

Clean energy can't be Trumped

Policy | The new US president has wasted no time in following through on campaign pledges to row back on clean energy regulation and climate change policy. But as Danielle Ola reports, with the US solar industry in rude health, it should be well placed to weather the Trump storm



Credit: flickr/Gage Skidmore

As Donald Trump finishes his first month in office as the 45th President of the United States, the clean energy industry has a pretty good idea of what to expect from the new administration. Decidedly optimistic, even if cautiously so, the general consensus seems to be that solar and energy storage will continue to thrive uninterrupted, but climate action will be taking a back seat.

"Though headline news is generally negative with statements made by Trump on renewables, we do not see any meaningful impact on near-term fundamentals in both the US and global solar and other clean energy markets," Vishal Shah, analyst at Deutsche Bank, said at the time of the election. "That said, we acknowledge that until there is clarity on specific policies from the new administration, stocks could remain under pressure."

Apprehension

Under pressure indeed, shares of renewable energy companies including wind and solar providers plummeted on the back of Trump's election as investors feared a rollback of federal incentives for such energy. Leading residential installer SolarCity closed at 4% down on election day, with Vivint Solar ending the day off 6.3%, while SunPower tumbled 5%. SunEdison

was down almost 9%, at 16 cents. According to stock market watchdog Investors, IBD's 21-company Solar-Energy industry group was down 8% at a nearly four-year low.

Initially, the solar industry would not have been wrong to think it was up against it. During the presidential race, Trump was not shy in conveying his views on solar and other clean energy technologies, telling media outlets that solar "doesn't work so good" and that wind turbines were responsible for "killing our birds". In addition, he branded solar as expensive, despite it being one of the cheapest energy resources, reaching parity with coal and natural gas in some parts of the world.

Trump made his disdain of solar known in the first presidential debate, citing how the now bankrupt solar company Solyndra took more than US\$500 million in taxpayers' money before going bust. "[Clinton] talks about solar panels. We invested in a solar company, our country. That was a disaster. They lost plenty of money on that one," he said.

That set the tone for the beginning of the Trump administration, characterised by proposed subsidy cuts, executive orders and climate-sceptic nominations galore. But US solar remained cautiously optimistic regardless.

"Nine out of ten Americans support solar

Incoming US president Donald Trump has signalled his hostility to clean energy but may find its momentum unstoppable

energy regardless of their party affiliation. The economics of solar remain strong and will only improve each year. So the US could very well reach [Hillary] Clinton's ambitious goal of installing half a billion solar panels by 2020 even without her in the Oval Office," says Amit Ronen, director of the George Washington Solar Institute.

America First Energy Plan

Aside from inflammatory and uninformed comments about renewables during the election, the only other clues for what energy policy under a Trump Administration would look like were found in his 'America First Energy Plan'.

Pushing for a focus on 'energy independence', Trump intends to create new energy jobs and energy security, but via fossil fuels, unleashing the potential of what he says is US\$50 trillion in untapped oil, natural gas and coal reserves. With coal being a firm crowd favourite among Trump and his cabinet, the Republican president has also vowed to resurrect this dying industry, which experts have confirmed is practically impossible.

Furthermore, the plan marks a stark contrast between the Obama administration – which has been credited for pioneering utility-scale PV projects in the US – by immediately blotting out any mention of

climate and renewables and decrying the accompanying “burdensome regulations on our energy industry”.

This was followed up by a budget blueprint that included slashing funds for the Department of Energy’s Office of Energy Efficiency and Renewable Energy and associated clean energy programmes. This would also place the SunShot Initiative in danger – which had contributed to building a stable solar industry supporting 375,000 direct jobs since its inception and contributing US\$25 billion to the US economy.

Regardless, the administration appears serious about this threat. Shortly after Trump took office, it a government-wide freeze on new or pending climate-related regulations was issued and DOE staff were barred from communicating with the press or using social media. The White House justified the attack on the climate and renewable works of the DOE, insisting that the actions would “greatly help American workers, increasing wages by more than US\$30 billion over the next seven years”.

This runs contrary to the available evidence. Renewable energy appears to be becoming a major engine for employment in the nation, with solar specifically outpacing the overall US economy by 17 times as it increased by more than 51,000 jobs for a total of 260,077 workers in 2016 according to the National Solar Job Census.

“I don’t think anyone who looks at the data can argue against it. We have hard data that shows it’s working. If you want to go backwards then you turn that off,” says Minh Le, former head of the SunShot Initiative, speaking in a strictly personal capacity. “It’s creating jobs, it’s growing our GDP. The only rational argument is to continue on but there are a number of ideological reasons why this administration might want to cut it. But if they do so, they’ll be shooting themselves in the foot because it would be harmful to the US economy for them to do so.”

