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News. September, 2015. Issue #42. 70,000 ESB [video views](#). *100% Renewable by 2035.*

*Your present circumstances don't determine where you can go;
they merely determine where you start.*

-- Nido Qubein, businessman and motivational speaker.

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Moving to 100% Renewables

Lawmaker: 'We Should Be Incentivizing Solar as Much as Possible'

Lots of lawmakers say this sort of thing - interestingly, an increasing number of them are from the tea-party and other conservative groups. (G)

<http://www.greentechmedia.com/articles/read/michigan-tea-party-lawmaker-we-should-be-incentivizing-solar>

US Cities & Counties That Now Have 100% Renewable Electricity

Aspen, CO, Burlington, VT, Palo Alto, CA, Greensburg, KS, Jefferson County, WA - are all locally controlled municipal or county electric utilities and are all at 100% renewable electricity.

Georgetown, TX, is not 100% yet, but they have signed contracts for 100% renewable solar and wind due next year.

Actually, Georgetown will have contracts for 200% of their annual electricity use. They plan to sell excess into the open Texas market, and purchase off the market for the few hours a year that the solar and wind don't cover their electricity need.

Finally, Georgetown is rockbed conservative. Their decision was based almost entirely on their belief that they can hold their rates stable for 20 years with wind and solar. Their electricity rate is currently about 9 cents/kWh for retail residential. (G)

http://www.huffingtonpost.com/entry/aspen-renewable-energy_55f99356e4b0b48f670188f7

Energy Storage, Etcetera

New York: Reforming the Energy Vision (REV)

This long video is of a panel discussing the activities going on as New York state looks very carefully about what NY should have as an electric utility structure. One of the goals is to use far more distributed renewables than the current electric utility structure allows. If you want a more in-depth look into what is going on in NY, this video is for you. Topics include local control, community-choice aggregation, how customers can make solar easier for installers, and a departure from business as usual on how utilities make money. (PG)

<http://www.greentechmedia.com/articles/read/will-rev-bring-more-than-solar-to-average-new-yorkers>

California: Reforming Electricity Markets: Distributed Storage

When you build a market, they will come. California allowed aggregated (multiple customers), distributed (on the customer's side of the meter), bidding into the electricity market by energy storage companies. In September, for the first time, part of California's electricity was provided by distributed battery storage. (PG)

<http://www.renewableenergyworld.com/articles/2015/09/an-industry-first-distributed-energy-storage-system-dispatches-electricity-to-california-grid.html>

Energy Storage Technologies Beyond Batteries

Most people understand that in a very high renewable world we will need electricity storage on a large scale. While we believe that the fact that batteries can be mass-produced gives batteries the edge in low cost, high quality storage, there are other technologies that may prove more cost-effective.

This article looks in some depth at storage technologies like pumped-hydro, gravity acting on heavy train cars on sloped tracks, compressed air energy, and flywheels. (PG)

<http://www.utilitydive.com/news/beyond-batteries-the-diverse-technologies-vying-for-the-bulk-storage-market/405189/>

California Study: How Much is Distributed Solar Worth?

Answer: 25 cents per kilowatt-hour (kWh) in one study. Note that if you assume one roundtrip per day in and out of a battery for a kWh over 10 years, you are looking at a value over \$900/kWh. Since Tesla's battery storage is closer to \$500/kWh starting next year, it seems safe to predict that there will be lots of distributed battery storage sold. (G)

<http://www.greentechmedia.com/articles/read/Value-of-Battery-Backed-Solar-in-California-25-Cents-per-Kilowatt-Hour>

Study Results on Transactive Energy: Managing Demand

One way to manage large amounts of renewable electricity on a grid is storage - soaking up excess generation and releasing it later. The other way is to manage electricity use (demand) - encouraging customers to use more when there is ample renewables, and use less when there is less renewable electricity. This "managing demand" is called transactive energy. This is an article and report on the largest test of transactive energy to date. (article and report - both PG)

<https://www.greentechmedia.com/articles/read/results-from-the-worlds-biggest-transactive-energy-test>
<https://www.smartgrid.gov/files/TPR02TheTransactiveCoordinationSystem.pdf>

Why Fixed Charges Are A False Fix

Many electric utilities are calling for high fixed charges on solar customers - as high as \$90 per month penalty for solar in Utah's Salt River Project. Former FERC-chair Jon Wellinghoff and VP of Clean Power Finance James Tong believe fixed charges ... *are wrong when they distort markets and create larger problems than the ones they were intended to cure...*

Current calls for more fixed charges completely ignore appropriate market structures as an option. In fact, they seek to undermine such structures. Uncritical approval by regulators of fixed-charge proposals without considering market options would imply a lack of appreciation of the power of markets ... All of us – especially those who champion market principles – should be skeptical. (PG)

<http://www.utilitydive.com/news/tong-and-wellinghoff-why-fixed-charges-are-a-false-fix-to-the-utility-indu/364428/>

Brooklyn to Avoid Blackouts With Utility-Disrupting Microgrids

Microgrids allow a small part of the grid to continue operating when the larger grid is down. We are seeing many prototypes of microgrids around the country. (PG)

<http://www.renewableenergyworld.com/articles/2015/09/brooklyn-to-avoid-blackouts-with-utility-disrupting-microgrids.html>