



## Facilitator — April/May 2012



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### What's New With You?

Mike Walker

#### A Direct Path to the Sun

A new solar-energy-collecting method makes harnessing renewable energy more possible

Using solar energy to reduce your energy expenses and emissions is great in theory, but it's not always so simple in execution. The need to make extensive and expensive building modifications, and the associated safety concerns, are common barriers. However, these obstacles can be mitigated by a new method for collecting solar energy that feeds it directly into a rooftop HVAC unit, which is simpler to install and safer than traditional solar-energy solutions.

To reduce installation time and costs for solar equipment, choose a solar-ready rooftop unit designed to accept simple-to-install, plug-and-play solar collection modules. Easily installed by a professional contractor, each module has its own microinverter that allows it to independently convert the collected energy and deliver it to the RTU.

#### Improving Solar Reliability

Sending converted energy directly into the rooftop unit avoids the reliability issues of traditional single-inverter systems. With traditional systems, if a solar module fails, all modules are affected and overall performance is reduced. With a microinverter in each solar panel, the failure of one module doesn't affect the energy output of the entire system.

When the modules are connected to the solar-ready unit, they will supply needed energy directly into the HVAC system. If the rooftop unit cycles off, the converted solar energy is supplied to other electrical devices in the building, such as light bulbs and computers. The system can even send surplus energy back to the grid to help organizations qualify for utility credits.

To create surplus energy, the technology is scalable and easily expandable by simply adding more solar modules without a system redesign. This provides flexibility as building requirements change, or the decision is made to achieve net-zero buildings.

#### Making Safety and Security High Priorities

Many traditional solar-power systems use a high-DC voltage line that can reach up to 600 volts. These lines often run the length of the entire building with no easy way to disconnect the power from the main building panel in the event of a building fire or other emergency. Choosing a system that uses microinverters with a maximum peak voltage of 50 volts is a safer choice. In the event of a power outage, the microinverters will stop transmitting energy to the rooftop unit and the main building panel.

#### Superior System Control

The new solar-energy systems also come with improved software that provides a superior level of control. For example, the software includes a program that monitors real-time system performance, energy production and environmental benefits. As peak hours for solar energy production correspond with peak energy demand, the feedback will be both impressive and invaluable to stakeholders concerned with environmental stewardship.

Finally, the newer solar HVAC systems can also help buildings meet the ASHRAE 189.1 requirement to be solar-ready and the LEED® EAC2 credit for on-site renewable energy.

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