



# Intelligent Efficiency – It's Different in Texas

*Prepared for:*



# MP2's Energy Expertise

## Retail Electricity

1,200 MWs in PJM and ERCOT

Broad range of products tailored to customer requirements

Unique electricity products that optimize demand response

## Asset Operations

Manage 1,500 MWs of traditional natural gas, landfill gas, bagasse, wind and solar

Review multiple load and weather forecasts

Monitor actual conditions, including load, weather, generation and transmission outages

## Demand Response

Represent over 900 MWs of DR

Primary cloud-based NOC physically located in The Woodlands, TX but accessible anywhere. Secondary NOC in San Jose, CA with its own redundancy

Support all PJM DR products

## Distributed Generation

Designed, developed, installed and own over 44 MWs of distributed generation

Maximize over 75 MWs of distributed generation

## Solar

Manage North America's first fully merchant solar plant

Released first retail electricity product to fully implement net metering solution

## Wholesale Trading

Market intelligence

Risk Management

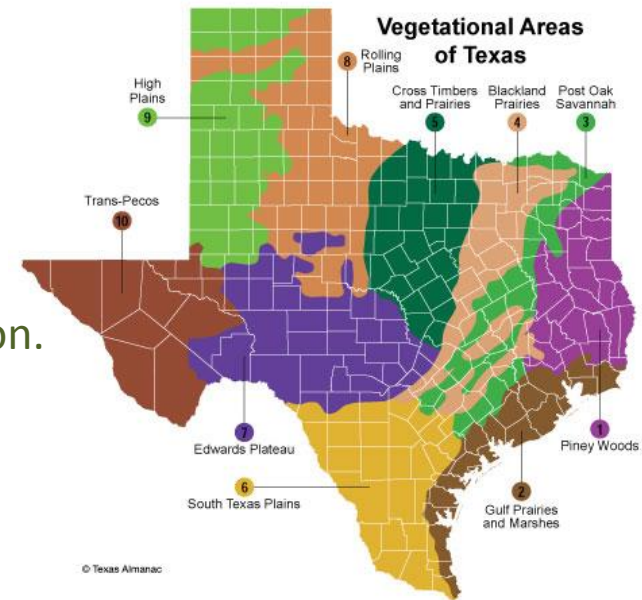
Supports specialized products, including DR

Credit Support by Sumitomo Corp

# It's Different IN Texas

## 1. Geographic Difference

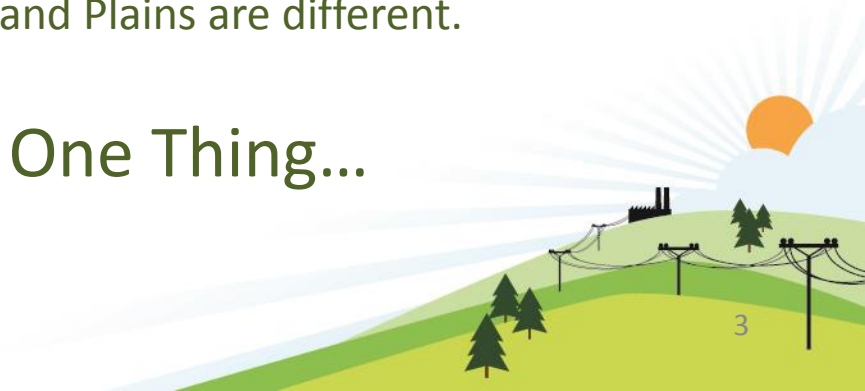
- a) Four of top 11 cities in US by population.
- b) Second most populated state but 26<sup>th</sup> in density.
- c) Second largest state - significant landscape variation.
- d) Diverse economy: energy, agriculture, chemical, medical, manufacturing, ports, etc.



## 2. Electricity Market Difference

- a) Most competitive in the US – where competition exists.
- b) Difference in transmission / distribution reliability and capacity.
- c) IDR / smart meters standard; except where it's not.
- d) Most installed wind capacity – but Coast and Plains are different.

