

The Building Shell Game

Finding the Winner for Your Next Project



Speaker:

David Carolan

CEO/Founder of Solid Green Companies

Panelists:

Cy Kilbourn

Co-founder and director of engineering, Ekotrope

Dondi Atwell

Inspector, ATS Engineering

Jim Bledsoe

Partner, Cendea

Byron Phillips



Vice President of Engineering, Solid Green Systems

Our Vision

To be the premier global innovator and catalyst for achieving smart, net-zero buildings.

Our Mission

To create and deliver high performing, sustainable, cost effective building solutions.



Our History

- Four years of proving our technology
- Talented, experienced team
- Collaborative
- Proprietary processes
- Focused on value and the fastest ROI
- Making net zero the logical choice for every building project



History of Building Shells

- 50 years of alternative building systems
 - Wood
 - *Geodesic domes, straw bales, log cabin, compressed earth*
 - SIPs
 - ICF
 - Steel
 - EPS



Government Subsidized Housing

- 1300+ sq. ft. steel roof, stucco and stone veneer
 - SGS Panels
 - 2.5 Ton 16- SEER variable speed HVAC

“With the help of federal and state funds, our city was able to build three new homes provided by Solid Green Structures. Construction time was approximately 45 days even with the government red tape. We finally have new homes in our community that people can afford.”

--Avery Williams, City of Waelder Administrator



Central Texas Wildfire Rebuild

- 2000+ sq. ft, steel roof, stucco and stone veneer
 - SGS Panels
 - 2.5 Ton 16- SEER variable speed HVAC

“Our community was devastated after losing many homes in the Spicewood wildfires. Solid Green Systems helped us rebuild one of the homes with energy efficient materials that would withstand future wildfires.”

--Jim Madigan, SLTR Committee Member



Multi-Family Apartments

- 40 unit, efficiency apartment complex
 - SGS Panels

“SGS construction methods were highly energy efficient. We believe that with the air conditioning running nearly 24x7 in South Texas that our electricity bills run 50-70% below what they would be under conventional construction and insulation methods.”

--Brad Beago, Eagle Ford Housing Solutions



Custom Estate Home

- 7000+ sq. ft., steel roof, stucco, stone
 - SGS Panels
 - Windows and Doors
 - HVAC
- Solar panels
- Water Heaters
- LED Lighting
- HERS Rating: 15

“We are so impressed with Solid Green Systems and the quality of construction of our new home – both inside and out. We have the most beautiful home and our energy bills are next to nothing. We never thought we could afford what Solid Green provided.”

-- Homeowner, Houston, Texas





PARADIGM SHIFT

**VALUE
THROUGH PLANNING**

Focus and Goal

FASTER ROI

- Higher energy savings
- Less cost to add alternative energy components
- Faster build time
- Higher appraised value

COST COMPETITIVE

- Design & Build approach
- Building costs are comparable
- Lower delivery costs
- Less maintenance

VALUE

BETTER SYSTEM

- Straighter and stronger walls
- More comfortable living
- More durable
- Low carbon footprint and waste
- Longer lasting

Collaboration to Maximize Value

- Focus on Faster ROI/Lowest TCO
 - *Educate stakeholders on why and how*
 - *Keep clients focused on goal(s)*
 - *Deliver clients' design*
- Making “Better” Quantifiable
 - *Allow for subjectivity and emotion*
 - *Support concept of trade-offs*
 - *Remind clients of their goals*



Assumption

- 1800 square foot structure

Better Shell

Proposed System Size	Annual Production
6,760 W-DC	8,605 kWh

- System Price: \$22,497
- Utility Rebate: 9,668
- Out of Pocket: 12,829
- Federal Tax Credit: 3,849
- **Final System Cost: \$8,980**

Wood Frame

Proposed System Size	Annual Production
10,400 W-DC	13,240 kWh

- System Price: \$32,480
- Utility Rebate: 14,898
- Out of Pocket: 17,582
- Federal Tax Credit: 5,275
- **Final System Cost: \$12,307**

