



# THE SMART CHOICE FOR LASTING PV PLANT SUCCESS



# SOLECTRIA - A YASKAWA COMPANY

## SETTING THE STANDARD FOR UTILITY-GRADE PV SOLUTIONS

Solectria Renewables, a wholly-owned subsidiary of Yaskawa America, Inc., is a leading PV inverter manufacturer based in Lawrence, Massachusetts. Founded in 2005, Solectria offers a versatile line of high-efficiency, high-value inverter solutions supported by exceptional engineering and world-class warranties.

In September 2014, Solectria Renewables became a wholly-owned subsidiary of Yaskawa America, Inc. Founded in 1915, Yaskawa is a \$3.6 billion global leader in factory automation solutions and motor drive inverters, and is an established leader in the low power PV inverter market in Japan.

The acquisition benefits Yaskawa and Solectria customers alike. Yaskawa brings scale, global sales and manufacturing facilities as well as diversification to Solectria. Solectria brings over 25 years of power electronics experience, 10 dedicated to the PV industry and an in-depth knowledge of medium and high voltage PV products to Yaskawa.

Yaskawa is dedicated to increasing its presence in the renewable energy market in the US and globally. It acquired Solectria for its in-depth North American PV knowledge and for its world-leading inverter solutions. Yaskawa brings a broad base of technology expertise to enhance the capabilities of the Solectria team.

Together, the companies are committed to growing the business by delivering superior customer experiences. Solectria Renewables retains its team – management, engineering, sales and customer service – as a wholly-owned subsidiary of Yaskawa America, Inc.

Solectria Renewables has a powerful, diversified global partner with world-class quality systems. The acquisition has enhanced the company's bankability and has provided additional resources to expand into new markets for the future.

Solar power is reaching cost parity with conventional energy sources in North America, driving aggressive demand for solar projects. Companies that will be successful need the best technology from reliable partners. Solectria, a Yaskawa Company, is the right choice for large commercial and utility-scale projects.



## SOUND

A secure partner invested in your success: Solectria was acquired by Yaskawa America in September 2014. Solectria continues to manufacture all of its 3-phase central inverters, utility-scale inverters, monitoring systems and combiner boxes in the U.S.A.

## SIMPLE

Simple, innovative technologies at exceptional value: Built on 25 years of experience with power electronics and inverters, Solectria's elegant designs lower costs and improve reliability. Solectria's solutions deliver exceptional uptime, and are engineered to work with current and future North American grid standards.

## SMART

Ready for the utility grid of today and tomorrow: Solectria is committed to developing the next generation of utility-grade systems that ensure grid stability and enable higher penetration. Solectria has partnered with EPRI and leading utilities along with the U.S. Department of Energy SunShot program to develop and test technologies that accommodate evolving standards.

## SUSTAINABLE

Sustainable solutions backed by a solid, secure team: Solectria offers exceptional engineering support throughout the project life cycle, including a world-class customer support team committed to rapid and professional response.

“[Solectria’s] sales and service team were supportive on every level. That, combined with their unprecedented inverters with 98% CEC efficiency and unbelievable reliability, makes them our preferred inverter partner.”

*Andrew Goldin, Senior Vice President of EPC Operations, Cenergy Power*



## CREATING JOBS FOR AMERICA

Solectria was featured in the inaugural ranking of *Inc. Magazine's* Hire Power Awards, recognizing businesses that have generated the most jobs in the past three years. Between 2008 and 2014, Solectria Renewables has grown by over 500% generating 200 jobs, ranking as the #1 Energy Sector job creator in Massachusetts, and placing it among the top 10 business job creators within the U.S. energy industry.



## THE SOUND CHOICE FOR PV PROJECT INVESTMENTS

*Solectria is a steady, secure partner with the right combination of financial security, high-value/high-reliability solutions, and utility-scale expertise.*

### FISCAL HEALTH

Solectria, a wholly-owned subsidiary of Yaskawa America, Inc., offers customers and partners the security of fiscal health and bankability. This ensures continued investment in product development and manufacturing to support the largest PV projects in North and South America.

