



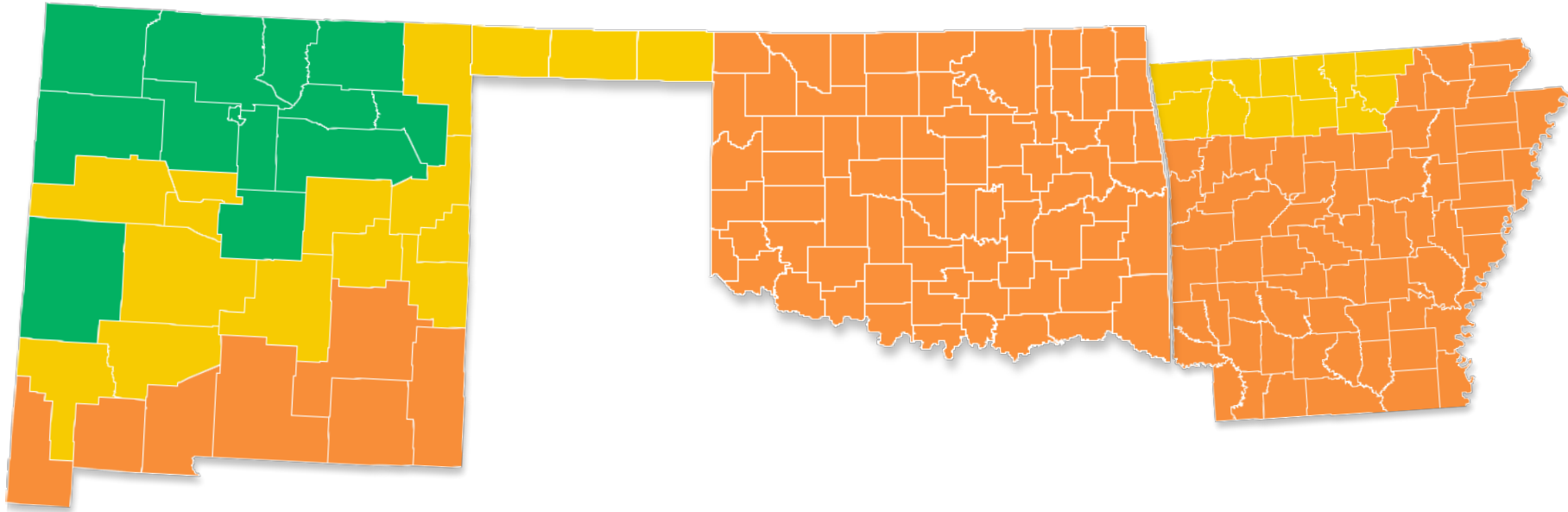
Climate Zone 3: New Homes Program Transitions under 2009 IECC

A quick look at Residential, New Construction EE Programs in Oklahoma, Arkansas & New Mexico

February 18, 2015

Steve Ellison
Senior Manager
ICF International

The Geography



Climate Zone 3 in Orange

Who Moved My Cheese?

Just like Dr. Johnson warned us...



... the “cheese” moved on January 1, 2012

- ✓ Floating HERS Index
- ✓ 4 Checklists
- ✓ SFA
- ✓ HVAC Credentialing
- ✓ Increased costs
- ✓ Certified, not qualified



Permit Date ²	Date of Final Inspection ¹		
	4/1/2011	1/1/2012	7/1/2012
Before 4/1/2011 ^{3, 4}	v2	v2.5	v3
Between 4/1/2011 and 12/31/2011 ⁴		v2.5	v3
On or after 1/1/2012 ⁵		v3	

Version 2	Version 2: 2006 Guidelines
Version 2.5	Version 2.5: Core Version 3 energy efficiency measures with Air Barriers and Air Sealing sections of Thermal Enclosure System Rater Checklist; Other checklists completed but not enforced
Version 3	Version 3: Core Version 3 energy efficiency measures with all checklists completed and enforced

And the results...

