

Host Utilities



Co - Host Utilities



ORGANIZER



India SMART UTILITY Week 2024

Supporting Ministries



सत्यमेव जयते
MINISTRY OF POWER
GOVERNMENT OF INDIA



सत्यमेव जयते
MINISTRY OF NEW AND
RENEWABLE ENERGY
GOVERNMENT OF INDIA



सत्यमेव जयते
नीति आयोग
National Institute of Public Administration



सत्यमेव जयते
MINISTRY OF ELECTRONICS &
INFORMATION TECHNOLOGY
GOVERNMENT OF INDIA



सत्यमेव जयते
MINISTRY OF HEAVY INDUSTRIES
GOVERNMENT OF INDIA



सत्यमेव जयते
MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES,
R DEVELOPMENT & GANGA REJUVENATION
GOVERNMENT OF INDIA



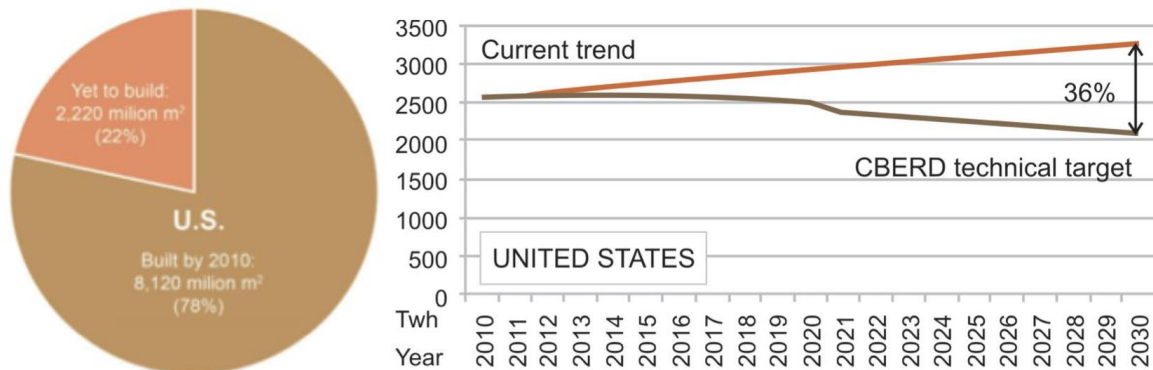
सत्यमेव जयते
MINISTRY OF POWER
GOVERNMENT OF INDIA
CENTRAL ELECTRICITY AUTHORITY

Session: Energy Positive Smart Buildings and Campuses U.S. Trends in Grid Responsive & Efficient Buildings

Presented By

Rish Ghatikar, Advisor to India Smart Grid Forum (ISGF)

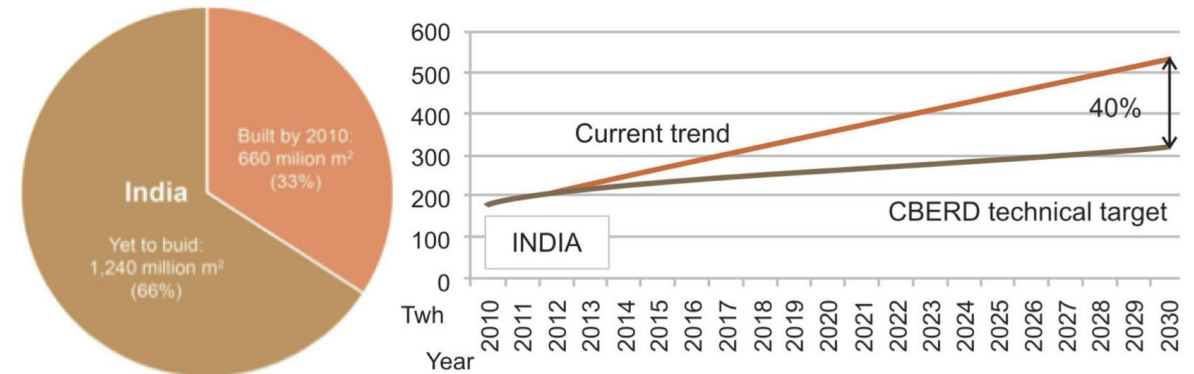
U.S—INDIA PARTNERSHIPS: TECHNICAL TARGETS



U.S. 2030:

Commercial stock: 10.3 B m²

Retrofit and New Construction Focus



INDIA 2030:

