



# Private Sector Perspectives on Energy-Efficient Community Development

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- ❑ Ongoing Research Initiatives
- ❑ CVRP Workshops & Surveys
- ❑ Industry Opportunities
- ❑ Industry Constraints
- ❑ Requested Assistance



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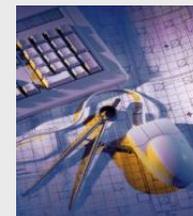
## Ongoing Research Initiatives: Global & U.S.

- ❑ Global Energy Network for Sustainable Communities
    - ❑ Australia, Canada, China, Denmark, Israel, Poland, Switzerland, UK & the US
  
  - ❑ Common Mission & Research Focus Areas
    - Research, demonstration & capacity-building initiatives that enable development professionals to build sustainable communities
      - ❑ Technology optimization & integration
      - ❑ Community planning & public policy
      - ❑ Economic, market & behavioral studies
- 
- ❑ U.S. Affiliate: NECSC
  - Founding Sponsors: U.S. Department of Energy, City of Chula Vista, San Diego State University & the Gas Technology Institute
- 
- ❑ Research & Promotional Partners:
  - CEC / PIER, U.S. DOE, City of Chula Vista & SEMPRA Energy Utilities



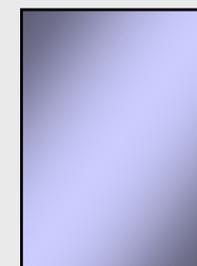
# U.S. Center Focus on Practitioner Tools

- ❑ Affordable Housing Infill Project
- ❑ Small-Scale Mixed-Use Infill Project
- ❑ Large-Scale Development & Redevelopment Projects
  - ❑ Advance use of energy-efficient & renewable energy technologies in community development projects, & to optimize their performance through complimentary land use & urban design features
  - ❑ Quantify the energy efficiency & emission reduction gains that can be achieved through the combination of these technologies & design features in representative community development projects
  - ❑ Assess the impact of this alternative approach to development on the electric & natural gas utility infrastructure & on potable water & sanitary water processing systems
  - ❑ Resolve, market, economic & policy / regulatory barriers preventing the finance, real estate & development industries from pursuing energy-efficient development



# U.S. Center Focus on Practitioner Tools

- ❑ **Urban Infill Development Series** (available now)
  - ❑ Two studies conducted on urban infill sites:  
a net-zero energy affordable housing project & a mixed-use residential/commercial development project
  
- ❑ **Greenfield Development Series** (available Fall '09)
  - ❑ Technical Reference Guide for Building & Site Design
  - ❑ Policy Reference & Resource Guide for Public Agencies addressing all four 2009 IEPR Scoping areas
  
- ❑ **Brownfield Development Series** (available Fall '09)
  - ❑ Case Study of an Integrated District Energy System
  
- ❑ **Alternative Fuels & Transportation Series** (proposed)



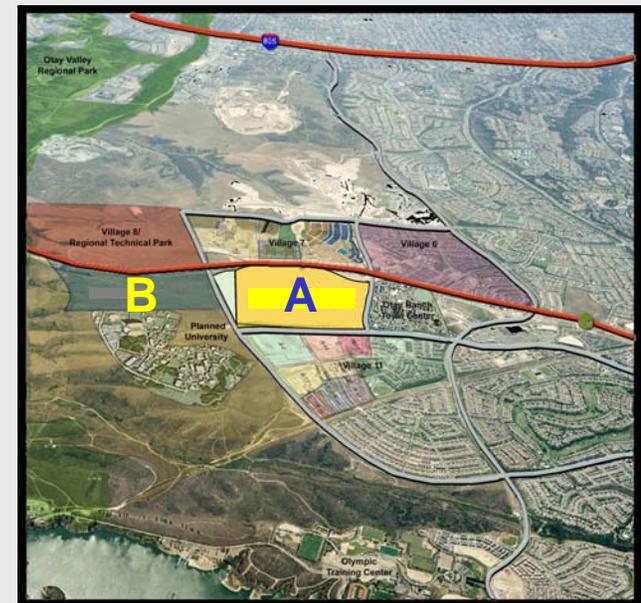
# Chula Vista Research Project: Development Sites

## Site-A Mixed-Use Commercial

- ❑ 290 acres – predominantly commercial
- ❑ 16% commercial retail
- ❑ 16% commercial office
- ❑ 34% mixed-use (residential./commercial)
- ❑ 21% institutional
- ❑ 13% recreational

## Site-B Mixed-Use Residential

- ❑ 418 acres – residential & institutional
- ❑ 15% residential
- ❑ 1% commercial retail
- ❑ 43% mixed-use residential
- ❑ 22% institutional
- ❑ 19% recreational



# Chula Vista Research Project: Modeling Focus Areas

- ❑ Aggregate Building-Level Modeling
  - ❑ Envelope enhancements
  - ❑ HVAC enhancements
  - ❑ Illumination enhancements
  - ❑ Onsite-power with CCHP
  - ❑ Renewable energy – solar thermal & PV
  - ❑ Urban-scale district cooling system
  - ❑ Demand control strategies
  
- ❑ Aggregate Site-Level Modeling
  - ❑ Alternative densities
  - ❑ Mixed-use & transit-oriented design features
  - ❑ Urban heat island reduction strategies
  - ❑ Stormwater runoff mitigation measures



