

**From:** Jean Jewell  
**Sent:** Friday, March 22, 2013 9:48 AM  
**To:** Jean Jewell  
**Subject:** FW: Japan's Leap into Solar will Result in New Grid Technologies

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**From:** Gary Richardson [mailto:garyerichardson@gmail.com]  
**Sent:** Thursday, March 21, 2013 2:38 PM  
**To:** [marcia.smith@puc.Idaho.gov](mailto:marcia.smith@puc.Idaho.gov)  
**Cc:** Don Howell  
**Subject:** Japan's Leap into Solar will Result in New Grid Technologies

Here's evidence that rate-structures that encourage solar PV installations (rather than discourage, as IPCo proposes) are in the public interest. Please forward this to commissioners and appropriate staff and have it entered into the official record in IPCo's effort to undo net metering:

[http://tdworld.com/go-grid-optimization/commentaries/japan-solar-grid-0313/?NL=TDW-10&Issue=TDW-10\\_20130321\\_TDW-10\\_376&YM\\_RID=rickmas@qnet.com&YM\\_MID=1379060&sfvc4enews=42](http://tdworld.com/go-grid-optimization/commentaries/japan-solar-grid-0313/?NL=TDW-10&Issue=TDW-10_20130321_TDW-10_376&YM_RID=rickmas@qnet.com&YM_MID=1379060&sfvc4enews=42)

## Japan's Leap into Solar will Result in New Grid Technologies

Mar 21, 2013 9:37 AM  
Paul Mauldin, Editor, *TD World*

Japan has catapulted into the solar PV arena in a big, make that huge, way. And that jump could be good for everyone. As reported in Forbes, IHS Research found that Japan "...will install more than 5 GW of new solar photovoltaic capacity in 2013, marking an increase of 120% compared to the previous year." That instantly puts Japan ahead of the United States (4GW total solar PV) in PV capacity.

Overly generous feed-in tariffs (FIT) are the key to Japan's PV bloom, the same way they were in Europe. Panel owners are paid based on the energy they produce, regardless of what they use. That encourages entrepreneurial investment in distributed solar PV built solely to make money. Japan's PV FIT structure is the most attractive in the world (about \$0.50/kWhr). That level worked so well in kick starting the Japanese PV market that it can probably soon be reduced and still be effective.

Japan's motivation for solar build-out is focused and based on serious energy shortages, while Europe's push for renewable generation has been sponsored primarily by environmental and political interests. Germany became a leader in rooftop PV in a large part, not because it has a lot of sun, but because the nation sought to export high-grade solar technology. Of course, China's taken that lead, thank you very much. Some other European countries, such as Spain overdid it with FIT incentives and way overbuilt. The over-investment in solar assets along with the rusting EU economy has left plenty of abandoned PV panels around the Iberian Peninsula. But in general, neglecting cost-effectiveness, Europe has done a good job with PV. So much so that solar optimists claim that 12% of EU energy will come from PV by 2020.

But all of the events happening in the European renewables playground have a safety net - available conventional generation. For example, Germany can make plans to shut down its nuclear and fossil generation

resources and rely mostly on renewables because Germany can buy power from France (nuclear) and Poland (coal).

But Japan isn't just playing at all this - its large commitment to solar PV makes practical sense for several reasons: Japan's nuclear resources won't revive anytime soon, the nation doesn't have native fossil fuels, wind projects and new transmission corridors take too long to plan and build in the congested islands, and the solar insolation is about the same as in the U.S. Midwest.

Japan is facing energy shortages. It can't wait. The distribution networks are in place, panels are cheap, so it's going for the brass ring. Japan could end up with the largest distributed utility ever built. And we think we have some challenges around mitigating intermittent resources!

All this is going to help the rest of us because the Japanese are extremely good in producing high quality storage and electronics. Hopefully that resilient nation is going to solve its energy problems and it's going to develop the technologies to make it happen.

And they'll be available for the rest of us.

## About the Editor

Paul earned his B.S. and an M.S. in electrical engineering from the University of California-Berkeley and is a registered professional engineer. He has worked in the energy industry for more than 25 years, developing and implementing advanced energy technologies. As research director for Pacific Gas and Electric Co. he pioneered methodologies used in the design, maintenance and control of energy delivery systems. As a consultant he has provided guidance to utilities and the vendor community, nationally and internationally. Email him with comments: [Paul.Mauldin@penton.com](mailto:Paul.Mauldin@penton.com)

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