Fossil fuels

In spite of the evidence and economic progress the industry has made to date, Trump has so far continued to make good on his designs to promote fossil fuels as outlined in the America First Energy Plan. In fact, a memo written by his transition team and the Washington-based think-tank known as the Institute for Energy Research, which has strong links to the fossil fuel industry, and its advocacy arm, the American Energy Alliance, entitled ‘What to expect

Fossil fuels looks set to form the basis of energy policy under the Trump administration



Credit: Spondylolithesis/Getty Images

from the Trump Administration’, revealed 14 key tenets of the new energy policy – many of which engendered anti-climate change and pro-fossil fuel sentiments.

In particular, it noted the administration has plans to target subsidies for renewables and all other energy sources, subject wind energy to “increasing scrutiny”, increasing the leasing of federal lands for the exploitation of coal, oil and gas, as well as approving pipeline projects including the controversial Keystone XL and Dakota Access Pipeline. Just a few days after his inauguration, Trump signed executive orders to do just that. The plan also includes intentions to roll back federal fuel economy standards. Tellingly, perhaps, Trump’s pro-fossil fuel policies have garnered praise from oil kingdom Saudi Arabia, with its energy minister Khalid Al-Falih telling press that his plans are good for the oil industries.

Climate change

Trump is a self-proclaimed denier of climate change, tweeting in 2012 that the phenomenon was simply a “hoax” created by the Chinese “in order to make US manufacturing non-competitive”.

Furthermore, his cabinet picks share in his climate change scepticism and have a kindred affinity for fossil fuels. Former Texas governor Rick Perry, Trump’s Pick for energy secretary, dubbed global warming a “contrived phony mess”. Similarly, Scott Pruitt was selected by Trump to head the Environmental Protection Agency (EPA) – the chief architects of the Clean Power Plan that was designed to lower greenhouse gas emissions by up to 32% on 2005 levels by 2030. Pruitt, an attorney from Oklahoma, is himself suing the EPA on climate change – citing overreach for its state regulatory incentives in reducing emissions. To top it off, Trump placed Exxon Mobil’s Rex Tillerson as secretary of state, where he will

be responsible for shaping international climate policy, among other things.

Given the individuals placed at the forefront of the nation’s energy policy, it is unsurprising that the administration is following through on its intent to erase former president Barack Obama’s clean energy policies, with the Clean Power Plan one of the first to go. On day one of his presidency, Trump said he would cancel any restrictions on US energy production – of which the Clean Power Plan is one as it puts restrictions on coal-fired plants for their harmful emissions.

This was not taken lightly by the industry, with 15 state attorneys general penning a letter to Trump promising to go to court if the plan is cancelled. However, the plan itself has been frozen by the Supreme Court since February 2016 due to the contentious backlash from fossil fuel companies in several states.

In addition, Trump also plans to withdraw the US from the historic UN Paris Climate Agreement, as this falls under prior Obama policies Trump wants to eliminate. But the industry is confident that this will not impede the growth of renewables.

The US Energy Information Administration (EIA) reported that even without the Clean Power Plan, renewable energy will still be on the rise, as federal subsidies in the form of tax credits will continue to ensure that solar and wind are the primary sources of new generation capacity. The EIA expects almost 70GW of new wind and solar capacity to be added by 2021, with utility-scale solar being the main driver for renewable capacity additions, spurred on by declining costs and the ITC.

Whilst EIA predictions for both renewables and emissions looked better under the scenario with the plan, many feel that the decline of fossil fuels is more economics-driven than regulatory. In fact, outgoing

Utility-scale solar has been the main driver of growth in PV in the US in the last five years



Credit: SunPower

EPA administrator Gina McCarthy said critics give the Clean Power Plan “too much credit” during a speech in November, noting that it was designed to follow “a clean energy transition that was already underway” and that the market will continue to demand. Indeed, 24 states already had lower emissions in 2015 than required by 2022 under the plan.

Further, despite rhetoric portraying climate initiatives being scrapped as a death blow to the energy industry, the truth is that the Clean Power Plan has not been in implementation for a long time now, and even then, had only been supported by 18 out of 50 states. Indeed, analysts at Deutsche Bank rank the elimination of the plan as having a “limited near-term impact” and “no impact to the long-term development” of renewables.

In a similar vein, observers point out that US is unlikely to be able to walk away from the Paris Agreement as easily as Trump has made out, given its many complexities; it is a three-year binding agreement that would require the US to give one year's notice after those years, if it wanted to leave.

