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News. May, 2016. Issue #49. 86,000 ESB [video views](#). *100% Renewable by 2035.*

*"Great minds discuss ideas. Average minds discuss events.
Small minds discuss people."
- Eleanor Roosevelt*

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Moving to 100% Renewables

MGM Casino Paying \$87 Million to Leave Existing Monopoly Electric Utility Move Saves Money and Allows A Faster Switch to 100% Renewables

Monopoly utilities that charge more for renewables may have some rethinking to do. The cost of new wind and solar farms, combined with the rapid growth in competitive companies that provide low-cost reliable electricity with wind and solar, can be very attractive in states that allow electric-generation competition or allow companies to exit their electric monopoly.

So attractive that Las Vegas' largest casino and biggest single electricity user, MGM, just announced that it will pay \$87 million to leave Nevada Power (NP). Wynn Resorts is also planning on leaving and paying \$16 million for that right.

NP offers a renewable energy tariff - charging more for electricity while promising that more of that electricity comes from renewables than normal. But MGM at least thinks that they shouldn't have to pay more for renewables, that they will save more than the up-front \$87 million fee, and that they get to 100% renewables much more quickly than NP will let them.

In the podcast (see links below), one presenter says that 17 states allow companies to leave their monopoly electric supplier — some or all with no exit fee. States like Texas and Georgia. (3 articles & a podcast (scroll down for the podcast. First 20 minutes are excellent!) - all G rated)
<http://www.reviewjournal.com/business/energy/mgm-resorts-leave-nevada-power-pay-869m-exit-fee>
<http://www.reviewjournal.com/business/energy/mgm-resorts-witness-says-nevada-power-over-earning-tone-deaf-economy>
<http://www.reviewjournal.com/business/energy/mgm-resorts-wynn-resorts-file-leave-nevada-power-sands-doesn-t>
<http://www.greentechmedia.com/articles/read/big-corporations-are-starting-to-ditch-their-power-providers>

NREL Report: Rooftop Solar Potential? 39% of US Electricity Just From Rooftops

The total national technical potential of rooftop PV ... equates to 39% of total national electric-sector sales... This analysis includes rooftops large and small. It does not include solar potential from parking lots, brownfields, floodplains, highway and freeway buffer zones, etc. (PG)
<http://www.nrel.gov/docs/fy16osti/65298.pdf>

Santa Monica & San Francisco, California: All New Construction Must Have Solar

Santa Monica ... requires that new single family dwellings have a solar PV system with a minimum total wattage of ... 1.5 watts per square foot. In addition, new multi-family dwellings and non-residential, hotels and motels must have a minimum total wattage of ... 2 watts per square foot of building footprint... San Francisco in April approved new legislation that will require newly constructed residential and commercial buildings to have solar panels installed on 15 percent of roof area. (G)
<http://www.renewableenergyworld.com/articles/2016/05/santa-monica-approves-solar-requirement-for-new-construction.html>

Statoil is Building a Floating Offshore Wind Farm Off Scottish Coast

Most people and companies were just talking about floating wind farms a few months ago. Now Statoil is planning on having one done in late 2017.

Statoil is not a name normally associated with renewables. Offshore wind is an incredible resource - the wind offshore is less variable and more powerful than onshore wind. There are large areas of the world with excellent offshore winds, huge coast-area need for electricity, and near-shore water too deep to build conventional ocean-floor supported turbines — the coast of California for example. Statoil may be building on their experience with North Sea winds and floating oil platforms to find renewable ways to generate the energy we need. (G)
<http://www.citylab.com/tech/2016/05/statoil-largest-wind-farm-scotland-floating-turbines/482916/>

Dubai: World's Largest Solar Plant Shatters Low Cost Records (G)

<http://www.renewableenergyworld.com/articles/pt/2016/05/dubai-shatters-all-records-for-cost-of-solar-with-earth-s-largest-solar-power-plant.html>

Portugal: 107 Hours in a Row on Only Renewable Electricity

Portugal Wind energy production grew by more than 600 percent between 2004 and 2009, and in 2014, Portugal was second only to Denmark in wind power. (PG)

<http://www.csmoitor.com/Environment/2016/0517/How-Portugal-went-107-hours-on-only-renewable-energy-video>

Transportation

100% (or darn close) Vehicle Sales to be Plug-In Electric by 2027?

Global Light-Duty Plug-in Electric Vehicle Sales Surged 80% in 2015 to 566,000 Vehicles

The article shows a graph of sales for 2011 - 2015. In an interesting set of follow-on comments (scroll down), one poster notes “*Annual increases in the last 5 years have ranged from 48% to 152%. At a 50% rate of increase the market will be 100% EVs by 2027.*”

This is worth repeating: the cars available for sale in 2027 will be 100% (or darn close) plug-in at a conservative estimate of growth based on the last 5 years of plug-in sales. Is this really possible? A followup comment points to a graph of the adoption rates of various modern innovations which indicates that rapid adoption is not only possible, but is in fact common.

This does not mean that all cars in the US or world will plug-in in 2027. Since cars are kept on average for 14 or more years, it will take some number of years of most cars for sale being plug-ins for all cars to plug-in.

Note also that these are cars that plug-in, not just all-electric EVs (battery only), but plug-in hybrids as well (battery plus a gas engine that takes over when the battery is discharged). Oil use drops very low for all-electric EVs since little of the world’s electricity is generated by oil. But what about plug-in hybrids? One article says plug-in hybrid Chevy Volt drivers get 75% of their miles from electricity. (G)

Article: <http://cleantechnica.com/2016/04/01/argonne-national-laboratory-global-light-duty-ev-sales-surged-80-2015-565668/>

Adoption of Innovations Chart JPEG: <http://a.disquscdn.com/uploads/mediaembed/images/3464/5442/original.jpg>

Adoption of Innovations Chart citing New York Times, 2008 (page 18 in PDF): http://apo.org.au/files/Resource/vicgov_electric-vehicle-trial-mid-term_2013.pdf

75% of Volt miles are electric: <http://evobsession.com/chevy-volt-drivers-average-nearly-as-many-electric-miles-as-nissan-leaf-drivers/>

Energy Storage and Miscellaneous

Siemens Technology Turns Excess Wind Power into Ammonia for Fertilizer

Ammonia for fertilizer is typically made by chemical reaction from natural gas. This *technology could solve three problems at once. It would reduce emissions from the fertilizer business, which is responsible for 1 percent of carbon pollution worldwide... The technology also could absorb excess output from wind and solar farms as well as store electricity in the form of a usable gas. Siemens estimates it could help cut emissions by 360 million tons a year, more than the annual carbon output of France.* (G)

<http://www.bloomberg.com/news/articles/2016-04-20/green-ammonia-made-with-wind-is-future-of-fertilizer-at-siemens>

Nuclear Power Plant Closes Prematurely Because of Renewable Competition

We found that other carbon-free options are more economic. (G)

<http://www.powermag.com/fort-calhoun-may-close-by-year-end-joining-list-of-premature-nuclear-power-plant-retirements>