



## California Is Raising Costs for Defectors From Power Utilities

Mark Chediak <<https://www.bloombergquint.com/author/27817/mark-chediak>>  
 October 11 2018, 12:58 PM October 12 2018, 2:11 AM

(Bloomberg) -- A growing number of California communities are opting to ditch big utilities <<https://www.bloomberg.com/news/articles/2018-01-09/paul-fenn-wants-to-give-your-electric-company-the-boot>> in favor of alternative programs run by local governments. The state just made it more expensive.

The California Public Utilities Commission voted Thursday [October 11, 2018] to change the formula <<http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M231/K052/231052037.PDF>> that determines how much utilities charge customers who switch to these so-called community choice aggregators, or CCAs.

PG&E Corp. and the state's other big utilities say the revision is needed to protect against rising costs as their customer base shrinks. Advocates for CCAs counter that the decision will sharply increase rates for people who have already switched and may undermine the business case for communities considering forming new ones. The debate shines a light on these increasingly popular programs that threaten the century-old utility business model.

The new fee structure "would shift past and future utility costs upon CCAs in an onerous, destructive manner and hamstring CCA planning," said Paul Fenn, founder of Local Power Inc. <<http://www.localpower.com/>>, a consulting company that works with community choice programs in California and other states.

### Exit Fee

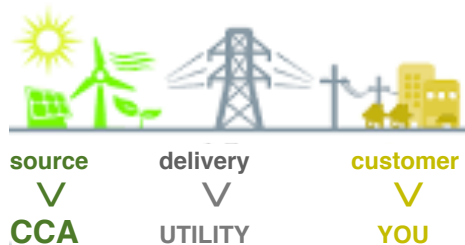
Under state law, departing customers must pay an exit fee to cover the cost of electricity utilities have already committed to buy on their behalf. The companies signed many of the power-purchase deals with renewable-energy providers several years ago, at prices that now seem expensive since the costs of wind and solar energy have been steadily falling. The idea behind revising the power charge indifference adjustment or PCIA, as the fee is called, is to protect utilities' remaining customers from getting stuck with higher bills as some ratepayers leave.

Under the CCA model, towns band together to buy power from a variety of sources, including wind and solar farms, and set the rates residents pay. Local utilities continue to deliver the energy, and also send customers their monthly bills. There are 19 operating community choice programs in California that serve an estimated 2.5 million customers, according to the California Community Choice Association <<https://cal-cca.org/>>, an advocacy group. *(Continued on page 2)*

### CONTENTS

1, 2	California Is Raising Costs for Defectors From Power Utilities
2	<b>ANNUAL MEMBERSHIP MEETING</b>
	<b>SATURDAY, FEBRUARY 10, 2019</b>
2	Voters rejected Most Ballot Measures Aimed at Curbing Climate Change
3	Our Guests & Speakers
4, 5	Book Report by Abraham Hoffman, Ph.D" UPSTREAM: <i>Trust Lands and Power on the Feather River</i> , by Beth Rose Middleton Manning
5, 6	Associates' Field trip tour of <b>Pine Tree Field Trip</b>
7	California and The Trump Administration Rarely Agree on Energy Policy. Here's an Exception
8	Mystery History by Jack Feldman
9	Exelon's Crane urges move away from carbon-based energy
10	The Battery Boom Will Draw \$1.2 Trillion in Investment by 2040
11	PG&E debt drawdown raises concerns of potential bankruptcy due to fire costs

### How Local Energy Aggregation Works



**Community Choice Aggregation (CCA)** is a program that allows cities and counties to buy and/or generate electricity for residents and businesses within their areas.

# California Is Raising Costs for Defectors From Power Utilities

## ANNUAL MEMBERSHIP MEETING SATURDAY, FEBRUARY 10, 2019

*(Continued from page 1)*

The commission's decision deals a "devastating blow to the flourishing CCA movement in California and could deter further market entry by CCAs," Beth Vaughan, executive director of the community choice association, said in a statement.

The community programs mean the state's investor-owned utilities operated by PG&E, along with Edison International and Sempra Energy, have already lost a significant number of customers and face more defections.

The costs for utilities' past investments in clean energy "do not go away when customers depart for a CCA," Lynsey Paulo, a spokeswoman for PG&E, the state's biggest utility, said in an email before the vote.

