

# ChinaFAQs

## The Network for Climate and Energy Information



# U.S.-China Collaboration: Can They “Inspire the World”?

*“Large scale cooperative action – is more critical than ever. Such action is crucial both to contain climate change and to set the kind of powerful example that can inspire the world.”*

-Joint U.S. China Statement on Climate Change, April 13, 2013<sup>1</sup>

### Key Questions:

1. What are the new developments in U.S.-China cooperation to combat climate change?
2. How well are the U.S. and China doing in confronting climate change?
3. What are the possibilities for transformative U.S.-China collaboration on climate and energy?

For analysis of the U.S.-China Climate Change Working Group July 2013 Report see:

[4 Promising Themes Emerge in U.S.-China Agreements at Strategic and Economic Dialogue](#)

### A Window of Opportunity

On June 25th, President Obama announced his plan for addressing climate change.<sup>2</sup> The plan takes a comprehensive approach to the climate issue, looking to reduce greenhouse gas emissions while also preparing the country for the impacts of climate change that are now unavoidable. However, as President Obama noted in his speech, “no one nation can meet this challenge alone.”<sup>3</sup> Therefore part of the President’s plan deals with engaging other nations to also act on climate change. No other nation is more important to engage than China. China and the United State are respectively the world’s first and second largest emitters of carbon dioxide, and together make up over 40% of global CO<sub>2</sub> emissions.<sup>4</sup> China and the U.S. have both been acting independently in their own self-interest to address climate change, and cooperating with each other on a modest scale. Now there is an opening for a major expansion of bilateral cooperation on climate change between the two countries. Such cooperation would create significant progress towards addressing the climate problem, and could create a cascade of stronger action across the globe.

### 1. What are the new developments in U.S.-China cooperation to combat climate change?

With the start of the second Obama administration and the once in a decade leadership transition in China, the beginning of 2013 saw new steps for collaboration between the U.S. and China on clean energy and climate issues. In April, during a visit to China by Secretary of State John Kerry, the U.S. and China released a joint statement pledging large scale cooperative action, saying, “Such action is crucial both to contain climate change and to set the kind of powerful example that can inspire the world.”<sup>5</sup> The joint statement also announced the formation of a Climate Change Working Group for the Strategic and Economic Dialogue, which will meet in July of 2013. The working group will examine existing collaboration and the potential to bolster those efforts, and will identify new initiatives “for concrete, cooperative action to foster green and low-carbon economic growth, including through the use of public-private partnerships, where appropriate.”<sup>6</sup> In June of 2013, President Obama and Chinese President Xi Jinping met for an informal summit in California, where one of the deliverables announced was an agreement between the two countries to work towards reducing the use of hydrofluorocarbons (HFCs), a potent greenhouse gas, through the Montreal Protocol.<sup>7</sup>

### Contact

JONATHAN MOCH  
ChinaFAQs Project Specialist,  
Climate and Energy Program

World Resources Institute  
Jonathan.Moch@wri.org  
(202) 729-7845

## Box 1: History of Major Bilateral U.S.-China Collaboration on Climate and Clean Energy

### 2013

- *July*: Strategic and Economic Dialogue<sup>i</sup>
- *June*: Meeting of President Obama and President Xi: U.S. and China agree to work together on phase down of HFCs<sup>ii</sup>
- *April*: Secretary of State John Kerry visits China; release of Joint U.S.-China Statement on Climate Change and establishment of Climate Change Working Group<sup>iii</sup>

### 2012

- *May*: reaffirm and expand previous collaboration efforts at the S&ED<sup>iv</sup>

### 2011

- *September*: U.S. and China reach agreement on framework intellectual property understandings for the CERC<sup>v</sup>
- *May*: U.S. and China reaffirm existing collaboration at S&ED;<sup>vi</sup> National Oceanic and Atmospheric Administration announces enhanced cooperation with the Chinese Meteorological Association on greenhouse gas monitoring<sup>vii</sup>
- *January*: Meeting between President and Obama and President Hu Jintao at which they announce enhancing existing cooperative efforts<sup>viii</sup>

