Energy



Policy Out Front: Pulling Ahead of Standard Practice

Role of Policy to Support ZNE

Abhijeet Pande

TRC

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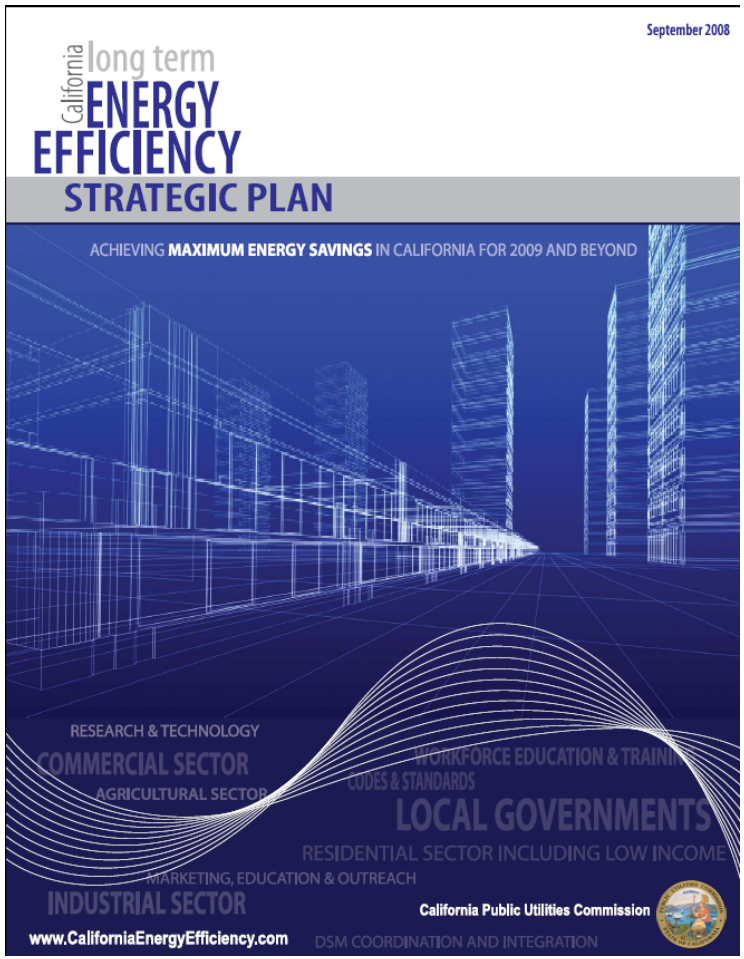
Lessons from a ZNE Early Adopter State

