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PLANNING TO A LARGER SCALE LESSONS FROM TRYING TO SAVE THE WORLD

John Randolph*

ABSTRACT

Most urban planning efforts are focused on city, district, and neighborhood scales, but many of our problems require a larger perspective and grander solutions. The Covid-19 pandemic and climate change head the list of global problems in need of action, but many others loom at different scales. In recent decades, the principles of planning have been applied to broader issues. This essay reflects on one of those problems—climate change and the associated energy transition, and the lessons that efforts aimed at its resolution may provide for planning at such scale.

INTRODUCTION

Several global, national, and regional problems illustrate the challenges that face planning at such a large scale, some successful, some not, others uncertain given long timeframes. These problems encompass many aspects of society today, such as:

- Public health: Covid-19 pandemic
- Environment: climate change, clean energy transition, ocean remediation and protection, cross-boundary air and water pollution
- Human rights: racial justice, immigration
- Economy: fiscal policy, globalization and trade

This essay addresses part of the environment aspect, climate change and associated energy transition, focusing on the lessons that efforts aimed at its resolution may provide for planning at very large scales. Some of the principal tenets of planning are key elements of addressing problems of this magnitude:

- **Trust in science, information, and rational planning** are critical, but populism and vested interests can threaten necessary action.
- **Effective planning to scale requires nested policies and programs:** global and regional framework plus national and state guidance and

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resources plus community, institutional, corporate, and individual implementation can produce effective, consistent, and efficient progress.

- **Collaboration and collective action** are necessary: one institution, city, or state cannot save the world, but the world cannot be saved without their collective action.

CLIMATE CHANGE AND THE ENERGY TRANSITION

Climate change is increasingly recognized as the major man-induced global threat facing society in the 21st century. As the *Guardian* summarized the 2014 IPCC 5th Assessment in 140 characters: “Climate change is real. We are to blame. It will get worse if we fail to act. The solutions are available and affordable. But time is short” (Hickman 2014).

The 2018 IPCC study *Global Warming of 1.5°C*¹ stated:

In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO₂ emissions must decline by 50% by 2030 and reach net-zero emissions around 2050.

Long-respected energy scholar Daniel Yergin (2020) refers to this IPCC statement, paraphrased as “Half-by-2030, All-by-2050,” as one of the most important sentences of the past few centuries, on par with “all men are created equal.” I do not know about that, but the challenge is clear since the world is still dependent on CO₂ emitting fossil fuels for more than 80% of its energy in 2021.

Efforts to arrest and manage climate change by accelerating the clean energy transition have engaged scientific analysis, planning, policy, and action at multiple geographic and jurisdictional scales by international agencies, national and state governments, and civil society including private corporations. Have these efforts succeeded? And how have these experiences demonstrated the key planning elements of scientific and rational planning, nested policies and programs, and collaborative and collective action?

TRUST IN SCIENCE AND RATIONAL PLANNING MUST COUNTER MISINFORMATION

The science of global warming dates back to the mid-19th century, but actual data of climate change and its future impacts came to light in 1988 when NASA’s James Hansen testified to Congress and the Intergovernmental Panel on Climate Change (IPCC) was formed. The IPCC includes hundreds of climate scientists throughout the world who create five-year cycle consensus assessment reports (AR)

¹ ...1.5°C above preindustrial levels, the limit scientists currently believe is the limit to avert catastrophic impacts (IPCC 2018).

of climate change science, impacts, and mitigation strategies, as well as a summary for policymakers. AR5 was released in 2014 and AR6 is expected in 2021.

The IPCC reports provide the scientific basis for evidence-based rational planning and decision-making at international, national, and regional scales. For example, at the U.S. national level, four recent science-based planning studies build from the IPCC challenge and develop pathways for the U.S. to achieve net-zero carbon emissions by 2050 with considerable employment, health, air quality, and economic co-benefits (Princeton University, *Net-Zero America*, 2020; National Academies, *Accelerating Decarbonization*, 2021; see also, Breakthrough Energy Sciences, *Clean Energy Future for the U.S.*, 2021; Lawrence Berkeley National Lab, *Halfway to Zero*, 2021).

