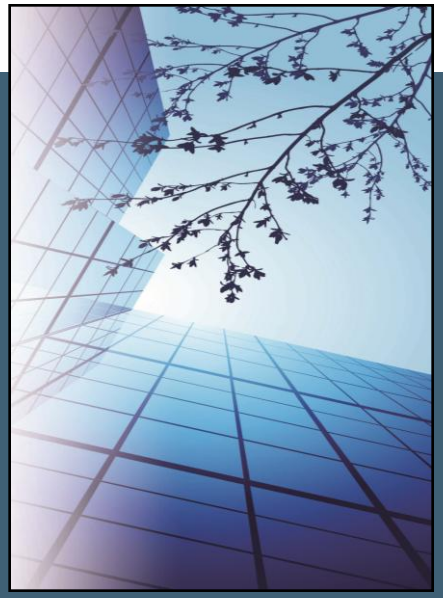


RENEWABLE ENERGY IN COLORADO

May 2, 2013
Paula Connelly, Managing Attorney
Xcel Energy

Renewable Energy Standard

2004
- Amendment 37: Voter-Approved RES

2007
- Colorado House Bill 1281: RES Increase to 20%

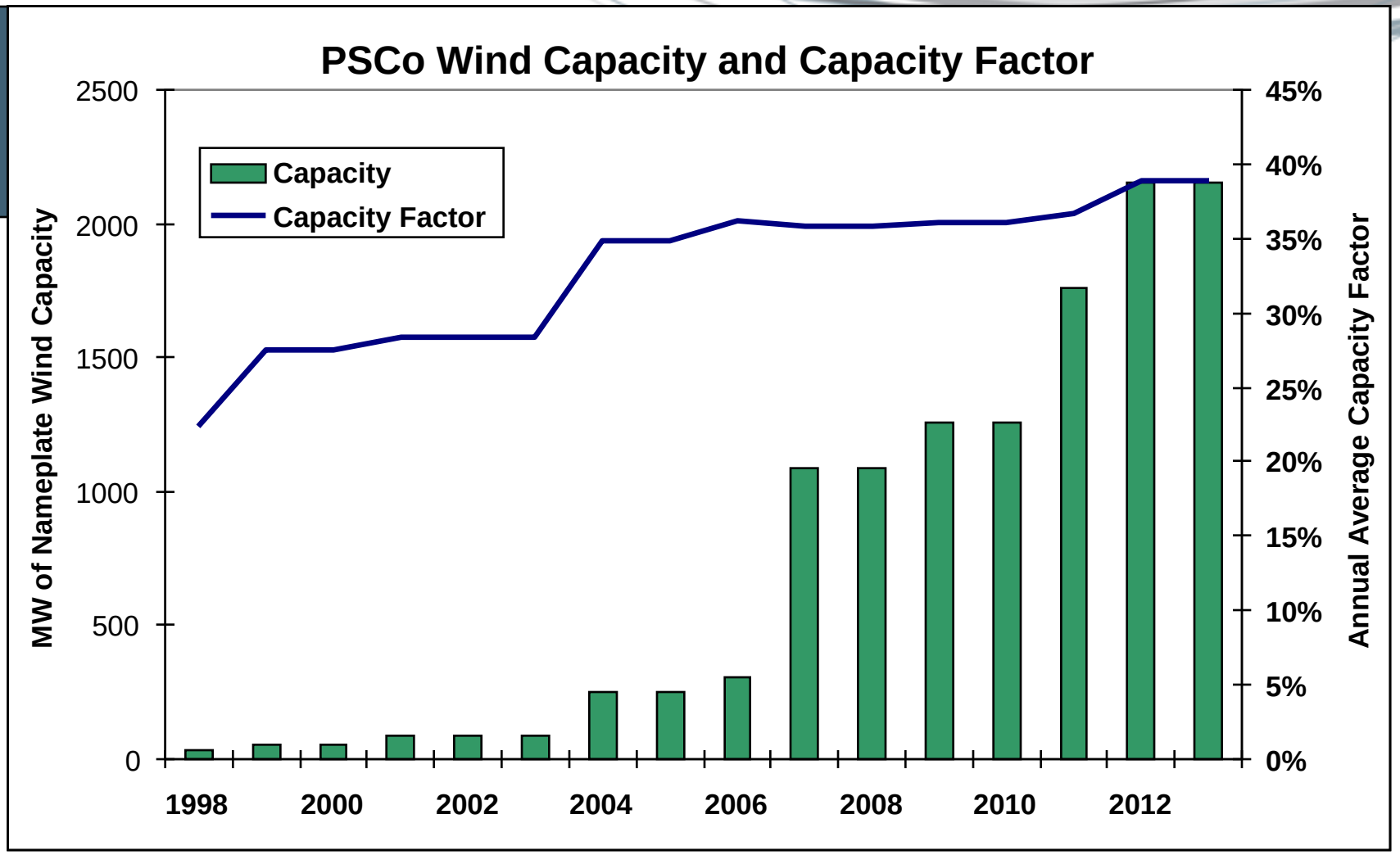
2009
- Senate Bill 09-051: Small Program – Third-Party Provider