## 3. BUT We All Come Together on One Thing...







# What Else is Different About Texas

## 1. Utilities are wires-only companies \*\*in deregulated areas.

- a) REPs sell energy

## 2. No Energy Payments for Demand Response

- a) This is the 'third party access' problem.
- b) Effectively is an LMP-G market for customers.

## 3. No Capacity Market

- a) Not regulated by FERC.
- b) Wholesale energy can reach \$9,000 / MWh

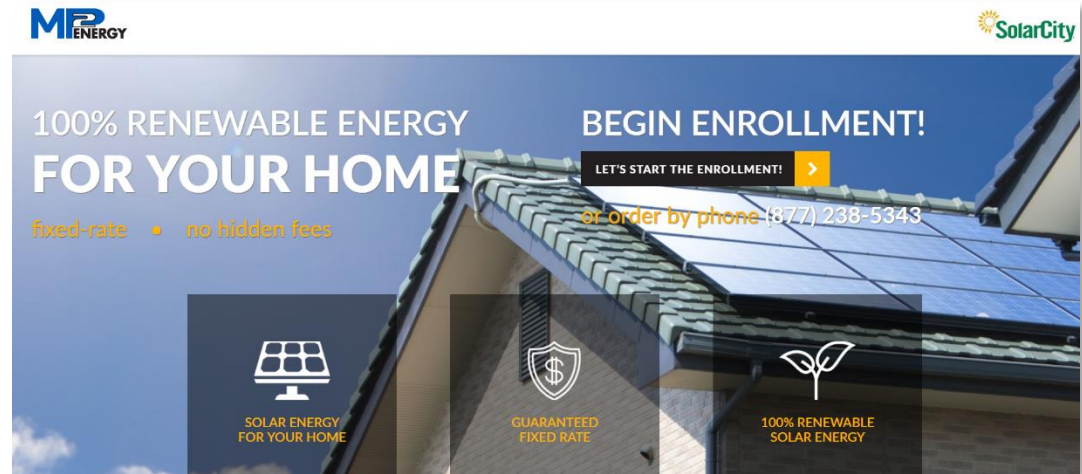
## 4. Limited Import/Export

- a) ERCOT 'island' creates different operational challenges.



# Some Retailers in Texas Offer:

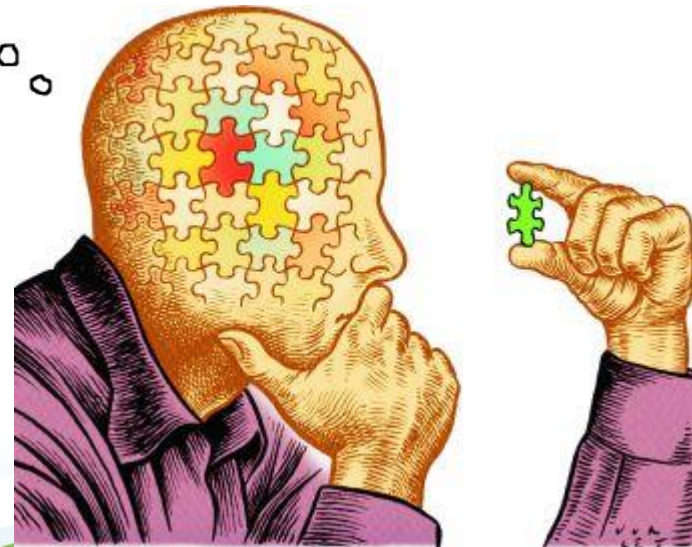
1. Distributed Generation
2. Energy Optimization
3. Energy Efficiency
4. Demand Response
5. On Bill Financing
6. Big Data Analysis
7. TOU Rates / Index / Price Responsive Rates



# Generic Drivers for Energy Efficiency Measures:

1. High Energy Price Levels
2. Significant Price Separation (On Peak vs. Off Peak)
3. Expected High Prices
4. Volatility
5. High Demand Charges
6. Subsidy

Let's examine  
these a little  
further...