Region	2011	2014	%Δ
Oklahoma	1,552	51	-97%
Tulsa MSA	288	39	-86%
Lawton MSA	18	1	-94%
Arkansas	252	32	-87%
Little Rock MSA	81	3	-96%
Other	31	27	-13%
Hot Springs	3	-	-100%
New Mexico	1,320	156	-88%
Doña Ana County	139	66	-53%

Plus, evaluators were beginning to ding our clients for paying incentives for “other fuels”



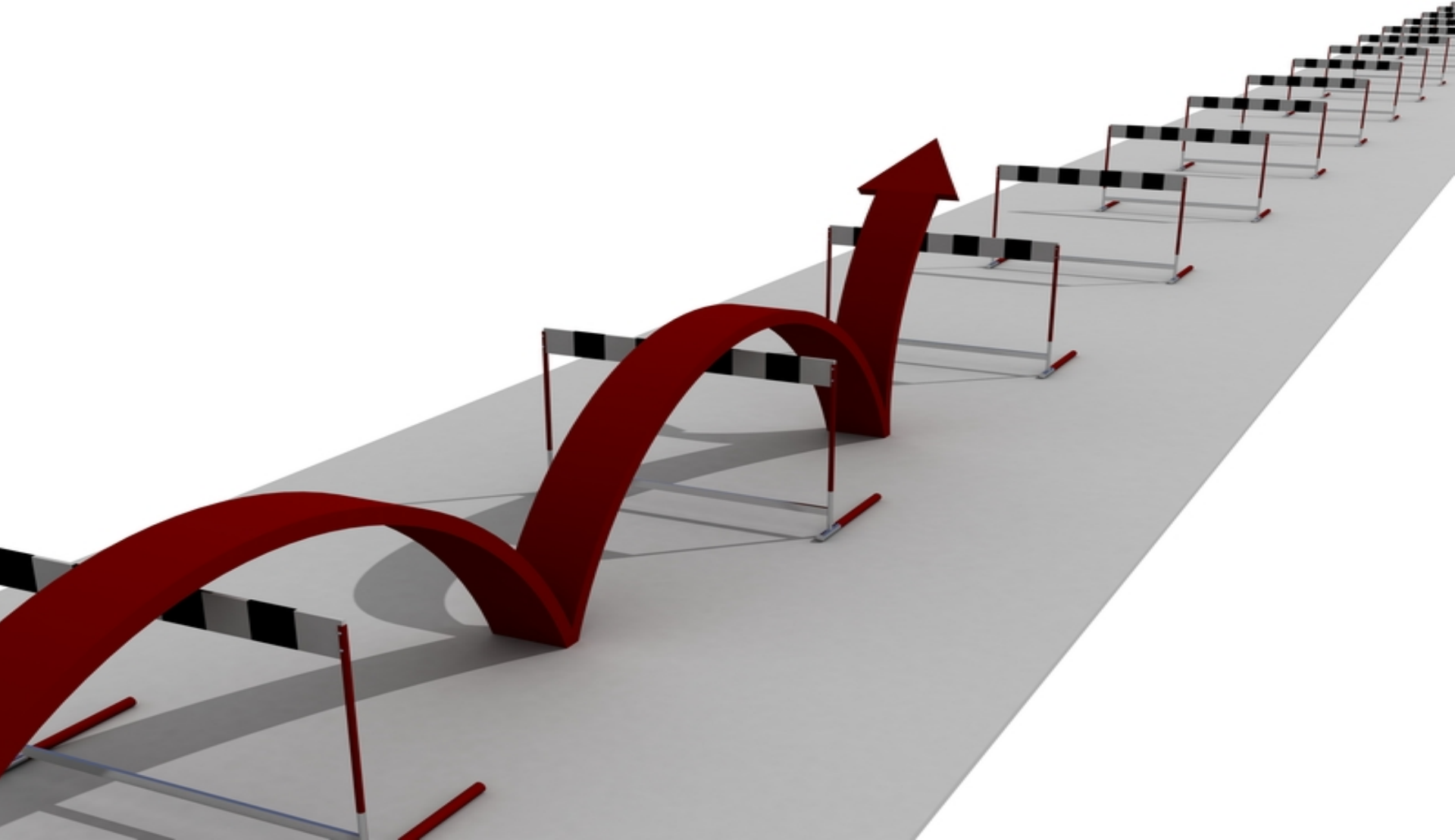
So if we were going to save our Programs...



