TEXAS SOLAR OUTFITTERS

Green is the New Black

Texas Solar Outfitters

Texas Solar Outfitters is the leading solar company in the Greater Houston Area, and recognized as one of Top 200 in the U.S. by Solar Power World.

Texas Solar Outfitters is a full service solar engineering and construction specialist. The team includes NABCEP and UL Certified Installers, Master Electrician and LEED AP designer. The company designs residential and commercial grid-tied, off-grid and grid systems utilizing solar powered battery backup.

TexasSolarOutfitters.com

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The amount of solar energy reaching earth in **1 hour** is more than mankind consumes **each year**.

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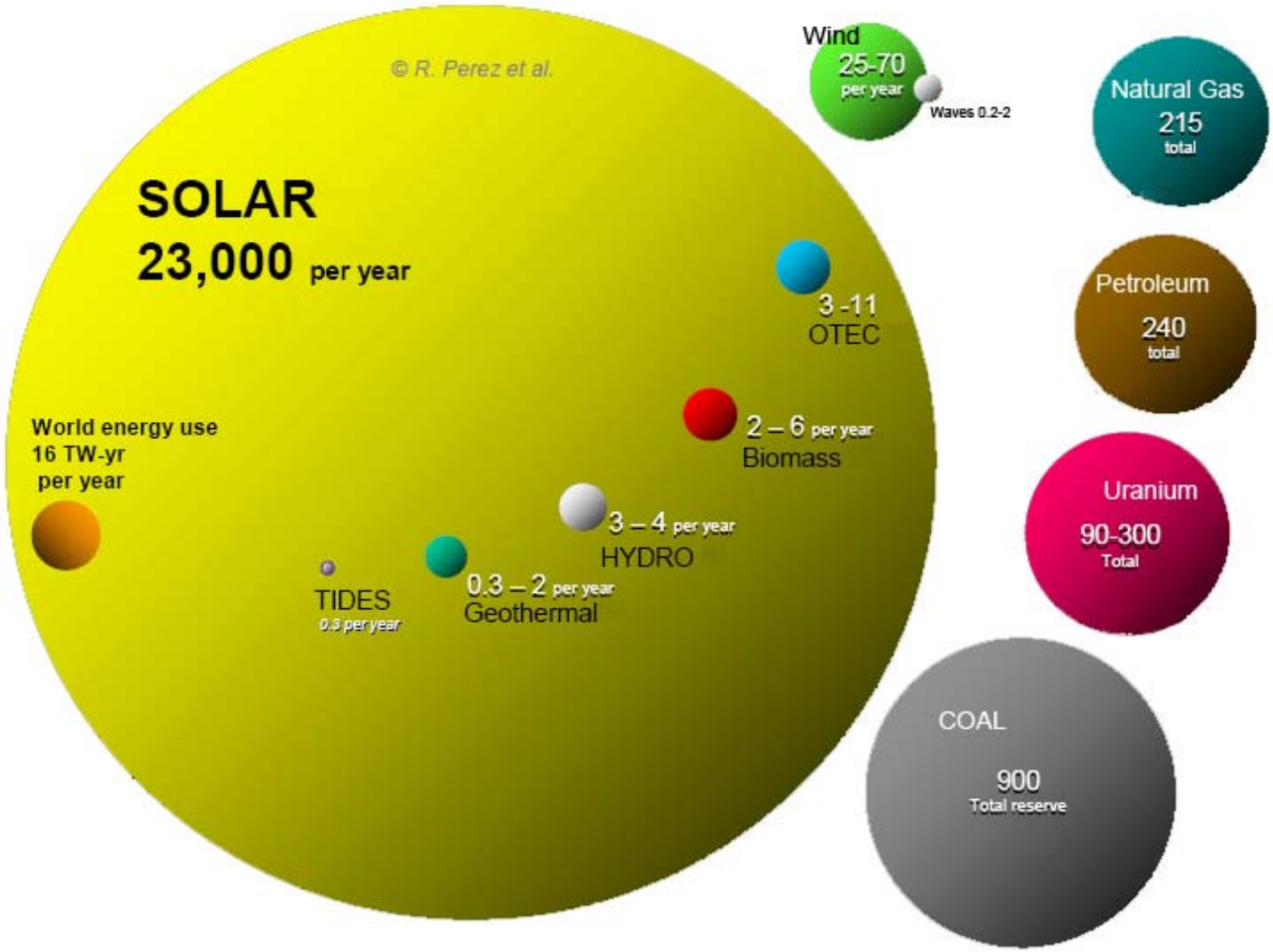
If natural gas provided all the energy we required, we would run out in about 13 years.