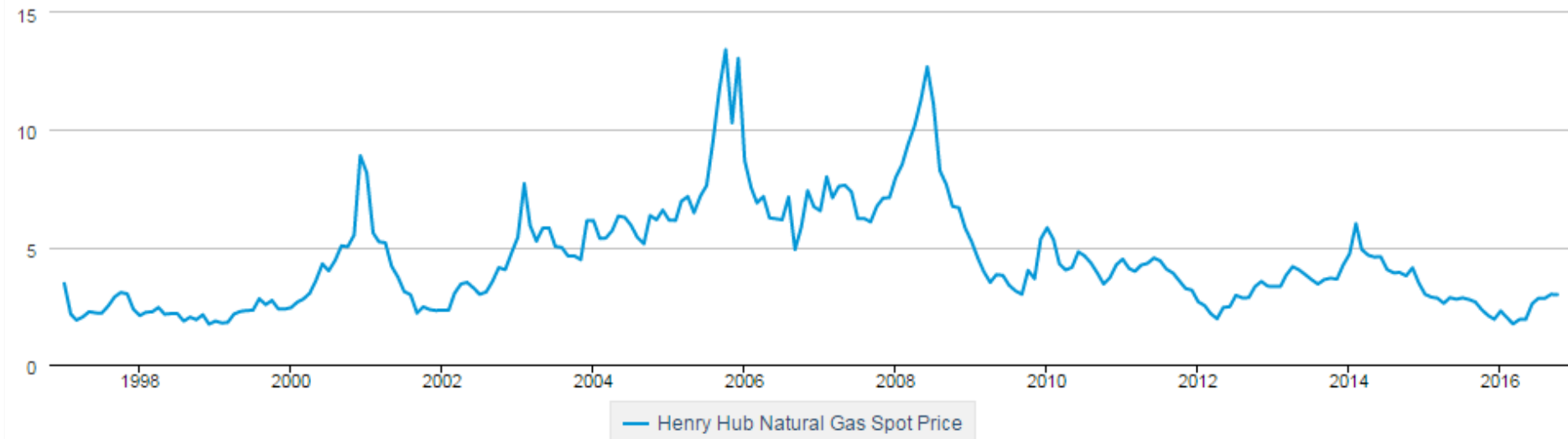


# Two Out of Six Might Do It:

## 1. High Price Levels (this isn't it...)

Henry Hub Natural Gas Spot Price

Dollars per Million Btu





# Two Out of Six Might Do It:

## 2. Significant Price Separation (On Peak vs Off Peak) (this isn't it either...)

**Real Time LMP**

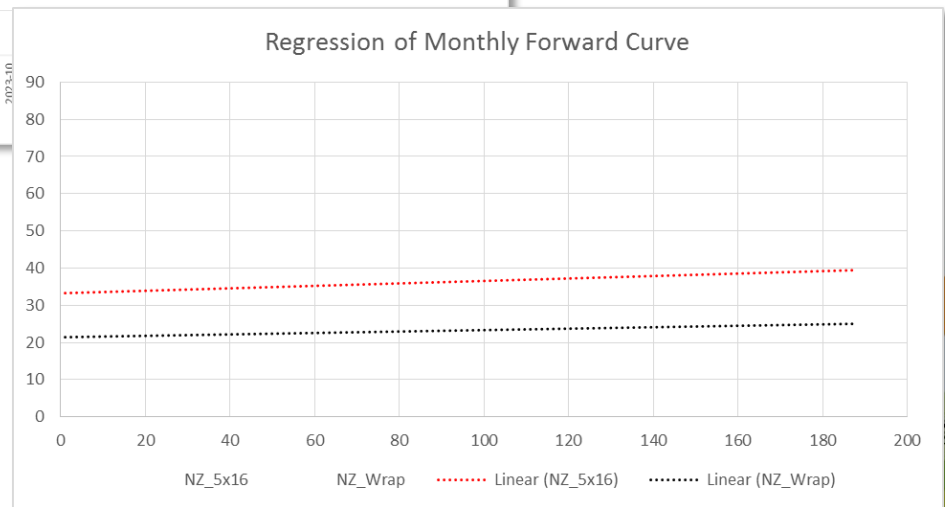
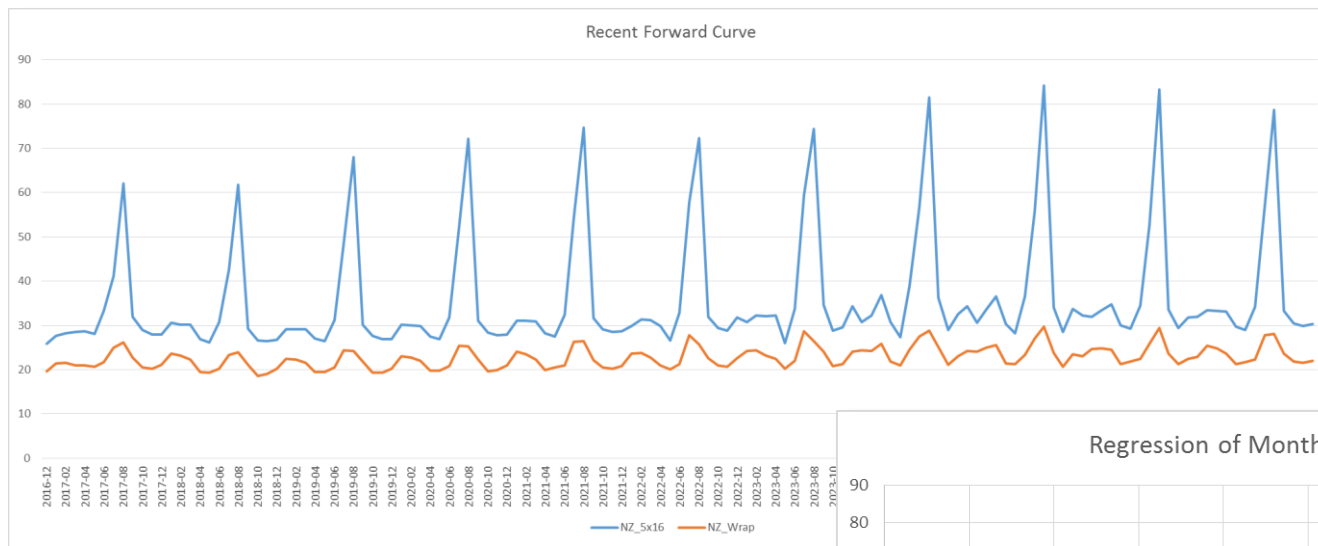
Year	Time Period	HOUSTON LZ	NORTH LZ	SOUTH LZ	WEST LZ
2011	2x16	\$37.45	\$37.17	\$37.81	\$35.51
	5x16	\$59.09	\$57.71	\$62.59	\$57.17
	7x8	\$25.63	\$25.87	\$25.79	\$19.15
2012	2x16	\$26.63	\$26.69	\$26.61	\$38.92
	5x16	\$29.35	\$29.69	\$31.06	\$46.59
	7x8	\$18.60	\$18.69	\$18.41	\$16.34
2013	2x16	\$31.93	\$31.28	\$32.08	\$36.44
	5x16	\$36.58	\$35.18	\$36.89	\$44.78
	7x8	\$24.47	\$24.58	\$24.27	\$22.91
2014	2x16	\$36.87	\$36.16	\$36.38	\$38.77
	5x16	\$45.13	\$43.79	\$48.28	\$52.92
	7x8	\$28.01	\$27.25	\$27.33	\$28.07
2015	2x16	\$28.62	\$24.86	\$27.37	\$26.60
	5x16	\$28.37	\$28.13	\$30.09	\$30.37
	7x8	\$18.06	\$17.83	\$18.06	\$17.71
2016 (through 9/30)	2x16	\$28.35	\$23.47	\$24.03	\$22.60
	5x16	\$27.61	\$25.24	\$28.28	\$23.80
	7x8	\$14.76	\$14.90	\$14.51	\$14.27