Federal subsidies

Evidently, the enormous growth and achievements of US clean energy will not be halted merely by opposition to climate change and emissions regulations. The core of the value proposition of solar and other technologies comes from its economic value proposition as one of the cheapest sources of new electricity generation, and the associated economic boost from the employment it generates.

Solar has however been given a big push through the 30% investment tax credit (ITC) that was extended in 2015. It is the fate of this federal incentive that is most feared. However, like with the Clean Power Plan,

energy advocates have faith in the legal process that removal of this will be easier said than done.

“I am cautiously optimistic that [the ITC] will remain intact,” says Abigail Ross Hopper, president and CEO of the Solar Energy Industries Association (SEIA). “It was forged from a bipartisan agreement and many of those same members continue to remain committed to it. It creates jobs in their districts, it creates lower prices of energy in their districts. The agreed-upon step-down process means there is no great need to change it, so I’m not inclined to speculate about what would happen if it were taken away.”

“The ITC is a bipartisan deal that was agreed across the aisle, and that is important to note,” agrees Graham Smith, CEO and founder of Open Energy, a solar finance platform. “It has been extremely successful at job creation. It could suffer, but given its status as a bipartisan agreement and the fact it would involve the export of oil/gas, there’s good confidence. It is not a never-ending tax credit either; it is due to last another three years before it drops to 10%. Ultimately it is dropping within the term of this administration, so it’s a relatively short-term thing.”

Even in the worst case scenario where the ITC is revoked, the end result may not be so bad, given that many in the industry were starting to get comfortable with the cost of equipment falling so much, so it was easier to consider a world without the ITC.

However, the ITC is not the only incentive under fire, with tech entrepreneur and energy investor Bill Gates confirming after a telephone call with Trump that the industry would likely see less federal incentives for renewables under this administration. This contrasts sharply to the prior administration, which supported a portfolio of more

than US\$30 billion in loans, loan guarantees and commitments, supporting more than 30 closed and committed clean energy projects.

But as to how hard a blow this will be to the industry is also optimistically debated.

“I think we would be lying if we said [subsidy cuts] wouldn’t be disruptive, because if you change the structure of a market, there will be ramifications. However, in the long run that’s a situation that because of the cost of energy, that would be something that the sector would deal with,” says Smith.

In addition, the majority of solar progress is achieved at a state level, with any federal incentives being an added bonus. The solar industry has achieved a lot through good state policy and renewable portfolio standards, economies of scale, as well as innovation at the private level that have all contributed to driving costs down.

“Each state has its own attitude and set of policies towards renewable energy, irrespective of the overall, for example the ITC which is a federal country-wide subsidy. Those state and regional programmes in some cases are extremely strong, extremely alive and well and because they are on a legislative basis, states are really in control of those,” explains Smith.

States such as California and Massachusetts have an extremely high amount of wind and solar relative to other states, the majority of which has been procured solely through state-level policy. It is very much in their self-interest to continue their programmes, and they have complete control over the subsidies and incentives.

A sound economic proposition

In spite of a fossil-fuel heavy energy policy, a concerted attack on climate action and purported federal withdrawal from clean energy, industry stakeholders maintain that the sound economic proposition of solar and other technologies is strong enough to carry it forward regardless.

Four and a half million Americans are now employed in and around clean energy. Meanwhile, costs continue to decline. A 2016 report from consultancy Lazard said the

Former president Barack Obama has described the momentum of solar as “irreversible”



Credit: Flickr/White House

Opportunity for energy storage

In the Trump Infrastructure Plan is a focus on homeland security and grid resiliency that Matt Roberts, executive director of the Energy Storage Association, feels presents a unique opportunity for energy storage.

"The thing about energy storage is that it's very adaptable. Whatever front this administration moves on, there is a sizeable opportunity for storage to be a big part of that conversation, especially as the focus is on infrastructure – which includes roads, bridges as well as grids."

It is interesting to note that the original Republican platform during the presidential campaign did highlight electricity energy storage as part of its grid modernisation objectives. Other than that, there are few, if any, instances of Trump mentioning energy storage. Roberts maintains that grid resiliency is a great place to start.

"There's an appetite I think to learn about it and to understand it but the way that it is being approached is from the homeland security kind of angle; the resiliency angle – more so than say storage's ability to augment generation or something like that," he says.

"We haven't seen an extensive dialogue around energy storage, but that being said, historically, we haven't seen any energy storage dialogue from any administration. We were very fortunate to engage the Obama administration towards the end to host a White House summit around the topic of markets and energy storage, but that took us a few years to pull together. We are going to put the same level of effort in if not more in to working with the Trump administration to bring more opportunities to light."

The White House summit did result in a pledge of US\$1 billion of new private sector investment as well as a commitment for around 1.3GW of additional energy storage. But so far storage has not seen any major policy shift, regulation or executive order from the federal level to date.

