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News. April, 2014. Issue #25. 27,000 ESB [video views](#).

Neither conformity nor complacency will do.
- John Fitzgerald Kennedy

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Electricity

60 Years Young - PVs Birthday 4/25

It has been 60 years (1954) since the first practical solar cell was invented at Bell Telephone Laboratories. (G)

<http://cleantechnica.com/2014/04/07/celebrating-sixtieth-anniversary-first-practical-solar-cell-powering-ferris-wheels-cities-beyond>

Blimp + Wind Turbine May Mean Low-Cost Remote Power (G)

<http://spectrum.ieee.org/energywise/energy/renewables/first-commercial-floating-wind-turbine-hovers-above-alaska/>

Reducing Wind Variability By Using Wind Farms in Different Locations

Using actual wind data, Colorado & Wyoming are found to have complementary wind patterns. If the wind isn't blowing in Colorado, it is likely to be blowing in Wyoming. (PG).

<http://wyia.org/wp-content/uploads/2013/04/uw-geo-diversity-study-for-wy-co-final-april-20131.pdf>

2013 Worldwide New Renewables Capacity Up Even Though Investment \$s Are Down

This is what a virtuous cycle looks like - price decreases of renewables allowing ever larger renewable installations. For example for solar: ... *the result was that although PV capacity*

installed was up from 31GW in 2012 to a record 39GW in 2013, dollar investment in solar capacity was down 23% at \$104 billion. (Article G. Report PG.)

http://www.huffingtonpost.com/2014/04/07/solar-power-renewable-energy-growth_n_5107150.html

http://fs-unep-centre.org/sites/default/files/attachments/14008nef_visual_12_key_findings.pdf

Transportation

Plugless Charging Your EV

A webpage that shows off their product as well as the concept of wireless charging. (G)

<http://www.pluglesspower.com/plugless-12/>

Tesla's Battery Protection Response & Up-Grade Above & Beyond

It is delightful when a car company responds in a big way to an unlikely safety event. In 2013, two similar and unusual events led to the puncturing of the battery compartment in Tesla cars. In both cases a removable trailer hitch - a thick, L-shaped piece of steel - was pushed through the battery case in Tesla Model Ss. In both cases the drivers were clearly notified of the catastrophic damage to the car and had plenty of time to safely pull over, get out of the car, and then, after a while, the cars started smoking and then caught fire. The details and response are in the link.

In short, Tesla will be upgrading all Model Ss for free to greatly increase the strength of the battery case. The intent is to either push almost all road debris off to the side or to destroy the debris. There are 3 short video clips that show the new protection shields in action towards the bottom of the link (G rated. Well worth reading and watching the clips (scroll down).)

<https://medium.com/p/544f35965a0d>

Worldwide Number of EVs Doubling Each Year

... there were around 100,000 EVs at the start of 2012, 200,000 when 2013 got going and now we have... 400,000 EVs at the end of 2013. If the trend continues there would be 800,000 at the start of 2015, and 25.6 million EVs by the start of 2020. (G)

<http://green.autoblog.com/2014/04/01/number-of-electric-vehicles-doubling-every-year/>

Energy Storage, Etcetera

ILSRs Energy Storage Report

This is an excellent summary and analysis of the impact of energy storage on distributed renewable generation. (G) Note that I (Ken) was one of John Farrell's reviewers.

http://www.ilsr.org/wp-content/uploads/downloads/2014/03/EnergyStorage_TheNextChargeforDistributedEnergy.pdf

Biochar Made From Wood Makes Greener Super-Capacitors

<http://phys.org/news/2013-10-team-forest-cheaper-greener-supercapacitors.html>