



Dr. Colin McCormick
Researcher, World Resources Institute

Integrating variable renewables into the grid: Technical and policy challenges

Abstract

The cost of renewable energy technology continues to fall, as a result of technology innovation, financial innovation, and scale. Grid parity has been reached or will occur soon in many locations. As renewables grow more cost-competitive and increasingly contribute power to electric grids, the challenges of integrating variable generation like wind and solar are becoming more prominent. I will talk about two aspects of this. The first is the emergence of islands as testbeds for practical lessons in renewable integration; while islands face larger technical challenges from variable renewables because they are (usually) isolated, the high cost of importing fuel has driven many to embrace renewables. The second is the emergence of accurate software models for forecasting renewable generation. Poor forecasts have contributed to significant curtailment of wind power, as well as policy disagreements over who bears the risk of inaccurate forecasts. New progress on modeling software suggests that the technical aspects of this issue are close to being solved, but many policy questions remain.

Bio

Colin McCormick is a physicist, technologist and energy policy expert based in Washington, DC. He currently works with the World Resources Institute (WRI) on energy technology analysis, and SpaceNinja, a startup company focusing on computer vision and satellite imagery. Previously, he worked with the Global Green Growth Institute (GGGI) on energy technology innovation in the developing world, the US Department of Energy on energy R&D policy, and the House Science and Technology Committee on technology and innovation policy. Colin got his PhD in atomic and optical physics from the University of California, Berkeley, and did post-doctoral work in quantum optics at the National Institute of Standards and Technology (NIST) in the group of 1997 Physics Nobel Laureate William Phillips.