

Cambridge University Press

978-1-107-00228-9 - Climate Policy Foundations: Science and Economics with Lessons from Monetary Regulation

William C. Whitesell

Index

[More information](#)

## Index

- Acid Rain Program, 164–166, 199, 220  
acidification, 71, 106  
aerosols, 58, 61–63, 82, 104, 123, 125,  
141, 164  
agriculture, 40, 42, 78, 85, 105, 113, 139–140  
albedo, 15, 33, 59, 61, 94, 99–100, 102, 123,  
125, 142  
allowance banking, 159, 198–199  
allowance borrowing, 162, 171, 199  
allowance reserve, 171, 190–192, 201, 212  
allowances. *See* emission allowances  
Antarctica, 21, 32, 100, 216  
Arctic Ocean, 99  
Atlantic Ocean, 38  
auctions, 7, 152, 194  
    Acid Rain Program, 165  
    Emissions Trading System (EU), 175–176  
    monetary policy, 6, 183, 193  
    Regional Greenhouse Gas Initiative, 167  
    Waxman-Markey bill, 169, 171
- Bingaman-Specter bill, 190, 201  
biological carbon pump, 87  
biomass, 58, 66, 69, 73–74, 79, 175  
Broecker, 41
- CAFE. *See* fuel economy  
cap-and-trade, 5–8, 150–154, 157–163, 165,  
168, 175, 180–181  
carbon capture and storage, 70–71, 138, 150  
carbon cycle, 17, 41, 56, 85, 92  
carbon dioxide, 11, 14, 56–57  
    concentration, 21, 32, 40, 49  
    emissions, 41, 50, 86  
    equivalent, 62–63  
    natural removal, 86
- carbon market, 183, 191, 193–194, 196–197,  
202, 204, 211  
carbon tax, 146–147, 184, 187, 189, 210  
cash-for-clunkers, 149  
central banks, 1–2, 4, 6, 188, 192, 198–199,  
202–203. *See also* monetary policy  
chemical weathering, 14–17, 20, 52, 85, 142  
Chicxulub, 35  
Clean Air Act, 138, 164–165, 168, 172, 198  
Clean Air Interstate Rule, 166, 199  
Clean Development Mechanism, 174  
climate sensitivity, 93, 122, 124, 219  
coal, 18, 48–49, 55, 65–66, 69  
command-and-control, 135, 150, 155, 164,  
166, 198  
commodity markets, 6, 193, 197  
compliance period, 158, 167, 176, 194, 199  
Copenhagen Accord, 8, 208–209  
corals, 106–107, 123  
cosmic rays, 28  
cost-benefit analysis, 113, 118, 121  
cost-containment, 181, 202, 212
- Deccan Traps, 36  
deep water, 23, 39, 91  
deforestation, 41, 49, 74, 85, 90, 169, 208–209  
diffusion, 51, 86, 128, 216  
discount rate, 117, 160, 225  
Doggett-Cooper bill, 192, 201  
downwelling, 38  
drought, 47, 104, 109
- economic recession, 34, 82, 84, 145, 178  
El Niño, 47, 79, 87, 90, 104, 217  
emission allowances, 6, 150, 152–154, 184  
emission intensity, 132, 138, 169, 209, 219

Cambridge University Press

978-1-107-00228-9 - Climate Policy Foundations: Science and Economics with Lessons from Monetary Regulation

William C. Whitesell

Index

[More information](#)

242

Index

Emissions Trading System (of the European Union), 175–177  
 energy intensity, 83, 132, 175, 209  
 enforcement, 138, 157, 195, 210  
 Environmental Protection Agency, 172  
 externality, 143, 146

Federal Reserve, 6, 178, 180, 188, 193, 198, 200, 204, 221  
 feedback mechanism, 31, 43, 53, 90, 95  
   albedo, 15, 17, 32  
   ocean temperature, 22, 31, 41, 50, 87  
   vegetation, 88–89  
   water vapor, 31, 59, 93  
 flooding, 103–104, 113  
 forestry, 78, 108, 140, 215  
 fossil fuel, 20, 53, 56, 64, 66, 83. *See also* coal, oil, or natural gas  
 free rider, 133  
 fuel economy, 136

geo-engineering, 8, 141  
 geothermal power, 77–78  
 Global Warming Potential, 62  
 Goddard Institute, 43  
 Greenhouse climate, 16, 18, 23  
 greenhouse gas, 55–60  
   concentration, 119, 125–127, 215–216  
   emissions, 82, 127–132, 213, 215  
 greenhouse momentum, 95  
 Greenland, 19  
 Gulf Stream. *See* ocean conveyor belt

heat island, 45  
 Himalayas, 20, 52, 214  
 hockey stick (historical temperature chart), 44  
 hydroelectric power, 66, 75–76, 104  
 hydrofluorocarbons (HFCs), 58, 80–81, 90  
 hydroxyl, 57, 90

