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News. August, 2016. Issue #52. 92,000 ESB [video views](#). *100% Renewable by 2035.*

[Freedom is never given voluntarily by the oppressor; it must be demanded by the oppressed.](#)  
- Martin Luther King, Jr.

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## **Moving to 100% Renewables**

### **2015 Wind & Solar US Average Contract Price 2 ¢ per Kilowatt-hour Wind. 4 ¢ Solar.**

Lawrence Berkeley National Laboratories has two annual series of reports on US wind and solar that come out in late August. These give an excellent picture of US large-scale solar and wind.

The biggest driver of wind and solar's spectacular growth has been declining price. These low prices also drive non-utility corporations to buy wind/solar directly where state laws allow.

These prices are for PPAs - Power Purchase Agreements. A PPA is a contract from the company that owns a wind/solar farm to a monopoly utility, muni or coop, or a competitive corporation.

Typically, PPAs are 20 to 30 years in length. In 2015 2/3s of solar/wind PPAs have been fixed price - a 2 ¢ per kiloWatt-hour (kWh) contract is 2 ¢ in 2015 and 2 ¢ in 2035. This means the real cost per kWh actually declines over time because of inflation!

Traditionally, when a monopoly electric company owns a generator, almost all risks are paid for by the monopoly's customers. So as fuel costs increase, or new pollution costs happen, or the generators fail for whatever reason, customers, not the monopoly are on the hook. For these

PPAs all risks and costs are taken by the owner of the solar/wind farm. If for whatever reason the farm doesn't produce power, the farm owner doesn't get paid.

For solar, the 2014 average contract price was 5 ¢ per kWh. For 2015, 4 ¢ per kWh.

For wind, the 2014 average contract price was 2.4 ¢ per kWh. For 2015, 2.0 ¢ per kWh.

(article on the 2015 wind report. G)

<http://www.greentechmedia.com/articles/read/7-Charts-That-Show-Wind-Power-is-Surging-in-the-US-and-Abroad>

Solar 2014 & 2015 (PG)

[https://emp.lbl.gov/sites/all/files/lbnl-1000917\\_0.pdf](https://emp.lbl.gov/sites/all/files/lbnl-1000917_0.pdf)

[https://emp.lbl.gov/sites/all/files/lbnl-1006037\\_report.pdf](https://emp.lbl.gov/sites/all/files/lbnl-1006037_report.pdf)

Wind 2014 & 2015 (PG)

<http://energy.gov/sites/prod/files/2015/08/f25/2014-Wind-Technologies-Market-Report-8.7.pdf>

[https://emp.lbl.gov/sites/all/files/2015-windtechreport.final\\_.pdf](https://emp.lbl.gov/sites/all/files/2015-windtechreport.final_.pdf)

Each of the Lawrence Berkeley reports come with slideshows and data files available at:

<https://emp.lbl.gov/reports/re>

### **The Greenest Happiest Country on Earth? Costa Rica**

With 99% renewable electricity, a life expectancy higher than the US, big investments in social programs, and no military to support it is no wonder that they top the Happy Planet Index. (G)

<https://www.weforum.org/agenda/2016/07/greenest-happiest-country-in-the-world/>

### **Haiti: Finding a Sustainable Business Model to Electrify the Lives of Millions Drops Residential Energy Costs From \$15 per Month to \$3**

75% of the people in Haiti lack access to electricity. Because of falling solar and storage costs, the problems with setting up electric micro-grids is less about technical or financial problems and more about finding ways to finance and pay for these small electrical systems in a sustainable business model. This article presents EarthSpark's attempt to create that sustainable model.

Residents and businesses in Les Anglais, Haiti, now get reliable low-cost electricity from solar and batteries. *Before the microgrid, they were spending about \$11 each month for kerosene (for light) and spending \$3 to \$4 each month to charge phones. Now residential microgrid customers are... paying about \$2 to \$3 per month for much better quality power. And EarthSpark's larger business customers are saving 50 percent over what they were spending on diesel.* (G)

[http://blog.rmi.org/blog\\_2016\\_08\\_18\\_changing\\_lives\\_with\\_solar\\_microgrids-1](http://blog.rmi.org/blog_2016_08_18_changing_lives_with_solar_microgrids-1)

## **Fair Electricity Markets**

### **Utilities Not Required in Corporate March to Clean Energy**

#### **72% of US Corporations Pursuing Renewable Energy Purchases**

*A survey by PricewaterhouseCoopers and the American Council for Renewable Energy (ACORE)... sampled U.S.-headquartered companies with large energy footprints. Seventy-two percent of respondents said they were actively pursuing renewable energy purchases, mainly PPAs. (Power Purchase Agreements - contracts directly with the owners of wind/solar farms).*

"It's pretty neat to see the corporates say 'look we want it (renewable electricity) and we're not waiting.'" (for our monopoly to provide it). (G)

<https://insideclimatenews.org/news/08082016/corporate-clean-energy-utilities-not-required-google-gm-walmart-microsoft-solar-wind-ppa>

### **Corporate Customers Defect From, and Compete With, Monopoly Electrics**

Apple has joined Google as an approved non-monopoly seller of electricity because of large-scale contracts and purchases of solar & wind. Will other non-monopoly corporates get into the act? Many contracts *were brokered directly with project owners -- or, in a more recent trend, the projects were owned directly by the corporation itself...*

*On the more extreme end of the trend are full-on corporate customer defections. In Nevada, for example, MGM Resorts recently filed to end its relationship with Nevada Power ... in order to go procure renewables on its own. MGM, which represents roughly 5 percent of Nevada Power's demand, is willing to pay an \$87 million penalty to buy its own power. Wynn Resorts and the Peppermill Casino have followed suit... Big companies think they'll be able to get renewable power for cheaper on their own.... regulated utilities will most certainly see their relationships with big customers erode -- unless they take a comprehensive approach to rethinking their offerings.* (G)

<http://www.greentechmedia.com/articles/read/corporate-customer-defection-megatrend>

### **FBI Investigates Arizona Monopoly for Political Contributions and Influence of Regulators**

Electric monopolies seem to be responding to the threat of customer defection (see above article) in several ways. One way is in using their enormous profits in perhaps illegal ways.

*The FBI is investigating APS (a monopoly electric company) and the people we elect to keep an eye on it.* (G)

<http://www.12news.com/news/local/arizona/fbi-investigation-of-aps-6-things-to-know/243016987>

## **Energy Storage and Miscellaneous**

### **Nissan UK: More EV Chargers Than Gas (Petrol) Stations by 2020 (G)**

<http://www.newsroom.nissan-europe.com/uk/en-gb/Media/Media.aspx?mediaid=148556>

### **Refrigeration Battery for Supermarkets**

Store cold when there is excess electricity and it is cheap. Use the cold when there is a shortage of electricity and it is expensive. (article and business website. Both G)

<http://www.utilitydive.com/news/thermal-storage-developer-raises-25m-after-completing-1st-full-scale-syst/423847/>

<http://www.axiomexergy.com/index.html>

### **Thermophotovoltaics: Electricity Directly From Heat From Solar or From Storage (G)**

<http://www.news.gatech.edu/2016/07/26/molten-storage-and-thermophotovoltaics-offer-new-solar-power-pathway>

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