



The 2016 US Presidential Election and the Implications for Climate Change:

Is There Potential for Cautious Optimism?

Mark Elder and Augustine Kwan
Institute for Global Environmental Strategies

1. Introduction

As the world celebrated the Paris Agreement's quick entry into force just before the Marrakech Climate Conference in November 2016, the results of the US presidential election raised serious questions about the future of US climate policy. During the election campaign, President-elect Donald J. Trump called climate change a "hoax" and promised to withdraw the US from the Paris Agreement. He also appointed a leading climate denier to head the environment transition team to oversee the selection of political appointees to manage the US Environmental Protection Agency, and former high-level EPA officials from the George W. Bush administration are being considered to return to lead the Agency.¹ At the Marrakech Conference, many countries became concerned about possible reversals in US climate policies but strongly expressed their expectations for the US to live up to its commitments.

This briefing note surveys early hints and speculations regarding the Trump Administration's possible climate policies and personnel appointments, and discusses them in the context of the surrounding domestic political context and institutional decision-making processes. A few areas for cautious optimism are identified and obstacles to the potential worst-case scenarios are highlighted. Despite the discouraging statements during the campaign and appointment of members of the transition team, it is too early to tell the precise direction of Trump administration policies, which may not be fully known even to Trump himself. Nevertheless, this briefing note concludes that even in the worst case, there are still various limitations on how far and how fast US climate policy and actions could be set back.

2. Possible moderation of Trump's climate policy

For US Presidents, actual governing is always much harder than running for election, especially for those without experience in Washington. It is easy to make attractive vague and general statements during the election, but once in office, the President cannot avoid real decisions to act or not act, or to prioritise or not prioritise. Moreover, the issues often look different from the perspective of the White House than they do during an election campaign, as a new President absorbs the enormous responsibility of the office.

Thus, shortly after the election, in an interview with the *New York Times*, Trump seemed to suggest some flexibility, saying that global warming might be real after all and there might be "some connectivity" with human activity. He did not repeat his pledge to withdraw from the Paris Agreement, saying that he is "looking at it very closely" and that he has "an open mind." He also said that clean air and water were very important.²

Past actions of Trump's businesses also indicate some flexibility. He applied for a permit to build a sea wall to protect one of his seaside golf courses in Ireland from rising sea levels due to climate change.³ Other major properties owned by Trump may also be at risk from climate change,⁴ and he continues to demonstrate a strong interest in the fortunes of his business.⁵

Trump's transportation policy may be considerably more climate-friendly compared to traditional Republican policy orientation. During the election campaign, Trump's infrastructure plan – one of his core job creation policies – proposes spending USD 1 trillion on roads, airports, pipelines, and the electric grid. It also includes investment in mass transit and high speed trains. This may be one area where Trump would have to work with Democrats, given the Republican party's historical opposition to these kinds of projects.⁶

The appointments to the Defense and State Departments will be very important. The State Department coordinates climate-related international negotiations. In particular, the Defense Department has already prioritised climate issues because they are closely linked to national security. Regardless of who is appointed to Defense, this policy is not likely to change. To the extent that officials appointed to lead these departments are mainly focused on typical foreign and defense policies, there is a reasonable possibility that these departments could be a moderating influence on climate policy. Early indications are not encouraging, however. Governor Nikki Haley of South Carolina, nominated to be the US Ambassador to the United Nations, has no foreign policy experience, but as governor, she “was accused of burying a report from the South Carolina Department of Natural Resources on the challenges climate change will bring to the state.”⁷

Still, the transition team for the EPA and the candidates for EPA Administrator are worrying. The head of the transition team for the EPA is Myron Ebell, a leading climate denier and head of the Competitive Enterprise Institute. According to *Reuters*, candidates for EPA Administrator include two energy lobbyists, “Jeff Holmstead, an energy industry attorney at the Bracewell law firm who was Assistant Administrator for the EPA’s Office of Air and Radiation from 2001 to 2005, and Mike Catanzaro, a partner at the CGCN Group, an integrated advocacy and strategic communications firm, who was an Associate Deputy Administrator at the EPA from 2005 to 2007.” *Reuters* adds that, “since leaving the Bush administration’s EPA, Holmstead has become one of the nation’s leading air-quality lawyers, representing the coal and oil industries, as head of the Environmental Strategies Group at Bracewell. Catanzaro, meanwhile, became director of government relations at electricity generator PPL Corporation after leaving Bush’s EPA. He later worked as a managing director at FTI Consulting before joining CGCN, taking on energy clients like Koch Industries, Devon Energy and Halliburton.” Another candidate is “Robert Grady, a venture capitalist at Gryphon Investors who served as associate director for Natural Resources at the Office of Management and Budget” in the George H.W. Bush Administration.⁸ A number of other candidates are strongly opposed to EPA regulations, and some played leadership roles in the lawsuit against the Clean Power Plan.⁹

The Heritage Foundation, a conservative think-tank, is emerging “as one of the most influential forces shaping President-elect Donald Trump’s transition team,” according to *Politico*, as a number of people related to Heritage have been given important roles.¹⁰ According to the Union of Concerned Scientists, Heritage is considered to be a leading climate-denier institute, playing “a key role in the fossil fuel industry’s ‘disinformation playbook,’ a strategy designed to confuse the public about global warming and delay action on climate change.” It has received funding from Koch foundations and Exxon Mobil.¹¹

3. Obstacles and limitations to major changes in US climate policies

Certainly, there is a range of actions that Trump could try to take that would weaken US actions on climate change: withdrawing from the Paris Agreement; abandoning the US Clean Power Plan; defunding the EPA; scaling back on environmental regulations; pursuing an energy strategy that lifts restrictions on domestic fossil fuel production and revives the coal industry;¹² and others. There are, however, major limits to most of these anti-climate measures.

3.1 Paris Agreement

It would be very difficult for the US to withdraw from the Paris Agreement within Trump's four-year term. On the one hand, legal technicalities prevent any country from instantly pulling out of the agreement; a withdrawal process could take up to four years, which means the US will still be a party during that period and could be subject to the Agreement's legally-binding procedural commitments.¹³ On the other hand, the Agreement contains a mix of legally-binding and non-legally binding provisions. Preparing, communicating and maintaining nationally determined contributions (NDCs), pursuing domestic mitigation measures, as well as transparency provisions are legally-binding, while an individual country's commitments to reduce greenhouse gas emissions are not. There is also no real enforcement mechanism in the Paris Agreement, so the Trump administration could simply refuse to comply with meeting the US NDCs. Myron Ebell suggested that the Paris Agreement could be submitted to the Senate for ratification, where it would likely be rejected, although the legal significance of such a move is not clear.¹⁴

Another option being considered by Trump's transition team is to withdraw the US from the UN Framework Convention on Climate Change (UNFCCC), which could be done in one year instead of four. This would also result in US withdrawal from the Paris Agreement.¹⁵ The Heritage Foundation is promoting the idea to withdraw the US from the UNFCCC.¹⁶

Most international agreements, like the Paris Agreement, are voluntary, especially those relating to the environment. None of the more than 110 countries that have already ratified the Agreement threatened to withdraw during the Marrakech Climate Conference. Their willingness to remain despite a possible US withdrawal represents a departure from previous climate negotiations. And if President-elect Trump continues to oppose the Paris Agreement, this could negatively affect relationships with other countries and their cooperation on other issues, such as trade and terrorism. Already France is discussing a possible carbon tariff on imports of US goods, if the US withdraws from the Paris Agreement.¹⁷

Nevertheless, as discussed below, the US may still be able to achieve significant greenhouse gas reductions through the efforts of cities, businesses, and individual citizens, even if Trump withdraws from the Paris Agreement or stops making efforts to meet the US targets under the Agreement.