Planning for climate change at smaller scales must also be fact-based and requires data inquiry on greenhouse gas (GHG) emissions, assessment of future impacts, and engineering and financial analysis of mitigation and adaptation strategies. These analyses are evident in the thousands of climate action assessments and plans developed at national, state, regional, local, and institutional scales.

However, climate change also illustrates the impact of misinformation related to political forces that often breed a distrust of science and rationalism. The response to the Covid-19 pandemic has suffered the same fate. Climate change has become a political issue, in which “climate skeptics” raise uncertainties and doubt, which create confusion to obstruct climate action and preserve the status quo and their self-interest. For example, Exxon’s and other oil companies’ long history of funding skeptic critiques of climate science to mislead the public about climate action is well documented (Cook, et al., 2019). A 2021 study identified 139 current members of Congress (out of 535 total members) as “climate deniers,” who happen to be recipients of \$61 million in campaign contributions from the fossil fuel industry (Drennen and Hardin, 2021).

Although misinformation is difficult to contain, public and shareholder political pressure on companies and elected officials has shown some success. In response to shareholders’ demands, in December 2020, Exxon Mobil recognized climate change and developed a five-year corporate strategy to reduce GHG emissions in line with the Paris Agreement (Rosenbaum, 2020).

NESTED POLICIES AND PROGRAMS ENHANCE CONSISTENCY AND EFFECTIVENESS

Global problems on the scale of climate change require a hierarchy of nested policies, plans, and action from the global level to the individual. What is needed is a coordinated effort to provide commitments, directions, policies, plans, resources, and strategies to tie together global agreements and sub-global action.

“Think globally, act locally” is a mantra that fits, but there are many required steps in between.

The United Nations Framework Convention on Climate Change (UNFCCC) aims to provide the global agreements and framework for national action through its annual Conference of Parties (COP) at which international agreements are forged. The 2015 COP Paris Agreement was the most far-reaching accord involving 197 nations, who each committed to reduced levels of GHG emissions and a fund to assist poorer countries to achieve their goals. The U.S. decision to withdraw from the Agreement in 2017 was a setback, but all other nations stayed in, and the U.S. rejoined in 2021. The Glasgow COP in 2021 aims to jump-start the global framework.

Although the Paris Agreement was a necessary first step to work toward global consensus, it is regarded as grossly inadequate to achieve the needed emission reductions to contain the increase in global temperature. The biggest obstacle to reaching an adequate global climate agreement (and really any international agreement) is nationalistic politics among negotiating countries. It is difficult for the nested policy approach to work if the “big nest” policy at the global level is inadequate.

The UNFCCC agreements still provide the framework for action at lower levels in this nested policy approach. For example, the European Union has continued to base its emission reductions on the needs identified by IPCC. In 2014, based on the AR4, the EU extended its emission reduction from 20% below 1990 levels by 2020 to 40% by 2030, and in 2020-21 extended it to 55% by 2030 and 75% by 2035. EU’s goals are developed by its member nations, who are required to implement them. At the national levels, governments formulate their implementing plans, which are passed down to their provinces and localities to take action.

The EU’s nested implementation is not replicated here. The U.S. has yet to develop a national policy framework or plan for climate change, except for piecemeal regulations developed by Obama, largely canceled by Trump, and then revived by Biden. Most of the action has been at the state level. And among the states, about 30 have climate action plans that vary considerably in detail, strategy, and implementation; but 20 states have none. Interest in climate action among the states largely follows political lines: Republican dominated states have little interest. The uneven nature of U.S. state climate and energy policies inhibits a consistent approach for climate action, especially without a national federal framework.

Democratic states like California have the most stringent climate change policies and plans, and they demonstrate the opportunities for effective nested climate action. California focuses on utility renewable energy and zero-emission vehicles, but it also has special requirements for locally developed plans to reduce emissions. About 35 states have Renewable Portfolio or Clean Energy Standards (RPS), which require electric utilities to provide a certain percentage of their power from renewable sources. California's RPS called for 33% renewable electricity by 2020 (utilities achieved 36%), 60% by 2030, and 100% zero-carbon electricity by 2045. Studies have shown that RPS policies have done more to drive the market for clean energy than any other policy (Barbose 2021).