# Chula Vista Research Project: Workshops & Surveys

## ❑ **Workshop & Survey Objectives**

- ❑ Determine the maximum incremental cost that the California building industry & consumers will accept for energy-efficient residential, commercial, industrial & institutional structures
- ❑ Determine which financial & business models & associated public policies & incentives will lead to accelerated deployment of EE, DR, RE & DG technologies in typical development projects throughout the State of California

## ❑ **Workshop Participants**

- ❑ Three Stakeholder Workshops (approx. 200 participants)
  - Real estate development transaction chain: investors, lenders, developers & builders, design professionals, brokers & appraisers
  - Environmental organizations & community advocacy orgs.
  - Local & state government agencies



# Chula Vista Research Project: Workshops & Surveys

## ❑ On-line Industry Surveys

### ❑ Capital Market Industry

- Real estate financiers, investors & developers
- National associations (NMBA, pension fund managers, etc.)
- 120 respondents over a 15-day period in June '08

### ❑ Development Industry

- Targeted developers, builders, & allied professions
- National & California industry associations (NAIOP, CBIA, etc.)
- 22 respondents (approx. 80% response rate)

## ❑ Telephonic Industry Surveys

- ❑ Follow-up interviews with industry leaders on key issues that surfaced during the on-line surveys



# Industry Opportunities

## **Competitive Market Advantage**

- Opportunity to market green development products
- Opportunity to offer buyers products with lower long-term operating costs

## **Regulatory Compliance**

- Opportunity to anticipate & comply with future state & local regulatory requirements for low-carbon development

## **Financial & Procedural Incentives**

- Opportunity to reduce project costs through available federal, state & utility financial incentives & preferential municipal procedural incentives

## **Shareholder Interest in Sustainability**

- Opportunity to respond to shareholder interest in, & corporate policy initiatives relating to sustainability



# Industry Constraints

## □ Top Six Industry Constraints

1. *Split Incentive Dilemma* - Misalignment between investment costs & benefits
2. Lack of consumer willingness to pay for energy-efficient features & properties
3. Insufficient knowledge among municipal officials about value of EECD features
4. Lack of uniform municipal procedures & incentives for EECD projects
5. Insufficient municipal investments in enabling green infrastructure
6. Investment risks that inhibit capital market entities from financing EECD projects

# Industry Constraints

- ❑ **Key Issue = Perceived Additional Cost & Insufficient Demand**
  - ❑ Perception that energy-efficient community development (EECD) is more costly than conventional development (20-35% more), & that there is currently insufficient market demand for this form of development
  - ❑ Rank-ordered factors perceived to influence cost:
    - Lengthened development cycles due to the novelty of EECD projects & lack of knowledge among municipal planning officials responsible for approving them
    - Corresponding increases in planning, design & engineering expenses
    - Increased material & equipment costs
    - Increased installation & inspection costs
    - Interconnection charges for distributed generation technologies & difficulty negotiating interconnection agreements with utilities



# Requested Assistance

- ❑ **Direct & Indirect Financial Support for Builders & Buyers**
  - ❑ Municipal development impact fee deferral programs
  - ❑ Utility & State financial Incentives for Energy-Efficient Community Design
  - ❑ State sustainable building & development project tax credit programs
  - ❑ Municipal allowances for higher development densities
  - ❑ Utility financial Incentives for green build program participation
  - ❑ Municipal bond funds for developer loans
  - ❑ Municipal special assessment districts
  - ❑ Lender consumer loan products for properties in EECD districts
- ❑ **Collaborative Effort to Establish Uniform Standards for EECD**
  - ❑ Among: State, regional & local government agencies, the utilities, & allied real estate development industries
  - ❑ California-specific EECD project rating & labeling system – not LEED-ND!
  - ❑ Targeted at resolving existing regulatory inconsistencies & procedural barriers



# Requested Assistance

## **Consumer Product Labeling & Education Programs**

- Research to quantify the value of EECD & low-carbon development features
- Real estate lending, investment, appraisal & brokerage industry ed. programs

## **Tools, Techniques & Training for Municipal Practitioners**

- Information clearinghouse for local officials
- Showcase EECD demonstration projects across the state
- EECD project evaluation standards, methods & tools
- Peer-match exchanges & a state & utility sponsored EECD training institute

## **Procedural Incentives for Developers**

- Flexibility in meeting zoning code requirements
- Cross departmental expedited development plan review
- Priority inspections & Gold Star treatment for EECD developers



# Public & Private Sector Perspectives on Energy-Efficient Community Development

## ❑ For More Information & Resources See:

- ❑ *Energy-Efficient Community Development in California: Chula Vista Research Project* (245 pg.). NECSC/SDSU Research Foundation. Available from the California Energy Commission PIER Program - Fall 2009
  
- ❑ *A Building and Site Design Technical Reference Guide for Energy-Efficient Community Development in California* (203 pg.). NECSC/SDSU Research Foundation. Available from the California Energy Commission PIER Program - Fall 2009
  
- ❑ *A Public Policy Reference Guide for Energy-Efficient Community Development in California* (47 pg.). NECSC/SDSU Research Foundation. Available from the California Energy Commission PIER Program - Fall 2009
  
- ❑ *Sustainable Community Energy Planning in California: New Challenges & Roles for Government Agencies, Utilities & the Development Industry* (53 pg.). NECSC/SDSU Research Foundation. Available from San Diego Gas & Electric & the City of Chula Vista, California – Fall 2009





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