

Green Energy and Green Banks: Governance Policies on Climate Change

By Anthony Fares*

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INTRODUCTION

This Field Report addresses the major topics covered by the Governance Policies on Climate Change Panel at the 10th Annual Columbia University Energy Symposium, held on November 21st, 2014. Panelists included Farrukh Khan, Senior Manager & Head of Climate Finance at the United Nations Executive Office of the Secretary-General; Jean-Philippe Brisson, a partner at Latham & Watkins and Co-Chair of its Air-Quality and Climate Change Practice; and Andrew Darrell, Chief of Strategy, U.S. Climate, & Energy and New York Regional Director at the Environmental Defense Fund. Sara F. Tjossem, a senior lecturer in Environmental Science & Policy at Columbia’s School of International and Public Affairs, moderated the panel. These leaders in environmental law and policy focused their discussion on state, national, and international implementation of cap-and-trade, and considered

* J.D. Candidate, Columbia Law School, Class of 2017.

how to fund sustainable development in both the developed and developing worlds.

I. CAP-AND-TRADE: THE BASICS

Recently, China announced plans to put a cap on coal usage by 2020 and predicts a nationwide reduction in carbon emissions around 2030.¹ Many other nations throughout the world have made efforts of varying success to reduce their carbon emissions through a “cap-and-trade” system.² In its most common form, this method puts a “cap” on carbon emissions in a certain region (a state, for example) and assigns each major emitter in that region a number of “credits,” which designate how much pollution can be emitted by that emitter per year. These credits may be bought from other emitters if an emitter foresees greater carbon output than designated by his allotted credits. In the words of Mr. Darrell, “Carbon pollution happens because it’s free. The purpose of putting a price on carbon is to put in place a mechanism so . . . that [pollution] costs something. How tight the cap is should be driven by science: how far down do we have to go until we can be comfortable that our planet is not going to be a complete disaster?”

II. THE FAILURE OF KYOTO AND REGIONAL SUCCESSES

The panel began with a discussion of the Kyoto Protocol’s failure to regulate global emissions. The panelists believed it had the potential to solve the problem of climate change through the efforts and promises of the world’s most powerful nations and heaviest emitters. Yet by 2005, when the Protocol came into force, the United States had already pulled out, and China was not involved at all. What was intended to be a coalition of nations working together to curb their own carbon emissions turned into a minority of 37 developed and developing countries that only achieved moderate success. As

1. Edward Wong, *In Step to Lower Carbon Emissions, China Will Place a Limit on Coal Use in 2020*, N. Y. TIMES, Nov. 20, 2014, <http://www.nytimes.com/2014/11/21/business/energy-environment/china-to-place-limit-on-coal-use-in-2020.html> [http://perma.cc/UU6S-XNSR].

2. Robert N. Stavins, *A Meaningful U.S. Cap-and-Trade System to Address Climate Change*, 32 HARV. ENVTL. L. REV. 293, 301 (2008).

Mr. Brisson stated, in light of this failure, international and national governments must look to the state and local level where there has been a “groundswell” of promising activity to mitigate climate change. Despite barriers in place on the state and regional level to prevent cap-and-trade innovation, Mr. Brisson posited that using successful regional cap-and-trade regimes as an example can quell fears that such innovation is too complicated, and most importantly, can prove that they do work.

One of the localized programs discussed by the panelists was the Regional Greenhouse Gas Initiative (“RGGI”), which is a regional cap-and-trade coalition of northeastern states. Each state reduces carbon emissions, selling its carbon allowances to other states in auctions, and most of the proceeds from these auctions get reinvested into energy efficiency, renewable energy, and other consumer benefit programs.³ These states have seen enormous successes through this program, according to Mr. Brisson. Other localized programs mentioned included Quebec’s Climate Change Action Plan, which focuses on reducing carbon emissions, using land more effectively, and innovating in the energy sector,⁴ as well as China’s pilot programs for cap-and-trade, running in seven major cities and provinces.⁵

Mr. Darrell, however, opined that while these regional initiatives look hopeful, they are too confined. He said that in order to bring about significant change, these cap-and-trade programs need to expand beyond states and regions to the national and international level. He also proposed a symbiotic relationship between these confined cap-and-trade initiatives and national governments: “The top [the national government] can move when there’s a pathway that looks doable. The bottom [regions, states, and cities] can be accelerated by having a strong goal at the top. This can get to the point where we’re actually achieving the targets that we set.” Mr. Darrell added

3. See generally REGIONAL GREENHOUSE GAS INITIATIVE, <http://www.rggi.org> [<http://perma.cc/DBQ6-LEBW>] (last visited Jan. 4, 2014).

4. 2013-2020 CLIMATE CHANGE ACTION PLAN, GOV’T OF QUE. (2012), available at http://www.mddelcc.gouv.qc.ca/changements/plan_action/pacc2020-en.pdf [<http://perma.cc/46ZM-6TDU>].

5. Mark Nicholls, *Carbon Trading with Chinese Characteristics*, SCI. AM., June 17, 2013, <http://www.scientificamerican.com/article/carbon-trading-experiments-in-china> [<http://perma.cc/467X-ZGHS>].

that this “bottom up” approach does not mean that states, cities, and regions would be working in isolation. Ultimately, he said, they should all link up: the Northeast trading carbon credits with Nevada, China trading with California, and so on.