Separation of peak and overnight prices still not enough



# Two Out of Six Might Do It:

## 3. Expected High Prices (don't look here...)



# Two Out of Six Might Do It:

## 4. Volatility (or here...)

ERCOT 2015 State of the Market Report

Real-Time Market

Figure 6: ERCOT Price Duration Curve

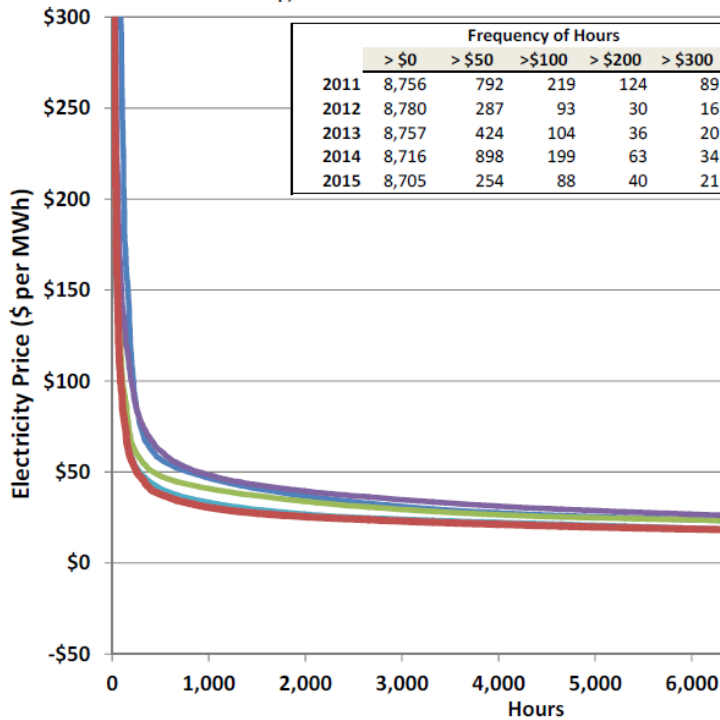
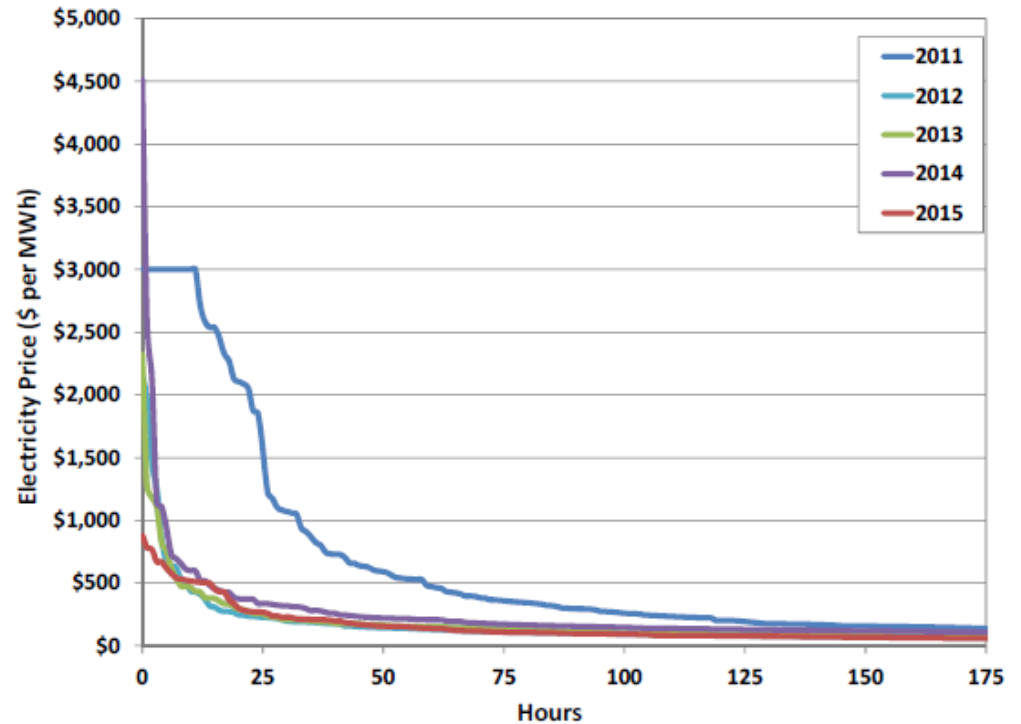