The decision Thursday goes further to "ensure customer choice does not increase costs" to PG&E customers, Paulo said after the decision.

Commissioner Carla Peterman, whose proposal was adopted Thursday, said in an interview before the vote that she tried to strike a balance between the needs of community choice groups and the utilities. The fees make up about 15 percent of the average bill, she said.

Residential customers leaving PG&E would see an estimated increase of 1.68 percent over 2018 bills, according to an estimate provided by the commission. Edison customers would see a 2.5 percent increase while customers leaving Sempra's San Diego Gas & Electric would get a 5.24 percent rate hike, based on commission estimates.

"This is not about utility profit versus customer choice," Peterman said. "Nothing changes to the utility's profit based on our decision here. What changes is which customers are paying for what."

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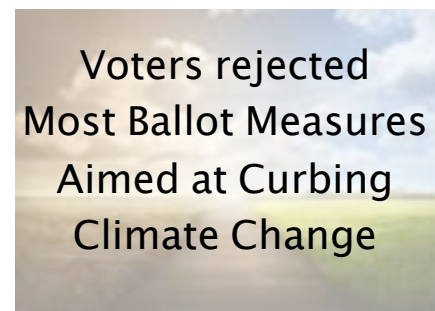
10:00 ~Noon  
Los Angeles Department of Water and Power  
John Ferraro Building  
111 North Hope Street,  
Los Angeles, Ca 90012.

Bring your identification for entrance into the parking lot and into the building. All members are encouraged to attend, bring guests or potential members.

Members and visitors are encouraged to attend our monthly Luncheon Board Meetings held the second Wednesday of each month, 11:00 a.m to 1:30 p.m.

To insure the adequate seating and meals are prepared, notify us one week prior at [comments@waterandpower.org](mailto:comments@waterandpower.org)

We invite our readers to join us  
**March 13 Board Meeting**  
Guest Speaker, Ted Bardacke of the Clean Power Alliance, a Los Angeles County Aggregator.  
Reserve your seat at [comments@waterandpower.org](mailto:comments@waterandpower.org)



In Arizona, voters said no to accelerating the shift to renewable energy. In Colorado, they said no to an effort to sharply limit drilling on non-federal land. And a measure to make Washington the first state to tax carbon emissions appears to have fallen short. The failure of environmental ballot measures in Arizona and Colorado--and the likely defeat of a proposal to impose fees on carbon emissions in Washington state -- underscore the difficulty of tackling a global problem such as climate change at the state and local level, where huge sums of money poured in on both sides. ❖

Washington Post, Nov. 7

Tags: Arizona Public Service Company



SOUTHERN CALIFORNIA  
**EDISON**

*Edison International is a public utility holding company based in Rosemead, California. Its subsidiaries include Southern California Edison, and unregulated non-utility business assets Edison Energy. Edison companies include one of the nation's largest electric utilities and providers of industrial and commercial energy services nationwide.*



*Local Power represents a revolution in bypassing the inertia of monopoly dominated electricity supplies — the ability of a city to choose to build, with municipal revenue bonds and private equity, a new local renewable energy infrastructure.*



*The Pacific Gas and Electric Company is an American investor-owned utility with publicly traded stock that is headquartered in the Pacific Gas & Electric Building in San Francisco.*

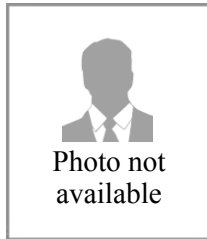


*Sempra Energy is an American natural gas utilities holding company based in San Diego, California. It divides its interests into two broad categories: California utilities, including Southern California Gas Company (SoCalGas) and San Diego Gas & Electric (SDG&E); and businesses not subject to California utilities regulation,*

# Speakers & Guests



**Eldon Cotton,**  
Retired engineer  
LADWP



**Bill Engels,**  
retired Engineer  
Power System,  
LADWP



**Richard F. Harasick**  
Senior Assistant General  
Manager Water System,  
LADWP.



**Donna Schlotman,**  
W&PA member

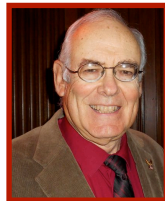


**Julie M. Spacht, P.E.**  
Water Executive,  
Managing Engineer.  
Interim Tribal Liaison  
LADWP

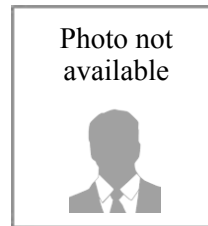
*Guest Speaker:*  
*"Issues for the Los Angeles Water System"*



