Keynote Speech

Unlocking Innovation for Net Zero: Constraints, Enablers, and Firm-Level Transition Strategies

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Abstract

Transition pathways for net zero encompass seemingly insurmountable innovation challenges for the scaling of less mature techno-logical solutions such as hydrogen, materials substitution, and electrification as well as societal challenges to increase the market acceptability of these solutions. In this article, we present a conceptual framework which provides a firm-level perspective on net-zero innovation which has four unique characteristics, i.e., it is complex, systemic, urgent, and directional. The framework shows that the input, process, and output constraints that incumbent firms face in the net-zero transition can be tackled through four firm-level innovation levers – i.e., recombinative, collaborative, integrative, and socio-cognitive capabilities – which, in concert, act as enablers for firms to address these net-zero constraints. We conclude the article by outlining the framework's main insights for firms' innovation strategies for net zero and the policy implications. We also propose avenues for future research on net-zero innovation.

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