...we knew that we needed to adapt.



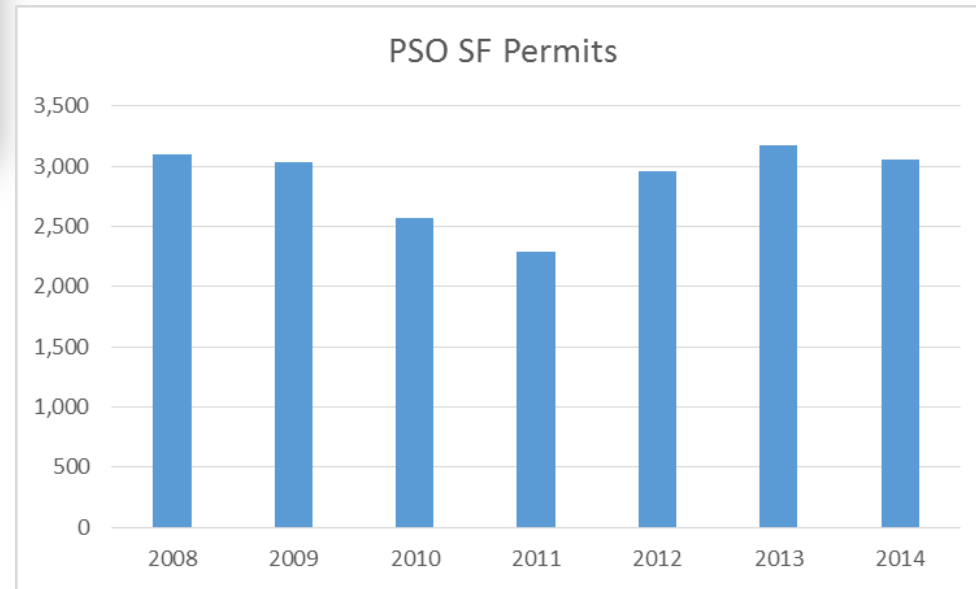
How did we respond?





***PUBLIC SERVICE
COMPANY OF
OKLAHOMA***SM

A unit of American Electric Power



- Program began 9/2008
- Peaked at ~ 700 E* V2.0 homes in 2010
- 2011 ~350 E* V2.0 homes
- Interim Hybrid Model enacted PY 2012

2012 Program Results

Tier	#Homes	%Total	kW	kWh	\$\$
Prescriptive	38	9.80%	7.5	16,201	\$ 5,620
Tier 1 (HPH = ES V2.0)	339	87.10%	478.3	549,341	\$122,890
Tier 2 (ES V2.5/3.0)	11	2.80%	16.5	18,077	\$ 7,700
Tier 3 (ES V3.0)	1	0.30%	2.8	6,707	\$ 1,100
Totals	389	100%	505.1	590,326	\$137,310

This wasn't good enough.