**Mike Webster,**  
Executive Director  
Southern California  
Public Power Authority  
(SCPPA),



**Abraham Hoffman, Ph.D,**  
Historian, Los Angeles Valley  
College professor.  
Former Associates Board  
member.



**Donald J. Waldie,**  
City of Lakewood  
Historian and  
Author.



*Thank You*



**Phyllis Currie,** Water and Power Associates Assistant Treasurer, has been selected as Board Chairperson of the Mid-Continent Independent System Operator (regional electric regulator and provider akin to Cal ISO), effective in January 2019.

MISO is a not-for-profit member-based organization that ensures reliable, least-cost delivery of electricity across all or parts of 15 U.S. states and one Canadian province. In cooperation with stakeholders, MISO manages approximately 65,000 miles of high-voltage transmission and 200,000 megawatts of power-generating resources across its footprint.



## Newsletter Article Contributors



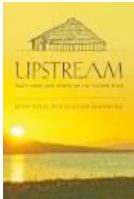
POWER  
ARTICLES  
submitted by  
**Thomas J. McCarthy**



ASSOCIATES'  
FIELD TRIP  
submitted by  
**Melinda Rho**



By Abraham Hoffman, Ph.D



**UPSTREAM: Trust Lands and Power on the Feather River,** by Beth Rose Middleton Manning. Tucson: University of Arizona Press, 2018. 245 pp. Illustrations, Notes, Works Cited, Index. Paper, \$35



I’ve long been skeptical of works that are advertised as telling the “untold story” of a particular place, person, or event. Usually this is hyperbole that at best adds some new information or an update on a story already told. However, *Upstream* really tells an “untold story.” In fact, this book should be mandatory reading for hydraulic and electrical engineers, or any engineer for that matter, who may be involved in the construction of dams, power stations, or anything that has to do with public works projects. With such projects advertised as benefiting people, it helps to know that there may be people who don’t benefit.

Beth Rose Manning is a professor at the University of California, Davis, where she teaches Native American Studies courses. She also does a lot of research as evidenced by her citing such sources as the Water Resources Center Archives, the Federal Energy Regulatory Commission, Bureau of Indian Affairs (BIA), and other archives. Her book is a case study on how public works projects on northern California’s Feather River were done at the expense of the Maidu Nation, a consortium of Native tribes who were deprived of their property and shoved aside by local, state, and federal agencies. Anyone not familiar with the history of indigenous people in California will be surprised at the fact that while the historical record ignores their presence in modern times, they are very much around, and thanks to Professor Manning, their story is being told.

Manning provides a useful timeline of event that begins in 1812, but it was the General Allotment

Act of 1887, generally known as the Dawes Act, that affected the Maidu as to their ownership of land in what is now Plumas and Lassen Counties. The Act provided that heads of household could file for 160-acre allotments that the Bureau of Indian Affairs would hold in trust for 25 years or until “the allottee was deemed competent to sell” (p. 188). There is an implied racism here, that Native people were incompetent to handle their own affairs, including decisions to sell their land. Maidu people were farmers, ranchers, and laborers, and most of them had adopted names common to the dominant society in which they lived—Jenkins, Salem, Mack, Thomas.

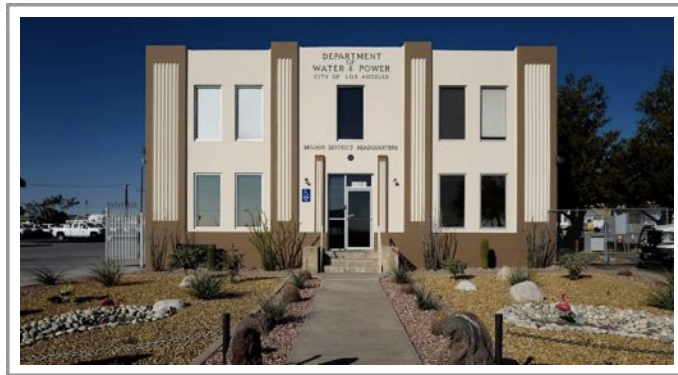
Manning focuses her study mainly on the period 1880s-1920s, a time when California’s population were increasing and demand for electrical power grew. Instead of protecting the interests of the Maidu, BIA officials played along with such companies as Great Western Power in persuading the Maidu to sell their allotments. In one egregious instance, a BIA official also worked for **GWP**, a clear conflict of interest that came rather late to the BIA’s attention. Manning cites numerous examples of BIA agents convincing Maidu that their land, which included timber and mineral deposits, was too poor for agriculture or even ranching, and presiding over land sales that undervalued Native property.