Custom Estate Home

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HERS RATING ON CUSTOM ESTATE

Home Energy Rating Certificate



Strnadel Residence
511 Edgewood Drive
Richmond, TX 77406



Registry ID 070777740
Rating Number
Certified Energy Rater Jim Williams
Rating Date 01/30/2014
Rating Ordered For Solid Green Systems

Estimated Annual Energy Cost

Use	MMBtu	Cost	Percent
Heating	15.7	\$368	55%



5 Stars Plus Confirmed

HERS Index: 15

Efficient Home Comparison: 85% Better

Estimated Annual Energy Cost

Use	MMBtu	Cost	Percent
Heating	15.7	\$368	55%
Cooling	15.3	\$359	54%
Hot Water	5.8	\$136	21%
Lights/Appliances	45.5	\$970	146%
Photovoltaics	-55.0	-\$1290	-174%
Service Charges		\$120	18%
Total	27.3	\$663	100%

General Information

Conditioned Area	7085 sq. ft.	House Type	Single-family detached
Conditioned Volume	98165 cubic ft.	Foundation	Slab
Bedrooms	5		

Criteria

This home meets or exceeds the minimum criteria for the following:

Above Grade Walls	R-36.0	Infiltration Rate	Htg: 4828 Clg: 4828 CFM50
Foundation Walls	NA	Method	Blower door test
Lights and Appliance Features			
Percent Interior Lighting	100.00	Range/Oven Fuel	Natural gas
Percent Garage Lighting	0.00	Clothes Dryer Fuel	Natural gas
Refrigerator (kWh/yr)	420.00	Clothes Dryer EF	2.67
Dishwasher Energy Factor	0.46	Ceiling Fan (cfm/Watt)	0.00

ATS Engineers, LLC
912 S Capital of Texas Highway
Suite 450
Austin, Texas 78746
(512) 328-6995



The Home Energy Rating Standard Disclosure for this home is available from the rating provider.

REM/Rate - Residential Energy Analysis and Rating Software v14.4

This information does not constitute any warranty of energy cost or savings.

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How it Works

- Design, Deliver, Build
 - Necessary steps
 - Design/Planning is the key
 - Delivering the product
 - Building collaboration
 - Measuring success



BREAK



Panelists

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ekotrope



- Software company in Cambridge, MA
- MIT-based technology developed for NASA
- Proprietary algorithm patented by Ekotrope
- Integrated Design Management Software
- Nationally Accredited **by RESNET** as:
 - **HERS Rating software**
 - **IECC performance compliance software**

