

Message

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Today's News

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Ontario Tories will scrap selling unused power to Quebec, U.S. states, says party's finance critic

Hamilton Mountain News - Wed Jul 5 2017 Page: 1

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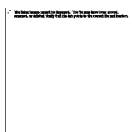


Are smart meters delivering on their promise?; Are smart meters delivering on their promise?

Canadian Press - Wed Jul 5 2017

Byline:Catherine Rosenberg, Professor in Electrical and Computer Engineering and Canada Research Chair in the Future Internet, University of Waterloo and Lukasz Golab, Associate Professor and Canada Research Chair, University of Waterloo

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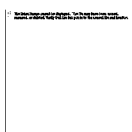


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Byline:Dave Waddell, Windsor Star

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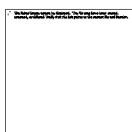


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Ontario Tories will scrap selling unused power to Quebec, U.S. states, says party's finance critic

Hamilton Mountain News - Wed Jul 5 2017 Page: 1

The Ontario Progressive Conservatives are proposing to end the longtime strategy of various governments of selling excess power to Quebec.

Vic Fedeli, the MPP for Nipissing and the party's finance critic, said in a recent interview the party will look to "stop shopping power" to Quebec and a number of U.S. states, in an effort to create jobs in the province.

"We can use that power here in Ontario," said Fedeli after addressing about 25 people at a breakfast meeting of the Hamilton chapter of the Macdonald-Cartier Club at Marquis Gardens last month.

"If there is a way for us to use that power at night to create some employment and use that power up to cover your hydro bills (and) allow businesses to put on a third shift," the party should do it.

A study by the Consumer Policy Institute revealed that Ontario customers have paid \$6.3 billion over the last decade to cover the cost of selling electricity to customers outside the province, predominately to Quebec, New York and Michigan. In 2011, surplus power was sold by the province for about \$418 million. In some instances, power is sold for a penny or two per kilowatt hour, and sometimes even given away to the interconnected grid linking Ontario with New York, Quebec, Michigan, Manitoba and Minnesota.

Fedeli said Quebec has lower hydro rates than Ontario and is enticing businesses to relocate to the province. He said Google chose to locate its first data centre in Canada in Montreal, Que. rather than in Ontario due to the lower energy costs.

"This goes on and on, not just the companies that left Ontario, it's the companies that chose not to come to Ontario," he said.

The Independent Electricity System Operator (IESO) has stated selling surplus power is not new and has happened over the years under governments of all political stripes. Ontario also, it stated, takes advantage of low energy prices on the grid from other areas.

Fedeli said the Tories are also preparing to eliminate the Green Energy Act, which the party has stated has provided expensive subsidies to renewable companies for power that Ontario already has.

"The first thing we have to do is stop signing contracts for power we don't need,"

said Fedeli. "Second is open up those contracts and look at them."

He also wants to slash Hydro One's \$11 million pay for its chief executive officer and four of the top executives to the more manageable salaries of counterparts at Hydro Quebec and B.C. Hydro where they make about \$400,000.

"It makes no sense making that kind of money," he said.

During his address, Fedeli took aim at various Liberal ministers and accused them of providing incorrect facts about how well Ontario's economy is doing.

He said Brad Duguid, minister of economic development, has stated that Ontario is "growing faster than the United States." Yet, said Fedeli, Arkansas, Washington, Oregon all have higher growth rates than Ontario.

Fedeli added that Duguid said Ontario is the "top foreign direct investment location" in North America.

"Well, no we're not the top foreign direct investment destination we used to be," he said.

He said Ontario is the fourth highest location for direct foreign investment.

"So we are the fourth, not the top," he said. "We fell, tumbled from \$7 billion to \$4 billion. That is a serious change in only a very short period of time."

Duguid's office did not respond to a request for comment. But the ministry's website states Ontario is the "North American leader in attracting foreign capital investment, dated 2015.

A report from fDi Intelligence, a division of the Financial Times Limited, showed Ontario leading for the second year in a row for foreign capital investment, receiving \$7.1 billion; ranked third when it comes to foreign direct investment job creation with 13,055 from 6,102 in 2013; and ranked second in the number of foreign direct investment jobs in the finance sector and first for automotive and life sciences sector.

