2012 DFW Solar Home Tour
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Reference - Summary

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Summary

Bottom Line So Far = 71% reduction since 2006

Monthly Electricity & Natural Gas Costs Total - 2006 to Present

2006: $673/mo avg
2011: $250/mo avg
2012: $193/mo avg (estimated)

Net of all cash flows
1. Aggressively manage electric utility rate (if in a competitive REP area)
2. Replace every incandescent lamp with CFL
3. Change living style
4. Turn stuff off
5. Understand and measure actual energy consumptions
6. Research what governments and utilities are offering
7. Look very hard at heating & cooling the structure
8. Replace items with Energy Star or lower power versions
9. Put in automation system to save even more
10. Put in solar PhotoVoltaic (PV) system to reduce grid power usage
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Summary

Overview:

East Plano located, 3400 sq. ft single story residence on shaded one-half acre lot, constructed in 1992. This home utilizes natural light and an open floor plan including a large porch to maximize space, functionality and spaciousness. Located near public greenbelts, parks, trail system and mass transit.

Green Features:

- Broad real time energy savings monitoring system continuously verifies structure and equipment performances are per manufacturer/installer claims, identifies areas to improve, anticipates impending failures when repairs can be made more cost effectively, and facilitates cost/benefit analysis for contemplated projects. All details are available to anyone at http://www.welserver.com/WEL0043.
- 8.1 kW roof-top grid-tied solar Photovoltaic (PV) system - provides 32% of electrical needs. Solar system leased with help of local utility subsidy and federal tax rebates, resulting in $21 per month positive net cash flow from first day of operation.
- Programmable thermostats adjust at different times of day, saving money and reducing energy use at peak times.
- Large ceiling fans in every room, prevent air stratification and reduce demand on HVAC system.
- All lights are Compact Fluorescent Lamps - no incandescents are used. Approximately $400 per year savings.
- Extensive home automation system assists with comfort, efficiency, safety and security.
- Windows are double pane with thermally broken anodized aluminum frames. All have thermally efficient shades to block out hot day time heat.
- Minimal windows on hot west side; large windows on north and east walls and open floor plan provide ample day lighting.

Extremely efficient (24 SEER / 5 COP) geothermal heat pumps - one mile of underground pipe, and no outside equipment to wear out.

$47/month average heating/cooling monthly cost in spite of Dallas hot climate and using electricity for heating.

HVAC efficiency further enhanced with four independent zone air distribution, variable-speed air handlers (improves humidity control), and two-stage compressors.

Sheet metal ducts (inside attic) insulated with R-8 foil backed insulation and seams sealed.

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