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Solar Energy

- Energy from the sun comes in two forms:

  heat & light

- We are going to focus on **Photovoltaic** (PV), which is converting the sun's **light** energy into electricity.

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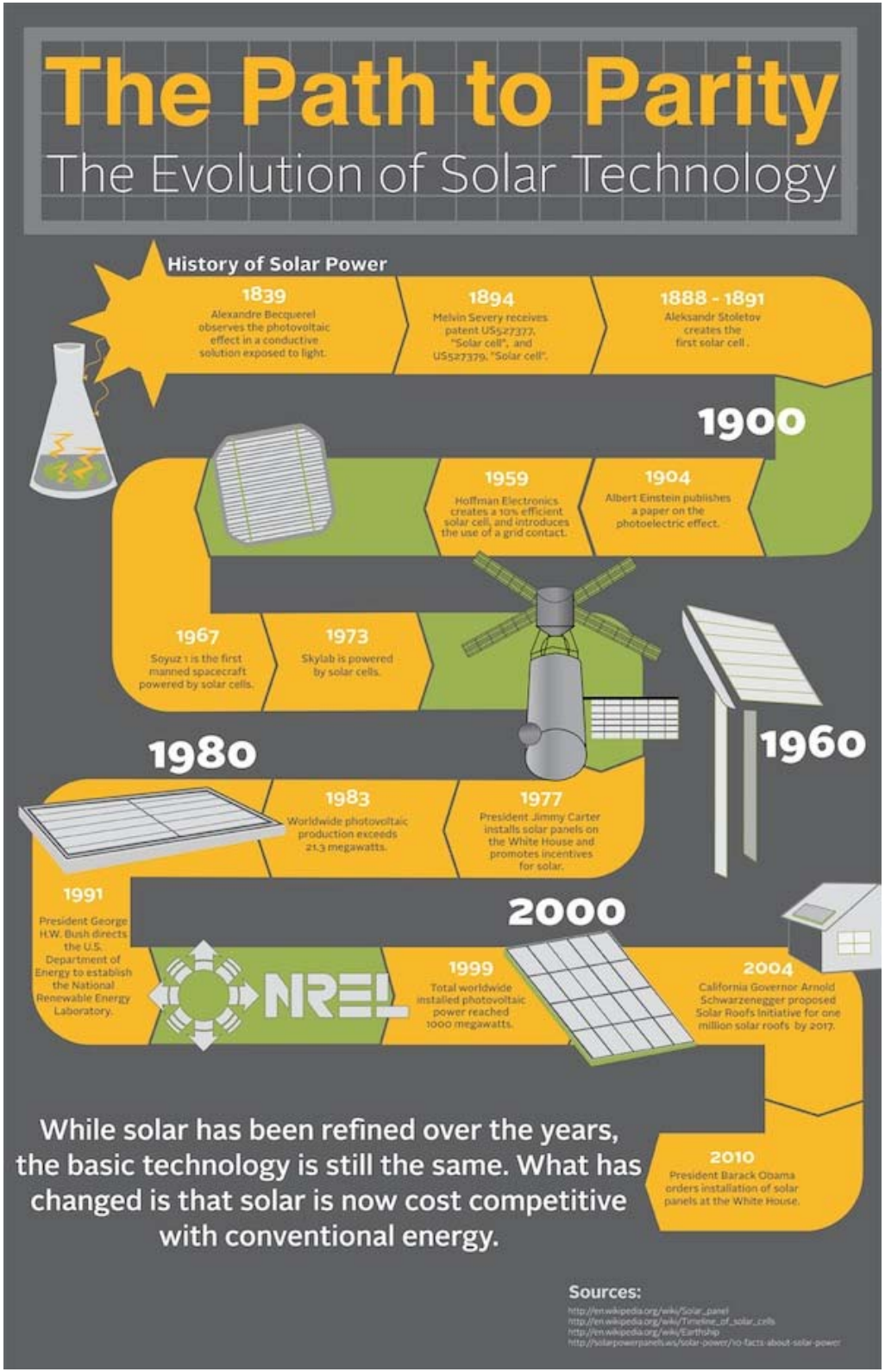