Commercial stock: 1.9 B m²

New Construction Focus

Rawal R., K Vadodaria, M. Galsar, G. Ghatikar, R. Singh, D. Douglas, Collaborative Research to Promote Energy Efficiency Innovation Towards Significant Reduction in Buildings Energy Use in the United States and India, The U.S.—India Joint Center for Building Energy Research and Development (CBERD), Annual Report 2013-2014, March 2014. LBNL-6862E

https://escholarship.org/content/qt474198v6/qt474198v6_noSplash_0a60d26f40a6607159a52b725e8dc9bc.pdf?t=p0uv18

Design Efficiency for Retrofits & New Construction

Energy-Efficient Modeling & Design
New Construction & Retrofits (Cx, RCx & MBCx)

Design for Inherent Demand Flexibility

Grid-Responsive Strategies to Lower Cost, Carbon & Likely Energy
Address Energy-Intensive End-Uses (e.g., HVAC); Engage Consumers

Embrace Non-Fossil Distributed Energy Resources

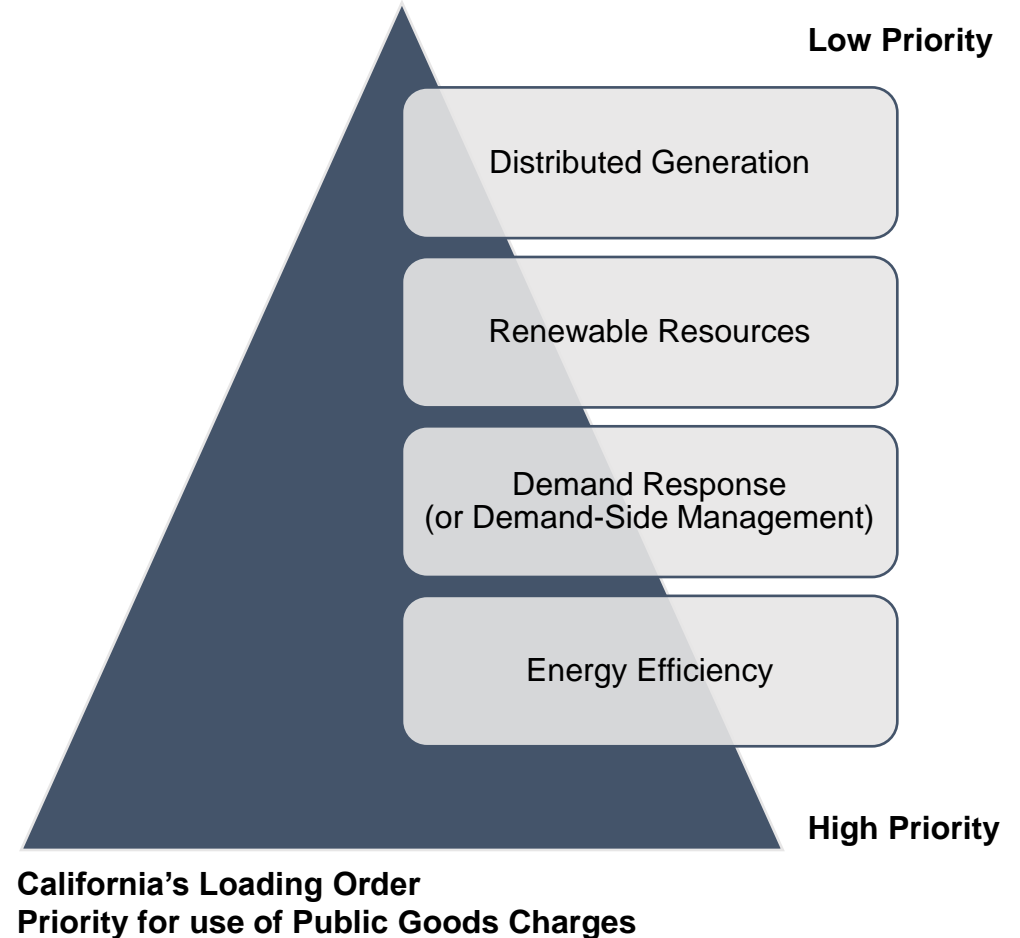
Electric Vehicles, Solar PV & Battery Storage (Non-Fossil DG)
Integrated Building & DR/DER Management Systems