### 2010

- *October*: The U.S. EPA signs an agreement to formalize collaboration with China's Ministry of the Environment on environmental protection<sup>ix</sup>
- *May*: reaffirm existing collaboration at S&ED; U.S. and China also release a joint statement on energy security<sup>x</sup>

### 2009

- *November*: President Obama and President Hu Jintao release a joint statement discussing climate change<sup>xi</sup> and announce seven joint measures to strengthen cooperation on clean energy<sup>xii</sup> including: the launch of the U.S.-China Clean Energy Research Center (CERC), the U.S.-China Renewable Energy Partnership (USCREP), and the U.S.-China Energy Cooperation Program (USCECP)

### 2008

- *June*: the U.S. and China establish the Ten Year Framework for Cooperation on Energy and the Environment<sup>xiii</sup>

### 2006

- *September*: beginning of the EcoPartnership program between the U.S. and China<sup>xiv</sup>

## 2. How well are the U.S. and China doing in confronting climate change?

The measures President Obama discussed when announcing his second term climate change agenda, including regulations for existing power plants, are important because, if fully and ambitiously implemented, they can put the U.S. back on track towards the U.S. goal of reducing greenhouse gas emissions by 17% below 2005 levels by 2020, resetting the climate agenda in the U.S.<sup>8</sup> On the other side of the Pacific, China has incorporated multiple specific targets for emissions intensity reductions, efficiency improvements and expansion of renewables into its 12th Five Year Plan,<sup>9</sup> and China is making progress towards meeting its Copenhagen pledge for reducing carbon intensity by 40-45% below 2005 levels. It will need to work hard to ensure that current Chinese policies continue and that carbon intensity continues to fall.<sup>10</sup>

The actions of both countries are significant, but they must be followed up with more large scale action in order to avoid the

dangerous impacts of climate change. A recent report released by the International Energy Agency notes that unless current policies are supplemented with additional measures, the world is on track to experience between 3.6 °C to 5.3 °C, rather than the 2.0 °C warming threshold that has been agreed by all governments to avoid the dangerous climate change impacts.<sup>11</sup> The U.S. and China both remain heavily dependent on coal, and the U.S. uses far more petroleum than any other country in the world.<sup>12</sup> Therefore, advances in clean energy and transportation policy will need to consider stronger actions, such as expanding the use of renewable energy and energy efficient technologies, as well as further developing technologies like carbon capture and storage and electric vehicles, all of which are priorities for U.S.-China bilateral energy research and development cooperation, as well as an array of other measures including putting a price on carbon.

The U.S. and China must use current commitments as a starting point and aim for even a more transformative shift to a low carbon economy and larger reductions in carbon emissions. In previous years, cooperation on climate between the U.S. and China has focused primarily on important small scale demonstration projects, basic research efforts, and fostering of business deals. However, to really mitigate the impacts of climate change, "large scale cooperative action"<sup>13</sup> between the U.S. and China is required. Fortunately, these types of initiatives may be on the horizon, beginning with the Strategic and Economic Dialogue in July.<sup>14</sup>

### Box 1 Sources

<sup>i</sup> <http://www.state.gov/r/pa/prs/ps/2013/04/207462.htm>

<sup>ii</sup> <http://www.whitehouse.gov/the-press-office/2013/06/08/united-states-and-china-agree-work-together-phase-down-hfcs>

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<sup>iv</sup> <http://www.state.gov/r/pa/prs/ps/2012/05/189287.htm>

<sup>v</sup> <http://energy.gov/articles/us-china-reach-agreement-intellectual-property-protections-us-china-clean-energy-research>

<sup>vi</sup> <http://www.state.gov/r/pa/prs/ps/2011/05/162967.htm>

<sup>vii</sup> <http://www.state.gov/r/pa/prs/ps/2011/05/162967.htm>

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<sup>xiii</sup> <http://www.state.gov/e/oes/eqt/tenyearframework/index.htm>

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### 3. What are the possibilities for transformative U.S.-China collaboration on climate and energy?