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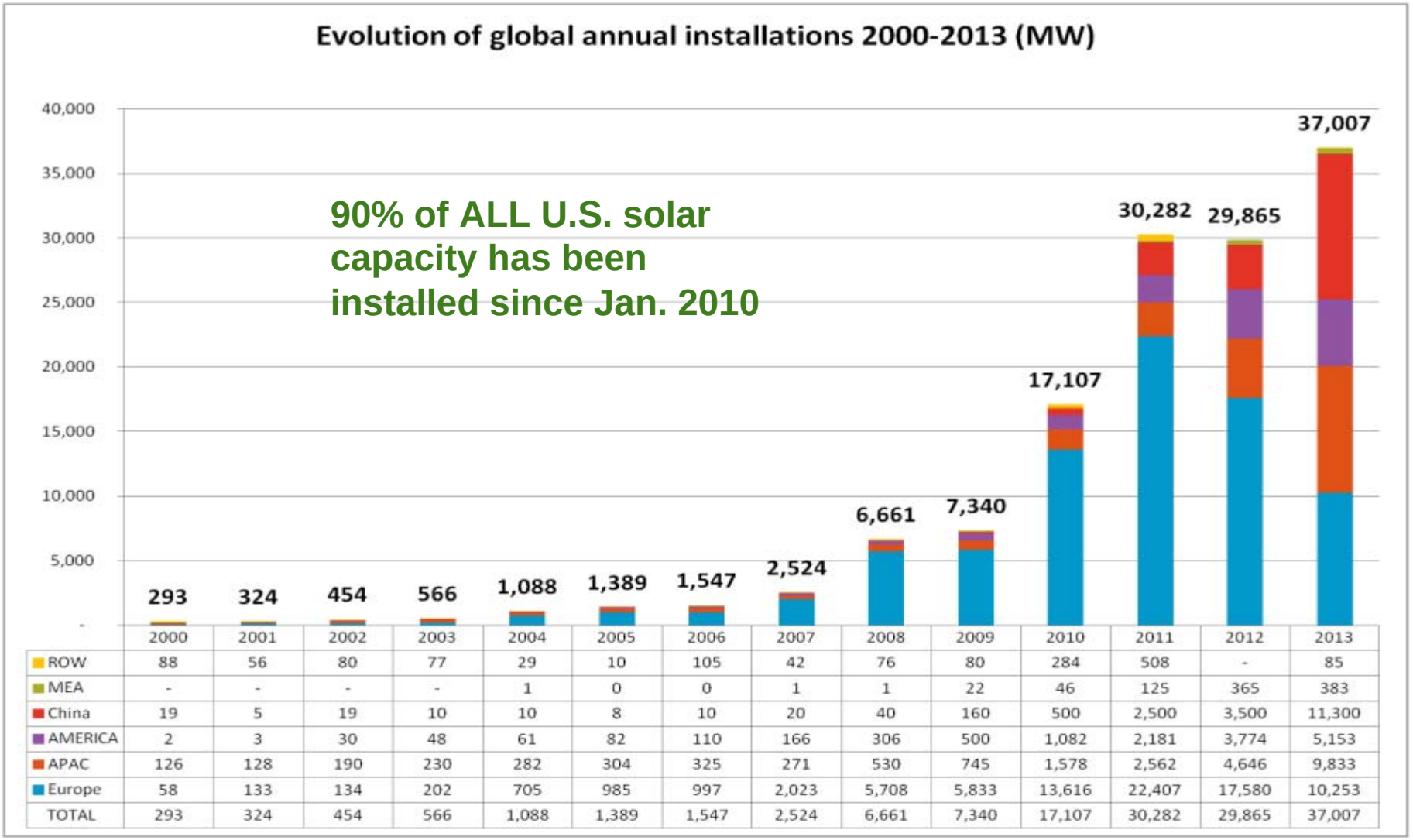
Global Solar Market



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
ROW	88	56	80	77	29	10	105	42	76	80	284	508	-	85
MEA	-	-	-	-	1	0	0	1	1	22	46	125	365	383
China	19	5	19	10	10	8	10	20	40	160	500	2,500	3,500	11,300
AMERICA	2	3	30	48	61	82	110	166	306	500	1,082	2,181	3,774	5,153
APAC	126	128	190	230	282	304	325	271	530	745	1,578	2,562	4,646	9,833
Europe	58	133	134	202	705	985	997	2,023	5,708	5,833	13,616	22,407	17,580	10,253
TOTAL	293	324	454	566	1,088	1,389	1,547	2,524	6,661	7,340	17,107	30,282	29,865	37,007

Source: EPIA

Texas Solar Market

Rhone Resch, President and CEO of the Solar Energy Industries Association: Solar Energy International Oct. 2011

"Texas has the potential to be a MASSIVE solar market...to put it into perspective, the sunshine that falls on Texas each month has more energy than all of the oil that has EVER been pumped out of this state. If you think oil made Texas great, just wait till you see what they do with solar..."