2013 Program Design: Performance

Incentive per kWh* Saved above current baseline home	\$0.50
Additional Performance Bonuses	
10% Savings Bonus	\$200
15% Savings Bonus	\$250
20% Savings Bonus	\$300
30% Savings Bonus	\$350
Stretch Bonus	
ENERGY STAR Certification	\$200

*As determined by the Fuel Summary Report in REM/Rate (ICF developed UDRH file)

**All incentives are capped at \$1,500 per home.

Date: February 17, 2015 Rating No.: 15368-14
 Building Name: Simpson (Neptune) 1757 GL Rating Org.: Senercon
 Owner's Name: Phone No.: 915-613-4168
 Property: 5600 New Castle Court Rater's Name: Luis Javier Ruiz
 Address: Santa Teresa, NM 88012 Rater's No.: 3363550
 Builder's Name: Accent Homes
 Weather Site: Santa Teresa, NM Rating Type: Confirmed Rating
 File Name: 5600 New Castle HERS.big Rating Date: 08/07/14

Fuel Summary Report

	UDRH	Simpson (Neptune)	1757 GL	DIFF	% DIFF
Annual Energy Cost (\$/yr)					
Natural gas	\$ 551	\$ 261	\$ 290	52.7%	
Electric	\$ 1392	\$ 1235	\$ 157	11.3%	
Annual End-Use Cost (\$/yr)					
Heating	\$ 478	\$ 194	\$ 284	59.3%	
Cooling	\$ 460	\$ 298	\$ 162	35.2%	
Water Heating	\$ 99	\$ 68	\$ 31	31.6%	
Lights & Appliances	\$ 907	\$ 936	\$ -29	-3.2%	
Photovoltaics	\$ -0	\$ -0	\$ -0		
Service Charges	\$ 190	\$ 190	\$ 0		
Total	2433	1685	448	21.0%	
Annual End-Use Consumption					
Heating (Therms)	613	245	368	60.0%	
Heating (kWh)	321	151	169	52.8%	
Cooling (kWh)	3199	2072	1127	35.2%	
Water Heating (Therms)	147	100	46	31.6%	
Lights & Appliances (Therms)	31	31	0		
Lights & Appliances (kWh)	878	888	-10	-1.2%	
Total (Therms)	790	376	414	52.4%	
Total (kWh)	9675	8579	1096	11.3%	
Annual Energy Demands (kW)					
Heating	0.2	0.1	0.1	52.8%	
Cooling	2.3	1.1	1.3	54.1%	
Water Heating (Winter Peak)	0.0	0.0	0.0		
Water Heating (Summer Peak)	0.0	0.0	0.0		
Lights & Appliances (Winter Peak)	0.6	0.6	-0.0	-2.9%	
Lights & Appliances (Summer Peak)	1.0	1.0	-0.0	-3.3%	
Total Winter Peak	0.7	0.7	0.1	10.4%	
Total Summer Peak	3.3	2.1	1.2	37.1%	

REMRate - Residential Energy Analysis and Rating Software v14.5.1

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



Yard Signs for Homes



Results

2013

- 640 Homes
- 80 were E* V3.0
- 927,341 kWh
- ~\$593K incentives (including Rater \$15/home)
- 44 homes reached \$1,500 cap