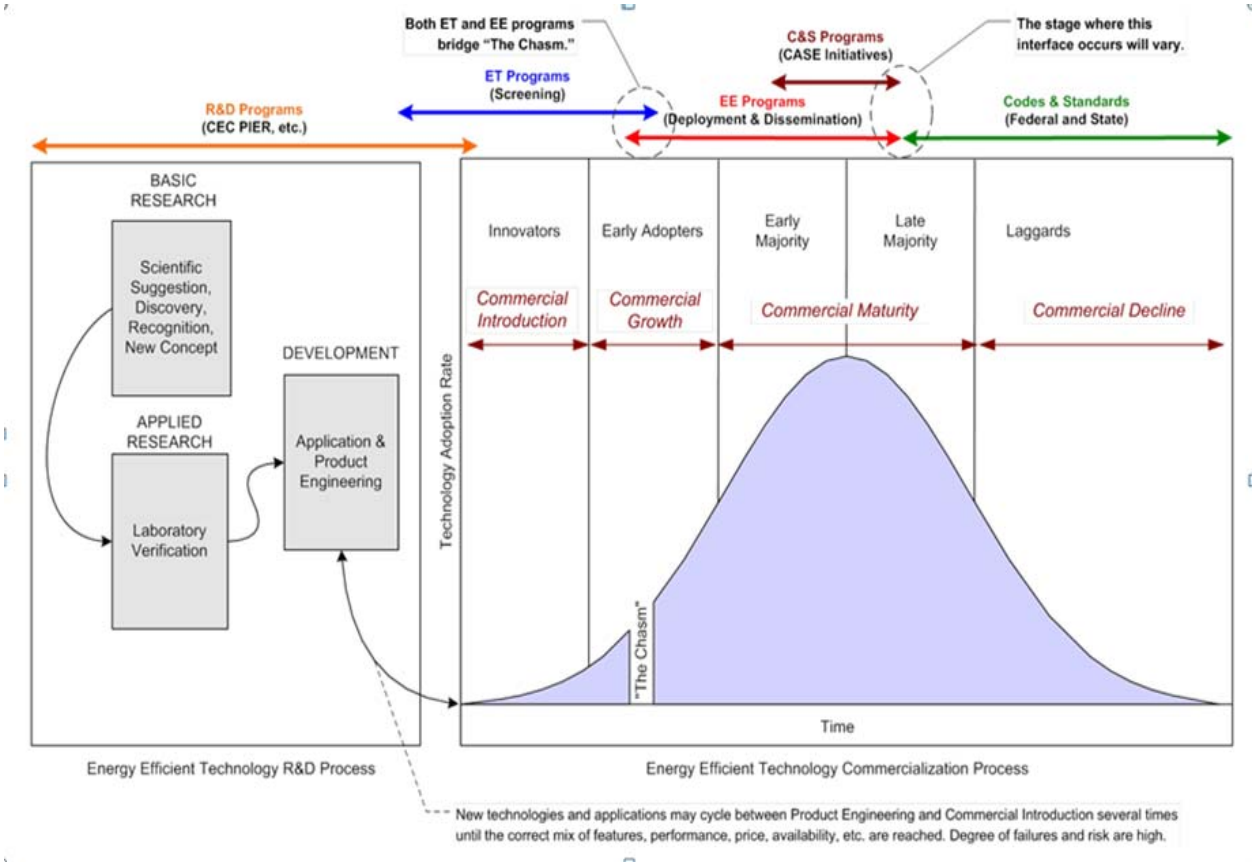
California Energy Efficiency Strategic Plan - 2008



