

Technology Innovations toward a Sustainable, Subsidy-Free, Global Photovoltaics Industry

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Worldwide solar photovoltaic (PV) installations continue to grow, despite intense margin compression of module and component manufacturers and rising trade tensions. Now more than ever, R&D efforts must focus on cost reduction, to enable subsidy-free adoption of PV technology.

I will introduce an industry-validated bottom-up cost model to compare the cost-reduction potentials of various innovative PV technologies. I will then describe recent progress toward industrially relevant innovations that could be introduced into product cycles within the 2014–2018 timeframe. Attention will be dedicated to new computational and experimental tools that have accelerated the cycle of discovery and product development. In closing, I will identify opportunities for how U.S. and Chinese interests can collaborate, toward a sustainable and harmonious global PV industry.