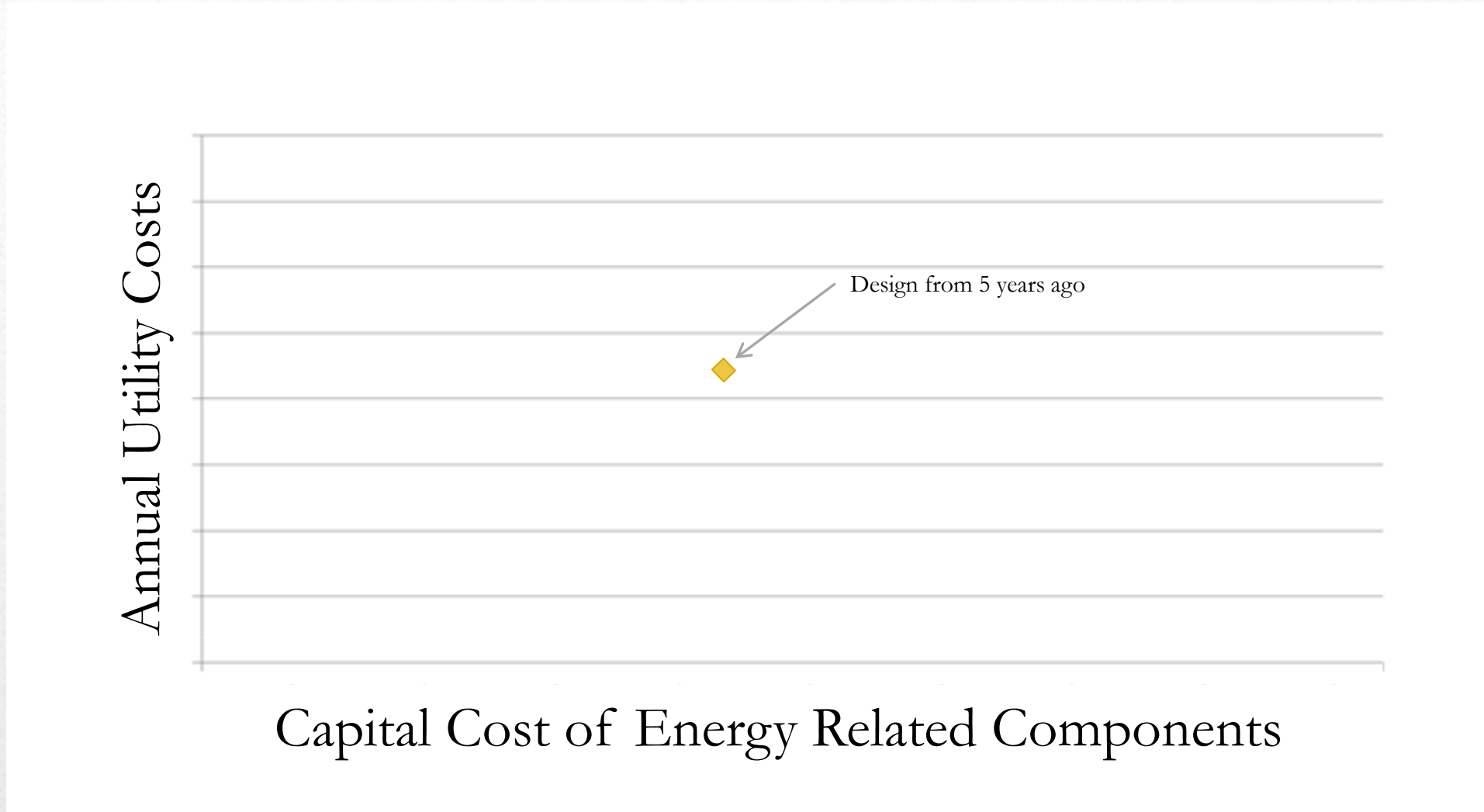


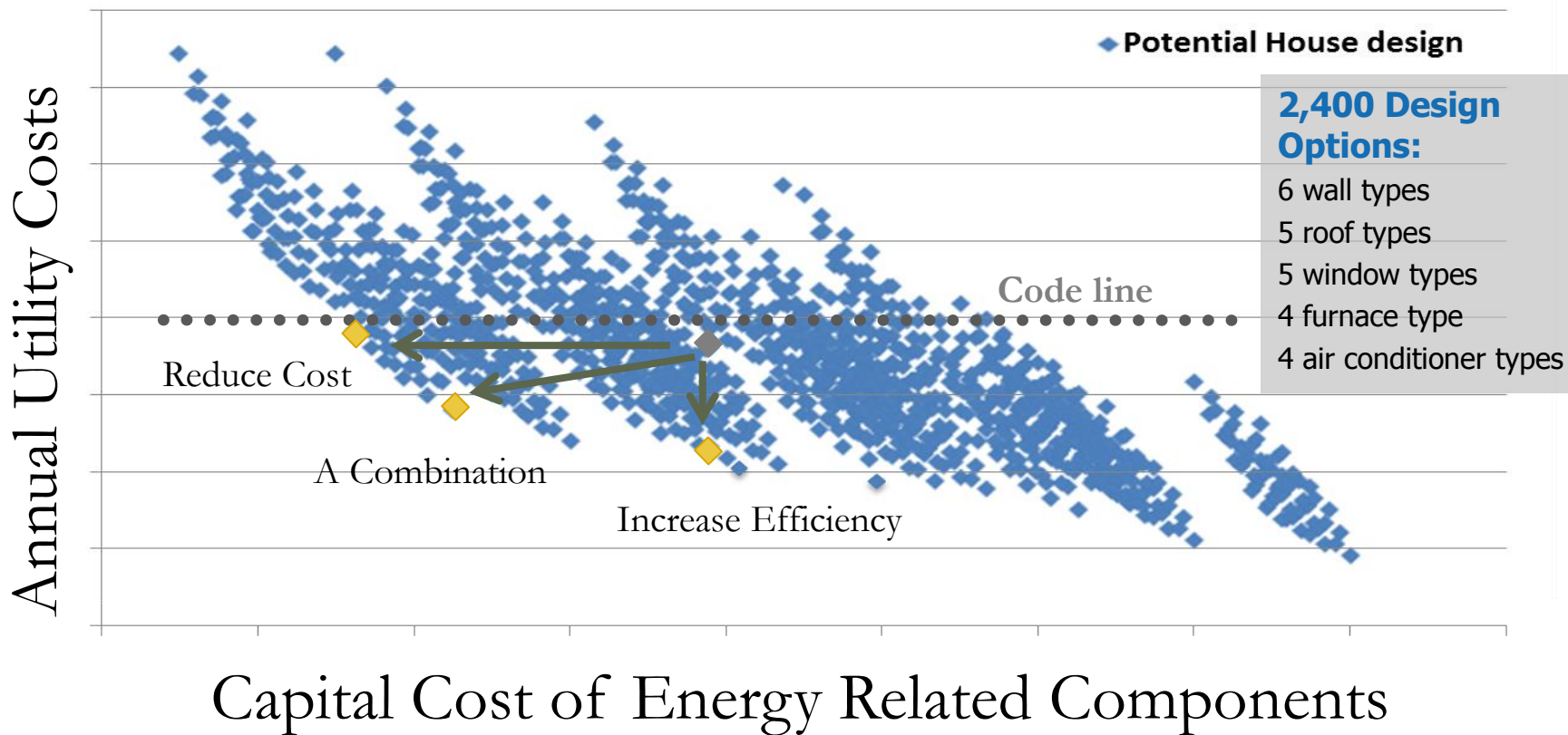
- Allow builders to quickly examine all design options and identify the most cost-effective way to meet energy related goals.
- A typical production builder will see:
 - A cost reduction of \$1000 - \$2500 per home*

and at the same time:

- Reduce the home's energy consumption by up to 40% (increasing sales price/speed of sale).

* Windows, walls, insulation, mechanical equipment, etc.