It is still hoped that the storage ITC can pass through Congress under a Trump administration, but it is likely to be a long process. Should it get through, it would help bring market and regulatory certainty to the industry. In addition, the industry would benefit from liaison with the Federal Energy Regulatory Commission (FERC), which oversees the regional wholesale markets. It is currently in



Grid resiliency is a focus for Trump, which could provide a boost to storage

the middle of three different proposals that are all very germane to and would help accelerate energy storage. One in particular would seek to require all the wholesale markets that have treatment for storage to have participation rules and find ways to compensate the technology.

Aside from those objectives, energy storage hopes to garner any kind of support from the federal level. "We are probably the one industry out there saying hey, please regulate us!" says Roberts. "We want to be regulated because to be regulated is to be recognised. Someone has to put pen to paper and go, what is this thing? How much is it worth? How much of it do we need? We are seeking federal regulation and asking for regulation, as opposed to maybe other industries that are saying, 'Hey we are a little over-regulated'."

"In my more cynical kind of voice, there is really nothing they can take away from this industry. We've been striving to get the engagement from the federal government. The worst they could do is not talk to us. And they've already indicated and shown interest in engaging with this industry and talking to this industry so all signs point to some sort of opportunity to advance storage within this administration" Roberts adds.

But much like renewable energy technologies, storage has achieved incredible feats independent of any federal input, installing 250MW nationwide in 2016 and on track to install 470MW in 2017 alone.

"This industry is succeeding and there are headlines every other day, and that's all without any sort of dedicated kind of programme at the federal level driving it. It's succeeding because it has an inherent value and the use case and value proposition is very clear," adds Roberts.

cost of large-scale solar has fallen 85% since 2009, making it competitive with natural gas on levelised cost of energy terms.

Obama himself has dubbed the momentum of wind and solar "irreversible", even in the absence of near-term federal policies. "The mounting economic and scientific evidence leave me confident that trends toward a clean-energy economy that have emerged during my presidency will continue and that the economic opportunity for our country to harness that trend will only grow," he wrote in an article for prestigious journal *Science*.

Renewables coincide with Trump's Infrastructure plans

That being said, beyond the realm of being good for the environment, solar is good for

business. Employing the most out of any other energy resource in the States and its falling costs is a case hard to be ignored by a seasoned businessman like Trump.

The president has expressed designs to focus on improving the nation's infrastructure, including transportation, water, energy and grid modernisation – with US\$1 trillion of investment specifically allocated for this. If the Trump administration realises its infrastructure-related objectives in any significant way, there should be a wave of new opportunities for the likes of solar and energy storage (see box).

SEIA's Hopper therefore feels that solar is the perfect fit for the administration's focus on infrastructure, and contrary to being in jeopardy, has a "very bright future" under Trump.

"Clean energy and solar energy in particular have had an incredible 2016 and anyone who cares about jobs, who cares about consumer choice, who cares about low energy prices, looks to solar and thinks, there's the trifecta. This is a great industry, a great technology to bring lower power prices, investment and communities and job creation. I do not think we are under attack, I think solar has been growing and will continue to have a very bright future."

If Trump really is focused on providing "jobs for all Americans", it does not follow that he turns a blind eye to the soaring job growth in the US renewables sector – which now employs far more people than the coal or oil and gas industries. Investors are on board too: the US is now the world's second biggest investor in renewable energy, with US\$44.1 billion invested in clean energy development in 2015, closely behind China.

Unable to be deterred

Ultimately the momentum of solar and renewable energy, which does not owe its success to any given administration, should equip it to continue to thrive regardless of Trump, subsidy cuts, fossil fuels and climate change denial. Renewables were the number one source of new electrical generation in the US last year and have created thousands of jobs and economic activity, allowing them to coincide perfectly with Trump's plans for job creation and infrastructure upgrades. Even surveys of Trump supporters demonstrate strong support for solar.

"I do feel very strongly that the market is mature enough that it can stand on its own two feet," says Jeff Krantz, senior vice president of Array Technologies. "I don't foresee out of my own lens that anything too detrimental will happen. This is a real industry; it no longer needs subsidies – it competes head-to-head with traditional energy sources, and I'm definitely confident in that."

To be sure, the effects of scrapping federal clean energy incentives and cutting funding to key programmes and institutions such as SunShot and the National Renewable Energy Laboratory, as has been threatened, should not be underestimated. However, importantly, most of the near-term market drivers are rooted firmly in state-level policies such as net metering and RPS. Such drivers are the self-contained prerogatives of individual states, and given the progress thus far, it is unlikely that even president Trump will be able to reverse this. ■