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Former Energy Comr. charges nation's energy utilities with 'electrotropophobia'



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<http://www.examiner.com/environmental-news-in-national/former-ca-energy-commissioner-jeffrey-byron-defines-electrotropophobia-photo>

Former CA Energy Commissioner Jeffrey Byron defines Electrotropophobia as the fear of change in the electric power industry.
Credits: Courtesy of DECA Connect



<http://www.examiner.com/environmental-news-in-national/microgrids-can-save-money-and-produce-more-reliable-electricity-picture>

Slideshow: [Microgrids can save money and produce more reliable electricity.](http://www.examiner.com/environmental-news-in-national/microgrids-can-save-money-and-produce-more-reliable-electricity) (<http://www.examiner.com/environmental-news-in-national/microgrids-can-save-money-and-produce-more-reliable-electricity>)

SAN FRANCISCO Former CA energy commissioner Jeffrey Byron called out America's current investor-owned utilities and institutional incumbents as having 'electrotropophobia' at the [Solarpraxis](http://www.solarpraxis.de/en/conferences) (<http://www.solarpraxis.de/en/conferences>) Inverter & PV System Technology Forum - USA 2012. He said the reason why the nation cumulatively possesses only the same amount of solar built just last month alone in Germany¹, is because that country has put distributed generation policies in place, also referred to as roof-top solar.

A New Word: electrotropophobia

-noun

from Greek, electro electricity + -tropos pertaining to a turn + - phobia fear

- Def. 1. Fear of change in the electric power industry.
2. Abject fear of grid operations that must comply a 33% intermittent renewable energy resource requirement.

Credit: Former California Energy Commissioner Jeffrey Byron as presented at Solarpraxis SF, 2012

[Jeffrey Byron](http://www.energy.ca.gov/commissioners/byron.html) (<http://www.energy.ca.gov/commissioners/byron.html>) is now Vice President of Integrated Solutions at NRG Energy, Inc. NRG ranks 276 on the Fortune 500 and S&P 500 Index and is the 16th fastest growing company in America. For the past 5 years Byron led the State of California's energy commission having been appointed by Governor Schwarzenegger who signed executive order **S-14 08** (<http://www.examiner.com/solar-energy-in-san-francisco>)

[/microgrids-can-save-money-and-produce-more-reliable-electricity-picture\)](http://www.examiner.com/environmental-news-in-national/the-uc-san-diego-campus-microgrid-video)



[Video: The UC San Diego Campus Microgrid](http://www.examiner.com/environmental-news-in-national/the-uc-san-diego-campus-microgrid-video) (<http://www.examiner.com/environmental-news-in-national/the-uc-san-diego-campus-microgrid-video>)

[/governor-schwarzenegger-to-hold-3rd-global-climate-summit-at-mondavi-center-davis-november-2010](http://www.examiner.com/environmental-news-in-national/former-energy...)) requiring that California utilities reach a 33 % renewables goal. This order became law when Governor Jerry Brown signed **SB 2x** (<http://www.examiner.com/environmental-news-in-national/california-passes-the-brightest-renewable-energy-requirements-on-earth>) April last year.

Electricity as a natural monopoly

NRG (<http://www.nrgenergy.com/>), is positioning itself to become the largest solar installer in the United States with rooftop solar poised to be at the center of their customer-focused strategy. However, the company's plans may become but empty promises like so many others in the clean-tech industry if the nation does not adopt the already proven public policies of over 200 nations transitioning off the hydrocarbon economy. These policies must break-up of the natural monopoly of the nation's current electricity grid.

Since Tesla's alternating current (AC) solved Edison's technological problem of long distance with direct current (DC) the natural current of the sun, the nation went along with the former technology and thus the current centralized distribution model and a natural monopoly writes Kurt Yeager with recently passed former Motorola CEO Robert Galvin in ***Perfect Power*** (<http://www.galvinpower.org/resources/perfect-power-book>): *How the Microgrid Revolution will unleash cleaner, greener, and more abundant energy.*

Yeager was instrumental in Marin County's not so long ago heated battle with Pacific Gas and Electric in Northern California, where that county won the right to select their own electricity provider having made use of the market based tool **Choice Community Aggregation** (<http://www.leanenergyus.org/>). He is currently Vice Chair at the **Perfect Power** (<http://perfectpowerinstitute.org/>) Institute in Chicago, Illinois and an advisor along with Byron to the **Clean Coalition** (<http://www.clean-coalition.org/about-the-clean-coalition/>) in Palo Alto, CA.

Reinvent Edison

Kurt Yeager told *Examiner* in an interview, "We have alternating current (AC) because we had long distances to work with in order to electrify the country including rural America under the leadership of President Franklin Delano Roosevelt to get the nation out of the Great Depression. It was the right thing to do at the time."

However, that grid was not designed to do what today's technology could do to serve our electronic economy with an intelligent grid. It is in fact 'bleeding at the speed of light' as each electron moves and

transfers its energy to another to form an electrical current says Yeager.

He cites the US Departments of Commerce and the Treasury in saying our outdated performance in terms of inefficiencies and unreliability of the grid costs the nation nearly a trillion dollars a year in lost revenue due to outages, shortages, job losses and the lack of ability to innovate as competing nations are able to do. "We need a self healing grid to eliminate losses, and we need to be able to electronically power our electric vehicles, homes, and businesses and then be able to sell any excess back to the grid."

DC, the current of the sun

Yeager further spoke out that "Both political parties' leaders have gone on record as saying we cannot have a 21st century economy with a 20th century grid." He furthered that "Europe and Asia are more aggressively pursuing **DC** (<http://www.emergealliance.org/>). The frequent conversion from AC to DC, and then back to AC to accommodate solar power and run AC appliances typically leads to at as much as 30% energy loss."