Figure 7: ERCOT Price Duration Curve – Top 2% of Hours



# Two Out of Six Might Do It:

## 5. High Demand Charges

(hey, this looks promising...)

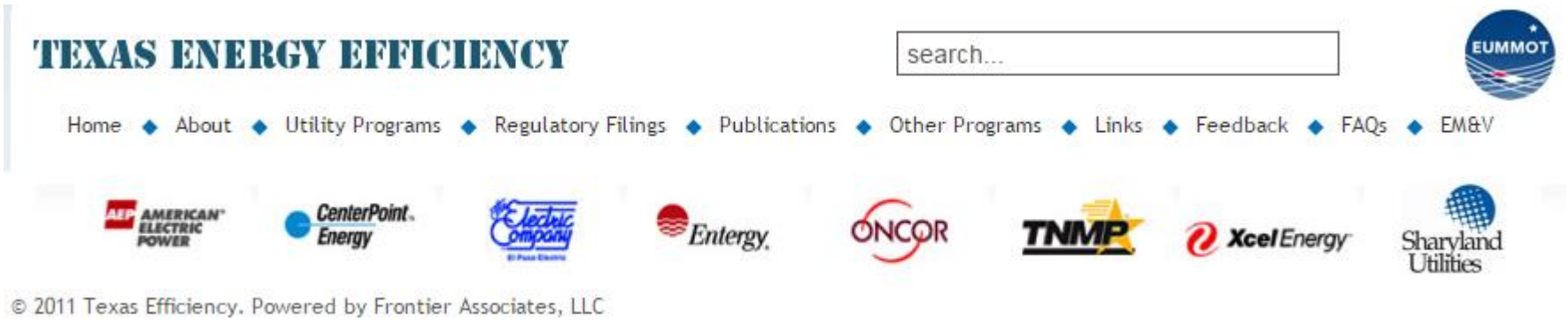
An increase over **1,666%** in ten years will get attention.

Transmission Cost Recovery Factor (TCRF)