This is not a story that took place a long time ago and is forgotten if not erased from the historical record. Power companies merged until Pacific Gas and Electric became dominant in northern California. *(Continued on page 5)*

# WAPA tours of LADWP Pine Tree Wind and Solar Farm

By Melinda Rho

On a perfect October day with blue skies and puffy white clouds, a group of 12 Water and Power Associates set out to tour the Pine Tree Farm located in the rugged Tehachapi Mountains.



The first group arrived at the Los Angeles Aqueduct Filtration Plant and boarded a van driven by Mike Ward

from the Water System’s Southern District Headquarters in Mojave, where the rest of the group was waiting. From there, the group headed to the Jawbone Station operated by the State. The visitors center is a museum filled with a treasure trove of books, pamphlets and maps. The official greeter was Mr. Bob, a tortoise who is estimated to be 120 years old – old enough to have been around when the first Los Angeles Aqueduct was constructed!

## 120 Mega Watt Pine Tree Power Plant

Completed in 2009, the 120 MW Pine Tree Power Plant was the largest municipally-owned wind farm in the United States, the beginning of a major move to renewable energy by the LADWP. California's Renewable Portfolio Standard (RPS) is the most aggressive renewable energy standard in the U.S. It requires California utilities to produce 20 percent from renewable sources by 2010, and 33 percent by 2020.

*(Continued on page 6)*

We met up with Aaron Westbrook, Electrical Services Manager of the Power Supply Operations. The service road to Pine Tree was speckled with wind turbines atop rolling hills as far as one could see.

Completed in 2009, the 120 MW Pine Tree Power Plant was the largest municipally-owned wind



## UPSTREAM: *Trust Lands and Power on the Feather River* by Beth Rose Middleton Manning.

*(Continued from page 4)*

By the 1960s, the State Water Project began construction of hydroelectric dams and power stations to meet the needs of a growing population. However, the Maidu didn't forget. Descendants have taken to the courts to pursue lawsuits regarding the taking of land by corrupt government officials in unholly bargains with power companies, the destruction of the environment and the damage to Maidu culture resulting from their homeland being taken from them.



It will come as a surprise to people who never heard of the Maidu but just assumed that Oroville Dam, Big Meadows Dam, Butt Valley Dam, and other producers of electric power were built for the benefit of a society dependent on electricity and a reliable water supply, that these projects were constructed at the expense of the first inhabitants who lived where these projects were built. As it happens, the Maidu are very much around,

and they are patiently taking their case through the courts, serving on commissions, and demonstrating an awareness of politics as they press for their rights. There have been some victories, with PG&E returning some acreage, but the battle—not on a stereotypical warpath but in the courts and law offices—continues.

Manning has written a powerful indictment of past injustice, made all the stronger for the depth of her research. The book isn't an easy read: many end notes are lengthy explanatory statements that could have been in the narrative, such as Note 95 on page 216: "... regardless of the determination of the twentieth-century land claims proceedings, quests for land restoration and access will continue, based on the need to protect cultural places and practices tied to those places and to achieve justice in a context of entrenched injustice." ❖

Abraham Hoffman teaches history at Los Angeles Valley College.

# Associates tour LADWP Pine Tree Wind and Solar Farm

*(Continued from page 5)*

By Melinda Rho

The Pine Tree certainly plays a key role in renewable power for Los Angeles. It provides 1.4 percent of the city's goal of 20 percent renewable energy. A total of 80 1.5 MW turbines built by GE were erected on 8,000 acres of rugged terrain in the Tehachapi Mountains.

Mr. Westbrook explained that the site's very difficult terrain was one of the biggest challenges in the construction of the project. He tells of a truck driver with a shipment of spare blades, who upon arriving at the head of the road into the wind farm said, in no uncertain terms, there was no way he was going up that road. The road is quite steep, with grades in excess of 15 percent in some areas. Due to the tough terrain and roads, Pine Tree proved to

be more demanding to construct than the average wind farm.