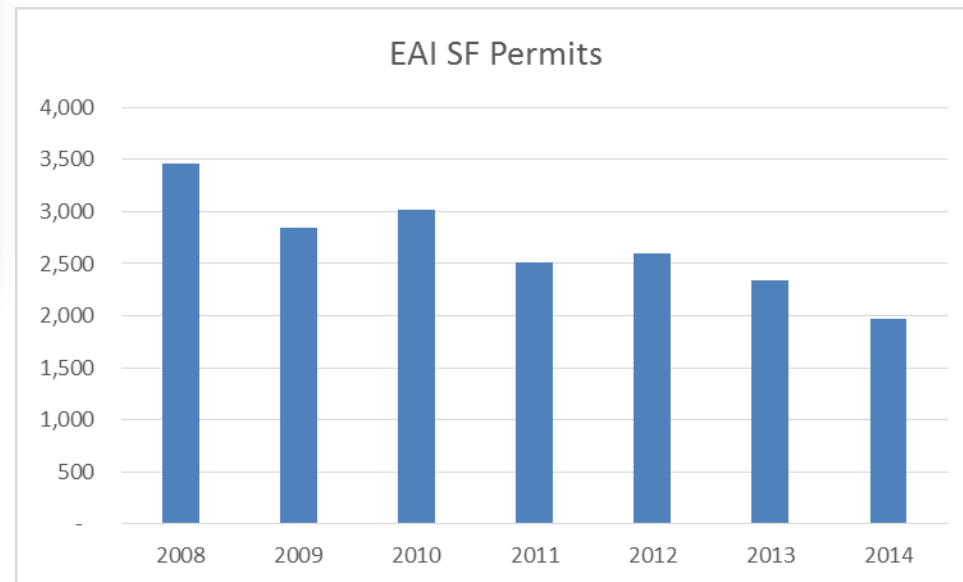
2014

- 646 Homes
- 44 were E* V3.0
- 926,807 kWh (baseline ratchet 7/1/2014)
- ~\$637K incentives (including Rater \$50/home)
- 16 homes reached \$1,500 cap



ENERGY SOLUTIONS

AN ENERGY ARKANSAS PROGRAM



- **Program began 4/2012**
- **Allowed both V2.5 (HPH) and V3.0 homes**
- **2012-2013: 37 homes**
 - **32 V3.0 homes**
 - **5 V2.5 homes**

So after averaging 2 homes per month...



2014 Program Design: Whole House

Incentive	Whole House Savings	Amount Rewarded
Base Incentive	Minimum 5% of whole-home savings required	\$0.40/kWh
10% Savings Bonus	10%	\$200
15% Savings Bonus	15%	\$250
20% Savings Bonus	20%	\$300
30% Savings Bonus	30%	\$350
Bonus Incentive for ENERGY STAR Certification		\$100
Maximum Incentive Per Home		\$1,500

***As determined by the Fuel Summary Report in REM/Rate (ICF developed UDRH file: Baseline & ADFA)**

****All incentives are capped at \$1,500 per home.**

This Home is Saving Energy and Money!

Learn More

www.energysolutionsarkansas.com



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2014 Program Design: Prescriptive