In support of this goal, Mr. Brisson suggested using NGOs and international organizations like the Environmental Defense Fund and the United Nations to break down barriers between regions and nations to facilitate carbon trade as well as exchanges of technical knowledge and policy. Ms. Tjossem added that, in her research, technical experts like scientists and engineers are able to reach beyond the political tensions between nations and work together to accomplish their goals. There is already evidence of the international cooperation that this panel envisions with the recent agreement between China and California to “combat global climate change, promote clean and efficient energy, and support low carbon development.”⁶

III. MICROGRIDS, GREEN BANKS, AND THE GREEN CLIMATE FUND

This revolution will not take place, however, without strategic funding for the right projects in the right places. The free market can dictate what gets funded and what does not, but sometimes more is needed to steer sustainable development in the right direction. As Mr. Darrell pointed out, the traditional model of a coal-burning power plant that provides energy to a city and its surrounding areas is no longer sustainable. He proposed the introduction of microgrids, or distributed energy, as a more climate-friendly alternative. Microgrids are composed of power-generating sources dispersed throughout an area, independent of the main power grid. They can power one building, or when there are enough, an entire neighborhood. For example, a house with solar panels can channel any excess power to the microgrid and power houses around it.

Mr. Darrell proposes that two types of regulatory measures must be put in place to establish these microgrids. First, lawmakers must create a standardized model to upgrade energy grids into microgrids. Standardization makes it easier

6. *China, California Sign Climate MOU*, ENERGY FOUND (Sep. 25, 2013), <http://www.ef.org/china-california-sign-climate-mou> [<http://perma.cc/D3ET-C7ED>].

to match these sources of renewable energy to capital markets and spur investment. Next, energy utilities must be transformed into companies that manage a flexible, data-rich grid of interconnected sources that function independently of the main power source. This complex transformation of energy utilities will be expensive and difficult, Mr. Darrell says, but it is the best solution to the problems posed by centralized fossil-fuel-burning power plants, and regulation is needed to implement this plan.

Although greater investment in technology and infrastructure is necessary for the expansion of microgrids, there has already been substantial progress in these areas. As Mr. Darrell pointed out, “12 years ago, solar power looked really expensive and wind power looked really hard.” Yet now, as he recognizes, on some days 38% of energy in Texas comes from wind power,⁷ the price of solar panels has dropped 75% in the past 6 years,⁸ and Germany has an excess of solar energy.⁹ Darrell says that companies like SolarCity and SunEdison have helped drive this progress, but it needs to be implemented on a much larger scale.

“Green banks” arose to stir up more investment in sustainable technology and microgrid implementation. These state-based financial institutions use public money to attract private investment in environmentally sustainable projects by stimulating demand. For example, a green bank could invest ten million dollars in the upfront costs of a project to install windmills in upstate New York, which stimulates demand and creates a snowball effect for private investors to fund more windmill development. Based on meetings between the EDF and green banks from across the country, Mr. Darrell estimated a total of 15 billion public dollars available for energy projects, which are predicted to catalyze 40 billion

7. Peter Kelly-Detwiler, *Texas Sets New Wind Power Record*, FORBES, (Mar. 30, 2014, 8:24 AM), <http://www.forbes.com/sites/peterdetwiler/2014/03/30/texas-sets-new-wind-power-record> [<http://perma.cc/MP4G-A4MU>].

8. Ernest Moniz, *A Clean Energy Revolution – Now*, U.S. DEPT OF ENERGY (Sep. 19, 2013, 3:52 PM) <http://energy.gov/articles/clean-energy-revolution-now> [<http://perma.cc/2TD9-TAAC>].

9. *Too Much Solar Power Could Overload National Grids, Warns Expert*, DAILY MAIL (London), (Oct. 27, 2010, 1:28 PM), <http://www.dailymail.co.uk/sciencetech/article-1324264/Too-solar-power-overload-national-grid-warns-German-energy-expert.html> [<http://perma.cc/5LRR-NCVT>].

dollars of private investment. Yet he recognizes the limitations inherent in green banks since each of these banks is localized in a certain area and has different plans for implementation. To solve this problem, Mr. Darrell suggests that legislators and policymakers coordinate the efforts of these green banks to bring about significant sustainable growth in the clean energy sector.

Most of the world's worst polluters are developed countries, yet developing countries are rapidly beginning to contribute to the problem. Mr. Khan recognizes that economic development is often accompanied by pollution; the United Nations is addressing the problem of how to promote economic development in these nations while also encouraging sustainable development. Over seven years of planning and hard work, Mr. Khan and others at the United Nations have developed a partial solution to this problem, known as the Green Climate Fund ("GCF"). The GCF was established to promote environmentally-friendly means of energy production by providing monetary support to developing countries to reduce their greenhouse gas emissions and help them adapt to the effects of climate change.¹⁰ As Mr. Khan points out, this is accomplished in much the same way that green banks fund energy initiatives in developed nations — through public sector financing that catalyzes investment from the private sector. The GCF's emphasis on developing countries permeates its administrative system as well; as Khan mentioned, it is one of the only organizations in the world in which developed and developing countries are on an equal footing. He estimates that the fund has already attracted about \$9.7 billion and will likely begin to disburse this money to global projects in the summer of 2015.

IV. CONCLUSION

Engineers and scientists have done their part to create sustainable technology that will reduce greenhouse gas emissions and mitigate the effects of climate change. The burden now falls upon legislators and policymakers to regulate

10. See generally GREEN CLIMATE FUND, <http://www.gcfund.org/about/the-fund.html> [<http://perma.cc/DP4T-FXAR>] (last visited Jan. 7, 2015).

emissions and direct funding towards sustainable energy projects. As Mr. Darrell concluded:

“The challenge before us is how do we use regulation and economic incentives, both of which are necessary and will work on different issues in different places, so that the trajectory of emissions begins to peak in time to do something about climate change. The challenge is there, we have the tools, and it’s possible.”

Even though this panel’s ideas for regulation and funding are not entirely new or particularly novel, the fact that they are being discussed and in some cases implemented is a hopeful sign for a greener future.