3.2 Climate Finance

Delivering climate finance to help developing countries to mitigate and adapt to climate change is a key pillar of the Paris Agreement. Under a Trump presidency, it will be easy to convince a Republican majority in Congress to cut the USD 3 billion the US pledged to the Green Climate Fund (GCF) in 2014, because budget issues are not easily subject to delaying tactics, such as filibusters. To date, the US has only delivered USD 500 million to the fund, so there are concerns about whether the US would pay the remaining USD 2.5 billion. US Special Envoy Johnathan Pershing tried to reassure the Marrakech Climate Conference that, "historically," the US has paid its international commitments,¹⁸ and the Republican Party's official website states that "international assistance is a critical tool for advancing America's security and economic interests."¹⁹ However, Trump made many statements on foreign policy during the election campaign that raised questions about whether he might depart from this historical practice.

There are several considerations that could lessen the significance of these potential reductions in US climate financing. First, the actual amount of US climate financing is significantly smaller than what Trump had suggested during his election campaign when he said that cutting these funds would save many billions of dollars. Second, in fact, a big portion of US climate financing does not actually go to the UN, but is disbursed through other international organisations, such as the World Bank, or through other bilateral programmes and agencies, such as the US Agency for International Development (USAID), working directly with developing countries. Third, there is some potential for the US share of climate finance to be picked up by other countries as happened after President George W. Bush withdrew the US from the Kyoto Protocol. Finally, the most important issue is to shift private sector investment in a climate friendly direction, which will amount to trillions of dollars. The USD 100 billion which the developed pledged to mobilize from both public and private sources is only a fraction of that amount. If the shift in private investment is successful, then the impact of the missing US contribution would be reduced.²⁰

3.3 Laws and Congress

The Republicans maintained their control over both houses of Congress in the 2016 elections. In the Senate, the Republicans have 51 seats to the Democrats' 48. One seat is still to be decided in Louisiana, in a run-off election in December, which is expected to be won by the Republican candidate. Republicans won 239 House seats compared to 194 for the Democrats, with two yet to be decided. Overall, this is problematic for climate change, since many of these Republican Senators and House Members are climate deniers and strongly support fossil fuels.

There were 182 climate deniers in the 114th Congress in 2016: 144 out of 435 members of the House of Representatives, and 38 of 100 senators, according to the Center for American Progress Action Fund. This accounts for only about one-third of both the Senate and the House. However, climate deniers represent about 59 percent of Republicans in the House and 70 percent of Republicans in the Senate. All of the climate deniers are Republicans, including the party leaders.²¹ Therefore, it is not easy for the non-climate deniers to achieve a majority to the extent that the Republicans maintain party discipline. Moreover, many senators and representatives who are not climate deniers (according to the survey's methodology) do not necessarily support strong action on climate change. Over 200 members of Congress signed a court brief opposing the Clean Power Plan, including 34 senators and 171 representatives; all are Republicans except Sen. Joe Manchin of West Virginia.²²

It is still difficult to pass or repeal any law in the Senate, including those related to the environment, due to a divisive partisan political environment and cumbersome procedures which have produced legislative gridlock in recent years. The Republican majority was reduced by two in the November 2016 election, so now Congress is almost evenly divided, 51 to 48. Due to the filibuster rule,¹ 60 votes are still needed for many types of laws to be passed. Republicans could decide to eliminate the filibuster – the “nuclear option” – although this is not a step to take lightly, since it would end their ability to use it in the future the next time they become a minority. Moreover, the filibuster gives individual senators a great deal of leverage with their own party too, so some Republican senators may be strongly opposed to ending the filibuster.²³ The Republican majority in the House of Representatives was also reduced. Continued legislative gridlock is much more likely than any new laws (either positive or negative) relating to climate change.

¹ Filibusters enable individual senators to veto legislation by preventing debate. Sixty votes are needed to end a filibuster.

There is some possibility, though probably small, that a few Republican senators might support some kind of climate action. They could also possibly provide some margin against anti-climate efforts. Senator Lisa Murkowski (Alaska), chair of the Senate Energy and Natural Resources Committee, believes that climate change is real and something should be done, although she still supports fossil fuels, including opening up more federal land for oil and gas drilling, while gradually moving towards cleaner fuels.²⁴ Senator Murkowski won reelection with the support of Democrats in 2010 while running as an independent in an improbable write-in campaign after losing the Republican primary election to a Tea Party challenger. In October 2015, four Republican senators formed a group to tackle climate change, including Lindsey Graham (South Carolina) and Lamar Alexander (Tennessee), although two of them, Kelly Ayotte (New Hampshire) and Mark Kirk (Illinois), were defeated by Democrats in the November 2016 election.²⁵ Susan Collins (Maine) and Rob Portman (Ohio) supported a resolution recognising humans' role in climate change in 2016, although Portman has opposed the Clean Power Plan.²⁶ Senator John McCain was supportive of climate change actions when he was a candidate for President in 2008,²⁷ although after he lost, he became much less supportive.²⁸ Still, there is also the possibility that a few Democratic senators from states such as West Virginia, North Dakota, and Montana might not be able to support climate change measures, so it is important to have at least a few potential Republican senators in favour of some kind of climate change action, in order to offset this possibility.

It is important to note that budget issues are not subject to the filibuster, and are not easily delayed. Moreover, according to the Constitution, revenue related bills should originate the House of Representatives, which gives the House extra leverage in this area. Sometimes, attempts are made to insert policy measures into budget bills in order to avoid potential filibusters. Therefore, anything related to funding would be relatively easy for the Trump administration to cut.

Even in the House of Representatives, 11 Republicans supported a resolution recognising humans' role in climate change (although it did not call for specific measures) in September 2015.²⁹ While certainly not enough to form a majority by joining with Democrats, it could indicate some margin to resist possible extraordinary measures against climate actions.

3.4 Presidential Appointments

Democrats, the minority party in the Senate, have limited ability to block or delay major Presidential appointments which require Senate confirmation. In the US presidential system, the President appoints about 4,000 officials. This includes not only cabinet-level positions, but also the top managers of cabinet departments and agencies. About 1,200 of these must be approved by the Senate. In the past, Presidential appointments were mostly routinely approved, but in the past 20 years, as politics have become more partisan, senators have frequently tried to block many of these appointments in order to disrupt policymaking in controversial areas, causing many positions to be unfilled for long periods of time, and this problem became especially acute under President Obama. In particular, the filibuster rule meant that 60 votes are needed to confirm Presidential appointments, making it relatively easy for the minority to block them. However, when Democrats were in the majority in 2013, they ended its application to most cabinet and sub-cabinet level appointments.

Even aside from voting for confirmation, the Senate also has a tradition that allows individual senators of either party to put a "hold" on nominations they particularly disapprove of. Use

of the hold has steadily increased in recent years by both Democrats and Republicans, especially against appointees of George W. Bush and Barak Obama. This tactic has been used not only to block or delay objectionable appointees themselves. Even in cases where a senator has no objection to a nominee, he or she may still put a hold on the nomination in order to try to force the President to change a particular policy.³⁰ Democrats may have difficulty using this currently, since they are the minority party, but Republican senators, especially committee chairs, could use it. In order to avoid lengthy confirmation battles, in many cases, recent Presidents have tried to select nominees who can appeal to a sufficient number of senators.