Houston Chronicle 6/16/2013

After a slow rise, solar starts to shine

Jeremy Young with Humble.

Brauner said many Green Mountain customers are drawn to solar as a way to reduce greenhouse gas emissions.

But Morton said the financial arguments are a lure for others.

"When I was a stockbroker, the challenge was getting consistent returns off the stock market," he said, referring to his previous career. "With this, I just need the sun to rise."

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Houston Chronicle 8/17/2013

Solar price trend is sunny in Texas

Texas out in front as costs for residential systems decline

The cost of solar systems is continuing to fall - with Texas leading the way - making rooftop sun power competitive in some cases with electricity from the grid.

Thomas B. Shea

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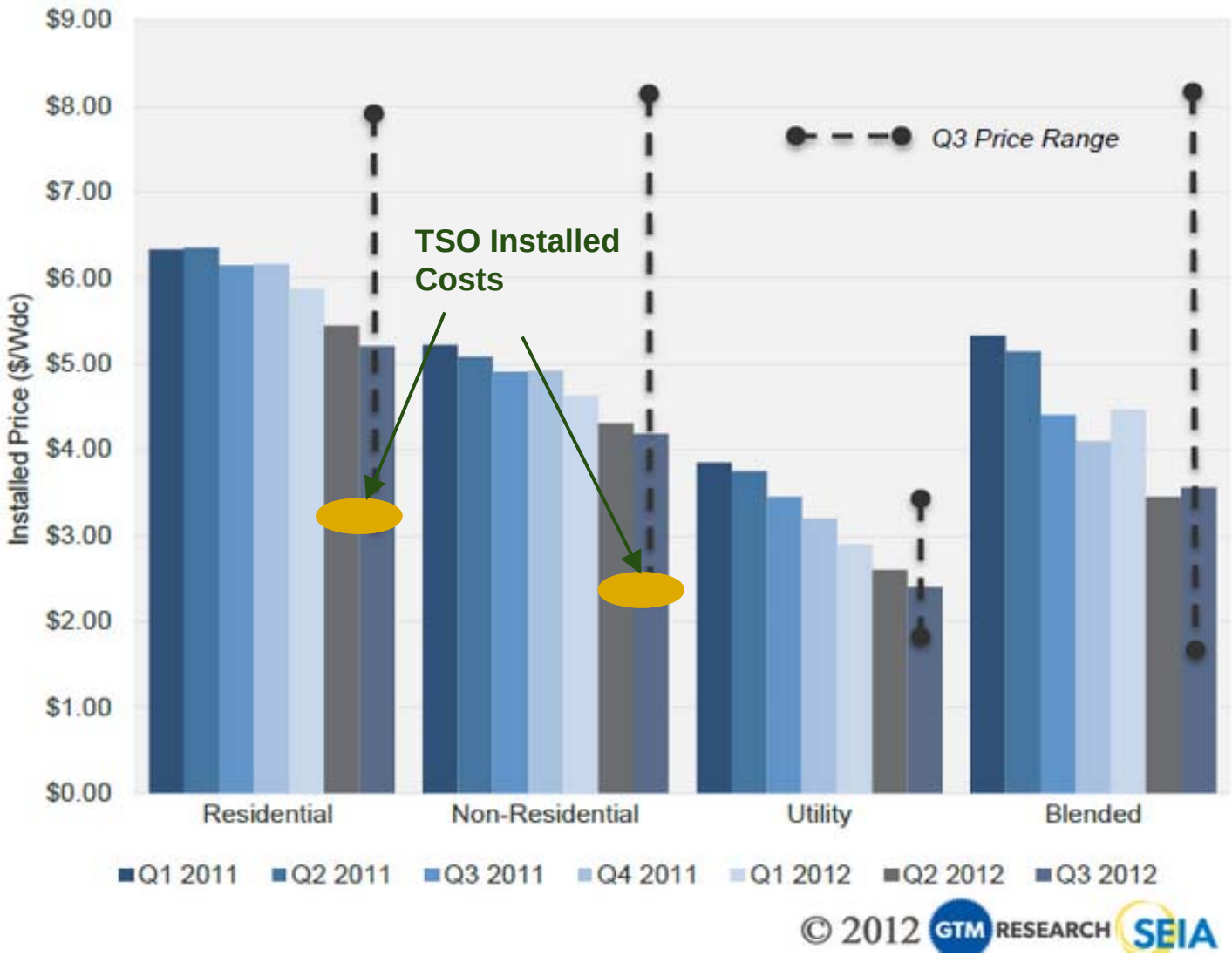
U.S. Installed Costs