In the fDi 2017 report on global investment, Ontario ranks third for foreign investment, surpassing Texas and Florida, from \$4.1 billion 2015 to \$4.5 billion in 2016.

Fedeli also took issue with the Liberal government's description of Ontario returning as Canada's economic engine. Ministers and Premier Kathleen Wynne have stated, including in visits to Hamilton, that Ontario is booming again.

Yet, said the former North Bay mayor, referring to an analysis from the Fraser Institute, British Columbia, Manitoba and Quebec all have lower unemployment rates than Ontario.

"So how can you say we're leading when there are 10 provinces that don't make us the leader," he said. "So why do they do it? It's because our economy is under attack. It is not outside forces that has made this happen, it's the policies of this government that have brought our economy under attack."

Fedeli said the major reasons why Ontario's financial situation is in such a

precarious situation is because of the high taxes, topping out at 53.5 per cent and the rising debt of over \$300 billion, making Ontario the world's most indebted subsovereign borrower.

"The deficits are going to get bigger," said Fedeli, referring to the Liberals' decision to extend the borrowing plan to finance the 25 per cent hydro rate cut under the party's Fair Hydro Plan.

"We are going to be about half a trillion dollars in debt," he said. "This is sobering and pretty damn scary."

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Are smart meters delivering on their promise?; Are smart meters delivering on their promise?

Canadian Press - Wed Jul 5 2017

Byline:Catherine Rosenberg, Professor in Electrical and Computer Engineering and Canada Research Chair in the Future Internet, University of Waterloo and Lukasz Golab, Associate Professor and Canada Research Chair, University of Waterloo

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Authors: Catherine Rosenberg, Professor in Electrical and Computer Engineering and Canada Research Chair in the Future Internet, University of Waterloo and Lukasz Golab, Associate Professor and Canada Research Chair, University of Waterloo

Smart meters have two clear goals: to save energy and to shift consumer use of energy from on-peak to off-peak hours.

But new research suggests smart meters and time-of-use electricity pricing in Ontario have only modestly reduced residential energy demand during the most expensive peak periods.

Smart meters that measure hourly electricity consumption have been installed in homes across Ontario to enable time-of-use (TOU) pricing with a goal of setting different prices of electricity throughout the day. For example, on summer weekdays, one kilowatt-hour of electricity costs 7.7 cents from 7 p.m. to 7 a.m., and 15.7 cents from noon to 5 p.m. The price difference is meant to give residential customers an incentive to use less electricity during peak-demand times.

We recently published a study in the Journal of Energy Policy in which we asked: Is time-of-use pricing effective? Compared to flat pricing (previously used in Ontario),

has there been any change in electricity consumption during high-demand periods?

Past research inconclusive

Previous studies that attempted to answer these questions produced no common methodology or results. So we set out to produce a clear, objective, transparent, efficient and reproducible study.

Using smart-meter data from 20,000 households in southwestern Ontario for nine months before and after TOU pricing was introduced on Nov. 1, 2011, we compared the summers of 2011 and 2012. Our approach adjusted for variances in pricing, weather and working days, which can affect electricity consumption due to factors such as air-conditioner use.

Demand not being shifted

What did we find? Our analysis showed that on-peak and mid-peak consumption fell by about 2.5 per cent, while off-peak consumption remained about the same. This suggests that electricity demand is not being shifted to off-peak periods, but is being conserved.

We hope our results will help the Ontario government and other jurisdictions to determine whether time-of-use pricing and smart meters are as effective as intended, or whether new initiatives should be considered to reduce or shift residential demand.

We also encourage policy makers to make more electricity consumption data available to validate new pricing schemes and conservation programs. Our analysis would not have been possible without access to smart-meter data from before and after the introduction of TOU pricing. Additionally, policy makers should demand that the studies they commission have clear and transparent methodologies.