One of the few ways Senate Democrats can influence Presidential appointments is through public confirmation hearings. These hearings put a media spotlight on a nominee's background and qualifications, and create public pressure against problematic nominations.

3.5 Regulations

In the US, regulations are not easy to create or change, and a long and complicated process is required. As in many other countries, US laws are often broad and open to interpretation, and Congress delegates the power to make detailed regulations to departments and agencies. However, unlike other countries where ministry officials have broad discretion to create and implement regulations, in the US, the regulatory process is governed by strict and complicated procedures, and laws often specify the criteria that should be used to develop new regulations. Some laws require departments and agencies to develop new regulations on specific topics. Therefore, the legal framework significantly restricts the discretion of the department and agency officials, including the top managers appointed by the President. In addition, agencies and departments are required to ask for comments from the public, which should be taken into account when developing new regulations. The regulation-making process can also be challenged in the courts, and those seeking to prevent or delay a regulation can claim that an agency did not follow the procedures properly or misapplied the criteria specified in the law. Once a regulation is finalised, the regulatory process must be started again in order to amend or abolish it. This process can easily take two years or more. President Obama has been in office for eight years, so he has had time to finalise many regulations.

Thus, any regulations proposed by the Trump administration, especially controversial ones, could not be implemented immediately, but would take at least a couple of years. Environmental groups and others would have opportunities to mobilise opposition to damaging new regulatory proposals, mount court challenges, and try to delay them. Of course, the Trump administration would also be able to mobilise support for its regulatory proposals.

The most likely danger is that the political appointees who manage departments and agencies could sabotage the implementation of existing regulations and laws by simply working slowly or refusing to work, cutting budgets and staff, or simply not hiring new people to fill existing vacancies. These kinds of strategies were used at the EPA during the George W. Bush administration.³¹

A worrisome proposal to shift NASA's earth science budget to other agencies, namely the National Oceanic and Atmospheric Administration (NOAA) and the National Science Foundation (NSF), has been made by one of Trump's space advisors, former US Congressman Robert Walker. This proposal has generated significant concerns about major budget cuts for

climate-related earth observation satellites. Under President Obama, NASA's earth science budget grew about 50 percent, while the budget for space exploration was slightly reduced. Walker wants to expand support for space exploration.³² On the surface, the proposal seems to be about shifting budgets, but the resulting administrative reorganisation may be disruptive, and it is not clear to what extent NOAA or NSF would be able to manage satellite related programmes. Climate experts have expressed serious concerns about the proposal.

3.6 Clean Power Plan

The Clean Power Plan is an EPA regulation under the Clean Air Act which requires states to come up with plans to reduce greenhouse gas emissions from electric power plants. The regulation was challenged in court on the day it was published (23 October, 2015), and the case is now awaiting a ruling by the District of Columbia Court of Appeals, which is likely to be appealed to the Supreme Court. The legal proceedings are likely to continue after Trump takes office, and his first step may be to simply stop defending the plan in court. However, this would not be enough to stop the case, because other parties, such as states and cities, have legal standing to continue the case.³³ The legal implementation of the Clean Power Plan is currently suspended while the case is in court. If it is upheld by the Appeals Court, it may survive if the Supreme Court remains tied at 4-4, or it may be struck down if Trump succeeds in confirming a conservative 9th Justice before the Supreme Court decides the case.

In order to overturn the regulation outside of the courts, it would be necessary to go through the regulatory process again, which would take a long time. Another option could be for Congress to pass a new law, but it might not be easy to reach an agreement on the contents even among Republicans, and in any case, it would be subject to filibuster by Democrats. Again, the more likely option is that the political appointees in the EPA would try to minimise enforcement, for example, allowing states to develop weak plans.

Some power companies actually support the Clean Power Plan, including Calpine, Pacific Gas and Electric, Southern California Edison, and Dominion Resources. Some leading tech companies also support it, including Amazon.com, Apple, Google, and Microsoft.³⁴

In any case, it already appears likely that the Clean Power Plan's targets will be achieved about 14 years ahead of schedule.³⁵ The electric power sector has already met the plan's 2024 goal for carbon emissions and the 2030 target for reducing the use of coal. The main reason for this is not so much the regulation but rather market forces – coal is now more expensive than natural gas or renewable energy, so electric power companies are replacing coal anyway, regardless of the status of the Clean Power Plan.³⁶

3.7 Environmental Protection Agency

The EPA is not likely to be abolished. President Reagan also tried to do this, but he failed. Congressional approval would be needed, and a range of laws which specifically relate to the EPA would need to be amended or repealed. Democrats would be able to filibuster and significantly delay such an effort. Moreover, it is not clear that enough Republicans would vote to repeal all of the related laws. Eliminating the EPA without changing all of these laws would result in violations of the laws due to lack of enforcement. In this case, courts would order the laws to be enforced, and Congress would have to recreate something like the EPA in order to enforce them.³⁷

3.8 Courts

There is considerable concern about the role of the courts, especially the Supreme Court, whether they will overturn the Clean Power Plan or other regulations, and possibly prevent future regulation. There is already one vacant seat on the Supreme Court, and it is likely that one or two additional seats could become vacant during President Trump's term in office.

Certainly there is good reason for concern, but it will take some time for any change to happen, and it is still not clear who President Trump might appoint to the Supreme Court (or other courts), and what their views on climate change regulation would be. Much of the discussion on court nominations revolves around social issues such as abortion and discrimination. Climate regulations are a kind of business regulation, which usually gets less attention in political discussions surrounding the Court.

In any case, Court nominations must be approved by the Senate, including not only Supreme Court justices, but also judges on lower courts. As explained above, the Democrats have considerable ability to delay or block nominations, as the Republican majority is very small.

In the meantime, the Supreme Court operates with only eight justices (with one vacancy), which means that a tie vote causes the lower court ruling to be automatically upheld. Therefore, different courts in different areas of the country could rule differently on the same issue, resulting in inconsistent application of the law. Lower courts in some areas may be more favourable to climate regulation compared to others, so climate-friendly regulations could be upheld in some parts of the country for a while, until the Court begins operating again with an odd number of justices. (It is also possible that a second vacancy could occur before the first vacancy is filled, leaving a 7-member Court.) It is important to keep in mind that individual justices can be unpredictable, and their views may change after joining the Court.

4. Structural shift towards renewable energy and away from coal in the US

The Energy and Interior Departments are also important for renewable energy and climate change, so appointments to these agencies will be very significant. For the Energy Department, there is some potential that policy support for renewable energy could be scaled back or eliminated if people related to the fossil fuel industry are appointed to lead it. The Interior Department has jurisdiction over the federal government's large land holdings, including national parks. There is a danger that Trump appointees could try to open more federal government land for fossil fuel exploration.³⁸ However, even if this happens, drilling may not increase very quickly because of the current global oil surplus. In fact, only about 35 percent of existing oil and gas leases on public lands are currently under production, and oil and gas drilling is already allowed on 90 percent of public lands managed by the Bureau of Land Management.³⁹

Trump's most notable involvement with wind power is connected with his opposition to building a windfarm near his golf course in Scotland. He urged UK Independence Party's Nigel Farage and others to lobby against windfarm development in Scotland and called the project an act of "public vandalism."⁴⁰

More recently, Trump discussed renewable energy in an interview with the *New York Times* on 22 November, 2016, and expressed skepticism about its economic viability. He complained that wind power needs subsidies, and that wind turbines are made in Germany and Japan but not in the US.⁴¹ This interview made clear that his understanding of renewable energy is considerably out-of-date. There has been a structural shift away from coal and towards renewable energy in the US.