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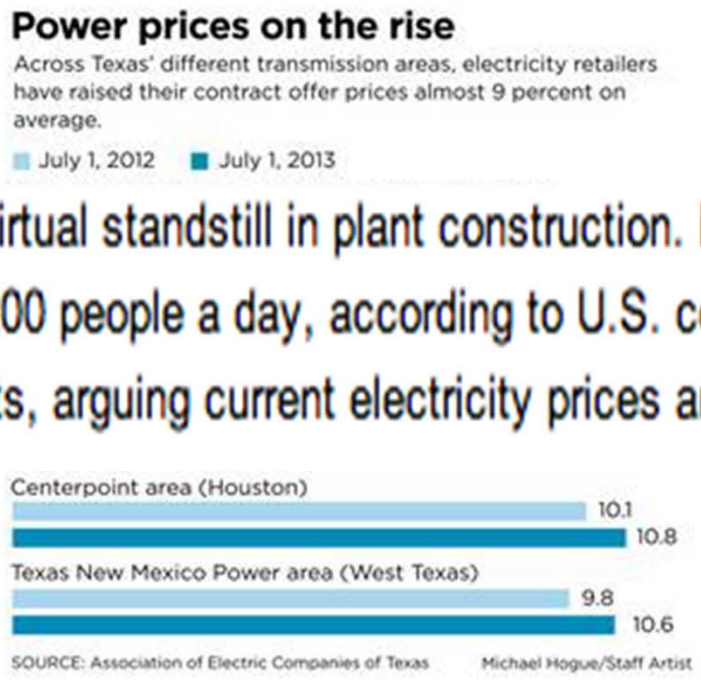
Electricity Prices on The Rise

Dallas Morning News, July 19th 2013



Complicating the situation is a virtual standstill in plant construction. New residents have been flooding Texas at a rate of more than 1,200 people a day, according to U.S. census data. But power companies have held off building more plants, arguing current electricity prices are too low to justify construction.

Keeping it Simple

- We're going side-step the long form arithmetic and focus on how much energy a sample array using 250W modules will produce at a residential location in Texas.

- Installations are unique, and there are numerous factors that go into a proper design - the goal here is to present the economic case to 'go solar'.

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Grid-Tied

- Net-metering is the term ‘generally’ used to describe how your utility offsets what you consume, against how much electricity you generate during a monthly billing cycle.
- Rule of Thumb: Size the array to cover base loads.
- This generally results in a system that will cover 50-70% of annual electricity demand.

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Sample Home

- Your electric bill is quoted in cents per kWh, we'll use 10 cents or $0.10 kWh.
- We're also going to assume our home uses 17,000 kWh of year of electricity
- Low usage month (base) is March (1,200 kWh)
- Peak usage month is August 2,600 kWh