Lee Ewald, systems designer, owner, and educator in the State of Michigan further expounds that LED lights, electronic components like laptops, cell phones, etc., all are DC devices. "Think of the number of electronic components you have that require that pesky transformer that you have to plug into an electrical outlet. My power strip has 3 or 4 of them. Why do we need those darn things? Because have to convert 115 vac (household voltage and current) to 12 vdc (more typically 13.4 vdc). Now if we had distributed DC throughout our homes, apartments, condosin essence all buildings, we could simply plug directly from these DC components into some distributed power strip with simple small plugs.

No more Enrons, please

Additionally, an intelligent grid would allow the consumer to capture fluctuating rates during the day allowing greater honesty and disclosure from the utility companies as to what is actually being charged to prevent another **Enron** (<http://topdocumentaryfilms.com/enron-the-smartest-guys-in-the-room/>) scenario when agents intentionally pulled generation facilities off the grid in order to charge rate payers higher prices.

Yeager summed his comments up in the interview, "This pent up innovation is not easy to implement within the regulated monopoly business model. We would have to change the law, not to one that is anti-utility, but to incent moving the now 20th century

electromechanically controlled grid into a museum. The focus for a 21st century grid is on the transformation to an intelligent electronically controlled and monitored grid that is focused on consumer empowerment and decentralized local community distribution micro grids where we have the greatest leverage to create the greatest efficiency, reliability and jobs. The demonstrated economic benefits are an immediate multiple of the cost."

An intelligent grid is nirvana

The sessions chair Craig Lewis of the [Clean Coalition](http://www.clean-coalition.org/) (<http://www.clean-coalition.org/>) put up a diagram for the system designers, manufacturers, and policy makers illustrating the Clean Coalition's ultimate goal: distributed generation integrated with an intelligent grid. See this as a slide show this article.

Lewis stated both the development of an intelligent grid and a plan of distributed generation, or rooftop solar as opposed to centralized clean power are integral to his group's vision for transforming towards more decentralized, local systems of energy distribution.

He further stated that "Intelligent grid solutions, such as demand response, energy storage, electric vehicles, and monitoring, communications and control are needed to balance the distributed generation grid in order to get that local nirvana, - that is the balancing of the supply and demand of energy at the local level."

Boatloads of money waiting to be spent on a smart energy future

Lewis assured that "Getting the policies right will drive everything else." He furthered, "There is no shortage of money either. There is a boatload of money waiting to be spent on a smart energy future in many places around the world. Over the next 20 years, California alone is on track to spent 20 billion on infrastructure." Given the expansion of rooftop solar, ratepayers will get a better value in the long-run if this money is spent on preparing the distribution grid for high penetration levels of distributed generation, rather than continuing to invest in new transmission infrastructure.

Lewis triggered the memories of Americans in the audience back to the days when AT&T was so powerful that no one was even allowed to own their own phone. It took much work just to eventually win that consumer right, let alone the right to be able to have and to keep your own phone number.

Electricity transactions as on EBAY?

Stanford University's Lecturer in entrepreneurship and clean energy **Tony Seba** (<http://www.youtube.com/watch?v=mrd1iE6voS4>) and author of **Solar Trillions** (<http://tonyseba.com/>) attended the conference and backed the notion that not only the technology and the money are there, but also demand in the market in terms of end users and investors.

Seba said that today's energy opportunity is what the opportunity for data was in 1980. "Today we are going to transform, the way that energy is produced, stored, transmitted, and used the same way. So there are technologies for all these things generation, storage, transmission, and usage."

Furthered Seba, "A former student of mine has opened a company in New Zealand called **Power Shop** (<http://www.powershop.co.nz>) . Basically, anybody subscribing to their service can sell and buy electricity from any utility vendor that they choose at any time. Your not confined to just one electricity vendor, or to the one utility. Think about that for a second. Does that remind you of something? EBAY?"

He concluded, "There is a perfect storm of user needs, technology development, and investment in clean energy that resemble the early 1980s when the personal computer took off and the mid-90s before the Internet took off."

The seat of innovation sparks another economic revolution

And it was within the City of Palo Alto less than an hour south of San Francisco, home of Stanford University wherein the famous Mr. Hewlett and Mr. Packard's garage fashioned the first consumer computer utilizing government funded research to spawn that creation that was the foundation for daily life in today's technology and information age.

Now the City of Palo Alto will again enjoy the spotlight of innovation having adopted exactly some of the policies Clean Coalition say will be needed to form a more perfect energy system with Palo Alto **CLEAN** (<http://www.latimes.com/business/money/la-fi-mo-palo-alto-solar-program-20120307,0,1466033.story>) - a program that will pay commercial providers with rooftop solar 14.003 cents a kWh on a 20 year contract modeled after a more robust German style feed in tariff co-founded by Bundestag **Hans-Joseph Fell** (<http://www.hans-josef-fell.de/>) and recently passed **Hermann Scheer** (http://www.hermannscheer.de/en/index.php?option=com_content&task=view&id=1&Itemid=35), author of *Energy Autonomy*.

Additional Resources:

1 Green Tech Media – Mj Shiao, Solar Analyst, GTM Increasing PV demand through Grid-Integrated Smart Inverters.

2 **[Emerge Alliance \(http://www.examiner.com/node/44831971/edit\)](http://www.examiner.com/node/44831971/edit)**, an open industry association developing standards leading to the rapid adoption of DC power distribution in commercial buildings.

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Karen Hansen is currently an Earth and Environmental Sciences Facilitator at a private college. She has worked as a consultant to start-up companies, various levels of governmental agencies, the real estate and construction industries, and to vintners; regarding compliance with state and federal...