DESIGNING CLIMATE SOLUTIONS: A POLICY GUIDE FOR LOW-CARBON ENERGY

By Hal Harvey, with Robbie Orvis, Jeffrey Rissman, Michael O'Boyle, Chris Busch and Sonia Aggarwal

Reviewed by Jonathan D. Schneider[*]

The United States has never implemented a national response to climate change. While climate change legislation enjoying bipartisan support seemed inevitable ten or more years ago, given the momentum behind the McCain-Lieberman Climate Stewardship Act of 2005 and later the American Clean Energy and Security Act ("Waxman-Markey," passed by the House of Representatives in 2009), those efforts proved to be the high water mark for climate change legislation. In the years since, the only substantial movement toward a national climate policy was the Obama Administration's promulgation of the Clean Power Plan in 2015, calling for states to submit plans aimed at increasing levels of carbon reductions beginning in 2022, with a planned 32% reduction in power sector emissions by 2030, compared with 2005 levels.[1] That effort was formally repealed by the Trump Administration in 2019.[2]

Throughout this period, scientific consensus embodied in the now six assessments issued by the Intergovernmental Panel on Climate Change (IPCC)[3] beginning in 1990, has solidified, even as it has become more politically controversial. State governments have filled the policy gap, with twenty-nine states, along with the District of Columbia, having promulgated Renewable Portfolio Standards (RPSs),[4] while California and the Northeastern States are administering carbon trading platforms.[5]

With decision-making over climate change policy having devolved to discussion at the state and local levels, the need for smart, data-driven analysis informing policy choices has grown. Hal Harvey and his team at Energy Innovation: Policy and Technology, LLC help to fill this void with *Designing Climate Solutions,* offering a framework for decisions on an array of policy choices, cali-

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1. Final Rulemaking, *Carbon Pollution Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, 80 Fed. Reg. 64,662 (2015).

2. Final Rulemaking, *Repeal of the Clean Power Plan; Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Generating Units; Revisions to Emission Guidelines Implementing Regulations*, 84 Fed. Reg. 32,520 (2019).

3. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, ABOUT THE IPCC, https://www.ipcc.ch/about/.

4. *See* DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY, RPS POLICIES (Nov. 2011), https://appvoices.org/images/uploads/2013/01/url.png.

5. *See* CAL. PUB. UTIL. COMM'N, GREENHOUSE GAS CAP-AND-TRADE PROGRAM, https://www.cpuc.ca.gov/General.aspx?id=5932; *see also* THE REG'L GREENHOUSE GAS INITIATIVE, https://www.rggi.org/.

brated to weigh their effectiveness and cost, with measures cutting across economic sectors, particularly power production, transportation, industrial processes, and construction. Their analysis is useful as well to nations struggling to implement coherent, cost-effective programs, and it may help inform policy choices to be made at the national level in the United States in the near term, assuming (as seems probable as of this writing) Joe Biden assumes the Presidency in January of 2021.

Harvey's cross-sector, multi-technological approach to carbon reduction builds on the work of others, and substantially on the ground-breaking work done by McKinsey & Company in 2007 and updated since, analyzing cross-sector carbon abatement activities including building standards, renewable power production, methane reduction, industrial management, carbon capture, and sequestration and reforestation.[6] Harvey makes it clear that "there is no silver bullet" in the form of a breakthrough policy or technology that will keep the world below the commonly shared goal of a two degree rise in average global temperature by the end of the 21st century.[7]

Harvey's substantial contribution to this ongoing discussion is a model for making policy choices that weigh the benefits and costs of a wide array of options, including: (1) renewable portfolio standards; (2) energy efficiency measures; (3) transportation sector performance standards; (4) building sector codes; (5) industrial sector standards; and (6) carbon pricing (carbon tax or a carbon cap, with trading). The analytical model introduced with *Designing Climate Solutions* is Energy Innovation's Energy Policy Simulator.[8] It is a free and open source resource, developed in coordination (Harvey represents) with MIT, Stanford, Argonne National Labs, National Renewable Energy Laboratory, and China's National Center for Climate Change Strategy and International Cooperation, among others. While this reviewer cannot lay claim to have run the model, the analytical framework that it appears to offer enables policy makers to weigh a wide and sometimes confusing array of solutions of unequal value. This ought to be of substantial worth to policymakers and should certainly advance the national discussion.

With what, as of this writing, would appear to be the impending change in Administrations, we will once again be in the position of considering measures addressing climate change at the national level, after a four-year hiatus. Presumptive President-Elect Biden has announced plans to rejoin the Paris Climate Agreement, and with that there will be the need to make a national commitment (the price of entry for the accord) that was once satisfied by the now-defunct Clean Power Plan. Should the Democrats regain the Senate, it is possible that

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6. *See* MCKINSEY & CO., A REVOLUTIONARY TOOL FOR CUTTING EMISSIONS, TEN YEARS ON (last visited Nov. 9, 2020), https://www.mckinsey.com/about-us/new-at-mckinsey-blog/a-revolutionary-tool-for-cutting-emissions-ten-years-on; *see also* Jonathan D. Schneider, *So the World is Getting Warmer: What Now? New Literature on Electric Sector Options and the Cost of Climate Control Legislation*, 30 ENERGY L.J. 553 (2009).

7. The two degree threshold was articulated as a mitigation target by the United Nations Framework Convention on Climate Change (UNFCCC) in 2010, and informs the Paris Climate Conference Agreement, held under UNFCCC auspices in 2015.

8. HAL HARVEY ET AL., DESIGNING CLIMATE SOLUTIONS, Appendix I (2018).

commitment may be made legislatively. This would be far preferable to an administrative solution. The fate of the Clean Power Plan underscores the durability of legislative solutions, compared with administrative solutions that can be readily reversed by ensuing administrations.

Whether the vehicle for addressing climate change is legislative or administrative, Harvey's work, emphasizing a cross-sector approach to climate solutions certainly seems to this author to be essential. As Harvey points out, the power sector is responsible for a substantial slice of the economy's carbon emissions (21%), but not nearly most,[9] and a holistic approach to solutions would be far more effective than a singular focus on the electric sector, as was the case with the Clean Power Plan.

There are two additional considerations when contemplating climate solutions that seem to this author also to be critical to success, both addressed to the politics that ensnared previous efforts. One relates to regional equity. Responding to earlier climate legislation and to the Clean Power Plan, carbon control enthusiasts in regions of the nation blessed with carbon free natural resources (generally wind or hydroelectric power) were often shouted down by renewable have-nots pointing to the disproportionate economic burden of carbon reductions. And the opponents did have a point. If indeed we are all in this together, sharing the economic cost of carbon reduction seems like not only the right thing to do, but politically essential. There may be a variety of ways to accomplish this objective, depending on the tools that are employed, though a carbon tax offers what would appear to be the most elegant means of sharing the burden. Tax revenue collected from carbon producing resources may be shared in a manner that offsets disproportional regional economic impacts.

Second, it will be critical for federal authorities to work with state and local governments in achieving common goals. If we have learned anything over the past ten years of political turmoil, it is that solutions designed in Washington D.C. are not always received with equal enthusiasm. In the case of climate measures, there are very good practical reasons for deferring to state and local initiatives where possible. Over the past ten years, state and local authorities have been the principle engines of what success we have had in addressing carbon reduction. It would be a mistake, both practically and politically, to push aside these highly successful efforts.

Kudos to Hal Harvey and his team at Energy Innovations for their significant contribution in addressing a challenge many have described as existential. This editor profoundly hopes that Harvey's can-do approach and optimism will prevail.

9. *Id.* at 66, fig.3-3.