In fact, the cost of renewable energy has drastically declined in recent years, and it has become economically competitive in the US, no longer very dependent on subsidies or other policy support. Some forms of renewable energy are also cheaper than natural gas. Coal is now more expensive than both renewable energy and natural gas. In the case of natural gas, new fracking technology has greatly reduced its cost of production. Bloomberg reported that in West Texas, new wind farms cost about USD 22 per megawatt hour, and in Arizona and Nevada, solar farms can be built for USD 40 per megawatt hour. In contrast, the average lifetime cost for natural gas plants is USD 52, and about USD 65 for coal plants. Utilities also like the flexibility offered by renewable energy, which can be scaled faster and in smaller increments to meet demand changes, in contrast to coal plants which are very large in scale and require a much longer time to construct.⁴²

Trump is also misinformed about wind power equipment manufacturing. Wind manufacturing now supports 21,000 jobs in 43 US states. "Jobs at wind farms, wind-related manufacturing facilities, or both, are now located in 70 percent of US Congressional districts," according to the American Wind Energy Association.⁴³

The coal industry in the US has been in decline for some time. Most major miners are now in bankruptcy. Despite claims by Republicans, coal's decline is not due to President Obama's war on coal. Rather, its decline is being caused by market forces: it is simply more expensive than shale gas or renewable energy. Therefore, US electric power utilities already have long-term plans to phase out coal fired power plants and replace them with natural gas or renewable energy. *Bloomberg* reports that US utilities plan to close 12 gigawatts of coal power plants over the next four years. Coal is on the way out regardless of what happens to the Clean Power Plan. Without the Clean Power Plan, the transition away from coal would not be stopped, but only somewhat delayed.⁴⁴ In terms of the total number of jobs (including manufacturing and power generation), both solar and wind each now provide more jobs (210,000 and 77,000, respectively) than coal (57,000).⁴⁵ Six major publicly traded coal companies filed for bankruptcy in the past year and a half: Peabody Energy, the world's biggest private sector coal producer; Arch Coal, the second largest US producer; Alpha Natural Resources, the world's third largest producer of metallurgical coal; Walter Energy, Patriot Coal, and Xinerger.⁴⁶ Moreover, even if fossil fuel supporters are appointed to lead the Energy and Interior Departments, they will not necessarily favour coal, and they may favour oil and gas instead. Electric power utilities also would not be expected to provide policy support coal, if natural gas and renewable energy remain significantly cheaper.

Moreover, clearly, US voters strongly support renewable energy, regardless of their views (or Trump's views) on climate change. There is considerably less support for other kinds of energy. According to a Pew survey, 89 percent of US adults support more solar panel farms and 83 percent support more wind turbine farms, while over half of the people oppose more offshore drilling, nuclear power plants, fracking, and coal mining, with 57 percent opposing more coal mining.⁴⁷ Wind power is especially popular in many states in the Midwest, which are Republican strongholds. Texas is a major wind power producer.⁴⁸

There is also increasing demand and support for renewables from the private sector, including major US corporations. Walmart has pledged to power half of its business operations from wind, solar and other renewables by 2025, while Microsoft made its biggest deal to date, agreeing to buy 237 megawatts of electricity from turbines in Kansas and Wyoming to power its data centres.⁴⁹ According to *Bloomberg's New Energy Finance*, over the next nine years, more companies, including technology giants like Google and Amazon.com, have committed to buy over 17.4 gigawatts of clean power.⁵⁰

Policy support for renewable energy in the US is likely to continue, although perhaps somewhat reduced. In 2015, Congress passed a long-term extension of the wind energy Production Tax Credit and alternative Investment Tax Credit.⁵¹ Renewable energy promotion measures passed congress with strong bipartisan support, which will likely continue.⁵² Moreover, regulation of energy utilities is mainly under the jurisdiction of states, not the federal government. Therefore, many of the renewable energy policy support programmes are at the state level, so these would not necessarily be easily influenced by changes in federal policies.

Outside the US, the growth of renewable energy will continue.⁵³ The Trump administration will be unable to stop the global spread of renewable energy. The cost of solar and wind power will continue to decline, driven by continuous advances in technology and production capacity, and the rapid scaling up of clean energy infrastructure by the EU and countries such as China and India.

5. States, cities, and businesses in the US are already taking actions on climate change

5.1 States and Cities

At the federal level, Congress has been slow in advancing climate policies; in fact, not a single bill has yet been passed over the last ten years that outwardly tackles climate change.⁵⁴ However, there is a great deal of momentum, innovation and action on climate change already happening in many US states and cities. This could be because the effects of climate change, such as rising tides, severe storms and drier summers, are most felt at the local level. At the same time, globally, cities also generate about 70 percent of global greenhouse gas emissions.⁵⁵ President-elect Trump often said that he wants to give more power to state and local governments, while disempowering the federal government.⁵⁶

Cities in the US have some powers to address climate by planning for, and investing in, public transportation infrastructure and climate-resilient infrastructure – sometimes even in the absence of financial or regulatory support from the federal government. More significantly, cities also influence key areas of planning that determine emissions and sustainability, including renewable energy initiatives, mass rapid transit and rail, shared mobility, and flood protection.⁵⁷ If they carry out these plans, cities will have a significant impact on reducing greenhouse gases and keeping global temperatures below 2°C. In general, US cities and states have more authority to tax and regulate compared to local governments in many other countries.

Shortly before the election, California adopted legislation to significantly strengthen the state's climate policies. The legislation sets a target to cut greenhouse gases to 40 percent

below 1990 levels by 2030; it also aims to enhance solar power, offers rebates for electric cars, and strengthens business regulation.⁵⁸ The state's lawmakers also supported a number of vehicle emission standards tougher than the rest of the US.⁵⁹ California is the country's second largest emitter after Texas and is the sixth biggest economy in the world by gross domestic product. California state officials remain committed to leading and implementing strong climate measures. California's governor, Jerry Brown, and his team attended the Marrakech Climate Conference and met with ministers from China, Germany, Canada and Mexico to discuss climate plans.⁶⁰

US legal experts are also exploring the possibility of a subnational body, like California, to join the UN climate talks, and there appears to be some room for flexibility in the UNFCCC membership rules to be an observer. In particular, California's State Senate leader, Kevin De Leon, said that California might consider joining the UN climate process if the US withdraws.⁶¹

In addition to California, the states of Vermont and Washington also sent representatives to Marrakech, demonstrating that individual US states can and will pursue Paris climate targets through state laws and international partnerships, free from the federal government and any possible plans to suppress climate actions by a Trump presidency.⁶² California Secretary for Environmental Protection, Matt Rodriquez, said at Marrakech that a total of 36 US states, including Washington, New York, Oregon, New England, and Vermont, already have set climate plans and renewable energy targets, and the economic shift towards renewables is not stopping.⁶³ Moreover, 35 US states have also adopted renewable portfolio standards and 25 have codified standards for energy efficiency – these climate actions go beyond what is required of states under current US commitments to the Paris Agreement.⁶⁴

