

# PROFESSOR MELISSA LOTT, PHD

## OVERVIEW

- Energy systems engineer, advisor, researcher, and teacher with nearly 20 years of experience working across the United States, Europe, and Asia in research, academia, government, and industry.
- Prolific writer and communicator on the energy transition and climate solutions. Winner of the AGU Pavel S. Molchanov Climate Communications Prize (2023). Host of The Big Switch Podcast (a top 40 Apple Podcast, #4 in Apple's Education category).
- Specialist communicator and educator on topics related to the energy transition and climate solutions. Deep experience engaging with diverse audiences including senior government officials and leaders, mid and early career energy sector participants, college and high school students, and the public.
- Advisor to the World Economic Forum, United Nations, and National Renewable Energy Laboratory.

## PROFESSIONAL EXPERIENCE (Selected)

### Academia

#### **Columbia University 2024 - Present**

##### **Climate School**

##### **Full Professor of Professional Practice**

Advise government leaders, resulting in science- and evidence-based policy decisions. Advise business leaders, the United Nations, and the World Economic Forum on ways to accelerate climate solutions. Engage extensively in public speaking and with the media. Conduct research and analysis of pathways to achieve net-zero energy systems and reduce greenhouse gas emissions to solve climate change. Contribute to knowledge creation and public understanding of the energy transition. Teach courses in climate change mitigation, environmental policy, and equitable transitions to Columbia students (undergrad and grad), high school students, executive education students, and informal learning activities (e.g., congressional briefings, roundtables). Teach and advise government officials, industry participants, and other key energy sector stakeholders. Testify before the U.S. Congress. Host *The Big Switch* podcast.

#### **Columbia University 2019 – 2024**

##### **School of International and Public Affairs (SIPA)**

##### **Sr. Research Scholar and Sr Director of Research**

Led strategic development of the research vision, program, and team at the SIPA Center on Global Energy Policy. Conducted research on net-zero transition pathways. Communicated research findings to help decision-makers understand the tradeoffs of pathways to accelerate the transition to low-carbon energy systems, including the risks and opportunities of climate mitigation. Engaged with the press and starred in "Chasing Carbon Zero" on PBS NOVA. Directed the Carbontech Development Initiative and Energy Opportunity Lab. Oversaw ~\$14 million/year research budget. Advised government officials, industry leaders, and other key energy sector stakeholders. Testified in the U.S. Congress.

#### **University College London | 2013 – 2017**

##### **Doctoral Researcher**

Quantified, contextualized the co-impacts of energy technology transition pathways on climate change, air quality, and public health both nationally and in cities. Developed scenarios that achieved UK Climate Change Act and Paris Agreement targets while reducing air pollution. Worked directly with the UK government to advise on practical pathways to achieve net-zero targets.

#### **The University of Texas at Austin | 2007 - 2011**

##### **Engineering Research Associate | Assistant Instructor**

### Government and International Organizations

#### **Asia Pacific Energy Research Centre | 2017- 2019**

##### **Assistant Vice President**

Led the development of the flagship *APEC Energy Demand and Supply Outlook 7<sup>th</sup> Edition*, which explored the implications of energy sector development pathways for the Asia-Pacific region with focus areas on low-carbon development, integration of renewables, emerging energy sector trends, markets, and regional as well as global trade issues. Trained and managed a diverse team of 18 interdisciplinary researchers and a global stakeholder group. Taught energy transitions course at Waseda University.

#### **International Energy Agency | 2012 – 2014**

##### **Energy Analyst & Consultant**

Served as the lead author of the IEA *Technology Roadmap: Energy Storage*, which explored pathways for developing energy storage to support. Built coalitions including academics, government officials, and industry members to identify key opportunities to accelerate the development of storage technologies and renewables. Analyzed aspects of the grid integration of variable renewables.

#### **U.S. Department of Energy | 2011 – 2013**

##### **Program Analyst; Presidential Management Fellow**

Led energy systems modeling work for the Program Analysis and Evaluation unit in the Office of the Chief Financial Officer. Completed market and risk analysis within the DOE's budget portfolio. Provided recommendations to leadership on budget priorities.

### Industry and Non-Governmental Organizations

#### **YarCom, Inc. | 2003 - Present**

##### **Principal Engineer**

Produce detailed analyses of national and local energy system development pathways to meet economic and environmental goals.