The towers are quite tall. Fully erected, each of the GE turbines stands 213 feet high to the top of the hub, and nearly 340 feet when the height of the blades is included. The turbines are designed to operate within a narrow range of wind speeds, and to shut down when winds exceed the upper limit. Within the wind farm, wind characteristics can vary from one turbine location to another due to gusting. This requires a different wind profile from one turbine to the next, even if they are only a couple of hundred yards apart. The winds may vary, but overall it is a rich wind source. The Tehachapi area is second only to the Palm Springs area for having the best wind resource in California.



GE Towers

In 2013, LADWP expanded Pine Tree to incorporate an 8.5 MW large solar array. The solar array can produce an average of 18 gigawatt-hours (GWh) per year over 25 years. That would be enough to serve an average of 3,000 homes each year. The Solar Power Plant is a significant component of LADWP's power supply transformation, as LADWP moves away from the use of coal power by 2025 and increase renewable energy to 33 percent LA's total power supply by 2020.

The solar farm features 35,160 ground-mounted solar modules, more than 7,400 steel posts, and 17 inverters converting DC to AC power.

The tour of Pine Tree was a singular glimpse into LADWP's wide-ranging renewable energy portfolio. We were impressed and confident that the future of energy for Los Angeles is bright

The tour returned to the Mojave Yard for a briefing and then back to the LA Aqueduct Filtration Plant. ❖



Pine Tree solar panels



Tour Group Photo

**Tour Guide. Aaron Westbrook,**  
Electric Services Manager of the Pine Tree Power Plant.  
**Tour Group ~ L-R:**  
Aaron Westbrook, Bruce Hamer, Scott Munson,  
Melinda Rho, Ruth Salsman, Ken Salsman,  
Jerry Gewe, Bill Glauz, Mike Ward,  
Larry Smith, David Payne, Daniel Smith.  
*Photograph by Jay Rho.*

# .POWER ISSUES

Published on October 24, 2018 by [Jaclyn Brandt](#)

## California and The Trump Administration Rarely Agree on Energy Policy. Here's an Exception



Under President Trump, the federal government and the nation’s largest state have clashed on a number of fronts when it comes to energy and environmental policy. But there’s at least one thing California and the Trump administration can agree on. Both want to erect wind turbines off of the state’s coast. The Department of the Interior took its first steps last week toward developing offshore wind energy off the West Coast. “We’re opening the Pacific,” Interior Secretary Ryan Zinke said Wednesday [Oct.17] at a wind energy meeting in Washington. [Washington Post, Oct. 22](#)

Related Coverage

*Wind Installation Trends Show State-Level Incentives Low on List of Drivers. SNL*  
*EDF Renewables: Pilot Projects Still have Value for U.S. Offshore Wind Sector. SNL*

## Trump Says He’s ‘Very Inclined’ to Oppose Yucca Mountain Repository



President Trump signaled his opposition Saturday [Oct. 20] to reviving the moribund Yucca Mountain nuclear waste project during a Nevada campaign stop for a vulnerable Republican. “I think you should do things where people want them to happen, so I would be very inclined to be against it,” Trump said in an interview with KRNV News 4 in Elko, Nevada. “We will be looking at it very seriously over the next few weeks, and I agree with the people of Nevada.” Trump spoke during a Nevada trip that featured a rally for Sen. Dean Heller, R-Nevada, who was embroiled in a re-election fight with Democratic Rep. Jacky Rosen.

[Environment & Energy Publishing, Oct. 22](#)

## Trump Appoints Chatterjee to Head Energy Regulation Panel



The White House said on Wednesday [Oct. 17] President Donald Trump has appointed Neil Chatterjee, an avid supporter of subsidizing aging coal and nuclear power plants, as chairman of the Federal Energy Regulatory Commission. Chatterjee, a Republican from coal-producing Kentucky, who was a FERC commissioner, had been a backer last year of a directive by Energy Secretary Rick Perry, that the commission ultimately rejected, to bail out coal and nuclear plants. [Reuters, Oct. 24](#)