Many US states and cities have joined and led global climate initiatives. California Governor Jerry Brown initiated "Under2 MOU," a subnational global climate leadership memorandum of understanding among subnational governments to work towards implementing the Paris Agreement by committing to limit their emissions to below 80 to 95 percent below 1990 levels, or below two metric tons per capita, by 2050. Already 16 states and cities in the US, including the city of Austin and the states of Connecticut and Minnesota, have signed the MOU, and outside the US, 165 jurisdictions representing 33 countries have joined. Altogether, this coalition represents more than 1.08 billion people and USD 25.7 trillion in GDP, equivalent to more than a third of the global economy.⁶⁵

Currently, 12 US cities are part of the C40 Cities Climate Leadership Group that connects more than 80 cities around the world. Created and led by cities, this grouping is committed to fighting climate change and reducing greenhouse gas emissions, starting at the local level. US city mayors, including Austin's Mayor Steve Adler, Chicago's Mayor Rahm Emanuel, and Los Angeles's Mayor Eric Garcetti, will join other city mayors from around the world, private sector and development partner organisations at the C40 Mayors Summit in Mexico City from 30 November to 2 December, 2016. Recognising that US mayors will now likely bear more responsibility driving climate actions given the election results, participants will redouble efforts to collaborate on these actions.

About 128 US cities are also part of the "Compact of Mayors" – a global coalition of mayors and city officials, representing 7,100 cities across 119 countries, who have committed to reduce carbon emissions, enhance climate resilience, and track progress transparently. Launched by former New York City mayor Michael R. Bloomberg and UN Secretary-General

Ban Ki-moon in 2014, the Compact is supported by several key global city networks, such as C40 Cities Climate Leadership Group, ICLEI – Local Governments for Sustainability, the United Cities and Local Governments, and UN-Habitat. At the Marrakech Climate Conference, the grouping announced the launch of a new “Global Covenant of Mayors for Climate & Energy” and their collective impact. Based on projections, the commitments made by these cities, when met, will account for reductions of nearly one billion tons of greenhouse gas emissions annually by 2030 or 11.6 billion cumulative tons between 2010 and 2030.⁶⁶

Hundreds of US local governments are members of ICLEI-USA, which is part of a global network of local governments working on climate and sustainability issues. ICLEI provides technical assistance and emissions monitoring tools to help local governments reduce greenhouse gas emissions.⁶⁷

On 22 November, 2016, Michael R. Bloomberg said that regardless of what Trump does, US cities would continue their climate policies. According to the *New York Times*, Mr. Bloomberg said that if Mr. Trump withdraws from the Paris Agreement, then he would urge the 128 US member cities of the Compact of Mayors to join it.⁶⁸

5.2 Businesses

In addition to cities, many US businesses are also already taking major steps to address climate change. Similar to the “Under2” coalition of subnational governments, at the Marrakech Climate Conference, more than 350 major US companies, including DuPont and Intel, joined the “Business Backs Low-Carbon USA” initiative and signed an open letter to call on world leaders, including President-elect Trump, to continue low-carbon policies, invest in the low-carbon economy, and implement the Paris Agreement.⁶⁹

Various business coalitions in the US are engaged in climate-related actions. One of the largest is C2ES’s Business Environmental Leadership Council (BELC), whose members are mainly Fortune 500 companies in a range of sectors with combined USD 2 trillion in revenue and 3.5 million employees.⁷⁰

With their own initiatives, it is clear that many US businesses are determined to address climate change because it is in their own interests. They will therefore continue to make progress regardless of what President-elect Trump and his administration decide to do.

6. Concerns about jobs and economic security

The US election showed that many voters have serious concerns about economic distress in the face of globalisation. These concerns are shared by voters and citizens around the world, and have resulted in the rise of populist movements and leaders. The UK vote in favour of Brexit is another example, but similar developments have happened in other countries, including in developing countries such as Venezuela and the Philippines.

While many of the voters who helped Trump to win the election come from the rust belt states and states which rely on heavy industries and fossil fuels, they did not necessarily vote against climate change. Public opinion surveys show increasing recognition of the dangers of climate change and a willingness to support climate change measures. This is the case not only with the overall population, but also among Republicans. In March 2016, Gallup reported that

concern about global warming in the US was at an 8-year high. About 64 percent of US adults worried about global warming a great deal or a fair amount, and nearly 60 percent say that the effects have already begun. A record 65 percent blame human activity. Concern among Republicans is rising rapidly, with 40 percent worrying a great deal or fair amount, up from 31 percent in 2015, and the percent of independents has risen from 55 percent to 64 percent.

In his interview with the *New York Times*, Trump suggested that while he is ready to keep an open mind on climate change, his main concern was the potential effects of climate measures on business. He said his view “depends on how much it’s going to cost our companies.” He emphasised, “you have to understand, our companies are noncompetitive right now. We have to make ourselves competitive.”⁷¹

However, in fact, many US businesses do not feel that climate measures are causing them to be uncompetitive. Many are joining climate-related business coalitions, supporting climate-related policies, and taking their own actions on climate change. A report by WRI concluded that “experience at the state and national level demonstrates that well-designed policies can reduce greenhouse gas emissions while providing overall net public benefits, for example through improved public health, as well as direct financial benefits to businesses and consumers,” and that “the ability to reduce greenhouse gas emissions while benefitting the economy has already been demonstrated through numerous policies and programs implemented in the United States.” A regional cap-and-trade programme for nine East Coast states will save customers about USD 1.1 billion on electricity, create 16,000 net job years, and contribute USD 1.6 billion to the region’s economy.⁷²

Nevertheless, public opinion surveys show that there are still many people who are not convinced that climate actions are good for business and jobs. More efforts are needed to help businesses and ordinary citizens understand the economic benefits of climate actions.

7. Conclusion

This briefing note identified a few areas for cautious optimism, based largely on interpretation of remarks made by Trump after the election, and looking at the institutional framework of the US policymaking process. It also highlighted a number of significant obstacles to various climate policy reversals that have been proposed. Many commentators are pessimistic, and there is plenty of evidence for this perspective,⁷³ so the potential areas of optimism identified by this briefing note may not necessary develop in an optimistic direction. Nevertheless, in this situation, it seems prudent to try to begin with the optimistic case, since Trump’s views and actions have a certain degree of unpredictability and inconsistency, and so there may be some room for persuasion.

Jobs and economic competitiveness are clear priorities, not only for Trump, but also for many US voters. Therefore, jobs and the economy may be the key points to try to encourage the Trump administration on climate change with the greatest chance of succeeding. Many US businesses, states, cities, and individual citizens understand the importance of climate change and are already taking actions. They understand that climate actions are good for the economy, not just for the climate itself. Still, not everyone shares this view, and if the pessimistic scenario prevails, it will be because of people who believe that climate actions are not economically beneficial.

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Disclaimer

The contents of this briefing note are solely the responsibility of the authors and do not necessarily represent IGES.

