



The future of green India: the role of innovation and industrial policy

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Innovation in low-carbon technologies has enabled a shift in approach to climate change action...

...internationally

- A shift in climate change governance to the **national-level** (nationally-determined climate targets and measures)
- A shift towards aligning climate with **economic development** (Low-carbon energy policies seen as economic opportunity)



...and in India

National Solar Mission

"...a leadership role in low-cost, high quality solar manufacturing..." [11th Jan 2010]

Unnat Jyoti by Affordable LEDs for All

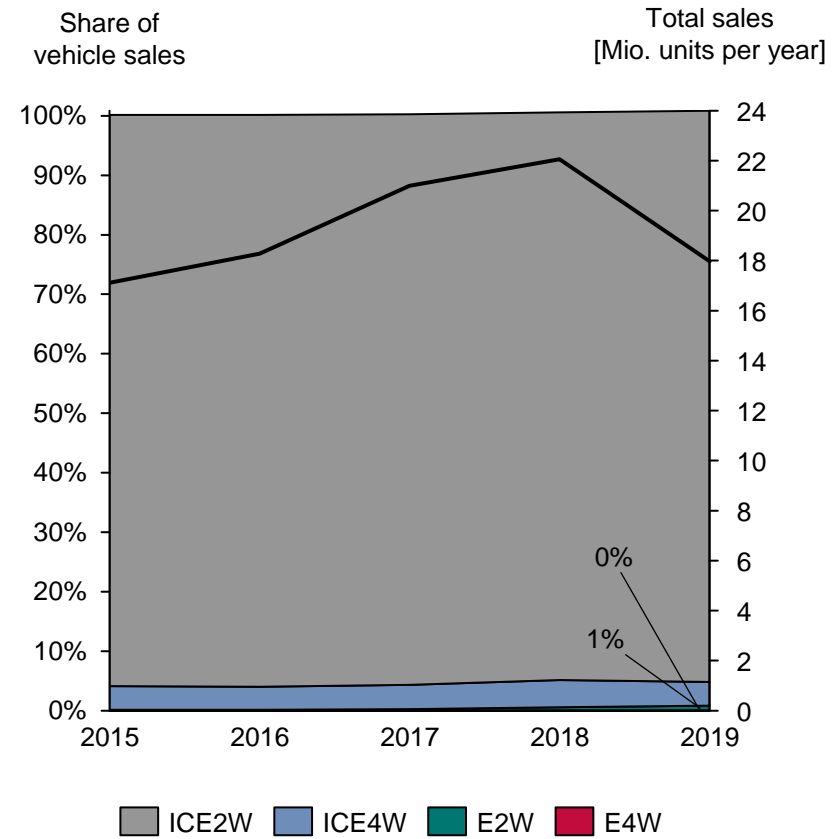
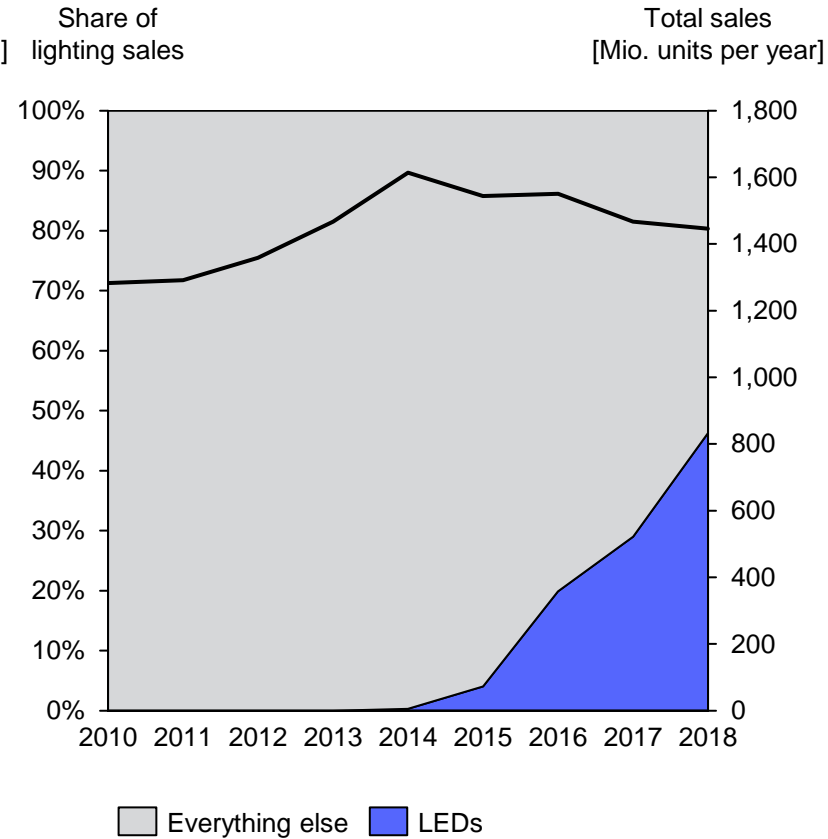
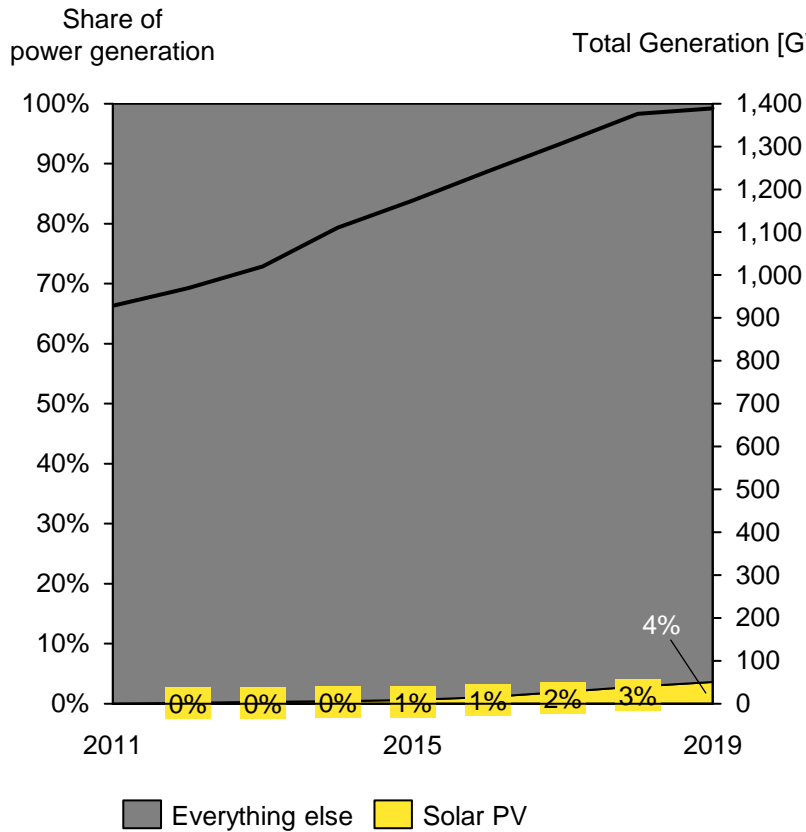
"Encourage and support domestic manufacturing of LED bulbs..." [1st May 2015]

India's next national mission?

"...a policy to make India **self-reliant in the area of advanced battery technologies** to power electric vehicles and other applications" [11th Feb 2021]

What does this mean for India's low-carbon development strategy?

The scale of the opportunity: examples from solar PV, LEDs and EVs



How can nations organize to capture economic co-benefits beyond cost reduction and climate change mitigation?

Several big questions must be addressed

- Building institutions to organize for innovation in the energy sector
 - Long-term planning horizon (time to commercialization in lithium-ion battery industry: ~15 years)
 - Systemic perspective (R&D institutes, testing labs, human resource training, sectoral ministries, finance...)
- Mapping technological capabilities, their fit with emerging technologies, and identification of gaps
 - Focus on technology (LIB) vs related sectors (e.g. chemical) vs knowledge base (e.g. material science)
 - “Technology-smart” industrial policies: how to pick winners?
- The role of startups and incumbents in the technological transition
 - Diversification opportunity vs existential threat to business models => managed phase-out of technologies
- The role of international technology cooperation in RD&D and global value chains
 - Complementary capabilities in global value chains as opportunities for cooperation (e.g. Solar PV cell manufacturing in China, production equipment in Germany)?



Thanks for your attention!

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