

Chapter 8

Climate Change Solutions: Where Do We Go From Here?

ABSTRACT

Carbon pricing initiatives, as well as carbon capture and geologic sequestration (CCS), are tools to offset and reduce the impact of CO₂ emissions. The best solution is to not create the CO₂ emissions in the first place by switching from fossil fuels to renewable clean energy sources. This can be incentivized through tax breaks, as Norway has done with EVs. DOI can be used to change the public mindset so that they will embrace EVs, as Germany is doing now. Sea level rise solutions include shoreline armoring and beach renourishment, elevation of roadways and sidewalks, managed retreat through purchase of vulnerable land for public use, and avoidance through limiting development in high-risk areas. This chapter gives case examples from U.S.'s 100 Resilient Cities, and UK's Bristol is Open, a programmable city where data on air quality, transportation, health, and needs of elderly residents are integrated into one high-speed centralized network.

INTRODUCTION

Short of building an ark, where do we go from here? The consensus among most experts is that it is too late to stop climate change. A twinned approach to climate change is recommended, one that involves both adaptation and mitigation. As the late Australian epidemiologist Anthony McMichael (2010)

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put it, “Adaptation is managing the unavoidable; mitigation is avoiding the unmanageable.”

Although the situation is dire and there is a high probability that we can only slow down global warming, not stop it, there are some glimmers of hope. Returning to the framework of DOI Theory, we must thank the tenacious persistence of the innovators and early adopters (DOI Theory—see Chapter 5), who “got it” about climate change back in the 1970s and have continued to pursue regulations to limit GHG emissions for the past forty years or so. The United States had a wakeup call during the 1973 oil embargo by OPEC, which caused gasoline shortages, long lines at the pump, and much higher gas prices. At the height of the energy crisis, everyone had to conserve gasoline, as supplies were limited. Once the crisis eased, most people resumed their usual consumption habits. However, the early adapters became more ecologically conscious, starting organic food coops, composting leftover food scraps, recycling, biking instead of driving, installing solar panels, and urging the public to reduce consumption of fossil fuels. Automobile manufacturers, however, catered to the late adopters, who were in the majority, by producing bigger SUVs, which guzzled more gas and emitted more CO₂.

Environmentalist and author Bill McKibben was one of the first to write about global warming for the general public; his 1989 book, *The End of Nature*, warned the world that their “reassuring sense of a timeless future” is a delusion, due to rapidly rising CO₂ levels in the atmosphere, a hole in the ozone, and acid rain. In 1992, Senator Al Gore’s book, *Earth in the Balance*, warned about the dangers of deforestation in the Amazon and of “needles, dead dolphins, and oil-soaked birds” on beaches, evidence of the environmental degradation of our waterways. As Vice President from 1993 to 2001, Gore helped to push forward protective environmental legislation, including President Clinton’s 1994 Executive Order 12898 on Environmental Justice (see Chapter 4 herein), and the 1996 Mercury-Containing and Rechargeable Battery Management Act (P.L. 104-19, Food Quality Protection Act (amended FIFRA), and *Safe Drinking Water Act Amendments*.

As a result of growing worldwide concern over global warming, the United Nations Framework Convention on Climate Change (UNFCCC) was established in 1994 with the aim of “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic [human-induced] interference with the climate system” (United Nations, 2014a). The first binding UNFCCC agreement to reduce

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