Endnotes

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- ¹ Volcovici, V. (2016) 'Trump Looks to Bush Era for New Head of U.S. Environmental Agency', *Reuters*, 15 November. Available at: <http://www.reuters.com/article/us-usa-trump-epa-idUSKBN13A2HC>.
- ² Ryan, J. (2016) 'Trump Shifts Tone on Climate Change, Environmentalists Scoff', *Bloomberg.com*, 23 November. Available at: <http://www.bloomberg.com/news/articles/2016-11-22/trump-shifts-tone-on-climate-change-environmentalists-scoff>; Shear, M. D., Davis, J. H. and Haberman, M. (2016) 'Donald Trump Seems to Retreat on Some Promises', *New York Times*, 22 November. Available at: <http://www.nytimes.com/2016/11/22/us/politics/donald-trump-visit.html?hp&action=click&pgtype=Homepage&clickSource=story-heading&module=b-lede-package-region®ion=top-news&WT.nav=top-news>.
- ³ Schreckinger, B. (2016) 'Trump Acknowledges Climate Change -- At His Golf Course', *Politico*, 23 May. Available at: <http://www.politico.com/story/2016/05/donald-trump-climate-change-golf-course-223436>.
- ⁴ Aldhous, P. (2016) 'Donald Trump vs. Sea Level Rise', *Buzzfeed News*, 23 January. Available at: https://www.buzzfeed.com/peteraldhous/trump-buildings-underwater?utm_term=.fudoObnGz0#.vgj5WGPOBq.
- ⁵ Shear, M. D., Davis, J. H. and Haberman, M. (2016) 'Donald Trump Seems to Retreat on Some Promises', *New York Times*, 22 November. Available at: <http://www.nytimes.com/2016/11/22/us/politics/donald-trump-visit.html?hp&action=click&pgtype=Homepage&clickSource=story-heading&module=b-lede-package-region®ion=top-news&WT.nav=top-news>.
- ⁶ Morris, D. Z. (2016) 'Trump's Surprising Transportation Priorities', *Fortune*, 11 November. Available at: <http://fortune.com/2016/11/12/trump-transportation-priorities/>.
- ⁷ Page, S. (2016) 'Gov. Nikki Haley's UN Appointment Is Even More Reason to Worry About the Climate', *Thinkprogress.org*, 23 November. Available at: <https://thinkprogress.org/nikki-haley-un-climate-2045ef787745#.khdr2lmpb>.
- ⁸ Volcovici, V. (2016) 'Trump Looks to Bush Era for New Head of U.S. Environmental Agency', *Reuters*, 15 November. Available at: <http://www.reuters.com/article/us-usa-trump-epa-idUSKBN13A2HC>.
- ⁹ Bravender, R. and Bogardus, K. (2016) 'EPA: Trump Meets with Prospects for Top Job', *eenews.net*, 28 November. Available at: <http://www.eenews.net/stories/1060046282>.
- ¹⁰ Gluek, K. (2016) 'Trump's Shadow Transition Team', *Politico*, 22 November. Available at: <http://www.politico.com/story/2016/11/trump-transition-heritage-foundation-231722>.
- ¹¹ Union of Concerned Scientists (2016) *Global Warming Skeptic Organizations*, *Union of Concerned Scientists*. Available at: http://www.ucsusa.org/global_warming/solutions/fight-misinformation/global-warming-skeptic.html#.WDvubLJ96Uk (Accessed: 28 November 2016).
- ¹² Energy Independence (2016) *President-elect Donald J. Trump website*. Available at: <https://www.greatagain.gov/policy/energy-independence.html> (Accessed: 24 November 2016).
- ¹³ Chemnick, J. (2016) 'Could Trump Simply Withdraw U.S. from Paris Climate Agreement?', *Scientific American*, 10 November. Available at: <https://www.scientificamerican.com/article/could-trump-simply-withdraw-u-s-from-paris-climate-agreement/>.
- ¹⁴ Chemnick, J. (2016) 'Could Trump Simply Withdraw U.S. from Paris Climate Agreement?', *Scientific American*, 10 November. Available at: <https://www.scientificamerican.com/article/could-trump-simply-withdraw-u-s-from-paris-climate-agreement/>.
- ¹⁵ Volcovici, V. and Doyle, A. (2016) 'Trump Looking at Fast Ways to Quit Global Climate Deal: Source', *Reuters*, 14 November. Available at: <http://www.reuters.com/article/us-usa-election-climatechange-accord-idUSKBN1370JX>;

-
- Chemnick, J. (2016) 'Could Trump Simply Withdraw U.S. from Paris Climate Agreement?', *Scientific American*, 10 November. Available at: <https://www.scientificamerican.com/article/could-trump-simply-withdraw-u-s-from-paris-climate-agreement/>.
- ¹⁶ Loris, N. and Schaefer, B. D. (2016) 'The U.S. Should Withdraw from U.N. Framework Convention on Climate Change', *Heritage Foundation Commentary*, 21 June. Available at: <http://www.heritage.org/research/commentary/2016/6/us-should-withdraw-from-un-framework-convention-on-climate-change>.
- ¹⁷ Herzog, K. (2016) 'If Trump Pulls the U.S. Out of the Paris Agreement, France Might Carbon Tax Our Goods', *Slate*, 15 November. Available at: http://www.slate.com/articles/health_and_science/climate_desk/2016/11/if_trump_pulls_the_u_s_out_of_the_paris_agreement_france_might_carbon_tax.html.
- ¹⁸ Oroschakoff, K. (2016) 'Trump's Climate Finance Threat May Be Hot Air', *Politico*, 16 November. Available at: <http://www.politico.eu/article/trumps-climate-finance-threat-may-be-hot-air/>
- ¹⁹ America Resurgent (2016) *Republican Platform*. Available at: <https://www.gop.com/platform/american-exceptionalism/> (Accessed 28 November 2016).
- ²⁰ Oroschakoff, K. (2016) 'Trump's Climate Finance Threat May Be Hot Air', *Politico*, 16 November. Available at: <http://www.politico.eu/article/trumps-climate-finance-threat-may-be-hot-air/>.
- ²¹ Ellingboe, K. and Koronowski, R. (2016) 'Most Americans Disagree with Their Congressional Representative on Climate Change', *Thinkprogress.org*, 8 March. Available at: <https://thinkprogress.org/most-americans-disagree-with-their-congressional-representative-on-climate-change-95dc0eee7b8f#.6a3g4iw5b>.
- ²² Fragoso, A. D. (2016) 'Hundreds Of Lawmakers Are Ganging Up Against The Clean Power Plan', *Thinkprogress.org*, 25 February. Available at: <https://thinkprogress.org/hundreds-of-lawmakers-are-ganging-up-against-the-clean-power-plan-e75959bb5256#.elptlvcp>.
- ²³ Hulse, C. (2016) 'Trump's Next Battle: Keeping These Republican Senators Happy', *New York Times*, 26 November. Available at: <http://www.nytimes.com/2016/11/26/us/politics/donald-trumps-republicans-senate.html?mabReward=R7&recp=7&action=click&pgtype=Homepage®ion=CColumn&module=Recommendation&src=rechp&WT.nav=RecEngine>.
- ²⁴ Leber, R. (2015) 'Could Republicans Pass an Energy Bill That (Modestly) Acts on Climate Change?', *New Republic*, 5 May. Available at: <https://newrepublic.com/article/121749/murkowski-suggests-energy-package-might-address-climate-change>; Dumaine, B. (2013) 'A Republican senator on climate change: It's real, we need to fight it', *Fortune.com*, 23 April. Available at: <http://fortune.com/2013/04/23/a-republican-senator-on-climate-change-its-real-we-need-to-fight-it/>.
- ²⁵ Valentine, K. (2015) 'These 4 Republican Senators Are Forming A Group To Tackle Climate Change', *Thinkprogress.org*, 31 October. Available at: <https://thinkprogress.org/these-4-republican-senators-are-forming-a-group-to-tackle-climate-change-dc667e9f8eb5#.b8t7xetnp>.
- ²⁶ Geiling, N. (2016) 'These Republican Lawmakers Are Turning To Climate Action to Help Keep Their Seats', *Thinkprogress.org*, 29 April. Available at: <https://thinkprogress.org/these-republican-lawmakers-are-turning-to-climate-action-to-help-keep-their-seats-7b9b3893c9de#.j6ouk05mk>.
- ²⁷ Bumeller, E. and Broder, J. M. (2008) 'McCain Differs With Bush on Climate Change', *New York Times*, 13 May. Available at: <http://www.nytimes.com/2008/05/13/us/politics/12cnd-mccain.html>.
- ²⁸ Samuelsohn, D. (2009) 'Has John McCain Gone Cool on Global Warming Legislation?', *New York Times*, 16 July. Available at: <http://www.nytimes.com/gwire/2009/07/16/16greenwire-has-john-mccain-gone-cool-on-global-warming-le-59832.html?pagewanted=all>.
- ²⁹ Cama, T. (2015) 'Eleven Republicans Vow to Fight Climate Change', *Thehill.com*, 17 September. Available at: <http://thehill.com/policy/energy-environment/254021-11-republicans-seek-to-fight-climate-change>.
- ³⁰ Kim, S. M. and Everett, B. (2015) 'Angry GOP Senate Freezes Out Obama Nominees', *Politico*, 14 October. Available at: <http://www.politico.com/story/2015/10/gop-senate-barack-obama-cotton-214700>.
- ³¹ For example, see Fountain, H. and Goode, H. (2016) 'Trump Has Options for Undoing Obama's Climate Legacy', *New York Times*, 25 November. Available at: <http://www.nytimes.com/2016/11/25/science/donald-trump-obama-climate.html?hp&action=click&pgtype=Homepage&clickSource=story-heading&module=a-lede-package-region®ion=top-news&WT.nav=top-news>.
- ³² Billings, L. (2016) 'Under Trump, NASA May Turn a Blind Eye to Climate Change', *Scientific American*, 23 November. Available at: <https://www.scientificamerican.com/article/under-trump-nasa-may-turn-a-blind-eye-to-climate-change/>.
- ³³ Harvey, C. (2016) 'Trump Has Vowed to Kill the Clean Power Plan. Here's How He Might — and Might Not — succeed', *Washington Post*, 11 November. Available at: https://www.washingtonpost.com/news/energy-environment/wp/2016/11/11/trump-has-vowed-to-kill-the-clean-power-plan-heres-how-he-might-and-might-not-succeed/?utm_term=.904dae7d7fa0.
-

