

# Energy Code Challenges in the Southwest



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# INCREASING ENERGY EFFICIENCY IN NEW BUILDINGS IN THE SOUTHWEST: The Role of Energy Codes and other Efforts

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Report to be available soon for  
downloading from SWEEP's web site

[www.swenergy.org](http://www.swenergy.org)

Principal source of info shown in the  
following

# Two important generalizations

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- Areas without strong codes in the SW either (1) are in low growth areas with little new housing stock like WY or northern NM, or (2) have E Star, Building America, or other programs + market forces that stimulate energy efficiency
- There is movement throughout the SW to adopt stronger energy codes, or, where adopted, to strengthen enforcement and education in the building and codes communities

# Of Southwest States (AZ, CO, NM, NV, UT, and WY):

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- ❑ Only UT has mandatory IECC 2000 statewide codes in place for residential and commercial buildings.
- ❑ NM can pass statewide codes, is debating adopting IECC 2000 or NFPA code this year to replace state-modified versions of 10 year old MEC.
- ❑ WY has no energy code, but is considering IECC for state buildings, to be voluntary for private structures initially.

# Arizona, a home rule state

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- Voluntary IECC 2000 for residential
- 23 local jurisdictions have IRC, which refers to IECC for homes with window areas > 15% (most do)
- IECC recently passed in Tucson, also applies to several others
- No building code in Phoenix, fast growing city, NFPA anticipated
- 90.1 99 commercial code voluntary state wide except for state buildings which must comply
- “Beyond code” work in commercial buildings underway

# Arizona good news

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- ❑ Most E Star activity of any state, over 50 certified builders, > 16,000 homes
- ❑ Strong support for energy efficiency, training for builders
- ❑ Evidence of more sophisticated buyers in key markets like Tucson and Phoenix; they ask the energy questions
- ❑ Civano community in Tucson has HERS 90 requirement, many progressive builders
- ❑ Even without codes in Phoenix, most residential structures would pass code, save for SHGC

# Tucson utilities' efficiency programs for new homes

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# Growth in Tucson matched by growth in energy efficiency

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- ❑ **20% growth in last decade, new single family homes added at 500 per month**
- ❑ **Tucson Electric Power (TEP) and Southwest Gas (SW Gas) competing for market share by promoting energy efficiency**
- ❑ **Most builders in the area have substantially improved their products**
- ❑ **Home buyers have become sophisticated, insist on energy efficiency**
- ❑ **Over 70% of new homes are program participants**

# TEP program features

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- **Guarantee H/C costs for three years**
- **40-50% > IECC 98 code**
- **E Star + 100% testing (3 times per home)**
- **Ventilation system required (+ pressure)**
- **Proper HVAC sizing**
- **Framing and insulation inspection**
- **Duct sealing and blaster testing**
- **Envelope sealing and blower door testing**
- **Pressure balancing**
- **Discounted utility rates**
- **Time of use rates chosen by 60%; better rates for homeowner**
- **Solar option**