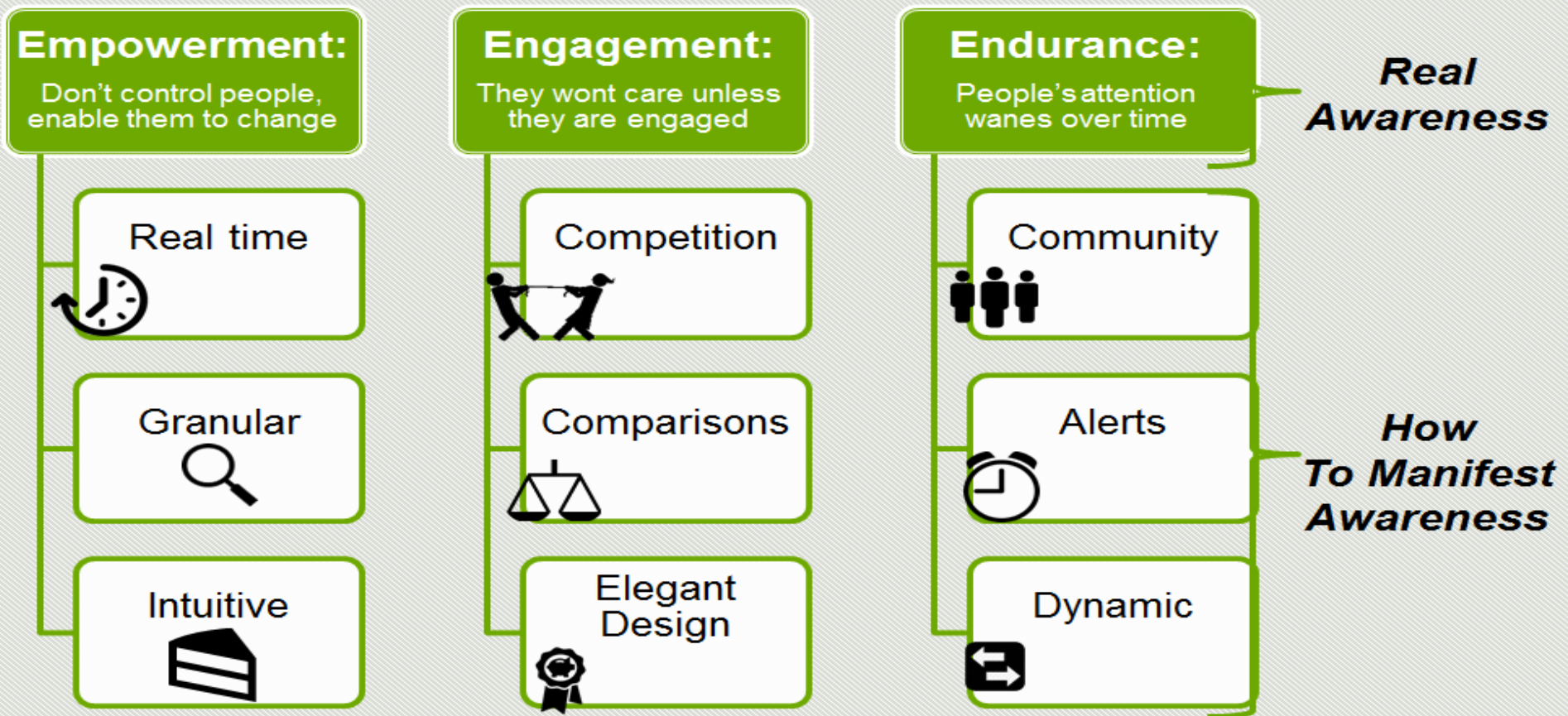




CURB ENERGY MONITORING



If people are aware of how much energy they consume, they tend to change their behavior. However, awareness isn't enough, **they must also care.**



