

Problem Analysis for Green Industrial Policy

Isabel Estevez¹ and Justus Schollmeyer²

¹ University of Cambridge, United Kingdom

² University of Bremen, Germany

isabel.estevez@gmail.com

Abstract. This paper addresses the importance of holistic problem analysis in the design of green industrial policies. Specifically, we show that the problem analysis that underpins emerging green industrial policies reduces existential environmental challenges to one objective -greenhouse gas mitigation neglecting other crucial environmental challenges and the tradeoffs between them. This narrow approach can lead to inadvertent support for industrial “solutions” that exacerbate risks like biodiversity loss, toxic pollution, and resource depletion to a degree that undermines the central objective of preserving a livable planet. Our analysis highlights these common shortcomings and provides a fuller characterization of the problems that green industrial policy needs to contend with to fulfill its objectives. Building on this assessment, we discuss how green investment and government procurement policies, in industrialized and developing nations alike, can adopt more holistic problem analysis as a starting point for analyzing tradeoffs between environmental objectives in policy implementation. We specifically propose a methodology that with the assistance of artificial intelligence could be immediately used to improve the selection of projects funded by the US Department of Energy through the Inflation Reduction Act, as well as other green public investment policies, to optimize improvements along various dimensions of pressing environmental challenges. Our analysis and proposals offer guidance to policymakers seeking to improve the environmental outcomes of green industrial policy and to avoid unintended adverse environmental impacts. This paper introduces the challenge of systematic problem analysis and trade off analysis to the field of green industrial policy design.

Keywords: Sustainability, Green Industrial Policy, Green Public Investment, Economic Transformation, Problem Analysis, Tradeoffs, Artificial Intelligence.