### TECHNOLOGY LEADERSHIP

Solectria has honed its industry-leading technology over 25 years, providing the most efficient and reliable solutions available today with proven reliability in even the harshest of conditions. The SMARTGRID inverter series is the industry's first and only 98.0% CEC efficient central inverter with external transformer.



“Solectria is a transparent, honest, and trustworthy company. Its U.S. focus is absolutely important – unlike many other manufacturers, Solectria’s equipment was designed from the beginning to meet U.S. standards.”

*Aron Anderson, Director of Estimating, Wanzec Construction, a division of Mastec*

## EXPERIENCE

Thousands of U.S. projects ranging in size from 1kW to 30MW rely on Solectria inverter solutions. Solectria partners with PV owners, investors, project developers, and EPCs throughout the Americas to build high-performing PV systems, from residential rooftops to the world’s largest CPV plant.

## NORTH & SOUTH AMERICA PV FOCUS

Solectria is a U.S. manufacturer with more than 1000MW of production capacity in Lawrence, Massachusetts. The Company is focused exclusively on the PV industry, dedicating 100% of its resources on improvements in power conversion technology and customer satisfaction.



## SIMPLE SOLUTIONS FOR NEXT-GENERATION PV SYSTEMS

Solectria's inverters offer outstanding product performance and advanced features anticipated for the next generation of distributed generation PV projects. A focus on elegant designs using minimal subassemblies to speed manufacturing and ease

installation, Solectria's inverter solutions increase efficiency, extend uptime, and provide maximum return on investment. Solutions range from 50kW to 2MW, and are manufactured in the U.S.A. to be ARRA compliant and listed to UL 1741/IEEE 1547.

"Entropy has a strong relationship with Solectria and we are looking forward to working with them on our North Carolina projects. Their ability to supply high-quality inverters and competitive pricing is essential for the continued deployment of low cost solar energy in the United States"

*Clay Hartman, Chief Operating Officer, Entropy Solar Integrators,  
on the company's choice to power 45 MWs in North Carolina*

## PVI SERIES

Solectria's series of PVI commercial string and central inverters are the most customizable commercial grid-tied PV inverters available today. Offering the highest peak and CEC efficiencies in the industry, they include options such as intelligent communications, real power curtailment, reactive power control, and voltage and frequency ride through. Customers have chosen Solectria's PVIs for projects ranging from 50kW up to 30MW.

## SGI SERIES

Solectria's SMARTGRID inverters boast industry-leading CEC efficiencies - 97.5% with integrated transformer or 98% with external transformer - and deliver exceptional reliability and economy. The SGI XT and XTM inverters are designed for direct connection to an external transformer and include advanced grid management features such as fault ride through, real and reactive power control, and power factor control. These inverters are deployed in a large number of commercial and utility-scale systems across North America ranging from 200kW to multi-MW.

## MEGAWATT SOLAR STATIONS

Solectria's Megawatt Solar Stations (MSS) are fully-integrated solutions for medium voltage applications. They include up to four inverters, padmount transformer, and switchgear, greatly simplifying field installation. They are available as an open skid, enclosure or canopy.

“Enabling utilities to control our SMARTGRID inverters (SGI) is the next big step toward a smarter grid that can accommodate a very high PV penetration density in a safe, secure, efficient and reliable manner.”

*Michael Zuercher-Martinson, CTO,  
Solectria Renewables*



## PLANT MASTER CONTROLLER

Solectria's Plant Master Controller (PMC) provides a master station for integrated control of PV plants. Designed to reduce the burden on SCADA communications, the PMC is a single, intelligent device to coordinate control of distributed generation assets.