Heating & Cooling  
Guarantee

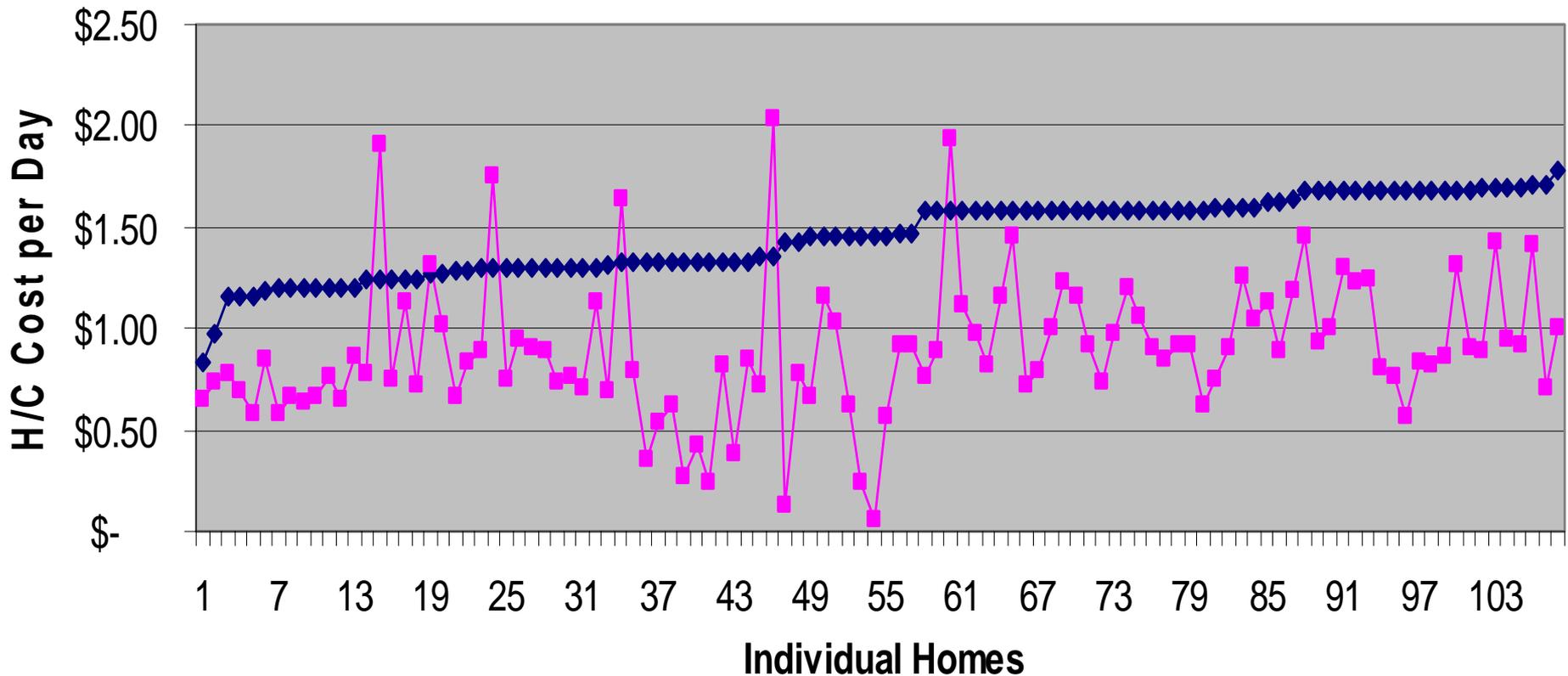
Less than  
**\$133**  
per day



It's better  
guaranteed  
to save  
you money  
on your  
energy bills.  
@EnergyMaster

# Tucson Electric Power guarantee heating and cooling costs versus actual for 108 dwellings (\$1.50 /day for a 1800 ft<sup>2</sup> home)

July 2001- July 2002  
Anniversary Report  
General Housing Group 1601 - 2000 Sq. Ft. (Avg 1740)



# Good deal for all parties

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- Homeowners get a comfortable, energy-efficient home with attractive rates and guaranteed maximums for their energy bills
- Builders get more sales, fewer call backs
- Utility builds satisfied customers, extends branding, and fills in winter valleys (heat pumps and electric hot water heaters are a necessary condition for participation in TEP)

# Colorado, a home rule state...

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- ❑ Local jurisdictions adopt and implement codes as they like, support from E-Star Colorado
- ❑ Denver is growing quickly, but has an out of date code. New Mayor may be receptive to code update; both IECC and NFPA in the running
- ❑ Many local jurisdictions have IECC codes on the books
- ❑ Energy Star very active and growing; 26 certified builders

# IECC integrated with green building in Boulder

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- Applies to new and substantial retrofit
- IECC “points” must be earned first to ensure code compliance; extras earned by better windows, insulation, and HVAC equipment
- Other points earned by efficient land use, xeriscaping, use of recycled bldg material, energy-efficient appliances, lighting, HRV, solar, natural cooling, hot water measures, others
- After kinks out of system, builders are cool

# Nevada, a *de facto* home rule state...

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- Most parts of the state have outdated versions of MEC on the books for residential.
- Hope for I codes in the next year or so
- ASHRAE 90.1 99 commercial code applies to state buildings only

# Nevada good news

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- ❑ Very fast growing Las Vegas metropolitan area (25,000 new single family homes per year, doubling of population since 1990) has significantly improved the energy efficiency of the product
- ❑ In mid 2002 Energy Star and Building America became co-branded in large campaign; the number of certified builders skyrocketed, along with homebuyer awareness.
- ❑ Now 31 Energy Star builders, 10,000 + certified homes