## Energy Companies Worry FCC Plan to Open Wireless Spectrum Could Compromise Communications



A new proposal from the Federal Communications Commission is raising concerns from energy sector leaders, who say it could compromise the ability of electric companies' employees to communicate with each other and their customers during power outages and other times of grid stress. Groups representing electric companies, including the Utility Technology Council and the Edison Electric Institute, last year opposed the FCC's notice of inquiry, which sought comment on how to expand spectrum accessibility [. Utility Dive, Oct 24](#)

# MYSTERY HISTORY



By Jack Feldman

**Los Angeles Scene:** This 1885 image shows a horse-drawn wagon on a dirt road, pedestrians walking on a sidewalk at left and several large homes on a hill in the background. There is a winding road running up the hill not too dissimilar to what we would see on Lombard Street in San Francisco.

By the turn of the century (1901), city and private engineers would come up with two different ways to traverse the steep hill...they built an 1080-foot long tunnel and a 33-percent grade funicular at the intersection seen below.



**What are the street names of this well-known downtown intersection?**

**&**

**Answers at:**

[https://waterandpower.org/museum/Mystery\\_History.html](https://waterandpower.org/museum/Mystery_History.html)

We invite your comments, inquiries, and suggestions.

Go to

[comments@waterandpower.org](mailto:comments@waterandpower.org)



## ANNUAL MEETING of GENERAL MEMBERSHIP

Saturday, February 9, 2019  
10:00 a.m. to Noon

L.A. Department of Water and Power  
John Ferraro Building  
111 North Hope Street  
Los Angeles, CA 90012 Room A5B.

Bring photo I.D. for admission to parking lot and building.  
Officer & Committee Reports & Elections of Board Members will be held

*Elections of 2019-2020 Officers, Wednesday, March 13, 2019.*



### 2018-2019 Board Of Directors

#### Officers

President:	Ed Schlotman
Vice President:	Rex Atwell
Vice President:	Gerald A. "Jerry" Gewe
Secretary:	David Oliphant
Assistant Secretary:	Robert Yoshimura
Treasurer/Membership:	Richard West
Assistant Treasurer:	Phyllis Currie

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Newsletter Editor:	Dorothy Fuller
Assistant Newsletter Editor:	Melinda Rho
Webmaster:	Jack Feldman
Assistant Webmaster:	Rex Atwell
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Alice Lipscomb	Thomas J. McCarthy
James McDaniel	Scott Munson
Philip Shiner	



## Exelon's Crane urges move away from carbon-based energy

Published on October 24, 2018 by [Jaclyn Brandt](#)

The president of Exelon Corp., which has more zero-carbon nuclear reactors than any other energy provider in the United States, recently outlined how the energy sector should reduce carbon emissions as many customers are demanding.

Exelon president and chief executive officer Christopher Crane spoke this week at a Brookings Institution event about the future of electric utilities and how nuclear and renewables fit into the transition to a low-carbon future.

The electric industry is supporting lower emissions by reducing demand through energy efficiency initiatives, promoting the use of low-carbon to zero-carbon energy sources, scrubbing carbon out of fossil fuels, and extracting carbon from the atmosphere.

With a long-term goal of an 80 percent reduction in greenhouse gases by 2050, Crane said, "Prominent scientific groups believe all of these strategies are required to meet the goals that we have set forward and to avoid the catastrophic climate impacts that we have seen and are having to live through as a company."

He called on the industry to quickly reduce the amount of carbon dioxide from burning fossil fuels. "The impacts of climate change are irrefutable," said Crane. "Look at our last couple of years: fires, floods, storms, heat waves, ocean temperatures that are drawing so much moisture into these hurricanes, and an infrastructure that we're trying to maintain during these changing times."

A dramatic reduction in emissions will be needed from both the supply side and the demand side of the industry and electrification with clean sources can be a key part of that, he added.

"We believe in the continued development of affordable renewable assets coming onto the market," he said. "It's got to be about cost, it's got to be about safety, it's got to be about reliability, but we can put the environment right on top of that to serve our customers."

Exelon is also invested in grid-scale storage, as well as supporting the creation of new designs that will allow price and reliability. Crane also believes in the potential of carbon-capture and storage technologies.

Exelon currently runs 23 nuclear reactors, six utilities that deliver electric and gas to 10 million customers, and a power generation fleet that also provides wind, solar and hydroelectric generating capacity.