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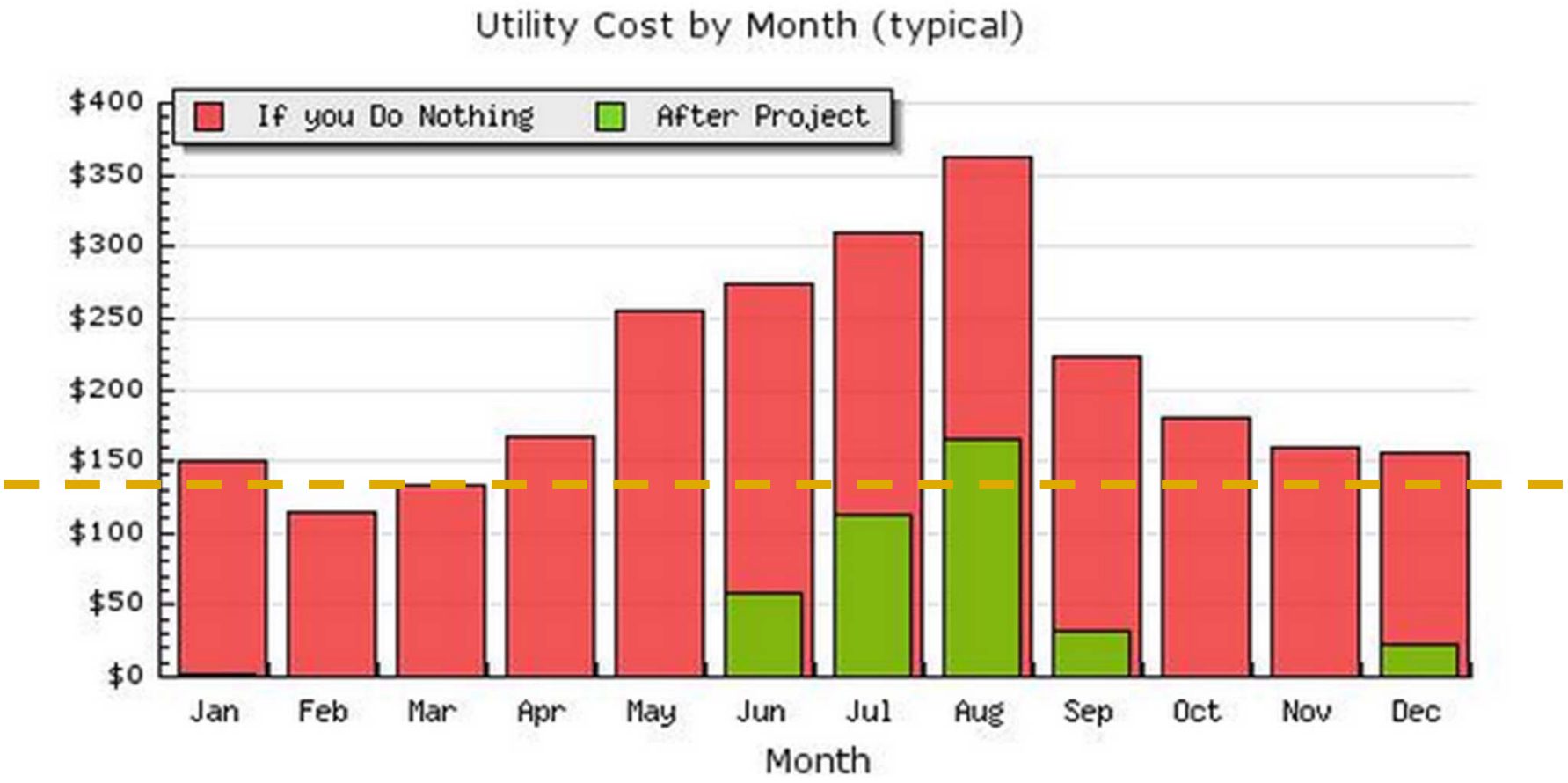
Sample Home



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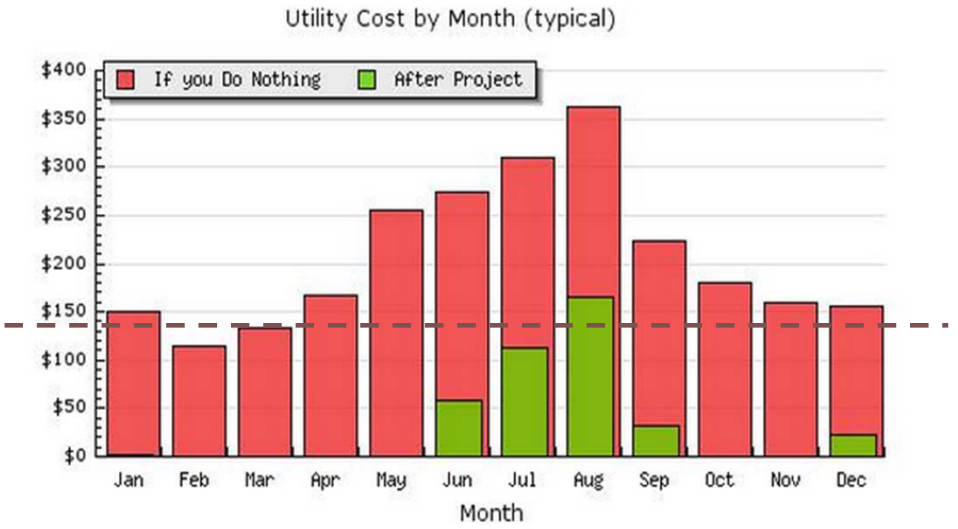
Sizing the System

- 'Rule of Thumb' system should be sized to generate about 1,000 kWh a month in this case, or 12,000 kWh a year.
- In this case, solar will provide 70% of demand, saving the customer $1,200 the first year.
  (1,200 kWh x $.10)
- Of course savings will increase as energy costs rise



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- A system that generates about 12,000 consists of 32 250W modules and needs to occupy about 650 sq.ft. of south facing roof or ground space.

- If you don't have 650 sqft of a shade-less, South facing roof, West/East or a combination works as well.

- East and West orientations generate about 85% of South.

