behalf of sponsors

ArcVera Renewables’ Technical Services Partner Network

ArcVera Renewables extends its solar project technical capabilities under its Technical Services Partner Network, a network of senior-level solar industry veterans who lend their qualifications and expertise to support projects requiring a comprehensive independent engineering scope.

Maximize Accuracy with ArcVera’s Turnkey Solar Energy Resource Assessment Solution

ArcVera maximizes accuracy and project success with complete, turnkey, solar energy resource assessment solutions. Developed for solar project stakeholders who recognize the cost-value benefits of a ground-based, solar energy resource assessment measurement campaign as an integrated component of a solar project pipeline development. Together with its solution partners, ArcVera provides a complete services solution that includes reliable measurement system supply, third-party field installation and maintenance services, and trustworthy, independent technical advisory services by ArcVera Renewables.

A list of representative solar project data is included within ArcVera’s confidential Statement of Qualifications document, available upon request.

The ArcVera Solar Team is standing by to schedule a consultation with you.

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ArcVera Renewables provides first-class consulting and technical services for wind, solar and storage project developers, owners, and investors worldwide.

SOLAR AND STORAGE SERVICES

20 years and 6 gigawatts of project experience inform ArcVera’s trusted analysis to help address your technical challenges.

LOCATIONS

NORTH AMERICA | UNITED STATES
COLORADO (Golden)
VERMONT (Burlington)
WASHINGTON (Bellingham)

LATIN AMERICA | BRAZIL
SÃO PAULO (São Paulo)

EUROPE, MIDDLE EAST & AFRICA
SOUTH AFRICA (Cape Town)

ASIA PACIFIC & MIDDLE EAST
INDIA (Bangalore)

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