Befriend Technology & Communications

Local- & Grid-Aware Actions to Improve Reliability & Lower Emissions
interoperable & Standardized Communications to Lower DER Costs

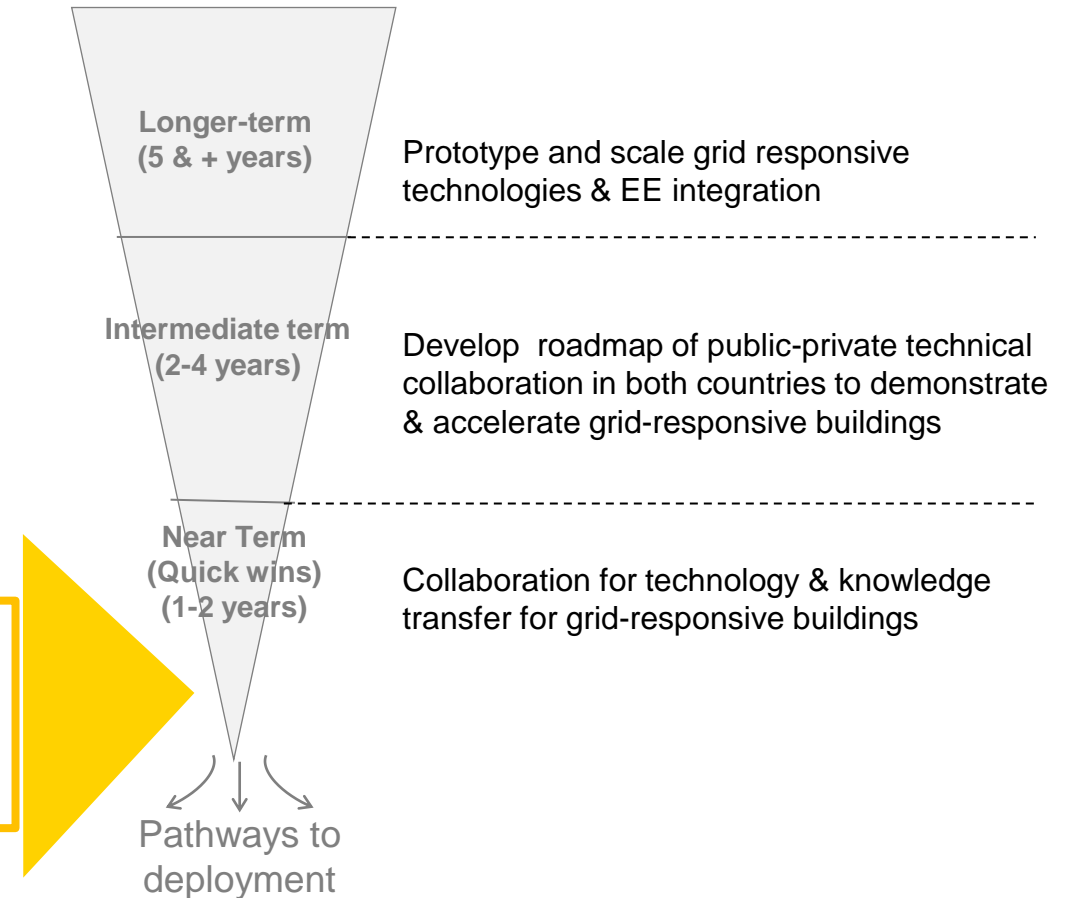
Exercise Stronger Building Codes & Partnerships

Code-Compliant EE & DR Adoption (e.g., ECBC & CA T24)
Technology & Knowledge Transfer to Scale EE, DR, & DER Adoption.



LESSONS: GRID-RESPONSIVE BUILDINGS

Technology opportunities and challenges in both countries, improve cost-efficiencies, region-specific technology applications, and forge public-private engagements



Honeywell

ComfortPoint Open
CP-REM-UP

- Complies to OpenADR 2.0 Standard
- Flexible and easy configuration with ComfortPoint Open Online tool
- Supports one BACnet IP interface and 3 independent RS485 interface MSTP channels for Modbus interface

Reference: Basu, C, and Ghatikar, G. *Enabling Efficient, Responsive, and Resilient Buildings: Collaboration Between the United States and India*. United States: N. p., 2013 (<https://www.osti.gov/biblio/1129527>).

THANK YOU

<http://linkedin.com/in/ghatikar/>