Moving from Intent to Practice

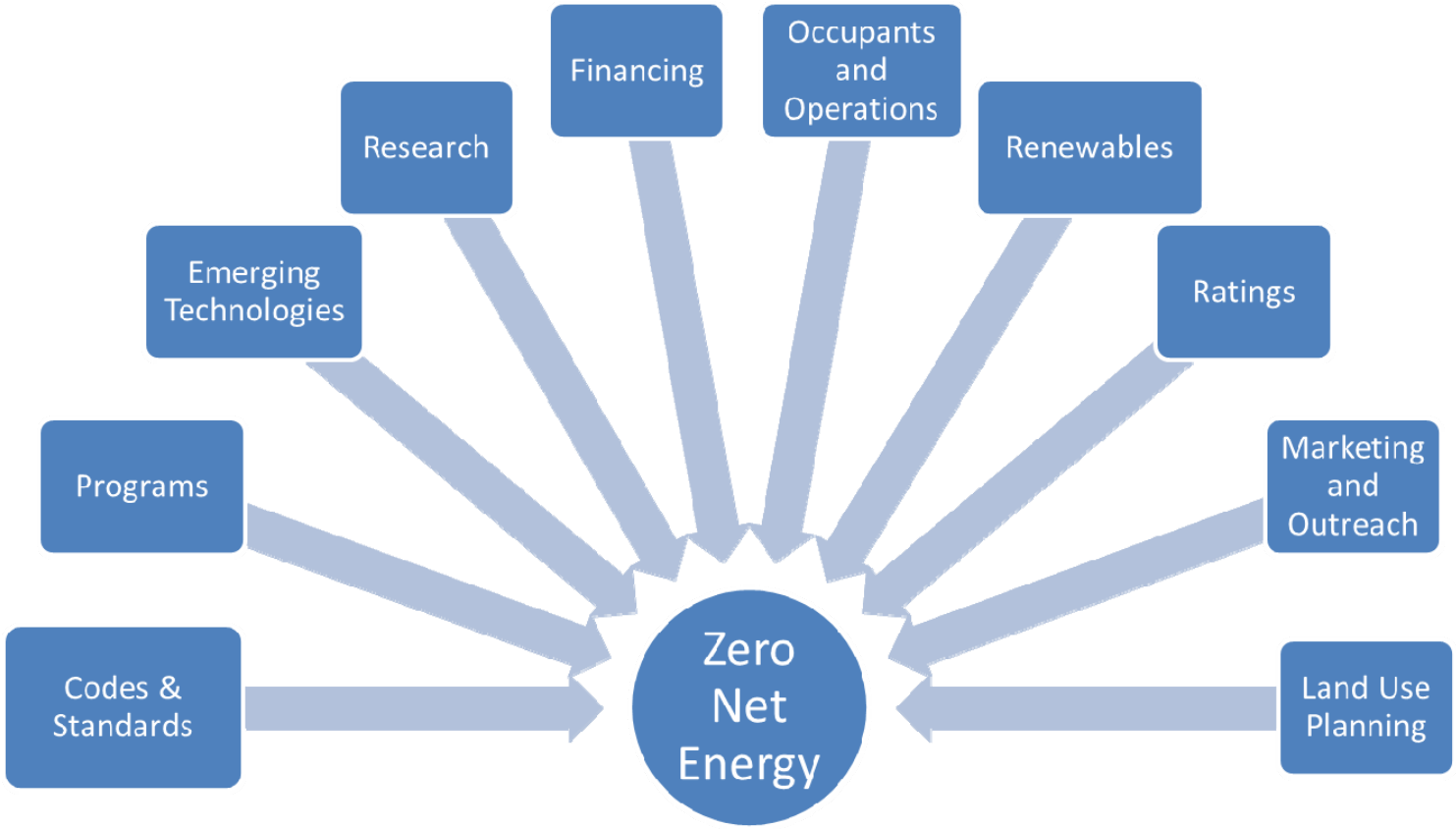
- Early adopters see ZNE as inevitable
  - Want to be ahead of the curve
  - Willing to experiment and try new ideas
  - Their motivations are inherently different than the rest of the market
- Essential Challenge is to go from a handful of early adopters to
  - The broader construction industry
  - An industry that is tradition bound and resistant to radical changes imposed on ‘standard practice’
- **This needs a market transformation initiative**

Traditional "Bottom Up" Approach to Market Transformation and Codes



- Diffusion of innovations
- C&S "Exit Strategy"
- Passive Recipient of market Development
- Slow evolutionary progress

ZNE Goals Dictate a Different Approach



Source: “Road to ZNE: Mapping Pathways to ZNE Buildings in California”, TRC, 2012

Top-Down Approach to ZNE

- Define an end-goal target
  - Clear definition of what ZNE means
  - Identify stakeholders
- Consolidate top management support
  - Regulators, legislators, utilities and industry groups need to "buy-in" to the goal
- Develop a well-coordinated top down plan
  - Identify pathways and dependencies
  - Orient portfolio towards goals
- Implement the plan
  - Check-in regularly and update