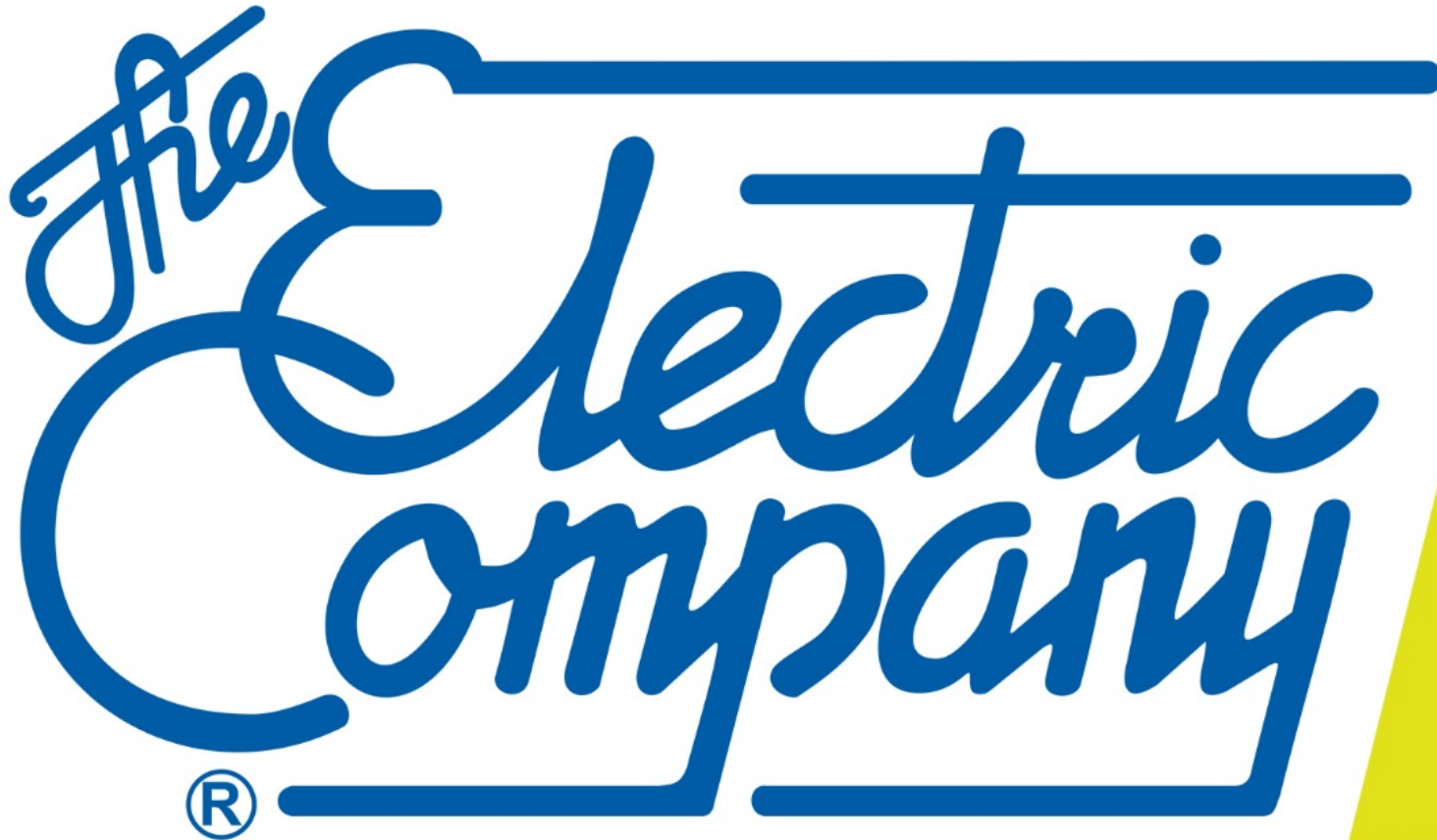
Component	Amount Rewarded
ENERGY STAR HVAC Equipment	\$0.25 per sqft of CFA
ENERGY STAR HVAC Equipment SEER 16+	\$0.35 per sqft of CFA
ENERGY STAR Windows & Doors	\$1 per sqft of windows/doors
ENERGY STAR Lighting Package (80% permanent lighting)	\$50 per home
(must install 2 components to qualify)	