CURB ENERGY MONITORING

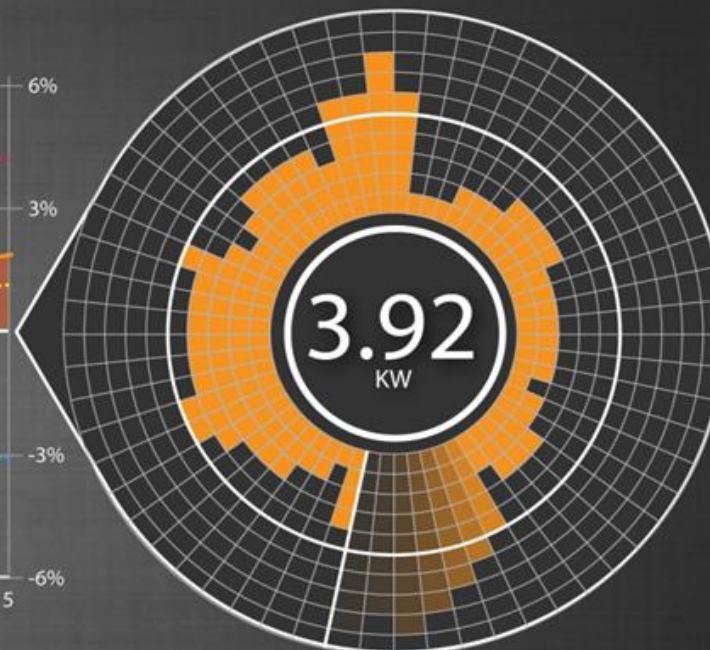
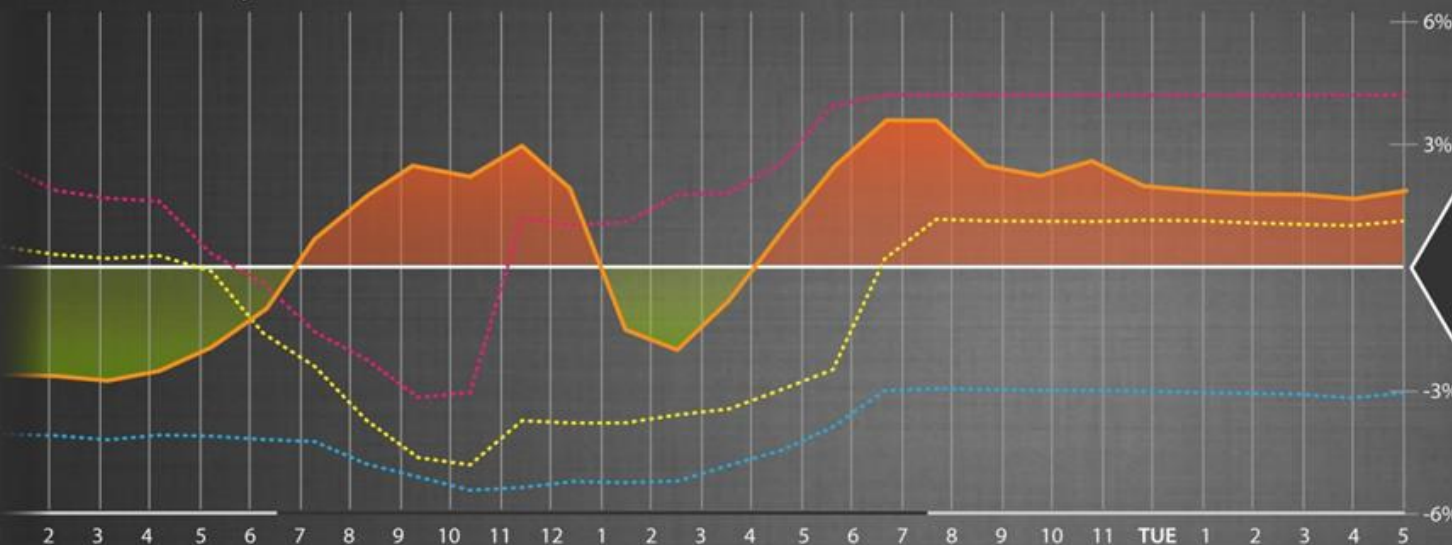
National
Provider

Clark Family

You've spend \$3.52 today on your electricity - 23% above your average
Add *National Provider's Water Package* for \$4.99 a month and start saving
43% of your electricity use occurs between 9pm and 6am



efficiency



savings

- June's Winner 15%
- 2nd You 7%
- 3rd Moore 3%
- 4th JB -3%

usage

day
overall
night

bill

\$ 19.32
this month

energy

Min: 540 w
Avg: 3324 w
Max: 7250 w

solar

73%
offset

2,861 w

night game

reduce 5% energy use
between 7pm and 7am

230/540 kWh
saved, 5 days left

 Thank you for your time. 

For more information

www.solidgreensystems.com