# COMMERCIAL & UTILITY PROJECT EXPERIENCE

[OVER 1000 MW INSTALLED IN NORTH AMERICA]



**Project:** Indianapolis Airport Solar Farm • **Location:** Indianapolis, IN  
**System Size:** 10MW • **Installer:** Cenergy • **Product:** (20) SGI 500XT



**Project:** Westford Solar Field • **Location:** Westford, MA  
**System Size:** 4MW • **Installer:** NexAmp • **Product:** SGI 500



**Project:** XCEL Energy Solar Farm • **Location:** Alamosa, CO • **System Size:** 30MW • **Installer:** Amonix  
**Product:** (504) PVI 82KW, SCADA Controlled & VAR Support



**Project:** Gainesville Solar Farm • **Location:** Gainesville, FL  
**System Size:** 5MW • **Installer:** Sybac Solar • **Product:** (10) SGI 500



**Project:** Campo Verde High School • **Location:** Gilbert, AZ  
**System Size:** 400kW • **Installer:** Solar City • **Product:** (4) PVI 82 KW

# SMART MANAGEMENT FOR GRID INTEGRATION AND COLLABORATION

North American utilities are calling for smart inverter solutions to enable higher penetration of PV installations, while maintaining power quality and reliability. Solectria is committed to meeting the needs of the future with Smart Inverters that ensure grid stability and accommodate evolving industry standards.

## SOLECTRIA'S SMART INVERTERS MEET UTILITY DEMANDS, OFFERING

- Advanced Communication
- Real and Reactive Power Support
- Dynamic VAR Injection
- Voltage and Frequency Ride Through
- Randomization of Timing for Trip and Reconnection

## SOLECTRIA'S SMART INVERTERS IMPROVE POWER QUALITY AND EXTEND ASSET LIFE

- Reduce Distribution Line Losses
- Create Flatter Voltage Profiles
- Reduce Harmonics, Surges, and Transients
- Reduce Tap Changes and Switched Capacitor Actions
- Defer Capital Costs for Capacitor Additions, Re-Conductoring, and Substation Upgrades
- Increase Hosting Capacity of Radial Feeders

## PARTNERING FOR INDUSTRY ADVANCEMENT

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Solectria was chosen to participate in the U.S. Department of Energy's SunShot program, partnering with EPRI and electric utilities throughout North America to develop, implement, and demonstrate smart-grid ready solutions that capture the full value of distributed PV plants.





## **SUSTAINABLE SOLUTIONS FOR RELIABLE OPERATIONS**

**SOLECTRIA'S WORLD-CLASS TEAM PARTNERS WITH CUSTOMERS THROUGHOUT THE LIFE CYCLE OF EACH PROJECT, FROM SYSTEM DESIGN SUPPORT, THROUGH INSTALLATION AND COMMISSIONING, TO ONGOING OPERATIONS AND MAINTENANCE.**

### **UTILITY PROJECT & POWER SYSTEMS ENGINEERS**

Highly trained Applications and Power Systems Engineers support projects throughout the development process to meet utility requirements. Solectria offers PV system design support, equipment specification services, utility impact study reviews and complex utility interconnection consultation.

### **GUARANTEED RELIABILITY**

Every Solectria inverter solution is backed by standard 5 or 10 year warranty, with optional extensions up to 20 years. Solectria also offers a 99% inverter uptime guarantee.



## RAPID RESPONSE

Solectria's extensive customer service organization is known for efficient, rapid response. Services include e-mail and phone-based support from a team of trained customer service representatives, and a nationwide network of technicians located in multiple field offices

for on-site support, preventive maintenance, and repair. Solectria partners with a network of authorized third-party service representatives to provide expanded geographical coverage throughout North and South America.

*"Solectria's inverters are simple to operate, easy to maintain, and the downtime is low compared with other manufacturers. I have installed more than 20MW within the last three years, and Solectria is very customer oriented – the response is really great and very quick."*

*Hitesh Patel, Quanta Solar*



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