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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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CITY OF CHULA VISTA

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A Sempra Energy utility

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

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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

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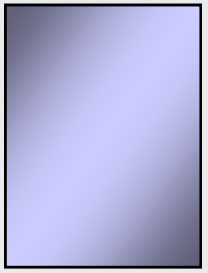
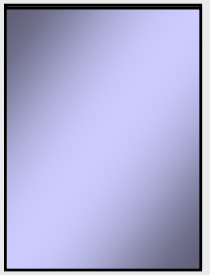
U.S. Center Focus on Practitioner Tools

- **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)

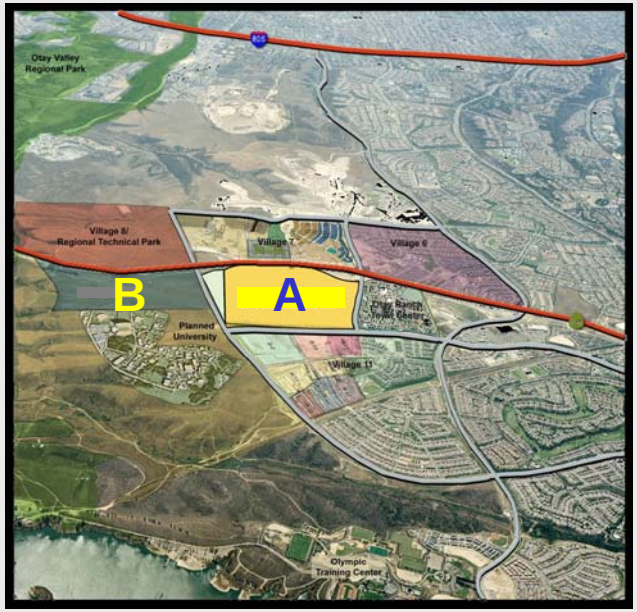
Chula Vista Research Project: Development Sites

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

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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

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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

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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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