Ice Age, 25, 27, 30, 33–34, 39, 41  
 ice core, 27, 32  
 Ice House, 16–18, 20, 24  
 ice sheets, 20–21, 24, 26, 32, 52, 99–102  
 ice shelves, 37, 100  
 industrial revolution, 48, 53, 109  
 interest rates, 3, 6, 121, 182, 186, 192–193, 200  
 interglacial period, 25, 30, 33, 37, 39, 52  
 Intergovernmental Panel on Climate Change (IPCC), 46, 49, 51, 57  
 isotopes  
   beryllium, 28

boron, 21  
 carbon, 19, 28  
 hydrogen, 27  
 oxygen, 22, 27

Kerry-Boxer bill, 170, 190  
 Kyoto Protocol, 7, 58, 66, 129, 131, 173–175, 206

La Niña, 47, 101  
 landfills, 57, 74, 81, 139, 209  
 leakage of emissions, 158, 167, 169, 176, 208  
 Lieberman-Warner bill, 170  
 Little Ice Age, 41, 48  
 livestock emissions, 57–58, 79

magnetic field, 12, 14  
 managed price, 6, 192–196, 199, 201–221  
 marginal benefit or cost, 118  
 market failure, 135, 143  
 market manipulation, 193, 196, 222  
 market-based policy, 5, 142, 150, 155, 170, 188, 220  
 Mauna Loa Observatory, 48  
 Medieval Warm Period, 42  
 methane, 11, 14, 57, 61–62, 72, 89  
   coal bed, 73  
   from livestock, 79, 140  
   hydrates, 19, 57, 71, 73  
   permafrost, 90–91  
   waste processing, 81  
   wetlands, 31, 40, 66  
 Milankovitch, 29  
 monetary policy, 1, 3, 121, 133, 178–182, 186–188, 193–194, 198, 202, 204  
 monsoons, 20, 36, 40, 104, 216

Nationally Appropriate Mitigation Actions (NAMAs), 207  
 natural gas, 57, 65–66, 69, 71, 80, 83–84, 146, 168, 173, 215  
 Net Primary Production, 89  
 nitrous oxide, 55, 57, 61–62, 79  
 Nordhaus, 114, 117–118, 131  
 northern summer radiation, 31, 33, 36–38, 40, 43, 96  
 nuclear power, 74–75

ocean conveyor belt, 39, 43, 53, 91, 214, 216  
 oil, 49, 67–68  
 opportunity cost, 153, 170, 177, 220, 225

Cambridge University Press

978-1-107-00228-9 - Climate Policy Foundations: Science and Economics with Lessons from Monetary Regulation

William C. Whitesell

Index

[More information](#)*Index*

243

- orbital factors, 29–32, 36, 38–39, 41, 43, 223
- oscillations, atmospheric and oceanic, 47
- ozone, 11, 47, 55, 58, 61, 141, 164
- perfluorocarbons (PFCs), 58, 90
- permafrost, 24, 33, 57, 73, 90
- petroleum. *See* oil
- photosynthesis, 12, 15, 36, 49, 56, 88–89, 105
- photovoltaic electricity, 77
- Pigou, 143
- policy instruments, 3, 121, 134, 156, 178–179, 182, 184
- policy mandates, 135, 143, 155, 172, 219
- political economy, 154, 156, 181, 187
- precautionary principle, 121–123, 126
- radiative efficiency, 61
- radiative forcing, 60–62
- RECLAIM program, 166
- Regional Greenhouse Gas Initiative (RGGI), 167, 200–201
- Renewable Portfolio Standard, 138
- renewable power sources, 64, 66, 76–77
- Ruddiman, 40–42
- runaway greenhouse, 92, 216
- safety-valve (allowance price ceiling), 181, 190
- satellite data, 59, 79, 97–98
- sea ice, 15, 34, 99, 101, 107, 213
- sea level, 37, 53, 90, 96–102, 114, 216
- shale oil, 68–69, 145, 215
- Snowball Earth, 14
- social cost of carbon, 120, 127, 143, 184, 217
- solar power, 77
- solar radiation, 27–29, 41, 46, 52, 60, 77, 99
- Southern Ocean, 21, 34
- Stern, N., 62, 82, 117–118, 131, 227
- storms, 103–104, 107
- stratosphere, 12, 46–47, 58, 141
- subduction zone, 97
- subsidies on energy production and use, 144
- sulfur dioxide, 55, 139, 141, 164, 199
- sulfur hexafluoride, 58, 80
- supercontinent, 13, 16, 18, 213
- tectonic plate, 97
- temperature (global average), 43–44, 47, 49, 53, 60–61, 95, 106–107, 122
- tipping points, 4, 90–91, 108, 122
- Toba eruption, 37
- Tol, R., 115
- transmission grid, 76, 78
- transportation emissions, 64, 71, 136
- troposphere, 46
- U.S. Climate Change Science Program, 83, 88, 94, 127
- uncertainty and policymaking, 3–4, 120–121, 184, 221
- United Nations Framework Convention on Climate Change (UNFCCC), 126, 172, 206
- upstream approach (to carbon pricing), 157
- upwelling, 26, 87, 105
- volcanism, 19, 21, 53
- waste management, 108, 185
- water vapor, 11, 14, 32–33, 53, 59–60
- Waxman-Markey bill, 130, 168–171, 190, 209
- Weitzman, 4, 184
- Western Climate Initiative, 168, 200
- willingness-to-pay, 115–116, 218
- Younger Dryas, 39, 43