

ZNE and the Utility's Role

Getting to Zero National Forum

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DNV GL

Sonia A. Punjabi

Sonia.Punjabi@dnvgl.com

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ZNE and the Utility's Role

- Balancing Zero
- Sustainable Communities Program – case study
- Challenges
- Utility's Role
- Key Takeaways

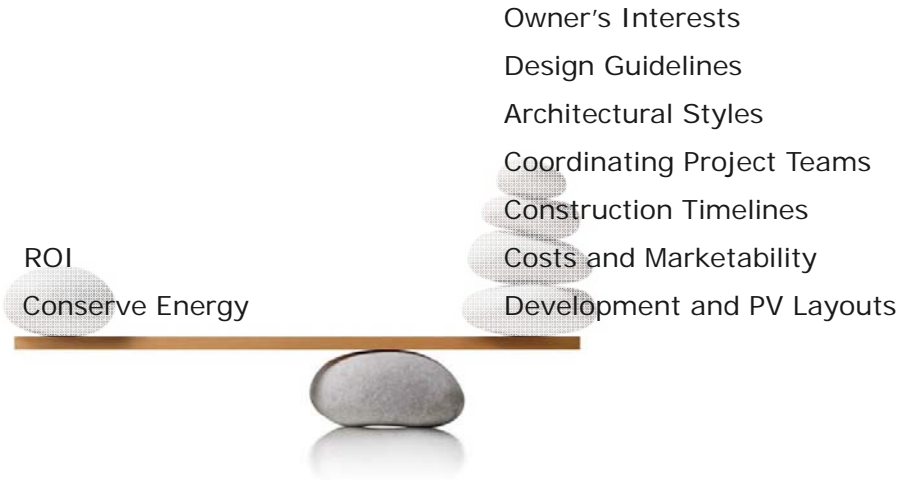
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Balancing Priorities



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Community-Scale Developments



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The Sustainable Communities Program (SCP)

▪ **About the Program:**

- Developed by Southern California Edison (SCE)
- Commercial, residential, mixed-use, and/or multiple building
- Design and incentive assistance



▪ **Goals:** Aggressive sustainable design, energy efficiency, water efficiency, daylighting, comfort, and ZNE



▪ **Benefits:** Funding, early integration/collaboration, constructability and education



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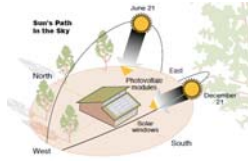
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Project Information

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Path to ZNE



Passive Design



Envelope & Shading



Lighting



Plug Load



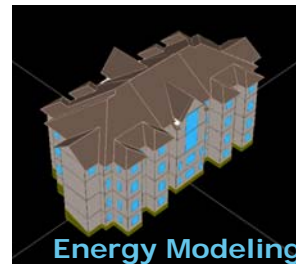
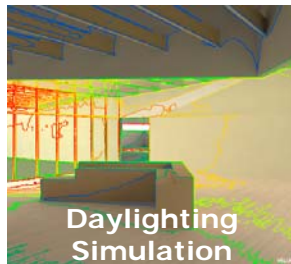
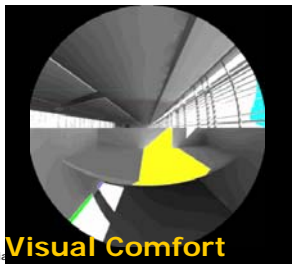
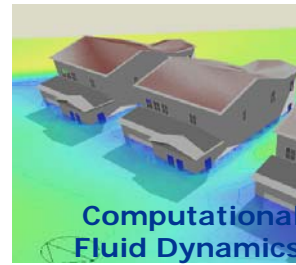
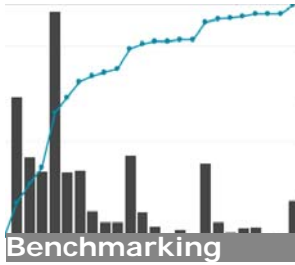
Mechanical Equipment