The U.S. and China share many of the same goals related to climate and clean energy, including promoting job creation, economic growth, energy security, pollution reduction, and avoiding dangerous climate change impacts. This is why we need not doubt that China has strong reasons to act if we act, and that both countries have strong reasons to collaborate.<sup>15</sup> The two nations have collaborated for over 20 years on these issues.<sup>16</sup> The U.S.-China climate and energy relationship reflects the two countries' interdependence and collaboration, even as the countries and their companies also compete in a global marketplace. Here are some possibilities for taking advantage of this moment to bring U.S.-China collaboration to scale and to produce the shift needed in both countries, and globally, to a low carbon economy:

- The economy of the future will rely much more on zero carbon power. The U.S. and China can work with each other to dramatically scale up the share of **renewable energy** sources in each country. Both China<sup>17</sup> and the U.S.<sup>18</sup> have abundant renewable resources, and could therefore replace a significant portion of current fossil energy with renewable energy. The U.S. and China have complementary strengths<sup>19</sup> in the renewable energy field, and have in recent years used various public-private partnerships, such as the U.S.-China Energy Cooperation Program (USCECP)<sup>20</sup> and the U.S.-China Renewable Energy Partnership (USCREP),<sup>21</sup> to leverage U.S. and Chinese advantages for productive business deals and joint research projects. Such efforts have been important

in promoting clean energy in both countries, and should therefore be expanded.

However, in order to bring these initiatives to the level of “large-scale cooperative action,” more focus needs to be placed on the widespread deployment of renewable technologies. The supply chains for renewable energy are thoroughly intertwined for U.S. and Chinese renewable energy companies.<sup>22</sup> With this in mind, researchers at MIT have proposed consideration of U.S.-China bilateral cooperation emphasizing joint promotion of solar photovoltaic technology in both countries, rather than only individual efforts for deployment.<sup>23</sup> This type of bilateral cooperation, which could extend to other renewables as well, could focus on cross border investment, joint development, and joint deployment projects in either country. Such an initiative could encourage private sector collaboration, and could use public-private partnerships focusing on R&D and commercialization. The current integration of the U.S. and China's renewable energy industries means that such bilateral efforts could result in jobs, revenue and technological advances in both countries.

- Another important area for cooperation on climate issues is **air pollution** and reducing the use of short lived climate pollutants. Air quality has become a serious concern in China, with the government now acknowledging the magnitude of the problem.<sup>24</sup> China can benefit from U.S. policy and technical expertise in this area.<sup>25</sup> The improvements in local air quality will have the additional benefit of reducing certain short lived climate pollutants, and will help with the transition away from coal, assisting the cooperative

### Box 2: Sample of Recent Major U.S.-China Business Collaborations on Climate and Clean Energy

#### Example 1: Duke Energy and Huaneng

- Duke Energy and Huaneng, one of China's biggest electric utilities, have been cooperating on clean energy technologies since 2009. The two companies have been working on sharing information and technology on clean energy, especially on carbon capture and storage.<sup>i</sup> In 2012, Duke Energy and Huaneng followed up their original agreement with an expanded project to examine the feasibility of bringing carbon capture and storage technology pilot tested in China to US power plants.<sup>ii</sup>

#### Example 2: GE and State Grid Corp.

- GE and State Grid Corp., another one of China's large electric utilities, signed a Memorandum of Cooperation to jointly develop standards for smart grids in China.<sup>iii</sup> GE has also formed an equally owned joint venture in China to offer leasing services to the energy industry,<sup>iv</sup> and an equally owned joint venture to market and manufacture grid monitoring and diagnostics products.<sup>v</sup>

#### Example 3: Boeing, Honeywell, PetroChina, and Air China

- A consortium of U.S. and Chinese companies, facilitated by the U.S.-China Energy Cooperation Program, has been collaborating on the development of biofuels for passenger jets. In 2011, the effort led to a successful Chinese test flight of a Boeing 747 using a 50% blend of traditional jet fuel and the jointly developed biofuel.<sup>vi</sup>

