

# RICHARD DUKE

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## EDUCATION

**Princeton University** - Woodrow Wilson School of Public and International Affairs

- Ph.D. in Science, Technology, and Environmental Policy Program
- Ph.D. dissertation: *Clean Energy Technology Buydowns: Economic theory, analytic tools, and the photovoltaics case*
- Masters in Public and International Affairs with Economics concentration

**Brown University**

- B.A. with honors in Environmental Studies and Economics
- Thesis: *Microeconomic Analysis of Utility Rate Structure and Energy Efficiency Programs*

## PROFESSIONAL EXPERIENCE

**Gigaton Strategies, LLC** (Washington, D.C.)

2017-present

*President*

- Advising multiple philanthropies and non-profits on low-carbon strategies
- Authored strategy for leading philanthropies to promote carbon dioxide removal

**The White House** (Washington, D.C.)

2016-2017

*Special Assistant to the President, Office of Energy and Climate Change*

- Led successful multi-year push to cut HFC climate super-pollutants through the Montreal Protocol
  - Secured October 2017 Kigali Amendment, eliminating over 80 Gt of CO<sub>2</sub> equivalent and up to 0.5 C of warming
  - Coalesced \$80M in early action funding and 100 member “Coalition to Secure an Ambitious HFC Amendment”
  - Drove interagency process with State, EPA, DOE to develop and execute negotiating strategy
  - Commissioned agency work addressing technical challenges and economic opportunities for HFC alternatives
  - Organized White House summits yielding industry commitments to cut HFCs and support amendment
- Directed development of U.S. Mid-Century Strategy for Low-Carbon Development submitted to UNFCCC
  - Led analysis of cost-minimizing pathways to 80+ percent greenhouse gas emissions reductions by 2050
  - Quantified option to sustain land carbon sink while managing demand for biomass, food, and development
- Led successful push to cut aviation emissions through the International Civil Aviation Organization (ICAO)
  - Drove negotiations to develop first-ever carbon pollution standards for aircraft
  - Helped secure market-based measure offsetting international aviation emissions growth from 2020

**The White House** (Washington, D.C.)

2012-2016

*Deputy Director for Energy and Climate, Domestic Policy Council and Council on Environmental Quality*

- Defined major elements of the Obama administration’s climate strategy
  - Briefed President Obama with proposed second-term climate strategy in early 2013
  - Co-authored 2013 Climate Action Plan, including framework spanning preparedness, domestic, and international
- Led implementation of key domestic climate actions
  - Catalyzed successful push for multi-year extension of renewable energy tax credits
  - Drove signature aspects of EPA Clean Power Plan
  - Set strategy and drove implementation for 3 Gt CO<sub>2</sub> DOE appliance standards push, methane reduction, measurement and mitigation of lands sector carbon sinks and 2013 update to the interagency Social Cost of Carbon
- Directed analysis and engagement on international climate diplomacy priorities
  - Drove year-long interagency process to define U.S. target to cut greenhouse gas emissions 26-28 percent by 2025
  - Supported US-China negotiations leading to historic 2014 Joint Announcement of climate targets
  - Managed analysis and bilateral dialog that improved Paris climate commitments of several major economies, including Mexico’s commitment to peak their emissions by 2026
  - Drafted first and second U.S. Biennial Reports to the UNFCCC explaining progress against 2020 and 2025 targets
  - Defended progress against 2020 U.S. emissions target in Multilateral Assessment plenary session at Lima COP

**U.S. Department of Energy** (Washington, D.C.)

2009-2012

*Deputy Assistant Secretary for Climate Policy, Office of Policy and International Affairs*

- Created domestic and international climate policy offices in DOE and built teams with over 20 high-caliber staff
- Set strategy and managed diplomacy and execution for priority international clean energy initiatives
  - Launched, and managed secretariat for, the Clean Energy Ministerial (CEM), an international forum to drive progress on clean energy among 23 major economies
  - Secured over \$40M in 5-year funding from State Department for CEM initiatives that collectively aim to achieve efficiency savings equivalent to the output from over 500 power plants
  - Managed development of Global Gaps in Clean Energy Research, Development and Demonstration published by the IEA in December 2009 in support of the Major Economies Forum (MEF) Global Partnership on climate, as launched by President Obama and other Leaders in L'Aquila in 2009
  - Drove development of ten Technology Action Plans for the MEF
  - Served as US Representative to the UNFCCC Technology Executive Committee (TEC)
  - Co-chaired the International Energy Agency's Committee on Energy Research and Technology (CERT)
- Led analysis of priority domestic clean energy policy options for front office and Administration
  - Led DOE analysis of Obama Administration's Clean Energy Standard legislative proposal
  - Led development of public report correctly assessing that EPA Mercury and Air Toxics Standard and Cross-state Air Pollution rules could be implemented without causing power shortages
  - Contributed to Council on Economic Advisors effort to define first ever social cost of carbon for agency rulemaking, including unique contributions on risk aversion and damage functions
  - Supported front office on critical short topics such as assessing Clean Energy Deployment Administration proposals and criteria for loan guarantee disbursement