Catherine Rosenberg, Professor in Electrical and Computer Engineering and Canada Research Chair in the Future Internet, University of Waterloo and Lukasz Golab, Associate Professor and Canada Research Chair, University of Waterloo

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Hydro plan worth celebrating: minister

Orillia Packet & Times - Thu Jul 6 2017

Byline: Glenn Thibeault

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When we introduced Ontario's Fair Hydro Plan in March, our government committed to fundamentally restructuring the system to deliver the biggest cut to electricity rates in Ontario's history. I'm happy to say that the Fair Hydro Plan is now a reality. And I believe this is the fairer way forward.

Recently, the Ontario Energy Board (OEB) announced it had taken the final steps to lower electricity prices by an average of 25% for all residential consumers in the province. As many as half a million small businesses and farms will also benefit.

The OEB, the province's independent body that sets rates, lowered bills in response to the Fair Hydro Act, 2017, which passed in the Ontario Legislature on May 31. All Progressive Conservative and NDP MPPs in attendance that day opposed our plan to bring down electricity rates and voted against the Fair Hydro Plan.

Relief through the Fair Hydro Plan is immediate. We also designed these reductions to last, by holding electricity rates to inflation for four years. In addition, we're updating our Long-term Energy Plan, which will continue our trend of taking costs out of the electricity system and making it more affordable for ratepayers.

These changes to the way we pay for electricity are fairer, and they are lasting. We can afford them because of Ontario's strengthening economy, which is the fastest growing in Canada, and we need them to ensure the growth in our economy translates to more opportunity and security for people right across Ontario. There is no better way to use the province's recently balanced budget than by giving everyone the break they need on their hydro bills. It's the right thing to do for Ontario and the fair thing to do for your family.

Glenn Thibeault

Ontario minister of energy

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Wind turbine deliveries could cause traffic delays in Lakeshore

Windsor Star - Thu Jul 6 2017
Byline: Dave Waddell, Windsor Star

Motorists in Lakeshore could face delays beginning Friday with the arrival of the latest shipments of turbine blades for the Belle River Wind project.

The 55-metre blades will be escorted by the OPP along County Road 22 to Rourke Line Road and then ultimately delivered on Lakeshore Road 115.

Three blades will be shipped on Friday, with the same number following over four consecutive days beginning on Monday.

"There could be some temporary closures at the intersection of County Road 22 and Rourke Line when the blades arrive, but there'll be no lengthy closures," said Nelson Cavacas, Lakeshore's director of engineering and infrastructure.

"They're using the Rourke Line intersection (at County Road 22) because the one at Lakeshore Road 115 (and County Road 42) was too small to turn the blades."

The sets of three blades per turbine will be delivered individually, approximately 40 to 50 minutes apart.

The blades will arrive at Rourke Line between 11:30 a.m. and 2:30 p.m. on the scheduled delivery days.

Beyond the 15 blades for five turbines being delivered over those five days, deliveries of more blades will continue through the summer, with the project becoming operational this fall.

Belle River Wind will consist of 41 turbines, with the possibility of an additional two or three turbines, located between County Road 42 and Highway 401 and extending westward near Puce Road and eastward past County Road 27.

The project is a joint effort between Samsung and Pattern Energy Group.

Though the wind farm is expected to generate an additional \$220,000 in property taxes for Lakeshore, council initially rejected the project. However, the province overruled the municipality's opposition.

"We have 109 turbines (in Lakeshore) already, that was one of our arguments for not wanting more," Lakeshore Mayor Bain said. "We've done our bit, but now we have 41 or 42 more.

"They put them in rural areas originally, and our farmers were happy for the extra income. Now they're starting to encroach on our residential areas.

"Originally, they wanted to put turbines along the Lake St. Clair shoreline, but fortunately we were able to talk them out of that."

Bain said the town has spent no money on infrastructure to support the creation of the wind farm.

When fully operational, the project will produce 100 megawatts of power, enough to meet the energy needs of 35,000 homes in Ontario.

The wind farm will also create 15 permanent jobs and 200 jobs during the 12-month construction period.

"There are no other turbine projects on the books," said Bain, who added residents have made it clear they don't want any more wind turbines.

"This is the last one hopefully. We don't have any more rural locations to put a wind farm.