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Costs

- A system that generates 12,000 kWh in Houston costs about $25k to purchase *before* tax credits.
- Federal 30% tax credit, reduces this amount to $17,500.
- The federal tax credit is a $ for $ reduction in a taxes owed. (exp. 2016)

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Economics

- For our model home, let's assume electricity costs increase by 4% a year from 2014.*
- By the 25th year savings rise to $3,200 a year from $1,200 in year 1.
- Total savings will amount to $54,000, or $75,000 if you consider that gross income (pre-tax) dollars are used to pay your electric bill.

*assumes utility rate will be $0.20 in 2032

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Summary of the Numbers

- So, even with NO rebates, the savings add up to far more than the system cost ($54,000 vs $17,500)
- LEC = Levelized Energy Cost = the lifetime cost of the energy produced by a system.
- The LEC for this system is $0.058 kWh...not bad!

$17,500
12,000 kWh X 25 yrs

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Conclusion

The extraordinary decline in module and BOS costs means homeowners and businesses can:

- Fix some or all of their electricity costs now, for decades to come.
- Alleviate concerns of a future that relies on burning a finite resource, impacted by regulatory and geopolitical events.
- Greatly reduce CO_2 emissions that would've been emitted on their behalf.

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Thanks for taking the time to learn more about solar energy. We left out a lot of math and science, and specific benefits for a business - very happy to talk about those in more detail.

Some of the other subjects we didn't cover, but which you can find on our website include:

1. Solar Leasing - monthly and prepaid options
2. Off-grid and Back-up Energy Storage
3. Property Appreciation

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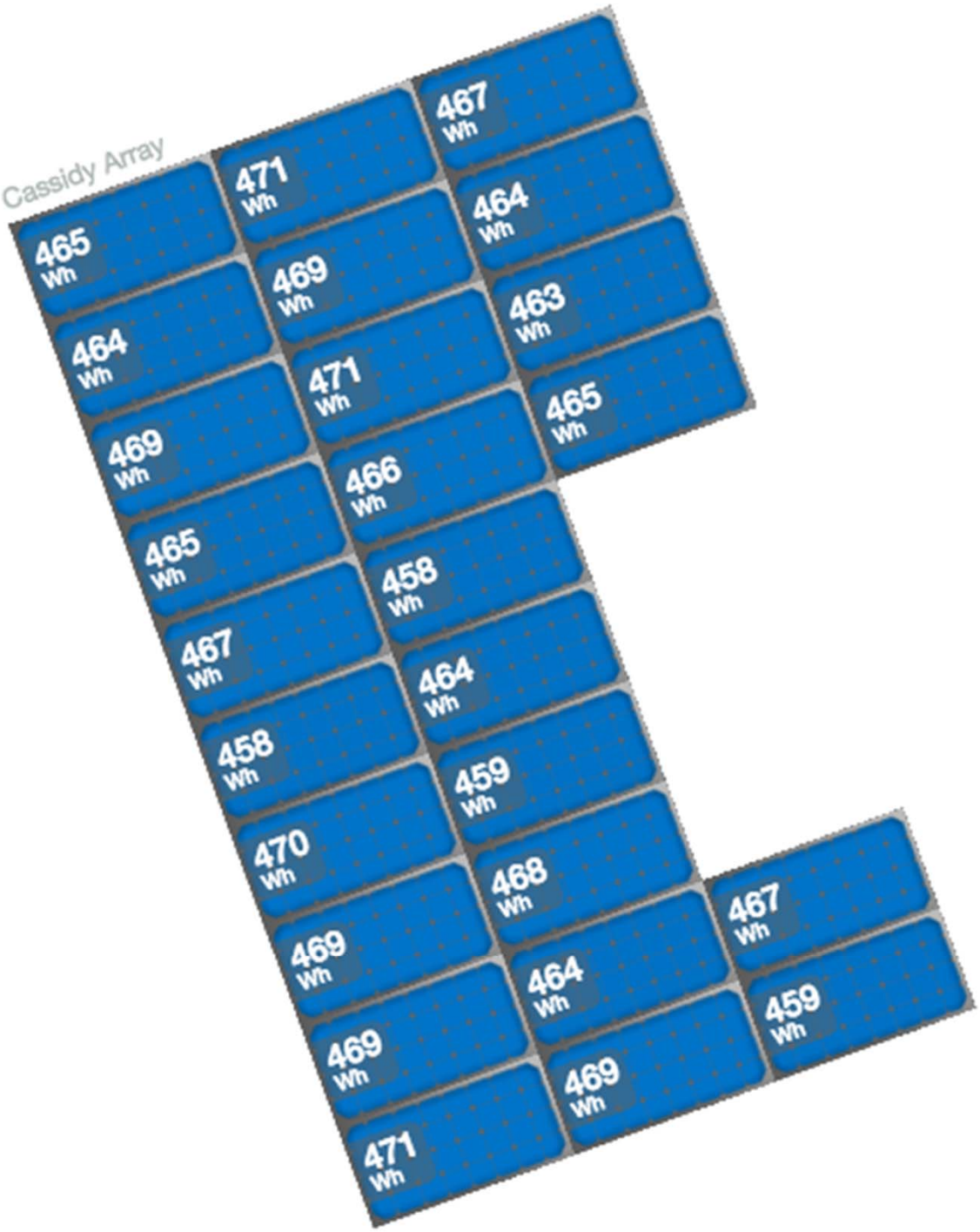