"The cost of new nuclear is prohibitive for us to be investing in, so our investments are going into storage,

our investments are going into sequestering activities so we can bring more of those technologies online," Crane said.

Although the company believes there is a place for nuclear, the high cost of bringing new nuclear properties online means making a dramatic move towards renewable sources may be a more economical option. While some small nuclear plants may not be viable economically, other larger emission-free nuclear plants are facing retirement before enough renewable energy can replace them, he noted.

Exelon has been the only utility to support the Baker-Shultz Carbon Dividends Plan, which calls for a fee applied to carbon dioxide emissions with the proceeds returned to taxpayers in the form of dividend payments.

Exelon supports a market-based approach that would allow creativity and technologies to compete, Crane said. "What we're doing right now is Band-Aids. What we need to do is either a regional or national fix," he said. "What we've got now is just buying us time, and time is running out on many of these assets and we will end up going backwards. Our dependency will grow higher on carbon-emitting sources than go lower."

Crane said customers are supportive of moving away from carbon-based energy.

"We've got customers in all the service territories that we serve believe the climate is changing, and believe we have to be a part of that solution in an economic way."

Although the world is changing in terms of awareness of a changing climate, he said, "There is one area of the country we are not seeing the awareness, and that is D.C. — not the city of DC, but our government. Getting energy and environmental policy merged is critical. We are seeing our customers across the board demand this from us."

The goal of the industry is to make climate change a less-polarizing issue and influence recognition. To do that, Crane believes elected officials need to "hear the voices of the nation. I think that will bring them along."

"If our federal government isn't going to lead, our customers in our communities are," Crane said. "If we are going to be a relevant supplier of energy in the future ... We understand the model: do what your customers want and do it in a safe, effective, clean methodology."



## The Battery Boom Will Draw \$1.2 Trillion in Investment by 2040

Brian Eckhouse November 06 2018, 5:00 AM November 07 2018, 12:56 AM



(Bloomberg) -- The battery boom is coming to China, California and basically everywhere else—and it will be even bigger than previously thought.

The global energy-storage market will surge to a cumulative 942 gigawatts by 2040, according to a new forecast from Bloomberg NEF published Tuesday, and that growth will necessitate \$1.2 trillion in investment. Sharply falling battery costs is a key driver of the boom. BNEF sees the capital cost of a utility-scale lithium-ion storage system falling another 52 percent by 2030.

But cost isn't the only factor. Governments from China to California are spurring demand, as is the rise of electric vehicles and solar power. There's also been a greater focus on storage for electric-vehicle charging as well as energy access in remote areas.

"Costs have come down faster than we expected," Yayoi Sekine, a New York-based analyst at BNEF, said in an interview. "Batteries are going to permeate our lives."

The implications of cheaper batteries are far-reaching, upending multiple industries and helping spur technologies necessary to help fight climate change. Batteries power the electric vehicles that are popping up on our freeways. They also unlock solar power from the exclusive confines of the sun.

Two important markets come into particular focus. China, [which is building up its battery-manufacturing capacity](#), will be a central player in the boom. California, meanwhile, has pushed through a series of measures in recent years that will directly or indirectly spur more batteries, including legislation that would require all of the state's electricity to come from [carbon-free sources by 2045](#).

"Storage is just so sensibly the next step in the evolution of renewable energy," Edward Fenster, the executive chairman of San Francisco-based rooftop-

solar company Sunrun Inc., said in an interview. "If we're going to get to 100 percent renewable energy, we'll need storage."

### Here are six key takeaways from the latest BNEF battery forecast:

1. Annual energy-storage deployments are now forecast to exceed 50 gigawatt-hours by 2020. That's three years earlier than BNEF's outlook from just last year.
2. Energy storage may be equivalent to 7 percent of the world's total installed power capacity by 2040.
3. The Asia-Pacific region will be home to 45 percent of total installations on a megawatt basis by 2040. Another 29 percent will be spread across Europe, Middle East and Africa. The remainder will be in the Americas.
4. The majority of storage capacity will be utility-scale until the mid-2030s. But then so-called behind-the-meter projects—installations at businesses, industrial sites and residential properties—will overtake utility-scale.
5. A list of the leading battery countries is topped by who you would expect: China, U.S., India, Japan, Germany, France, Australia, South Korea and the U.K. South Korea today dominates the market but will be overtaken by the U.S. early in the 2020s—and both will later be eclipsed by China.
6. Storage is coming to developing countries in Africa, too. BNEF explains it thusly: utilities will likely recognize that the combination of solar, diesel and batteries in "far-flung sites" is cheaper than extending the power grid or building a fossil-only generator.

