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Initial Thoughts on the Implications of the 2016 Presidential Election Results on the US Renewable Energy Industry

President Elect Trump has significantly different energy policies from his predecessor President Obama and his opponent Secretary Clinton. However, his statements and views have changed significantly over time and are sometimes contradictory on some of the key issues.

Perhaps his most famous comment on climate change, the 2012 tweet that global warming was a hoax inventing by the Chinese was surprising given he was a signatory to a 2009 open letter urging US action in at the Copenhagen Climate Change Conference– see opposite.

Since the election, the messages continue to be mixed. President Elect Trump has appointed Myron Ebell to head his EPA transition. Myron Ebell has long been critical of what he calls "the nonsense put out by the environmental movement".i On the other hand, in a recent interview with the New York Times, the President Elect said he thinks there is "some connectivity" between human activity and climate change and pledged to keep an open mind.ii

There are also a number of other slated new policies, namely on tax and trade which could have very significant impact on the economics of US renewables, on which we have similarly low levels of information on how they will ultimately be in-acted. Having said that we do believe that the probability that there will be some kind of tax reform leading to lower corporate tax rates in the US is very high, and have incorporated that into our analysis.

The aim of this paper is to discuss the key policy supports for the renewable energy industry in the US and give our initial view on how those measures are likely to change or not, understanding that there are many issues on which it is simply too early to tell.

Donald J. Trump
@realDonaldTrump
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The concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive.

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THE NEW YORK TIMES, SUNDAY, DECEMBER 6, 2009

Dear President Obama
& The United States Congress,

Tomorrow
leaders from 192 countries
will gather at
The UN Climate Change Conference
in Copenhagen
to determine
the fate of our planet.

As business leaders we are optimistic that President Obama is attending Copenhagen with emissions targets. Additionally, we urge you, our government, to strengthen and pass United States legislation, and lead the world by example. We support your effort to ensure meaningful and effective measures to control climate change, an immediate challenge facing the United States and the world today. Please don't postpone the earth. If we fail to act now, it is scientifically irrefutable that there will be catastrophic and irreversible consequences for humanity and our planet.

We recognize the key role that American innovation and leadership play in stimulating the worldwide economy. Investing in a Clean Energy Economy will drive state-of-the-art technologies that will spur economic growth, create new energy jobs, and increase our energy security all while reducing the harmful emissions that are putting our planet at risk. We have the ability and the know-how to lead the world in clean energy technology to thrive in a global market and economy. But we must embrace the challenge today to ensure that future generations are left with a safe planet and a strong economy.

Please allow us, the United States of America, to serve in modeling the change necessary to protect humanity and our planet.

In partnership,

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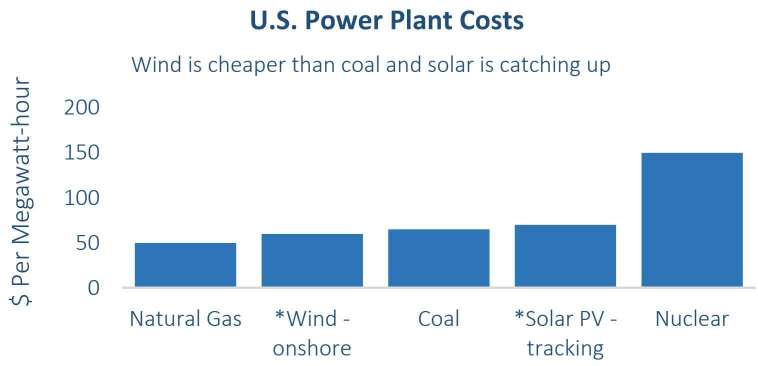
Donald J. Trump, Chairman and President, Donald J. Trump Jr., EVP, Eric F. Trump, EVP, Ivanka M. Trump, EVP, The Trump Organization
[illegible], Jean-Georges Management LLC

if you want to go quickly, go alone. if you want to go far, go together. african proverb

Business leaders, sign onto this initiative: businessleaders4environmentalchange.us

However, before we analyse the policy environment it's worth pointing out what we believe to be the key driver of long term growth in renewables installations not just in the US but also worldwide, and it's not regulation but economics, driven by technological change and cost reductions. The average levelised cost of energy of wind generation has reduced by 80% since 2008 and the price of solar panels and resulting levelised cost of energy has reduced by 90% since 2009. US wind and solar generation is now cheaper than coal and competitive with gas. This has led to significant growth in bilateral contracting from large corporates replacing grid procured electricity with self-procured renewable energy.



Source: Bloomberg New Energy Finance lifteimte estimates
** Excludes federal and state subsidies*

The below table shows the key policy supports for wind and solar generation in the US.

POLICY	CURRENT STATUS	POTENTIAL CHANGE
Production Tax Credit and Investment Tax Credit	US wind farms receive a tax credit of $0.23/kWh and US solar farms receive a tax credit of 30% of capital invested. These credits were extended for 5 years in December 2015.iii	Any change would have to go through both Houses of Congress (either through a budget reconciliation process requiring 51 votes or through a bill requiring 60 votes in the Senate) and at this time there are no existing proposals to reverse these measures. Wind is built predominantly in "red states" and the solar and wind industry employ more than 300,000 Americans, which should help garner support. iv However, it's not impossible that these credits are adjusted in the context of comprehensive tax reform possibly with offsetting benefits such as making renewable generating assets eligible for an alternative tax advantaged vehicle like Master Limited Partnerships.
Bonus depreciation and Modified Accelerated Cost Recovery System (MACRS)	US wind farms and solar farms are currently allowed to depreciate 50% of their capital investment in the first year of operation and the rest on an accelerated schedule over the following five years.v	Similarly there are no specific proposals currently to the policy on bonus depreciation or MACRS, but Speaker Ryan's plan does incorporate sweeping changes to tax deductibility of capex and related interest expense. It is very difficult to have visibility on the ultimate structure of a bill, but we do assign a high probability to a significant reduction in the US corporate tax rate. Because wind and solar asset owners typically sell this MACRS credit to financing partners, a reduction in the corporate tax rate means that the depreciation available to be sold is less valuable, and there is a resulting