Statewide Energy Policy driven by ZNE Goals

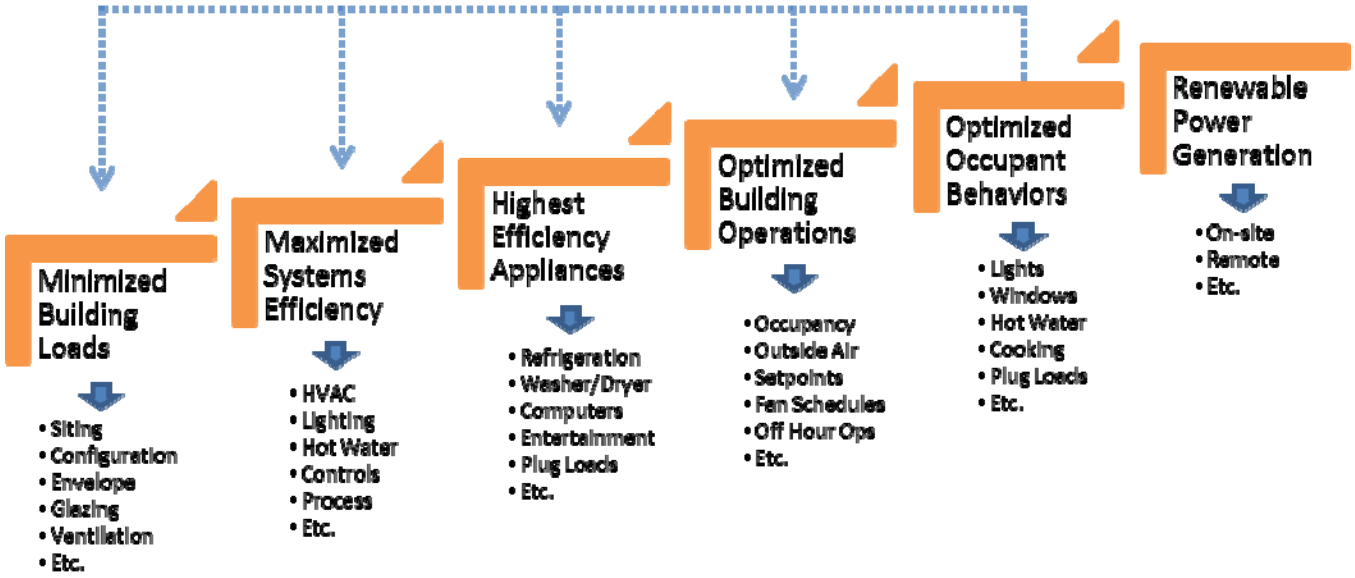
- Active and coordinated efforts necessary to achieve ZNE goals
  - Especially in light of aggressive timelines
- End goal for ZNE is to require ZNE construction through building energy codes
  - Title 24, part 6 in California
- The California Integrated Energy Policy Report (IEPR) identifies ZNE as goal for building energy codes
  - Emphasizes energy use targets to support energy efficiency

Internalize ZNE Goals in Portfolio Planning

- New construction programs
  - IOU and POU residential new construction programs have moved to support ZNE EUI targets
- Focus on target markets that have multiple reasons to pursue ZNE goals first
  - State buildings, schools, warehouses
  - Prop 39 funds for schools being leveraged for ZNE
- Integrated demand side management
  - Coordinated programs for EE, DR, DG
- Evaluate grid impacts of ZNE goals
- Conduct research to overcome technical barriers

Energy Efficiency as a Foundation for ZNE – As a Policy Goal

- "All cost-effective energy efficiency"
  - Should be the foundation of any ZNE definition or metric



Steps to ZNE Buildings

- Distributed renewable generation critical to ZNE goals
  - Need to address cost and feasibility issues for 'all' buildings

Codes and Standards

- CA IOU and CEC have established a tactical plan to develop ZNE building energy codes
  - By 2019 for residential buildings and 2030 for nonresidential buildings
  - Identified key measures for inclusion in Title 24 (building efficiency) and Title 20 (appliance efficiency standards) in 2016/2019
  - Make quality construction the foundational element of ZNE buildings
- CEC in the process of developing ZNE targets for codes
  - CEC to update cost-effectiveness metrics to account for distributed generation
- Need to Address
  - Federal pre-emption of state standards
  - Increasing plug loads and appliances energy use

Thank you

Questions?

Presenter Name
apande@trcsolutions.com