"They've become an inconvenience and a hassle being so close to residential areas."

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Enwin shelving its application for a rate hike

Windsor Star - Wed Jul 5 2017
Byline: Brian Cross

It will be 2019 or later before Enwin Utilities will raise the rate for its portion of an electric bill, says CEO Helga Reidel.

One year ago, Reidel announced that the Windsor electric utility would be seeking its first rate hike since 2009 to pay for rising costs to maintain the system. But thanks to a good year financially in 2016, that application to the Ontario Energy Board has been postponed.

"We're trying to delay it as long as possible," Reidel said Wednesday. The delay will mean a decade without a rate hike from Enwin.

Enwin's distribution costs account for about 20 per cent of a monthly electric bill, with the remainder going to provincial hydro bodies where until recently, hydro costs have been escalating. With the implementation this year of Premier Kathleen Wynne's Fair Hydro Plan, Ontario households and small businesses are getting rebates totalling 25 per cent.

"Obviously we know the rates are high on the cost of power, so we are trying to mitigate our distribution costs for as long as possible," Reidel said. "We might file it in late 2018, but it won't be effective until at least 2019, possibly 2020."

She said a hot summer in 2016 led to high electricity use, which contributed to Enwin's bottom line. Those favourable results meant the rate increase application could be deferred.

"Every year we're going to look at it and hopefully we have good results every year," she said. "Eventually we will have to file a rate application though."

She said it's too early to say what the increase will be. That will depend on the capital projects needed and Enwin's ability to offset some of those costs.

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California invested heavily in solar and wind production. Now there's so much that other states are sometimes paid to take it

USA Today - Sat Jun 24 2017
Byline:By Ivan Penn, Los Angeles Times

June 24— LOS ANGELES __ On 14 days during March, Arizona utilities got a gift from California: free solar power.

Well, actually better than free. California produced so much solar power on those days that it paid Arizona to take excess electricity its residents weren't using to avoid overloading its own power lines.

It happened on eight days in January and nine in February as well. All told, those transactions helped save Arizona electricity customers millions of dollars this year, though grid operators declined to say exactly how much. And California also has paid other states to take power.

The number of days that California dumped its unused solar electricity would have been even higher if the state hadn't ordered some solar plants to reduce production __ even as natural gas power plants, which contribute to greenhouse gas emissions, continued generating electricity.

Solar and wind power production was curtailed a relatively small amount __ about 3 percent in the first quarter of 2017 __ but that's more than double the same period last year. And the surge in solar power could push the number even higher in the future.

Why doesn't California, a champion of renewable energy, use all the solar power it can generate?

The answer, in part, is that the state has achieved dramatic success in increasing renewable energy production in recent years. But it also reflects sharp conflicts among major energy players in the state over the best way to weave these new electricity sources into a system still dominated by fossil-fuel-generated power.

No single entity is in charge of energy policy in California. This has led to a two-track approach that has created an ever-increasing glut of power and is proving costly for electricity users. Rates have risen faster here than in the rest of the U.S., and Californians now pay about 50 percent more than the national average.

Perhaps the most glaring example: The California Legislature has mandated that one-half of the state's electricity come from renewable sources by 2030; today it's about one-fourth. That goal once was considered wildly optimistic. But solar panels have become much more efficient and less expensive. So solar power is now often the same price or cheaper than most other types of electricity, and production has soared so much that the target now looks laughably easy to achieve.

At the same time, however, state regulators __ who act independently of the Legislature __ until recently have continued to greenlight utility company proposals to build more natural gas power plants.

These conflicting energy agendas have frustrated state Senate Leader Kevin de Leon, D-Los Angeles, who opposes more fossil fuel plants. He has introduced legislation that would require the state to meet its goal of 50 percent of its electricity from renewable sources five years earlier, by 2025. Even more ambitiously, he recently proposed legislation to require 100 percent of the state's power to come from renewable energy sources by 2045.

"I want to make sure we don't have two different pathways," De Leon said. Expanding clean energy production and also building natural gas plants, he added, is "a bad investment."

