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News. December, 2014. Issue #33. 48,000 ESB [video views](#). *100% Renewable by 2035.*

You and I, and our government must avoid the impulse to live only for today, plundering, for our own ease and convenience, the precious resources of tomorrow.

- Dwight D. Eisenhower

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## **Electricity**

### **Enhanced Geothermal System (EGS) Progress in Oregon**

Geothermal electricity is currently generated in areas where there are hot, porous, wet rock layers to pump hot water and steam out of, re-inject the cooled water, and let it heat up again.

Unfortunately, there are relatively few really good geothermal sites.

EGS would allow electricity generation where the rocks are not already porous and do not already have water in them. Potential geothermal sites that are dry and not porous are common throughout the world creating an enormous new renewable resource if EGS can be become cost-effective. This is a fairly detailed article describing research & development of EGS. (PG)

<http://www.renewableenergyworld.com/rea/news/article/2014/12/the-dream-becomes-real-touring-the-newberry-enhanced-geothermal-site>

### **Case Studies of 100% Local Renewables**

A nice compilation of examples of cities, regions, and countries going to, or already gone to, 100%. The researchers conclude, as many have concluded before, that achieving 100% is more a political and policy challenge than a technical challenge. They also emphasize the importance of including heating and transportation sectors in the transition. (PG)

[http://worldfuturecouncil.org/fileadmin/user\\_upload/Climate\\_and\\_Energy/Cities/Policy\\_Handbook\\_Online\\_Version.pdf](http://worldfuturecouncil.org/fileadmin/user_upload/Climate_and_Energy/Cities/Policy_Handbook_Online_Version.pdf)

## **Solar in 2014: It Was a Very Good Year (G)**

<http://www.utilitydive.com/news/solar-in-2014-it-was-a-very-good-year>

## **Transportation**

### **Driverless Taxi Analysis Suggests They Would Slash Fares (PG)**

<http://spectrum.ieee.org/cars-that-think/transportation/self-driving/robotic-taxis-could-slash-fares-in-austin-texas>

## **Energy Storage, Etcetera**

### **Storage Study 1) Electricity Storage Competes Directly With Gas Turbines by 2018**

The study provides some background on pumped hydro storage and the historical role of gas combustion turbines. It then concludes that with reasonable cost declines, storage will win against gas turbines for utility peaking purposes by 2018 in much of the US. (article and white paper. Both PG)

<http://www.utilitydive.com/news/study-energy-storage-will-soon-replace-peaker-plants>

[http://www.energystrategiesgroup.com/wp-content/uploads/2014/10/Guide-to-Procurement-of-New-Peaking-Capacity-Energy-Storage-or-Combustion-Turbines\\_Chet-Lyons\\_Energy-Strategies-Group.pdf](http://www.energystrategiesgroup.com/wp-content/uploads/2014/10/Guide-to-Procurement-of-New-Peaking-Capacity-Energy-Storage-or-Combustion-Turbines_Chet-Lyons_Energy-Strategies-Group.pdf)

### **Storage Study 2) Electric System Capacity From Storage Instead of New Generators**

*10% of new commercial solar customers will pair their installations with storage by 2018... resulting in a \$1 billion market.* Even now storage is starting to win against new generators. Commenting on Southern California Edison's recent commitment to 250 MW of storage, the report's author noted: "*It turned out that when they looked at all the various bids for various technologies and applications, for their capacity needs, storage won out,*" Kann said. "*That's the clearest indicator to me that storage is here.*" (Article: PG. The study itself is behind a paywall.)

<http://www.utilitydive.com/news/storage-is-here-solar-plus-storage-market-will-surpass-1b-by-2018>

### **Most Home PV Systems in Japan Provide Power When the Grid is Down Without Batteries**

The inverter is the electronic box that connects the DC (like a battery) power produced by PV panels to the AC grid. In the US, almost all solar inverters that don't have batteries are useless when the grid is down, even if the sun is shining. This is not the case in Japan. (G)

<http://www.renewableenergyworld.com/rea/news/article/2014/12/making-emergency-power-available-during-disasters-without-batteries>

### **Solar Thermal for Homes?**

This article strongly states that solar thermal hot water makes no sense for most homes. Solar PV electricity plus heat pump hot water systems are more cost-effective. (G)

<http://www.greenbuildingadvisor.com/blogs/dept/musings/solar-thermal-really-really-dead>

### **Spray Can Foam Installation Tip**

Double the amount of foam produced just by misting a little water before applying. (G)

<http://www.greenbuildingadvisor.com/blogs/dept/musings/justin-fink-s-canned-spray-foam-tip>