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I have been wondering for a long time why some of our own defense officials do not put more emphasis on finding a good substitute for oil and worry less about where more oil is to come from. Our people are ingenious. New discoveries are all around us, and when we have to make them, we nearly always do.

Eleanor Roosevelt, February 13, 1948

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## **Electricity**

### **Giant Wyoming Wind Farm, With Giant Energy Storage in Utah. Power to LA.**

*The proposed project would generate more than twice the amount of electricity produced by Hoover dam. The \$1.5 B Compressed Air Energy Storage (CAES) facility would be able to absorb or supply up to 1,200 MW and 60,000 MWh of energy. (PG)*

<http://www.duke-energy.com/news/releases/2014092301.asp>

### **Study: \$7 Billion+ Savings From Large-Scale Off-Shore US Wind (G)**

<http://www.renewableenergyworld.com/rea/news/article/2014/10/offshore-wind-power-can-save-u-s-billions-on-electricity-recent-doe-study-finds>

### **OTEC: Construction to Start Next Year on Utility Scale Ocean Thermal System**

Where the top of the ocean is relatively warm, and there is deep, cold water nearby, that difference in temperatures can be used to generate electricity. This is called OTEC - Ocean Thermal Energy Conversion. While OTEC has been known for years it was considered too expensive to go beyond small prototype systems. This has changed. This article describes several commercial scale OTEC projects including a net 10 MW generator being planned for the Caribbean island of Martinique. (G)

<http://spectrum.ieee.org/energy/renewables/ocean-thermal-energy-back-from-the-deep>

### **In Most of US - Way More Reserve Generation Available Than Needed**

This chart from the US Department of Energy shows reserve margins - how much generation backup is needed - for different parts of the US. For example, the 31/15 shown for California means California needs 15 GW of reserve margin and has 31. Note that most of the country has way more reserve margin than needed. Most likely, this excess has to do with monopoly investor owned utilities being paid a profit - incentivized - for building big generation and monopoly success at convincing Public Utility Commissions that their generation is needed. And, of course, overbuilt reserves cost us more money. (PG)

<http://www.eia.gov/todayinenergy/detail.cfm?id=16791>

## **Energy Storage, Etcetera**

### **Boulder's Municipalization Effort**

The history and current-status of Boulder's attempt to change to a high-renewables energy system written from a younger person's perspective. (G)

<https://collectively.org/en/article/these-20-somethings-beat-a-huge-energy-corporation-and-took-control-of-the-power-grid>

### **Research: Battery-voltaics? PVattery?**

Researchers combine a novel Lithium air battery with PV in an effort to increase efficiency and reduce costs. *Is it a solar cell? Or a rechargeable battery? Actually, the patent-pending device invented at The Ohio State University is both: the world's first solar battery.* (G)

<http://www.renewableenergyworld.com/rea/news/article/2014/10/all-in-one-solution-solar-that-stores-its-own-power>

### **Research: Crumpled Graphene a Path to Cheaper and Flexible Electricity Storage**

<http://spectrum.ieee.org/nanoclast/semiconductors/materials/crumpled-graphene-offers-inexpensive-way-to-achive-flexible-supercapacitors>

### **\$100/kWh Batteries**

Several energy analysts, including me, believe that all hell breaks loose for existing large-scale electricity generation - thanks for the memories - and renewables - here we come - at the \$150 - \$250 / kWh range. There are lots of reasons to believe that battery costs are poised to crash below that level quickly. (G)

<http://reneweconomy.com.au/2014/battery-storage-costs-plunge-below100kwh-19365>