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### California Energy Companies Prep Nation's Biggest Time-Of-Use Rate Roll Out

Many energy companies' tests of time varying rates have led to bill savings and lower peak loads, but California will soon be taking on the biggest test yet by putting over 20 million customers on time-of-use rates. "TOU empowers customers, and if they shift their usage to lower cost time periods when solar and wind are abundant, they will not only lower their bills, they will also use cleaner energy," SCE Rate Design Senior Advisor Andre Ramirez told Utility Dive. ❖

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# PG&E debt drawdown raises concerns of potential bankruptcy due to fire costs

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## Dive Brief:

- Pacific Gas and Electric released financial documents Tuesday that experts say could be a warning that the utility will soon file for bankruptcy or face other serious financial issues due to escalating costs related to multiple California wildfires.
- PG&E filed an [8-K document](#) with the Securities and Exchange Commission disclosing it has withdrawn all of the cash available from its revolving credit lines, a move that often presages a bankruptcy filing. The utility could also be preparing for other situations, such as a credit downgrade or another state report linking its equipment to wildfires.
- PG&E told financial analysts that its move is due to billions of dollars in debt coming due in the next few months, and not a preparation for bankruptcy, according to a note obtained by Utility Dive.

## Dive Insight:

Companies use revolving credit lines to finance their operations, and financial experts say drawing all that debt down at once, as PG&E did Tuesday, typically means a firm is preparing for tough times.

“This is a surprising move and it is potentially consistent with a bankruptcy filing,” said Michael Wara, a professor at Stanford Law School, “but there are other potential explanations that are also possible, especially under the circumstances in which PG&E finds itself.”

Companies preparing for bankruptcy often draw down their debt to avoid more onerous financing terms through the bankruptcy process, Wara said. But PG&E could also be putting cash in the bank to insulate itself from other financial situations.

One option is that PG&E is preparing to have its credit rating downgraded to non-investment status, Wara said, which would exacerbate its already limited access to capital markets. It also could be anticipating that California fire authorities will find its equipment responsible for the Tubbs Fire, which killed 24 people last year.

State officials have already found PG&E wires responsible for 16 fires last year. On Monday, California utility regulators announced a new investigation into PG&E’s involvement with the

ongoing Camp Fire, which has killed 42 people so far — the worst in state history.

In June — before the Camp Fire outbreak — PG&E officials told state lawmakers that fire expenses could [force the utility into bankruptcy](#) or compel it to break the company into several pieces. Financial analysts say those are just two options of many that could be foreshadowed by the debt drawdown.

“They’ve shored up and essentially enhanced their financial flexibility and I think given the situation that’s occurred there it’s not entirely surprising,” said Paul Patterson, an analyst at Glenrock Associates, a financial research firm. “Whether that means they are going to take additional action remains to be seen.”

“They’re in a situation which is pretty extreme,” he added, “and I think it behooves them to take action to increase their financial flexibility.”

PG&E did not respond directly to questions about the debt drawdown, saying in an emailed statement that the “entire company is focused on supporting first responders and assisting our customers and communities impacted by the Camp Fire.”

However, in a note to clients, Julien Dumoulin-Smith, a Bank of America-Merrill Lynch analyst, said the utility assured his firm that it is not preparing a bankruptcy filing.

“We had a chance to catch up with the company,” Dumoulin-Smith wrote, “noting that this isn’t an indication of pre-filing for bankruptcy as they have \$800 [million] of short-term debt coming due over the next three months as well as historical debt maturing in excess of \$1 [billion].”

“However,” the analyst noted, “the reality is that this is very alarming given the timing as we don’t know the specifics of the situation.”

If PG&E does file for bankruptcy, it would be the second time the company has been through the process in less than two decades. The company last emerged from [bankruptcy almost 15 years ago](#) following its filing during the California energy crisis. ❖

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*Editors’ note: Dive provides news and analysis for retail executives. It covers topics like retail tech, marketing, e-commerce, logistics, in-store operations, corporate, etc.*