- ³⁴ Dlouhy, J. A. and Harris, A. M. (2016) 'Obama's Clean Power Plan Heads to Court: What to Know', *Bloomberg.com*, 29 September. Available at: <http://www.bloomberg.com/news/articles/2016-09-23/obama-s-clean-power-plan-heads-to-court-what-to-know>.
- ³⁵ Cohan, D. and Parks, L. (2016) 'Achieving Clean Power Plan Targets Well Ahead of Schedule', *Thehill.com*, 24 February. Available at: <http://thehill.com/blogs/pundits-blog/energy-environment/270544-achieving-clean-power-plan-targets-well-ahead-of>.
- ³⁶ Grunwald, M. (2016) 'Environmentalists Get a Dose of Good News', *Politico.com*, 18 November. Available at: <http://www.politico.com/agenda/story/2016/11/environmentalists-get-a-dose-of-good-news-000233>.
- ³⁷ Dolsak, N. and Prakash, A. (2016) 'Trump Can't Abolish the EPA', *Slate.com*, 16 November. Available at: http://www.slate.com/articles/health_and_science/science/2016/11/trump_can_t_abolish_the_environmental_protection_agency.html. Also see Gustin, G. (2016) 'Could Donald Trump Kill the EPA? Probably Not, But He Could Cripple It', *Inside Climate News*, 14 November. Available at: <https://insideclimatenews.org/news/14112016/donald-trump-kill-epa-regulations-clean-power-plan>.
- ³⁸ Page, S. (2016) 'Trump's Interior Team is Great for Fossil Fuels, Terrible for the Environment', *Thinkprogress.org*, 23 November. Available at: <https://thinkprogress.org/interior-oil-and-gas-department-58e2d131041e#.v9sdr48wp>.
- ³⁹ Rowland, J. (2016) 'Trump Adviser Promises a Return to "Drill, Baby, Drill"', *Thinkprogress.org*, 16 November. Available at: <https://thinkprogress.org/public-lands-arent-a-cash-cow-676f0f575352#.scx4sdjat>.
- ⁴⁰ Brooks, L. (2016) 'Trump Resumes Fight Against Windfarm Near Scottish Golf Course', *Guardian*, 22 July. Available at: <https://www.theguardian.com/environment/2016/jul/22/trump-resumes-fight-against-windfarm-near-his-golf-course>.
- ⁴¹ *New York Times*, November 23, 2016, Available at <http://www.nytimes.com/2016/11/23/us/politics/trump-new-york-times-interview-transcript.html?hp&action=click&pgtype=Homepage&clickSource=story-heading&module=b-lede-package-region®ion=top-news&WT.nav=top-news&r=0>.
- ⁴² Ryan, J., Martin, C. and Polson, J. (2016) 'Economics to Keep Wind and Solar Energy Thriving With Trump', *Bloomberg*, 23 November. Available at: <http://www.bloomberg.com/news/articles/2016-11-23/economics-will-keep-wind-and-solar-energy-thriving-under-trump>.
- ⁴³ American Wind Energy Association (2016) 'US Wind Power Jobs Hit Record, Up 20 Percent in 2016', *awea.org*, 12 April. Available at: <http://www.awea.org/MediaCenter/pressrelease.aspx?ItemNumber=8736> (Accessed: 29 November 2016).
- ⁴⁴ Ryan, J., Martin, C. and Polson, J. (2016) 'Economics to Keep Wind and Solar Energy Thriving With Trump', *Bloomberg*, 23 November. Available at: <http://www.bloomberg.com/news/articles/2016-11-23/economics-will-keep-wind-and-solar-energy-thriving-under-trump>.
- ⁴⁵ Biesecker, M. (2016) 'GOP States Benefiting from Shift to Wind and Solar Energy', *Associated Press*, 6 May. Available at: <http://bigstory.ap.org/article/ea6648b16cf48399e9e9ff18e43e712/gop-states-benefiting-shift-wind-and-solar-energy>.
- ⁴⁶ Nair, A. S. (2016) 'Peabody Chapter 11 Tops String of U.S. Coal Bankruptcies', *Reuters*, 15 April. Available at: <http://www.reuters.com/article/us-usa-coal-bankruptcy-idUSKCN0XC2KQ>.
- ⁴⁷ Funk, C. and Kennedy, B. (2016) 'The Politics of Climate', *Pew Research Center*, 4 October. Available at: <http://www.pewinternet.org/2016/10/04/the-politics-of-climate/>.
- ⁴⁸ Philips, M. (2016) 'Clean Power Is Too Hot for Even Trump to Cool', *Bloomberg*, 17 November. Available at: <http://www.bloomberg.com/news/articles/2016-11-17/clean-power-is-too-hot-for-even-trump-to-cool>.
- ⁴⁹ Philips, M. (2016) 'Clean Power Is Too Hot for Even Trump to Cool', *Bloomberg*, 17 November. Available at: <http://www.bloomberg.com/news/articles/2016-11-17/clean-power-is-too-hot-for-even-trump-to-cool>.
- ⁵⁰ Ryan, J., Martin, C. and Polson, J. (2016) 'Economics to Keep Wind and Solar Energy Thriving With Trump', *Bloomberg*, 23 November. Available at: <http://www.bloomberg.com/news/articles/2016-11-23/economics-will-keep-wind-and-solar-energy-thriving-under-trump>.
- ⁵¹ American Wind Energy Association (2016) 'US Wind Power Jobs Hit Record, Up 20 Percent in 2016', *awea.org*, 12 April. Available at: <http://www.awea.org/MediaCenter/pressrelease.aspx?ItemNumber=8736> (Accessed: 29 November 2016).
- ⁵² Philips, M. (2016) 'Clean Power Is Too Hot for Even Trump to Cool', *Bloomberg*, 17 November. Available at: <http://www.bloomberg.com/news/articles/2016-11-17/clean-power-is-too-hot-for-even-trump-to-cool>.
- ⁵³ See REN21 (2016) *Renewables 2016 Global Status Report*. REN21 Renewable Energy Policy Network for the 21st Century. Available at: <http://www.ren21.net/status-of-renewables/global-status-report/>.
- ⁵⁴ Bloomberg, M. R. (2016) 'Washington Won't Have Last Word on Climate Change', *Bloomberg*, 22 November. Available at: <https://www.bloomberg.com/view/articles/2016-11-22/washington-won-t-have-last-word-on-climate-change>.
- ⁵⁵ GHG Protocol for Cities (2016) *Greenhouse Gas Protocol*. Available at: <http://www.ghgprotocol.org/city-accounting> (Accessed: 24 November 2016).

