

Zero Energy New Homes

A Synopsis of SMUD's Proposal To The California Energy Commission

David Hatfield, Project Manager
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ZENH Project

- Funded by \$2.5M from the California Energy Commission PEIR Program
 - Cheri Davis, Commission Contract Manager
- Project Partner: San Diego Gas & Electric
 - Ahmed Abdullah, Project Manager
- Contract Start: Q1-08, Duration: 3 years
 - David Hatfield, SMUD Project Manager



ZENH Concept

- Balance of project team
 - Production builders (Sac'to & San Diego)
 - Building energy consultant(s)
 - EEM suppliers
 - HERS inspectors
- Min. performance: T24, Tier 2+ (>35%)
- Cost-Effectiveness
 - Basis: cash flow, net energy, net cost, et al.



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ZENH Deployment

- Two communities
 - Sacramento & San Diego, ~75 homes each
- Base design
 - incl. EEMs standard in all community homes
- Builder options
 - value added EEMs in selected homes
- Buyer options
 - add'l EEMs selected by home buyer



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ZENH Project Activities

- Base design concept/validation
 - options selection
- Utility and regulatory new business models
- Initial build and HERS evaluation
 - feed back best practices and guidebook
- Build out, commissioning, buyer education
- M&E, T&D impact
- Reporting and technology transfer



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Options For Consideration

- Thermal mass
- Super efficient HVAC
- Programmable/Controllable thermostats
- Energy storage
- TOU/CPP rate options
- Demand response
- Controls/Home energy management system
- PV (capacity exceeding the base design)
- Others...



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ZENH Project R&D Goals

- Evaluate perf. of base design EEMs
 - technology-related
 - behavior-related
- Test several “next step” technologies
- Survey homeowner comfort/satisfaction
- Analyze cost of EEMs
 - base design
 - builder/owner options



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