Renewable Energy

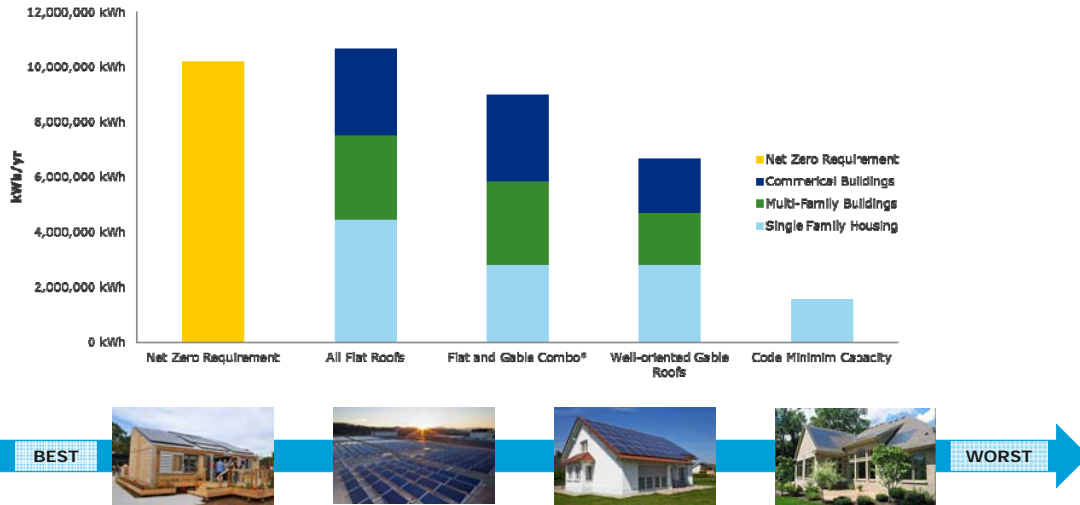
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Analysis Methodology



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Rooftop PV Capacity



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Challenges

Is this a regulatory hurdle for commercial PV system applications?



Conventional building practices limit daylighting capability



VS



Challenges

- Due to poor existing building design it becomes a cost and structural barrier when looking at NZE level
- 'Too hard' and 'Too expensive' mentality



Tenant – Owner Issues for NZE



Source: Real Estate Optimizer

- Tenants don't have economic incentive to improve building envelope or systems, they even see this as asset depreciation
- Served by common/shared HVAC system that are not sized for a reduced load
- Façade improvements usually mean \$\$\$

Tenant – Owner Issues for NZE

- For DPR's office in Newport it cost \$3,000 per window to switch to natural ventilation.
- VE: 90 operable windows down to 43.



Source: DPR Newport Beach office before renovation



Source: DPR Newport Beach office after renovation

Net Metering Incentive – Capacity Restriction

- CPUC's Net Metering incentive caps at 1MW
- An incentive for solar, solar thermal, wind, fuel cells and other renewable technologies
- Financial and demand restriction for utilities
- Limits NZE performance for sites (campuses) where 1MW PV capacity is just not enough



Source: ASU campus – 2 MW of the total 10 MW Array

Utility's Role


- Market demographic - Owner occupied vs Owned and Leased
- Educate the market through emerging technologies and aggressive performance targets
- Better integration of EE and RE programs within utilities
- Local government partnership programs
- Funding solar with utility dollars – utility rules
- Remove barriers associated with net-metering
- Grid integration
- Natural gas

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Key Takeaways

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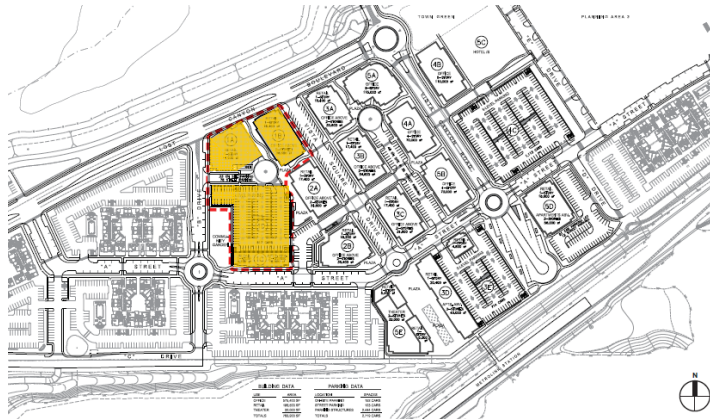
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Key Takeaways

- Education to design teams of ZNE possibilities
- Competing objectives
- Change in ownership

General Barriers to ZNE:

- Site Restrictions
- Net Metering
- Existing building stock
- Owner/Tenant



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Questions?



Sonia Punjabi, Principal Consultant

Sonia.Punjabi@dnvgl.com

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