-
- ⁵⁶ Biron, C. L. (2016) 'What Effect Could President Trump Have on U.S. Cities' Climate Action?', *Citiscopes.org*, 9 November. Available at: http://citiscopes.org/habitatIII/news/2016/11/what-effect-could-president-trump-have-us-cities-climate-action?utm_source=Citiscopes&utm_campaign=638236beaa-Mailchimp_2016_11_11&utm_medium=email&utm_term=0_ce992dbfef-638236beaa-118057313.
- ⁵⁷ Metcalfe, J. and Bliss, L. (2016) 'How Cities Plan to Fight Climate Change in the Trump Years,' *Citylab, The Atlantic*, 22 November. Available at: <http://www.citylab.com/weather/2016/11/how-cities-can-fight-trump-on-climate/508280/>.
- ⁵⁸ Riley, M. (2016) 'California Takes An Unprecedented Stand Against Climate Change,' *Huffington Post*, 11 September. Available at: http://www.huffingtonpost.com/entry/california-climate-law-us_57d2d195e4b03d2d459a0747.
- ⁵⁹ King, E. (2016) 'If Trump Quits, California Could Apply to Join UN Climate Talks,' *Climate Change News*, 17 November. Available at: <http://www.climatechangenews.com/2016/11/17/if-trump-quits-california-could-apply-to-join-un-climate-talks/>.
- ⁶⁰ King, E. (2016) 'If Trump quits, California Could Apply to Join UN Climate Talks,' *Climate Change News*, 17 November. Available at: <http://www.climatechangenews.com/2016/11/17/if-trump-quits-california-could-apply-to-join-un-climate-talks/>.
- ⁶¹ King, E. (2016) 'If Trump quits, California Could Apply to Join UN Climate Talks,' *Climate Change News*, 17 November. Available at: <http://www.climatechangenews.com/2016/11/17/if-trump-quits-california-could-apply-to-join-un-climate-talks/>.
- ⁶² King, E. (2016) 'If Trump Quits, California Could Apply to Join UN Climate Talks,' *Climate Change News*, 17 November. Available at: <http://www.climatechangenews.com/2016/11/17/if-trump-quits-california-could-apply-to-join-un-climate-talks/>.
- ⁶³ King, E. (2016) 'If Trump Quits, California Could Apply to Join UN Climate Talks,' *Climate Change News*, 17 November. Available at: <http://www.climatechangenews.com/2016/11/17/if-trump-quits-california-could-apply-to-join-un-climate-talks/>.
- ⁶⁴ Withnall, A. (2016) 'US States Vow to Push Ahead in Fight Against Climate Change - With or without President Trump's Blessing,' *The Independent*, 18 November. Available at: <http://www.independent.co.uk/environment/president-donald-trump-cop22-climate-change-california-states-a7423816.html>.
- ⁶⁵ Subnational Global Climate Leadership Memorandum of Understanding (2016) *Under2*. Available at: <http://under2mou.org/the-mou/> (Accessed 25 November 2016).
- ⁶⁶ The Global Covenant of Mayors for Climate & Energy Announces its Global Impact (2016) *Compact of Mayors*. Available at: <https://www.compactofmayors.org/press/global-covenant-mayors-climate-energy-announces-collective-impact-cities-move-paris-agreement-commitment-action/> (Accessed 27 November 2016).
- ⁶⁷ See the ICLEI-USA website and its 2014 Annual Report. Available at: <http://icleiusa.org/about-us/who-we-are/>. (Accessed 27 November 2016.)
- ⁶⁸ Wong, M. (2016) 'Bloomberg Says Cities Will Fight Climate Change, With or Without Trump,' *New York Times*, 23 November. Available at: <http://www.nytimes.com/2016/11/23/us/politics/mike-bloomberg-donald-trump-climate-change.html>.
- ⁶⁹ Business Backs Low-Carbon USA (2016). Available at: <http://www.lowcarbonusa.org/> (Accessed 24 November 2016).
- ⁷⁰ See the c2es.org website available at <http://www.c2es.org/business/belc> (Accessed 27 November 2016).
- ⁷¹ *New York Times*, November 23, 2016, Available at <http://www.nytimes.com/2016/11/23/us/politics/trump-new-york-times-interview-transcript.html?hp&action=click&pgtype=Homepage&clickSource=story-heading&module=b-lede-package-region®ion=top-news&WT.nav=top-news&r=0>.
- ⁷² Bianco, N., Meek, K., Gasper, R., Obeiter, M., Forbes, S. and Aden, N. (2014) *Seeing is Believing: Creating a New Climate Economy in the United States*. Washington, D.C.: World Resources Institute Working Paper. Available at: http://newclimateeconomy.report/2016/wp-content/uploads/sites/2/2014/11/seeingisbelieving_working_paper.pdf.
- ⁷³ McGibbon, A. (2016) 'Trump Is a Threat to the Paris Agreement. Can States Like California Defend It?', *The Guardian*, 21 November. Available at: <https://www.theguardian.com/commentisfree/2016/nov/21/trump-threat-paris-agreement-california-climate-change>.
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Institute for Global Environmental Strategies (IGES)

2108-11 Kamiyamaguchi, Hayama, Kanagawa, 240-0115, Japan
Tel: 046-826-9592 Fax: 046-855-3809 URL: www.iges.or.jp

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