Effective Date	Residential Service (\$/kWh)	Secondary Service			Primary Service			Substation (\$/4CP kW)	Transmission Service (\$/4CP kW)
		≤ 10 kW (\$/kWh)	>10 kW		≤ 10 kW (\$/kWh)	>10 kW Distribution Line			
			Non-IDR (\$/NCP kW)	IDR (\$/4CP kW)		Non-IDR (\$/NCP kW)	IDR (\$/4CP kW)		
Sept. 1, 2016	0.017099	0.008810	4.026318	4.147862	0.008694	3.725416	4.284415	2.190903	3.485010
March 1, 2016	0.010878	0.006844	3.295464	3.920838	0.007985	2.721529	3.510469	3.304420	3.061538
Sept 1, 2015	0.014101	0.006987	3.472800	3.755437	0.006852	2.476787	3.462231	3.576640	3.159436
March 1, 2015	0.012189	0.006771	3.264002	3.770375	0.006071	2.919763	3.677512	3.494888	3.544887
Sept 1, 2014	0.012012	0.006736	3.481646	3.795392	0.006041	2.628477	3.639964	3.520538	3.667981
March 1, 2014	0.010953	0.007165	3.079186	3.516757	0.005666	2.521523	3.325860	3.350609	3.605516
Sept. 1, 2013	0.012052	0.006532	2.665916	2.778674	0.004906	2.158241	2.616894	2.759452	2.840117
March 1, 2013	0.007926	0.005692	2.222965	2.550483	0.004282	2.232660	2.548630	2.803877	2.665781
Sept 1, 2012	0.010553	0.006286	2.440971	2.508042	0.004183	2.175351	2.568354	2.655406	2.636809
March 1, 2012	0.005386	0.004840	1.827715	2.142828	0.004089	1.785852	2.237058	2.337749	2.228859
Sept. 1, 2011	0.007673	0.004833	1.976561	2.122139	0.003479	2.081311	2.186947	2.405318	2.231749
July 1, 2011	0.006872	0.004678	1.846436	2.059691	0.003346	2.124988	2.193299	2.402998	2.249449
March 1, 2011	0.000950	0.000731	0.283570	0.385626	0.000629	0.302083	0.396410	0.283060	0.422800
Sept. 1, 2010	0.000685	0.000455	0.170603	0.233457	0.000344	0.191823	0.229377	0.252862	0.247124
March 1, 2010	0.000516	0.000343	0.128406	0.175714	0.000259	0.144377	0.172643	0.190319	0.186001
Dec. 30, 2009	0.000363	0.000246	0.091033	0.125668	0.000186	0.105518	0.117411	0.120862	0.120722
Sept. 17, 2009	0.000363	0.000246	0.091033	0.125668	0.000186	0.112336	0.117110	0.117110	0.120722
Sept. 1, 2009	0.002356	0.002462	0.472547	0.840573	0.001623	0.479068	0.720912	0.720912	0.691746
March 1, 2009	0.002189	0.002287	0.439061	0.781008	0.001508	0.445120	0.669826	0.669826	0.642727
Sept. 1, 2008	0.002063	0.002127	0.403055	0.702664	0.001420	0.430280	0.619825	0.619825	0.573063
March 1, 2008	0.001732	0.001786	0.338338	0.589841	0.001192	0.361193	0.520303	0.520303	0.481049
Sept. 1, 2007	0.001533	0.001635	0.310246	0.456301	0.001134	0.438720	0.414901	0.414901	0.440732
March 1, 2007	0.001215	0.001295	0.245789	0.361500	0.000898	0.347571	0.328701	0.328701	0.349165
Sept. 1, 2006	0.001051	0.001033	0.271030	0.256934	0.000667	0.881852	0.242577	0.242577	0.379605

# Two Out of Six Might Do It:

## 6. Subsidy (I'll take some of this too, please...)



For more info on using the PACE financing tool, contact: 855-738-PACE (7223)

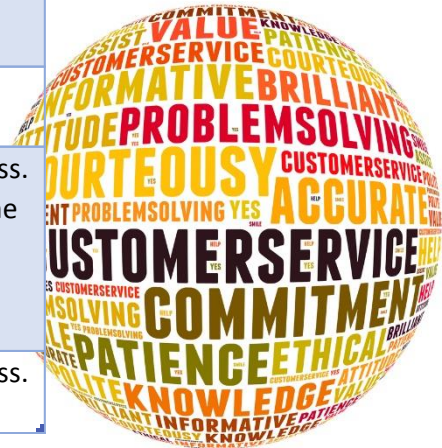




# Thank you - Any Questions?

## Industry Recognition and Accolades

- 2012** - DNV KEMA (now DNV GL) ranked MP2 #1 for overall satisfaction amongst all retail energy providers.
- 2013** - DNV KEMA (now DNV GL) ranked MP2 #1 for overall satisfaction amongst all retail energy providers.
- 2014** - DNV GL ranked MP2 #3 in Overall Satisfaction and #5 of Ease of Doing Business.
  - The Energy Professionals Association (TEPA) awarded MP2 the Supplier of the Year award for outstanding broker and customer satisfaction.
  - The Energy Research Consulting Group (ERCG) ranked MP2 #2 in overall satisfaction and #1 in ease of doing business.
- 2015** - DNV GL ranked MP2 #1 in Overall Satisfaction and #1 of Ease of Doing Business.
  - ERCG ranked MP2 #1 in Overall Satisfaction.



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