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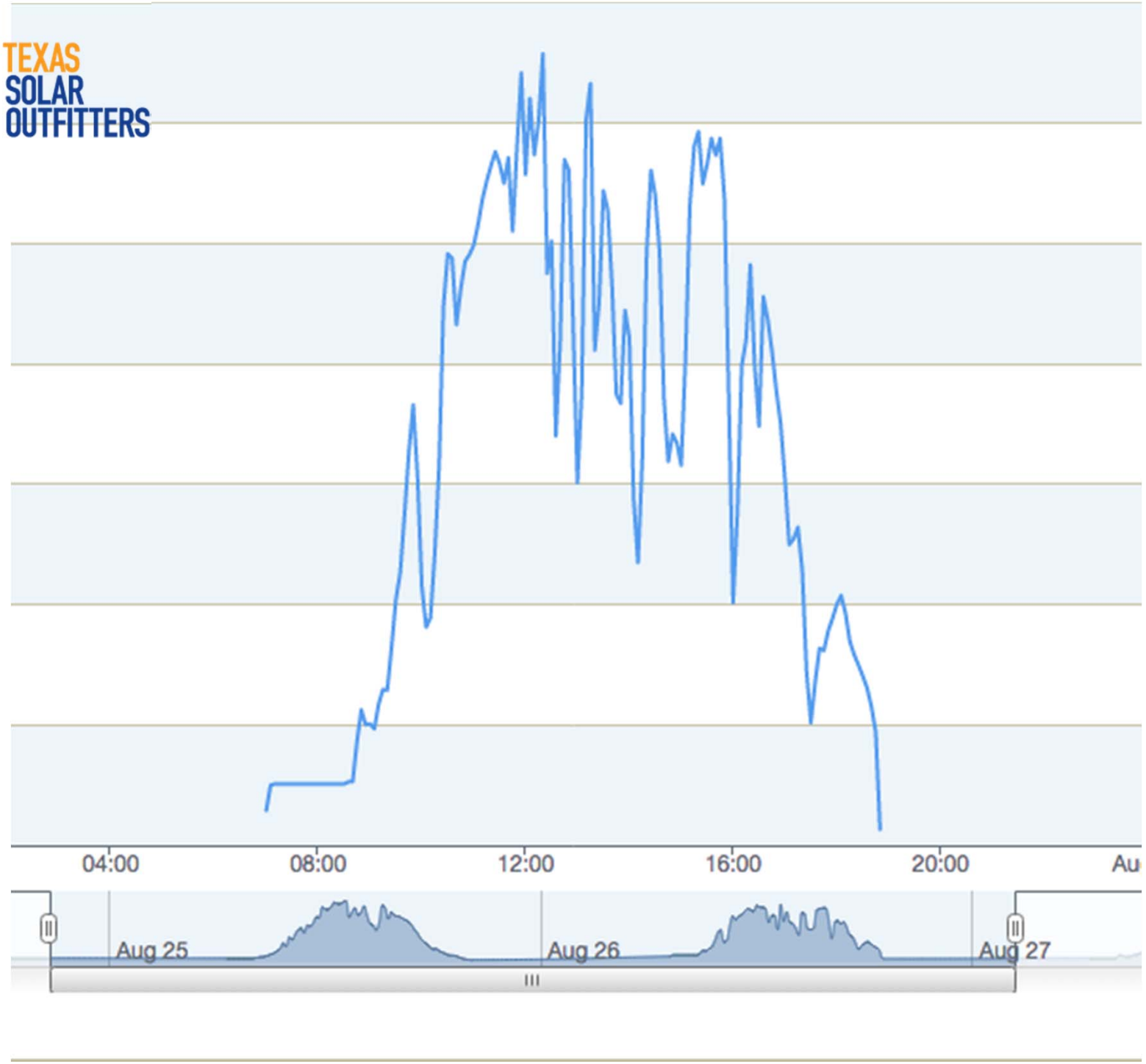

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