Environmental groups are even more critical. They contend that building more fossil fuel plants at the same time that solar production is being curtailed shows that utilities __ with the support of regulators __ are putting higher profits ahead of reducing greenhouse gas emissions.

"California and others have just been getting it wrong," said Leia Guccione, an expert in renewable energy at the Rocky Mountain Institute in Colorado, a clean power advocate. "The way (utilities) earn revenue is building stuff. When they see a need, they are perversely (incentivized) to come up with a solution like a gas plant."

Regulators and utility officials dispute this view. They assert that the transition from fossil fuel power to renewable energy is complicated and that overlap is unavoidable.

They note that electricity demand fluctuates __ it is higher in summer in California,

because of air conditioning, and lower in the winter __ so some production capacity inevitably will be underused in the winter. Moreover, the solar power supply fluctuates as well. It peaks at midday, when the sunlight is strongest. Even then it isn't totally reliable.

Because no one can be sure when clouds might block sunshine during the day, fossil fuel electricity is needed to fill the gaps. Utility officials note that solar production is often cut back first because starting and stopping natural gas plants is costlier and more difficult than shutting down solar panels.

Eventually, unnecessary redundancy of electricity from renewables and fossil fuel will disappear, regulators, utilities and operators of the electric grid say.

"The gas-fired generation overall will show decline," said Neil Millar, executive director of infrastructure at Cal-ISO, the California Independent System Operator, which runs the electric grid and shares responsibility for preventing blackouts and brownouts. "Right now, as the new generation is coming online and the older generation hasn't left yet, there is a bit of overlap."

Utility critics acknowledge these complexities. But they counter that utilities and regulators have been slow to grasp how rapidly technology is transforming the business. A building slowdown is long overdue, they argue.

Despite a growing glut of power, however, authorities only recently agreed to put on hold proposals for some of the new natural gas power plants that utilities want to build to reconsider whether they are needed.

A key question in the debate is when California will be able to rely on renewable power for most or all of its needs and safely phase out fossil fuel plants, which regulators are studying.

The answer depends in large part on how fast battery storage improves, so it is cheaper and can store power closer to customers for use when the sun isn't shining. Solar proponents say the technology is advancing rapidly, making reliance on renewables possible far sooner than previously predicted, perhaps two decades or even less from now __ which means little need for new power plants with a life span of 30 to 40 years.

Calibrating this correctly is crucial to controlling electricity costs.

"It's not the renewables that's the problem. It's the state's renewable policy that's the problem," said Gary Ackerman, president of the Western Power Trading Forum, an association of independent power producers. "We're curtailing renewable energy in the summertime months. In the spring, we have to give people money to take it off our hands."

(EDITORS: STORY CAN END HERE)

Not long ago, solar was barely a rounding error for California's energy producers.

In 2010, power plants in the state generated just over 15 percent of their electricity production from renewable sources. But that was mostly wind and geothermal power, with only a scant 0.5 percent from solar. Now that overall amount has grown

to 27 percent, with solar power accounting for 10 percent, or most of the increase. The solar figure doesn't include the hundreds of thousands of rooftop solar systems that produce an additional 4 percentage points, a share that is ever growing.

Behind the rapid expansion of solar power: its plummeting price, which makes it highly competitive with other electricity sources. In part that stems from subsidies, but much of the decline comes from the sharp drop in the cost of making solar panels and their increased efficiency in converting sunlight into electricity.

The average cost of solar power for residential, commercial and utility-scale projects declined 73 percent between 2010 and 2016. Solar electricity now costs 5 to 6 cents per kilowatt-hour — the amount needed to light a 100-watt bulb for 10 hours — to produce, or about the same as electricity produced by a natural gas plant and half the cost of a nuclear facility, according to the U.S. Energy Information Administration.

Fly over the Carrizo Plain in California's Central Valley near San Luis Obispo and you'll see that what was once barren land is now a sprawling solar farm, with panels covering more than seven square miles — one of the world's largest clean-energy projects. When the sun shines over the Topaz Solar Farm, the shimmering panels produce enough electricity to power all of the residential homes in a city the size of Long Beach, population 475,000.