#### Box 2 Sources

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<sup>ii</sup> <http://www.duke-energy.com/news/releases/2012021301.asp>

<sup>iii</sup> [http://www.chinadaily.com.cn/business/2011-01/11/content\\_11825804.htm](http://www.chinadaily.com.cn/business/2011-01/11/content_11825804.htm)

<sup>iv</sup> <http://www.bloomberg.com/news/2011-07-26/ge-state-grid-subsidiaries-form-leasing-50-50-joint-venture.html>

<sup>v</sup> <http://www.genewscenter.com/Press-Releases/GE-to-Invest-More-Than-2-Billion-in-R-D-Technology-and-Financial-Services-Partnerships-in-China-2c93.aspx>

<sup>vi</sup> <http://www.uschinaecp.org/ecps-sustainable-aviation-bio/>

effort to confront climate change. The U.S. and China have already agreed to begin working towards phasing down the use of HFCs,<sup>26</sup> but work remains to be done on finalizing the details. The U.S. and China can also cooperate on reducing emissions of black carbon.

• To accomplish the shift from high carbon to low carbon energy, a possible bridge is **natural gas**, an area ripe for cooperation between the U.S. and China. Shale gas might lower overall CO<sub>2</sub> emissions from the energy sector if correct oversight and regulations are implemented. The natural gas boom has dramatically changed the energy landscape in the U.S. It is estimated that China may have shale gas reserves that are roughly equivalent to<sup>27</sup> or as much as 50 percent larger than<sup>28</sup> U.S. reserves. China is already moving to expand its share of natural gas production, with a target to have 6.5 billion cubic meters by 2015.<sup>29</sup> China, however, faces challenges to reach its full natural gas potential. Currently, China lacks some of the technical capacity necessary to fully exploit the resource. Extracting gas through hydraulic fracturing is also a very water-intensive process, which is a serious consideration given the high water stress in many parts of the country.<sup>30</sup> Underlying the expansion of natural gas is the important question of methane leakage, which carries implications for climate change. Methane is a potent greenhouse gas, and these leaks need to be reduced for natural gas to be a truly low-carbon fuel source.<sup>31</sup> China can benefit from the U.S.'s experience with shale gas, both positive and negative, from both U.S. regulatory experience and from U.S. technical knowhow. The U.S. can benefit from the business opportunities that come from shale gas expansion in China. Additionally, both countries can benefit if natural gas serves as a bridge to a low

carbon future, which means creating a common vision for low GHG sustainable shale gas.

• Any transformation of the way we use energy will require addressing coal. The U.S. gets around 40 percent of its electricity from coal power,<sup>32</sup> while in China coal makes up nearly 80 percent of the electricity supply.<sup>33</sup> While there are some signs already, such as a projected slowing of the growth in Chinese coal demand,<sup>34</sup> that this high level of coal consumption is not inevitable, there is a need to continue to pursue **carbon capture and storage (CCS)**. CSS could potentially play a significant role in reducing carbon dioxide emissions but the ambition and speed of deployment needs to be scaled up. Working together around CCS, through forums like the Clean Energy Research Center (CERC),<sup>35</sup> offers benefits for mutual technological exchange, along with environmental and jobs benefits. The U.S. and China have complementary advantages with regards to CCS. The U.S. is a leading innovator in the technology, while China has a growing power sector where the technology can easily be tested and fine-tuned.<sup>36</sup> According to the Global CCS Institute, China already has 11 large scale integrated CCS projects in the planning stages.<sup>37</sup> Successful pilots, like Huaneng's Shidongkou CO<sub>2</sub> capture plant, are being scaled up. U.S. companies like Duke Energy are also collaborating with China on applying the technology to coal-fired power plants in the U.S.<sup>39</sup> These research and pilot efforts have been important, but the U.S. and China need to cooperate in working towards commercial scale CCS deployment quickly.

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## ChinaFAQs

World Resources Institute  
10 G St NE  
Washington, DC 20002  
202-729-7600  
[www.ChinaFAQs.org](http://www.ChinaFAQs.org)