		reduction in the net present value of wind and solar companies.
Clean Power Plan	Signed by President Obama in 2015, the Clean Power Plan requires states to regulate carbon emissions from power generation with an aim to reduce carbon dioxide emissions by 32% from 2005 levels by 2030. While less important today, this plan is a driver of wind and solar installations towards the end of the decade and into the next decade.vi	The Clean Power Plan is currently being challenged in the courts. The next challenge is due to be heard in the DC circuit court in January 2017. Its possible President Elect Trump cancels the plan before it reaches the court although he has limited time available. It's ultimately likely given the makeup of the Supreme Court that President Elect Trump's Supreme Court Nominee would have a significant impact on whether the Clean Power Plan survives and for that reason we would expect the Plan to be overturned, but it is a complicated legal process which may have many twists and turns along the way.
State Renewable Portfolio Standards and Other State Subsidies	29 states now have state renewable portfolio standards that require utilities to sell a specified percentage of renewable electricity.vii There are also a number of other state specific incentives for renewable energy.	These standards and incentives will not change. In fact some states may be inclined to make their standards more stringent to offset less commitment to climate change at the federal level. The attractive economics of wind and solar allow them to do so without any adverse impacts on customer bills.
Trade Tariffs	The US currently has a variety of anti-dumping and countervailing duty tariffs on Chinese and Taiwanese solar panels, but no other significant tariffs on the renewable energy sector.	Speaker Paul Ryan's tax plan which may form a basis for future tax reform includes some provisions removing tax deductibility of depreciation on imported goods. This would have a very significant negative impact on the renewable energy sector if implemented. It would be more negative for solar than for wind and the impact would vary significantly by company. We don't currently have a strong view on the likelihood of these measures being implemented but it is something we will continue to monitor closely.
Paris Climate Agreement	The US has now ratified the Paris Climate Agreement committing to hold the increase in global average temperature to well below 2 degrees centigrade above pre-industrial level and to pursue efforts to limit the temperature increase to 1.5 degrees centigrade above pre-industrial levels.viii	During the campaign President Elect Trump ix said he would cancel the Paris climate deal. Although in a recent interview with the New York Times, he said he "had an open mind" on Paris. It is also difficult for the US to pull out under the terms of the agreement and would likely take 3 years.x While the agreement has little impact on near term installations, it has a significant impact on longer term sentiment on the sector and if the US withdrew it could also lead under countries to reconsider their positions.

Having reviewed each of the individual policy mechanisms, and focused on those measures where we think we have reasonable levels of certainty on the likely outcome, **perhaps counterintuitively we see tax reform as the major risk to the renewable energy sector** in the US in short term, not necessarily because we expect the ITC and PTC to be rescinded but because we think there is a significant likelihood of a lower corporate tax rate which would reduce the net present value of the depreciation tax shield and also potentially the availability of tax equity. Because of the various tax credits allocated to renewable energy projects, the majority but not all of which can be sold forward, projects typically pay tax only after year eleven of their operating life, so the decline in the value of the depreciation shield is not offset by a decrease in taxes paid in the initial stage of the projects. The impact will vary project by project **but we estimate that a decline in the corporate tax rate from 35% to 15% would result in approximately 15% lower IRRs for new wind and solar projects, all other things being equal, with no significant impact on the installed base.**

As discussed above, there are still many uncertainties around the structure of corporate tax reform, and the ultimate bill may have some offsetting measures to compensate renewable developers. We will monitor the drafts of the bill closely as they evolve through the House and the Senate. However, in the short term, the potential negative impact of a lower corporate tax rate suggests to us that you may see a pause in some new installations as the market analyses potential changes and that in particular tax equity providers may prefer to see more detail on tax reform before committing significantly more investment to the sector. Hence, our forecast installations for US wind and solar are lower post the election than they were before, and lower than the market forecasts. Although longer term we would expect the force of the declines in the cost curve and relative economics of renewable energy to win through and drive the sector back to growth.

Notes and Sources:

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[i] Source: http://www.nytimes.com/2016/11/12/science/myron-ebell-trump-epa.html

[ii] Source: http://www.nytimes.com/2016/11/22/us/politics/donald-trump-visit.html

[iii] Source: http://energy.gov/savings/renewable-electricity-production-tax-credit-ptc

[iv] Source: http://energy.gov/sites/prod/files/2016/03/f30/U.S.%20Energy%20and%20Employment%20Report.pdf, Page22.

[v] http://energy.gov/savings/modified-accelerated-cost-recovery-system-macrs

[vi] Source: https://www.epa.gov/cleanpowerplan/fact-sheet-overview-clean-power-plan

[vii] Source: http://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx

[viii] Source: http://unfccc.int/paris_agreement/items/9444.php

[ix] Source: http://www.bbc.co.uk/news/election-us-2016-36401174

[x] Source: http://www.nytimes.com/2016/11/22/us/politics/donald-trump-visit.html?_r=0