***All incentives are capped at \$1,500 per home.**

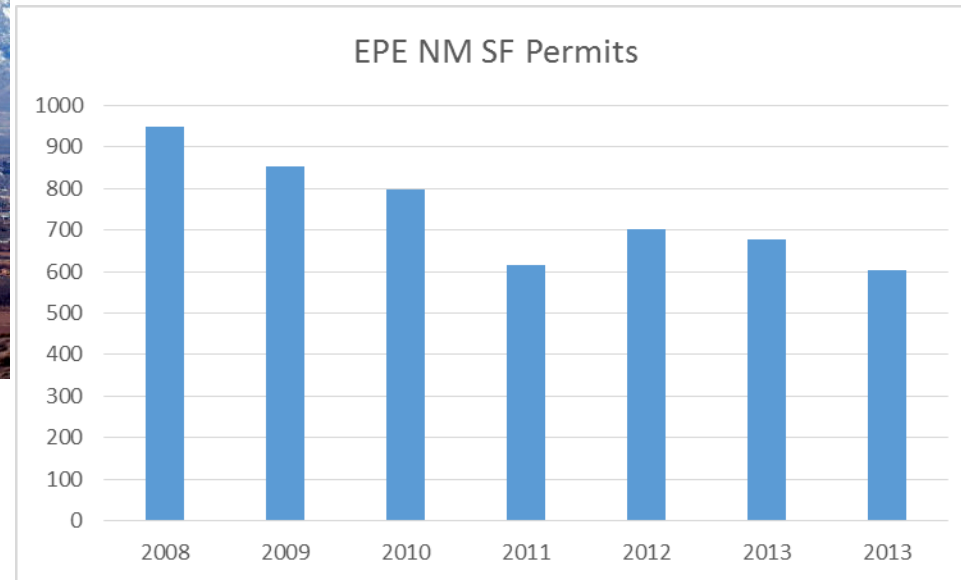
2014 Program Results

2014 New Homes Program Results			
	Prescriptive Path	Whole House Path	TOTAL
Number of Rebates	7	57	64
Incentives Paid	\$10,360.20	\$67,768.77	\$78,728.97
Total kWh Savings	38,037	136,449	174,486
Total kW Savings	23.1	22.5	45.6
Average kWh Savings	5,434	2,394	-
Average kW Savings	3.29	0.40	-
Average Sq. Ft.	4,283	1,409	-

2015 Program will follow same structure.



El Paso Electric



- Program began 9/2010
- Incentives for E* homes (V2.0, 2.5 & 3.0)
- Results
 - 2011: 134 homes (134 E*)
 - 2012: 147 homes (102 E*)
 - 2013: 196 homes (117 E*)
 - 2014: 152 homes (66 E*)

So noticing the E^* drop off & EPE getting dinged for “incentivizing” gas efficiency...



2015 Program Design: Whole House

<i>Incentive Assumptions</i>	
Base kWh Incentive	\$0.30
10% - Performance Bonus	\$100
15% - Performance Bonus	\$175
20% - Performance Bonus	\$250
30% - Performance Bonus	\$500
Maximum Incentive for Performance-based incentives (base + performance bonus)	\$1,500
ENERGY STAR bonus	\$100

***As determined by the Fuel Summary Report in REM/Rate (ICF developed UDRH file)**



2015 Program Design: Prescriptive

Equipment Measure	Amount Rewarded
New-SEER 16 - from - SEER 14	\$120 per ton
New-SEER 17 - from - SEER 14	\$180 per ton
New-SEER 18 - from - SEER 14	\$240 per ton
New-80% CFL - from - 50% CFL	\$1.85 per bulb
New-90% CFL - from - 50% CFL	\$1.94 per bulb
New-100% CFL - from - 50% CFL	\$2.00 per bulb
New-60% LED - from - 50% CFL	\$4.07 per bulb
New-70% LED - from - 50% CFL	\$4.44 per bulb
New-80% LED - from - 50% CFL	\$4.72 per bulb
New-90% LED - from - 50% CFL	\$4.94 per bulb
New-100% LED - from - 50% CFL	\$5.11 per bulb
New-Radiant Barrier - from - None	\$0.05 per sq ft of barrier
New-ES Refrigerator - from - Standard Appliance	\$20 per unit
New-Attic Insulation R-38 - from - Attic Insulation R-30	\$0.08 per sq ft of insulation
New-Attic Insulation R-48 - from - Attic Insulation R-30	\$0.14 per sq ft of insulation
New-100% LED Lighting; ES Refrigerator; Radiant Barrier; 17 SEER AC - from - Code Compliant Building	\$600 per home

***All incentives are capped at \$1,500 per home.**

- **Recruitment Meetings held 1/29/2015**
 - **Very positive response from current, past and potential builder participants**
 - **Results: TBD**

In summary...

- **Builders still want to build above code homes...**
- **...but the costs associated with ENERGY STAR® have pushed many home builders to look for alternatives**
- **Utility programs can take advantage of this arbitrage as long as they are aware of changing code environments.**
- **“Pay for Performance” seems to strike a balance for optimum participation.**

RESNET®

**EnergySmart
Builder**

Thank

You