Other large-scale solar operations blanket swaths of the Mojave Desert, which has increasingly become a sun-soaking energy hub. The Beacon solar project covers nearly two square miles, and the Ivanpah plant covers about five and a half square miles.

The state's three big shareholder-owned utilities now count themselves among the biggest solar power producers. Southern California Edison produces or buys more than 7 percent of its electricity from solar generators, Pacific Gas & Electric 13 percent and San Diego Gas & Electric 22 percent.

Similarly, fly over any sizable city and you'll see warehouses, businesses and parking lots with rooftop solar installations, and many homes as well.

With a glut of solar power at times, Cal-ISO has two main options to avoid a system overload: order some solar and wind farms to temporarily halt operations or divert the excess power to other states.

That's because too much electricity can overload the transmission system and result in power outages, just as too little can. Complicating matters is that even when Cal-ISO requires large-scale solar plants to shut off panels, it can't control solar rooftop installations that are churning out electricity.

Cal-ISO is being forced to juggle this surplus more and more.

In 2015, solar and wind production were curtailed about 15 percent of the time on average during a 24-hour period. That rose to 21 percent in 2016 and 31 percent in the first few months of this year. The surge in solar production accounts for most of this, though heavy rainfall has increased hydroelectric power production in the state this year, adding to the surplus of renewables.

Even when solar production is curtailed, the state can produce more than it uses, because it is difficult to calibrate supply and demand precisely. As more

homeowners install rooftop solar, for example, their panels can send more electricity to the grid than anticipated on some days, while the state's overall power usage might fall below what was expected.

This means that Cal-ISO increasingly has excess solar and wind power it can send to Arizona, Nevada and other states.

When those states need more electricity than they are producing, they pay California for the power. But California has excess power on a growing number of days when neighboring states don't need it, so California has to pay them to take it. Cal-ISO calls that "negative pricing."

Why does California have to pay rather than simply give the power away free?

When there isn't demand for all the power the state is producing, Cal-ISO needs to quickly sell the excess to avoid overloading the electricity grid, which can cause blackouts. Basic economics kick in. Oversupply causes prices to fall, even below zero. That's because Arizona has to curtail its own sources of electricity to take California's power when it doesn't really need it, which can cost money. So Arizona will use power from California at times like this only if it has an economic incentive _ which means being paid.

In the first two months of this year, Cal-ISO paid to send excess power to other states seven times more often than same period in 2014. "Negative pricing" happened in an average of 18 percent of all sales, versus about 2.5 percent in the same period in 2014.

Most "negative pricing" typically has occurred for relatively short periods at midday, when solar production is highest.

But what happened in March shows how the growing supply of solar power could have a much greater impact in the future. The periods of "negative pricing" lasted longer than in the past _ often for six hours at a time, and once for eight hours, according to a Cal-ISO report.

The excess power problem will ease somewhat in the summer, when electricity usage is about 50 percent higher in California than in the winter.

But Cal-ISO concedes that curtailments and "negative pricing" is likely to happen even more often in the future as solar power production continues to grow, unless action is taken to better manage the excess electricity.

Arizona's largest utility, Arizona Public Service, is one of the biggest beneficiaries of California's largesse because it is next door and the power can easily be sent there on transmission lines.

On days that Arizona is paid to take California's excess solar power, Arizona Public Service says it has cut its own solar generation rather than fossil fuel power. So California's excess solar isn't reducing greenhouse gases when that happens.

Cal-ISO says it does not calculate how much it has paid others so far this year to take excess electricity. But its recent oversupply report indicated that it frequently paid buyers as much as \$25 per megawatt-hour to get them to take excess power, according to the Energy Information Administration.

That's a good deal for Arizona, which uses what it is paid by California to reduce its own customers' electricity bills. Utility buyers typically pay an average of \$14 to \$45 per megawatt-hour for electricity when there isn't a surplus from high solar power production.

(EDITORS: STORY CAN END HERE)

With solar power surging so much that it is sometimes curtailed, does California need to spend \$6 billion to \$8 billion to build or refurbish eight natural gas power plants that have received preliminary approval from regulators, especially as legislative leaders want to accelerate the move away from fossil fuel energy?