#### **Energy Transition Forum | 2015 – 2017**

##### **Program Director**

#### **Scientific American | 2011 - 2017**

##### **Energy Writer**

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## EDUCATION

- **Doctor of Philosophy (Ph.D.) – Sustainable Energy Resources & Engineering** | 2017 | University College London
- **Master of Science – Engineering** | 2010 | The University of Texas at Austin
- **Master of Public Affairs** | 2010 | The University of Texas at Austin
- **Bachelor of Science – Engineering** | 2005 | University of California, Davis

## ADVISORY POSITIONS (Selected)

- World Economic Forum | Global Future Council on the Economics of Equitable Transition | 2023 - Present
- United Nations | Council of Engineers for the Energy Transition | 2022 - Present
- U.S. Department of Energy | National Transmission Planning Study Technical Review Committee | 2022 - 2024
- GE European Digital Foundry | Scientific and Strategic Advisory Board | 2016-2018
- Alstom | International Science and Technology Committee | 2013-2015

## AWARDS (Selected)

- 2023 AGU Pavel S. Molchanov Climate Communications Prize Recipient
- 2019, 2018 “Solar100” Thought Leader
- 2015 IEEE Power & Energy Society “Women in Power” (featured)
- 2013 Forbes “30-under-30” in Energy

## PUBLICATIONS

Experienced author, having published hundreds of articles as well as numerous reports and journal papers. A full list of publications is available upon request. A list of all electronic publications with Scientific American can be found online (<https://www.scientificamerican.com/author/melissa-c-lott/>). A short list of selected publications is included below:

- [Author] *Tallying Updated NDCs to Gauge Emissions Reductions in 2030 and Progress toward Net Zero*. <https://www.energypolicy.columbia.edu/research/report/tallying-updated-ndcs-gauge-emissions-reductions-2030-and-progress-toward-net-zero>. March 2022
- [Lead Author] Lott, MC and B. Philipps. *Advancing Corporate Procurement of Zero-Carbon Electricity in the United States: Moving from RE100 to ZC100*. <https://www.energypolicy.columbia.edu/research/report/advancing-corporate-procurement-zero-carbon-electricity-united-states-moving-re100-zc100>. December 2021.
- [Author] I. Hamilton, H. Kennard, [...], M. Lott, [...], R. Sharma, M. Springmann, J. Woodcock, and N. Watts. *The public health implications of the Paris Agreement: a modelling study*. *The Lancet Planetary Health*. DOI: [https://doi.org/10.1016/S2542-5196\(20\)30249-7](https://doi.org/10.1016/S2542-5196(20)30249-7) February 2021.

## SPEAKING ENGAGEMENTS AND INTERVIEWS

Deeply experienced public speaker, with expertise in communicating with specialist and non-specialist audiences on topics spanning the energy sector and climate solutions. Host of *The Big Switch* podcast (a top 40 Apple Podcast, #4 in Apple’s Education category) and frequent guest co-host of major energy podcasts (e.g., *The Energy Gang*, *This American Life*, *The Carbon Copy*, *The Interchange*). A very limited set of recent interviews and speaking engagements is included below:

- [Testimony/Witness] Senate Committee on Energy & Natural Resources. Full Committee Hearing to Examine the Reliability and Resiliency of Electric Services in the U.S. in Light of Recent Reliability Assessments and Alerts. June 1, 2023. <https://www.energy.senate.gov/hearings/2023/6/full-committee-hearing-to-examine-the-reliability-and-resiliency-of-electric-services-in-the-u-s-in-light-of-recent-reliability-assessments-and-alerts>
- [Interview] **PBS NOVA**. Chasing Carbon Zero. <https://www.pbs.org/video/chasing-carbon-zero-sneak-peek-1jejwk/> April 26, 2023.
- [Interview] **This American Life**. It’s a Game Show! You Bet Your Planet’s Life! December 2, 2022. <https://www.thisamericanlife.org/786/its-a-game-show/act-two-18>
- [Speaker] **National Governors Association** Getting to 100% Clean Electricity. October 27, 2021.
- [Interview] **The New York Times**. Coal Is Set to Roar Back, and So Are Its Climate Risks. November 1, 2020. <https://www.nytimes.com/2021/04/20/climate/coal-climate-change.html>