**Natural Resources Defense Council** (New York)

2007-2009

*Director of the NRDC Center Market Innovation (CMI)*

- Launched and funded NRDC's Center for Market Innovation (CMI) with Advisory Council of leading investors
- Led "Cap 2.0" project to define innovative climate legislation drawing from over 20 cross-program staff
- Managed Environmental Entrepreneurs (E2), a group of private-sector clean energy advocates

**McKinsey & Company** (New Jersey)

2002-2007

*Engagement Manager*

- Managed team to develop first McKinsey greenhouse gas abatement opportunities "cost curve"; analytic approach subsequently used in [dozens of client engagements globally](#)
- Managed risk and growth strategy for leading developer of CO2 credits
- Managed emergency deployments study for seven relief and development agencies
- Led field team for re-organization of Sri Lanka's post-tsunami reconstruction agency
- Multiple industrial and power sector engagements including review for \$750B utility capital budget

**ADDITIONAL EXPERIENCE**

- Distinguished Visiting Lecturer on climate policy at UC Santa Barbara Bren School (April 2009)
- Board of Directors for The Aquaya Institute (2004-2009)
- Federal Reserve Bank of New York (1992-1994)
- International Finance Corporation (summer 1996)
- Soluz, Incorporated and Enersol Associates in Honduras (1994/1995)

## AWARDS AND QUALIFICATIONS

- TS/SCI security clearance (2011 to 2017)
- Winner of global McKinsey knowledge competition with new climate strategy framework (2004)
- USEPA Science to Achieve Results (STAR) Fellowship (1998-2001)
- Directed solar energy documentary selected for Tokyo Foundation Award (1999)
- Organized and funded conference on Distributed Electricity Services in Africa (1999)
- General Motors Environmental Excellence Award (1998 and 1999)
- Link Foundation Energy Fellowship (1998-1999)

## SELECT PUBLICATIONS

Mignone B., Duke R.D., *et al* (2013). “Cost-effectiveness and Economic Incidence of a Clean Energy Standard” *Economics of Energy and Environmental Policy*, 1(3), 59-86

Bales, C.F and Duke, R.D. (2008). “Containing Climate Change” *Foreign Affairs*; **87** (5).

Duke, R.D and Lashof, D. (2008). “The New Energy Economy: Putting America on the Path to Solving Global Warming” NRDC Issue Paper; [www.nrdc.org/globalWarming/energy/eeconomy.pdf](http://www.nrdc.org/globalWarming/energy/eeconomy.pdf).

Duke, R.D., Payne, A., and Williams R.H. (2005). “Accelerating Residential PV Expansion: Demand analysis for competitive electricity markets” *Energy Policy*; **33** (15), 1912-1929.

Duke, R.D., Jacobson, A., and Kammen D.M. (2002). “Mechanisms to Ensure Product Quality in the Markets for Photovoltaics,” *Energy Policy*; **30** (6), 477-499.

Payne, A., Duke, R.D., and Williams R.H. (2001). “Accelerating Residential PV Expansion: Supply analysis for competitive electricity markets,” *Energy Policy*; **29** (10), 787-800.

Duke, R.D., Jacobson, A., *et al* (2000) “Field Performance Evaluation of Amorphous Silicon Photovoltaic Systems in Kenya: Methods and Measurements in Support of a Sustainable Commercial Solar Energy Industry” World Bank.

Duke, R.D. and Ryder, S. (2000). “Green Lights Case Study” Intergovernmental Panel on Climate Change (IPCC) Special Report on Technology Transfer.

Duke, R.D., and Kammen, D.M. (1999a) “The Economics of Energy Market Transformation Initiatives,” *The Energy Journal*; **20** (4), 15-64.

## UNITED STATES GOVERNMENT REPORTS

White House (2016). [“United States Mid-Century Strategy for Deep Decarbonization”](#)

White House (2016). [“Catalyzing Markets for Off-grid Energy Access”](#)

White House (2016). [“Second Biennial Report of the United States of America”](#)

White House (2014). [“First Biennial Report of the United States of America”](#)

DOE (2013). [“U.S. Energy Sector Vulnerabilities to Climate Change and Extreme Weather”](#)

DOE (2011). [“Resource Adequacy Implications of Forthcoming EPA Air Quality Regulations”](#)