The answer depends on whom you ask.

Utilities have repeatedly said yes. State regulators have agreed until now, approving almost all proposals for new power plants. But last month, citing the growing electricity surplus, regulators announced plans to put on hold the earlier approvals of four of the eight plants to determine if they really are needed.

Big utilities continue to push for all of the plants, maintaining that building natural gas plants doesn't conflict with expanding solar power. They say both paths are necessary to ensure that California has reliable sources of power __ wherever and whenever it is needed.

The biggest industrial solar power plants, they note, produce electricity in the desert, in some cases hundreds of miles from population centers where most power is used.

At times of peak demand, transmission lines can get congested, like Los Angeles highways. That's why Cal-ISO, utilities and regulators argue that new natural gas plants are needed closer to big cities. In addition, they say, the state needs ample electricity sources when the sun isn't shining and the wind isn't blowing enough.

Utility critics agree that some redundancy is needed to guarantee reliability, but they contend that the state already has more than enough.

California has so much surplus electricity that existing power plants run, on average, at slightly less than one-third of capacity. And some plants are being closed decades earlier than planned.

As for congestion, critics note that the state already is crisscrossed with an extensive network of transmission lines. Building more plants and transmission lines wouldn't make the power system much more reliable, but would mean higher profits for utilities, critics say.

That is what the debate is about, said Jaleh Firooz, a power industry consultant who previously worked as an engineer for San Diego Gas & Electric for 24 years and helped in the formation of Cal-ISO.

"They have the lopsided incentive of building more," she said.

The reason: Once state regulators approve new plants or transmission lines, the cost is now built into the amount that the utility can charge electricity users __ no

matter how much or how little it is used.

Given that technology is rapidly tilting the competitive advantage toward solar power, there are less-expensive and cleaner ways to make the transition toward renewable energy, she said.

To buttress her argument, Firooz pointed to a battle in recent years over a natural gas plant in Redondo Beach.

Independent power producer AES Southland in 2012 proposed replacing an aging facility there with a new one. The estimated cost: \$250 million to \$275 million, an amount that customers would pay off with higher electricity bills.

Cal-ISO and Southern California Edison, which was going to buy power from the new plant, supported it as necessary to protect against potential power interruptions. Though solar and wind power production was increasing, they said those sources couldn't be counted on because their production is variable, not constant.

The California Public Utilities Commission approved the project, agreeing that it was needed to meet the long-term electricity needs in the L.A. area.

But the California Coastal Conservancy, a conservation group opposed to the plant, commissioned an analysis by Firooz to determine how vital it was. Her conclusion: not at all.

Firooz calculated that the L.A. region already had excess power production capacity __ even without the new plant __ at least through 2020.

Along with the cushion, her report found, a combination of improved energy efficiency, local solar production, storage and other planning strategies would be more than sufficient to handle the area's power needs even as the population grew.

She questioned utility arguments.

"In their assumptions, the amount of capacity they give to the solar is way, way undercut because they have to say, 'What if it's cloudy? What if the wind is not blowing?'" Firooz explained. "That's how the game is played. You build these scenarios so that it basically justifies what you want."

Undeterred, AES Southland pressed forward with its proposal. In 2013, Firooz updated her analysis at the request of the city of Redondo Beach, which was skeptical that a new plant was needed. Her findings remained the same.

Nonetheless, the state Public Utilities Commission approved the project in March 2014 on the grounds that it was needed. But the California Energy Commission, another regulatory agency whose approval for new plants is required along with the PUC's, sided with the critics. In November 2015 it suspended the project, effectively killing it.

Asked about the plant, AES said it followed the appropriate processes in seeking approval. It declined to say whether it still thinks that a new plant is needed.

The existing facility is expected to close in 2020.

A March 2017 state report showed why critics are confident that the area will be fine

without a new plant. The need for power from Redondo Beach's existing four natural gas units has been so low, the state found, that the units have operated at less than 5 percent of their capacity during the last four years.

(Los Angeles Times data editor Ben Welsh and staff writer Ryan Menezes contributed to this report.)

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