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News. November, 2013. Issue #20. 18,000 ESB [video views](#).

"When the winds of change blow, some people build walls and others build windmills."
- Chinese Proverb

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ESB News

Boulder Overwhelmingly Votes in Favor of Clean Energy

(Personal Note) I was deeply involved as a volunteer on the Campaign for Local Power in Boulder to prevent the passage of an Xcel-backed initiative that would have killed our clean energy future. Happily, Boulder voters killed Xcel's ballot question 2 to 1 in spite of Xcel outspending us 2 to 1. Check out the short "we won" video and give if you can - our work is far from done. (4 minute video. G)

https://salsa.wiredforchange.com/o/6121/c/10086/p/salsa/donation/common/public/?donate_page_KEY=9064

Electricity

Landmark NREL Study: Renewables at 25% in Western US

Excellent, detailed, and informative study of renewables' impact on fossil generation, costs, emissions, power plant cycling, etc. Destroys myths like "renewables don't cut emissions" and "renewables require lots of spinning reserves."

Some highlights: While *wind and solar increase cycling costs by \$35–\$157 million/year*, they displace *fuel costs of \$7 billion/year*.

With *up to 33% wind and solar energy penetration* emissions were reduced 29%–34% for CO₂, 16%–22% for NO_x emissions, and 14%–24% for SO₂. Generally speaking, emissions are reduced significantly and proportionally to the penetration level of renewables. (website and study: both PG)

http://www.nrel.gov/electricity/transmission/western_wind.html

<http://www.nrel.gov/docs/fy13osti/55588.pdf>

Study: Wind Power Cuts CO₂ Emissions Even at High Percentages of Wind

This is another study busting the myth that renewables need lots of fossil backup and so do not actually cut greenhouse emissions at very high levels of renewables - this study shows that even at high wind penetration levels... *when penetration levels are as high as 50% ... reductions would reach ... 80%* (G)

<http://cleantechnica.com/2013/10/21/wind-power-cuts-co2-emissions-considerably-even-high-penetration-levels/>

Lego-like Rows of Nano-sized Aluminum Studs on PV Improve Efficiency 22%

The studs are deposited on the PV surface. They bend & scatter light which keeps it in the absorber layer for a longer time and increases efficiency. (Article G, Research Report PG)

<http://www.sciencedaily.com/releases/2013/10/131018084452.htm>

<http://www.nature.com/srep/2013/131007/srep02874/full/srep02874.html>

Who is Installing Distributed PV? Everyone.

Another persistent myth about renewables is that only the rich install solar. New research shows that at least in Arizona, California, & New Jersey, the number of installations map well to the number of houses in each household income level. And interestingly, *the areas that experienced the most (installation) growth from 2011 to 2012 had median incomes ranging from \$40,000 to \$50,000 in both Arizona and California and \$30,000 to \$40,000 in New Jersey.* (G)

<http://www.americanprogress.org/issues/green/report/2013/10/21/76013/solar-power-to-the-people-the-rise-of-rooftop-solar-among-the-middle-class/>

3 Reasons Germans Are Moving Forward Rapidly on Renewables

More myth-busting... this time looking at myths about the German energy revolution. *Germany doesn't just have an incremental approach to renewable energy, but a commitment supported by 84 percent of residents to get to 100% renewable energy "as quickly as possible." ... Support for Germany's renewable energy quest isn't about cost of energy, but about the opportunity to own a slice of the energy system. Millions of Germans are building their retirement nest egg by individually or collectively owning a share of wind and solar power plants supplying clean energy to their communities.* Nearly half of all renewables is community-owned. (G)

www.renewableenergyworld.com/rea/blog/post/2013/10/3-reasons-germans-are-going-renewable-at-all-costs

Community Solar Gardens Fact Sheet & Guide

Nice, simple description of community solar gardens. The exact rules are specific to Minnesota, but the concepts are well presented and may be of help in getting solar gardens in your state. (G, website & PDF)

<http://www.cleanenergyresourceteams.org/solargardens>

<http://bit.ly/certscmtysolar0>

Transportation

Scooters & Skateboards Electrified - Oh My!

These two short videos show the ever increasing ways to get around on electrons.

(both fun, both G)

<http://green.autoblog.com/2013/10/22/works-electric-rover-is-a-stand-up-commuter-scooter-w-videos>

<http://green.autoblog.com/2013/10/21/back-to-the-future-hoverboard-now-on-indiegogo-video/>

Study: Teslas Sell Well to Men, Leafs to Women

This may be true about who buys them. But from my own personal experience, I know only 2 people that own Model S-es, both male, and neither can get them back from their wives. (G)

<http://green.autoblog.com/2013/10/25/men-like-tesla-evs-more-women-are-buying-electric-nissan-leafs/>

E-Bus 18 Cents per Mile for Electric “Fuel” Versus \$1.05 for Diesel

Further data showing electric vehicles saving a lot of \$\$ on fuel. (G)

<http://www.proterra.com/index.php/proterraaction/actionDetail/C18/>

Candid Camera Style Commercial - Where Do You Fill It Up?

Leaf commercial from Africa. (Fun, 2 min video. G)

http://www.youtube.com/watch?v=vJfjn0uin_s

EV Charging No Threat to the Grid. Monthly Charge to Charge: About 1/2 a Tank of Gas.

Study finds no issues with grid charging. For example, PG&E in California finds that less than 1% of transformer upgrades are due to EVs. (G)

<http://www.midwestenergynews.com/2013/10/29/study-electric-cars-disrupt-grid-less-than-expected/>

Misc.

Home Builder Makes Zero Energy Homes. Even With an EV - No Monthly Electricity Bill

KB Home anticipates that a fully tricked out ZeroHouse could end up with no monthly electricity bill, even with the additional load of an EV charging station. (Article: G)

<http://cleantechnica.com/2013/04/22/kb-home-and-ford-team-on-net-zero-home-with-ev-charging/>