The Commonwealth of Virginia has increased its attention to climate change with its 2020 Clean Economy Act that pushes utilities to 100% renewable electricity by 2045-50 and joins the Regional Greenhouse Gas Initiative (RGGI) cap and trade program. Although Virginia does not call on localities or state institutions to develop climate plans, several have done so in light of the state act. For example, Virginia Tech's 2020 Climate Action Commitment went beyond the statewide targets by setting goals for a carbon neutral campus and 100% renewable electricity by 2030 (VTCAC 2021).

COLLABORATION AND COLLECTIVE ACTION ENGAGE ALL IN CREATIVE SOLUTIONS

Related to nested policies and action is the need for collaboration among stakeholders and collective action by all sectors, from agencies to institutions to private companies to civil society to individuals. It is institutions, businesses, and people who consume energy and emit GHG, and it is they who must act to control climate change. While emerging technologies, economics, and public policy are critical to control climate change and transition to clean energy, "social solutions" of collective action are also essential. These involve value-driven choices about consumption, investment, and behavior (Randolph and Masters 2018).

After the Trump administration withdrew from the Paris Agreement, a social movement responded through a number of coalitions in the U.S. They include "We Are Still In" (10 states, 290 cities, 324 universities, 2183 businesses), "Climate Alliance" (24 states with half of U.S. population and 60% of its GDP), "Climate Mayors" (425 cities), and "America's Pledge" (17 states, 540 cities, 325 universities, 1914 businesses).

The movement appears to be strongest from an unlikely sector: private businesses. Three coalitions illustrate their response.

- **RE100** is an international movement started by IKEA that has 300 company members worldwide who have pledged to achieve 100% renewable electricity by a self-selected date (2028 is the average target date). In a

survey, members said that customer expectations (92%), shareholder requests (77%), and cost savings (70%) were among their motivations for making the pledge.

- The **Renewable Energy Buyers Alliance** (REBA) is a group that connects U.S. corporate buyers of renewable power with wind and solar projects. Most of the companies have pledged 100% renewables. REBA closed over 100 deals in 2020 totaling a record 10.6 GW. Amazon, Google, Verizon, McDonald's, and GM were among the top buyers.
- **The Climate Pledge** was founded by Amazon in 2019, and in only a year, 105 companies have pledged to achieve net-zero emissions by 2040, 10 years before the Paris Agreement target. Signatories agree to measure and report emissions, implement decarbonization strategies, and neutralize remaining emissions with carbon offsets. Amazon renamed its Seattle sports arena Climate Pledge Arena.

Universities are another sector taking collective climate action. Most U.S. colleges and universities have developed some type of climate plan. Hundreds have pledged to be carbon neutral, 105 of them by 2030 (SecondNature.org). At least 35 universities have plans to purchase 100% renewable electricity (go100renewablecampus.org). Virginia Tech's climate commitment goes further than most by engaging faculty, staff, and students in collective action at the department and individual level to reduce GHG emissions (VTCAC 2021).

IS CLIMATE ACTION A MODEL FOR LARGE SCALE PLANNING AND PROBLEM SOLVING?

This essay has suggested that to solve problems of the scale of climate change may require three elements:

- Scientific analysis and rational planning;
- Nested policies involving a hierarchy of jurisdictions; and
- Collaborative and "all hands on deck" collective action.

Have these elements been realized in climate action? The results are mixed.

- Scientific assessment and rational climate planning have been strong at many levels but misinformation prompted by political allegiance and vested interests has created some public doubt and inaction, especially in the U.S.
- Nested climate policies have been especially effective in the European Union, but the approach has been less effective in much of the United States. The U.S. lacks a national climate policy framework, and at the state level, the interest and commitment to climate action is largely determined by

political party affiliation of the state executive and legislature. And the “big nest” international framework policy of the Paris Agreement is regarded as grossly inadequate because it was limited by nationalistic politics.

- Collective climate action in the U.S. has been dominated by private businesses, which have pledged climate action and purchased renewable power, and by universities, which have developed climate action plans to provide a model for society. But there remain large segments of U.S. society that are not engaged in collective climate action.

Will the current efforts be sufficient to avert catastrophic climate impacts? Many think not. Although the energy transition is occurring, it may be too slow to avoid significant impacts. All three elements of rational planning, nested policies, and collective action have been constrained by politically driven misinformation, nationalism at the global level, and party politics at the U.S. federal, state, and local levels. Overcoming these barriers requires a major shift in the political necessity for climate action.

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