2010
- Colorado House Bill 1001: RES Increase to 30%; DG 3%
- Colorado House Bill 1342: Solar Gardens
- Colorado House Bill 1365: Clean Air-Clean Jobs
- 2% Retail Rate Cap

2011
- Restructured Solar*Rewards – Performances Incentives, 60 MW Program

2012
- RES Plan: Approval of Solar*Rewards Community
- Large RFP
- Strictly Performance-Based

2013
- Wind RFP
- Proposal to Cover Solar Gap

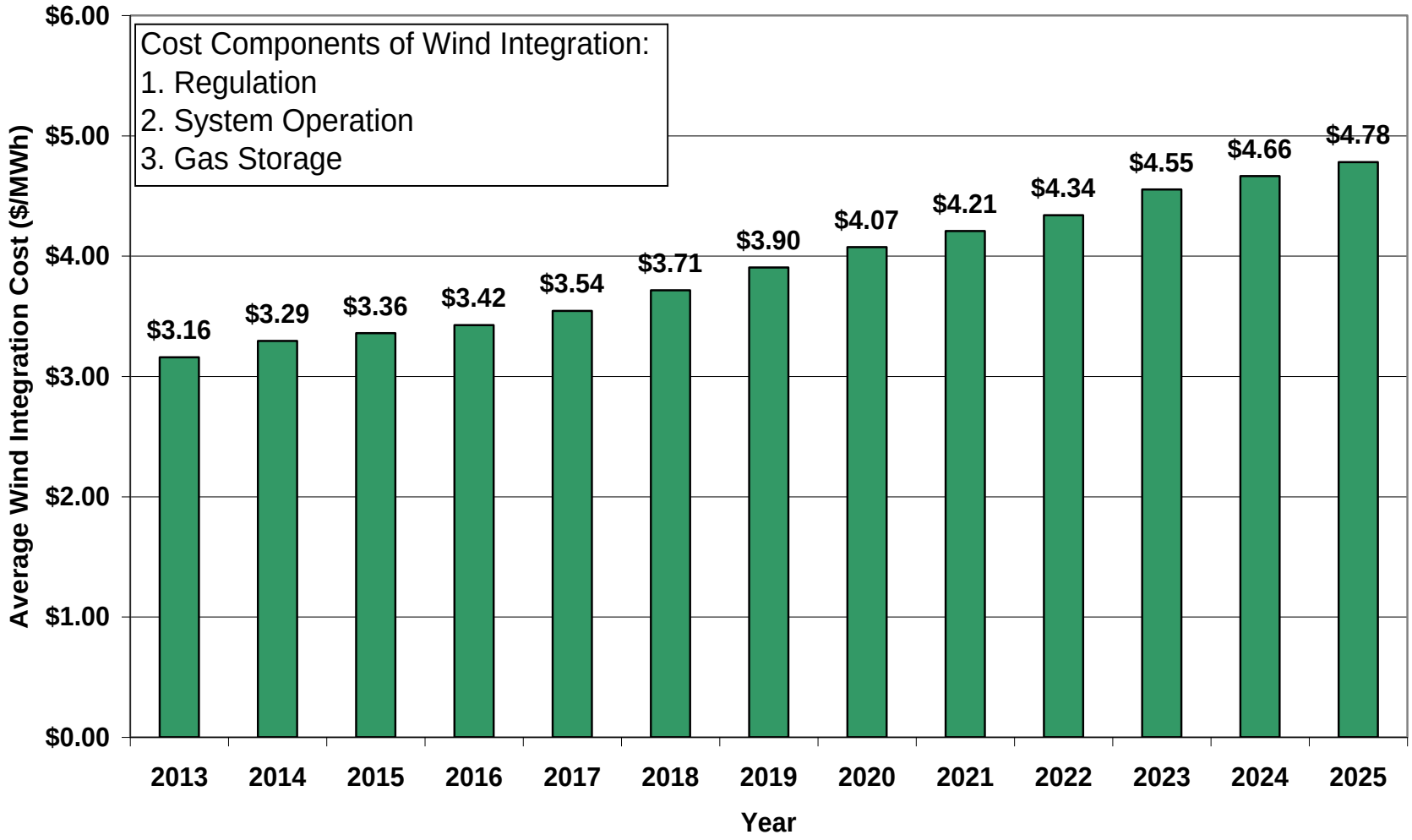


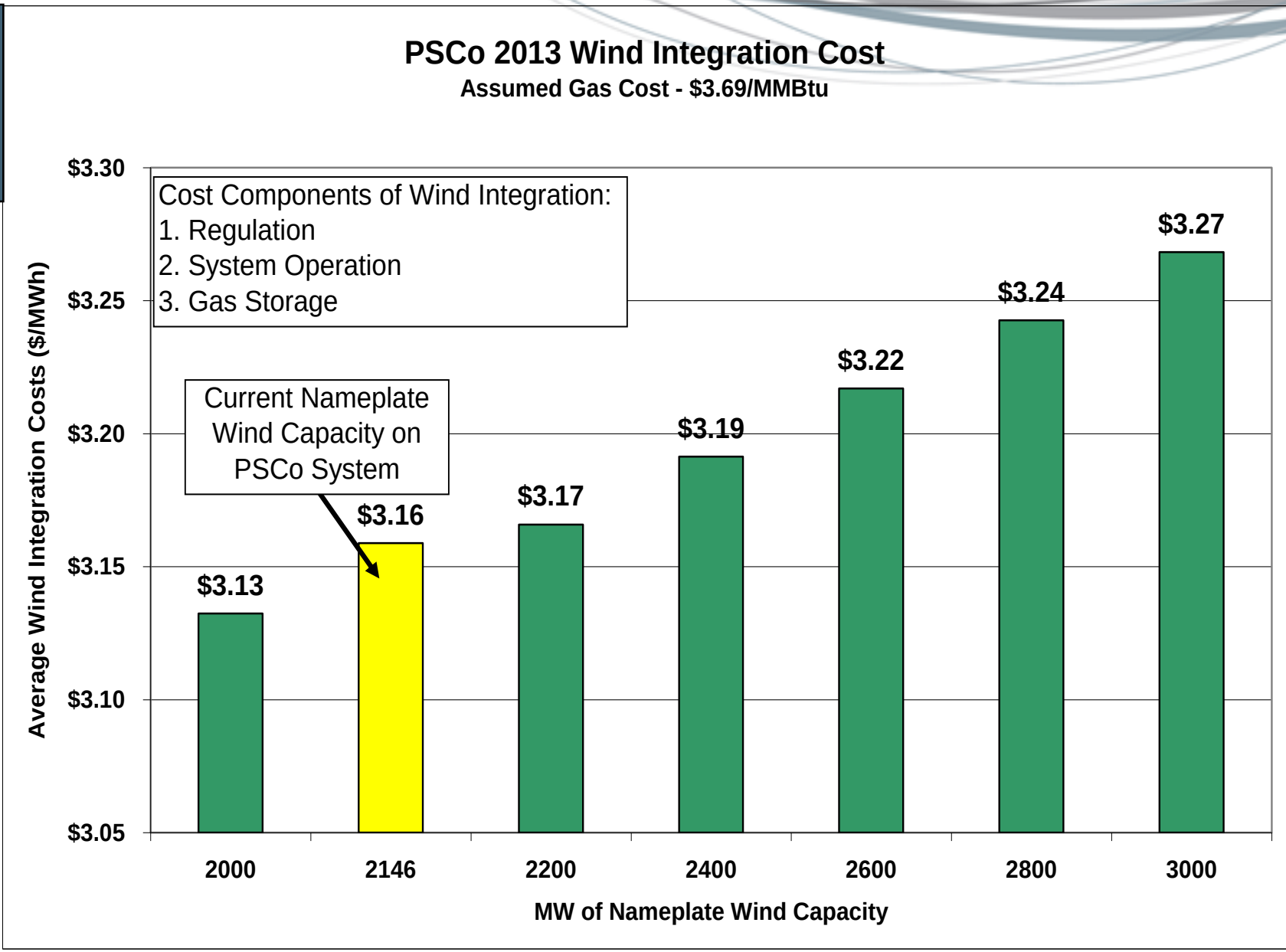
April 15, 2012 – 4-5 AM – 57% of Load Served by Wind

Year 2012 – 2172 MW Wind, Peak Load Approximately 6500 MW

PSCo Projected Wind Integration Costs

Assumes 2146 MW of Wind Capacity (Current PSCo System)



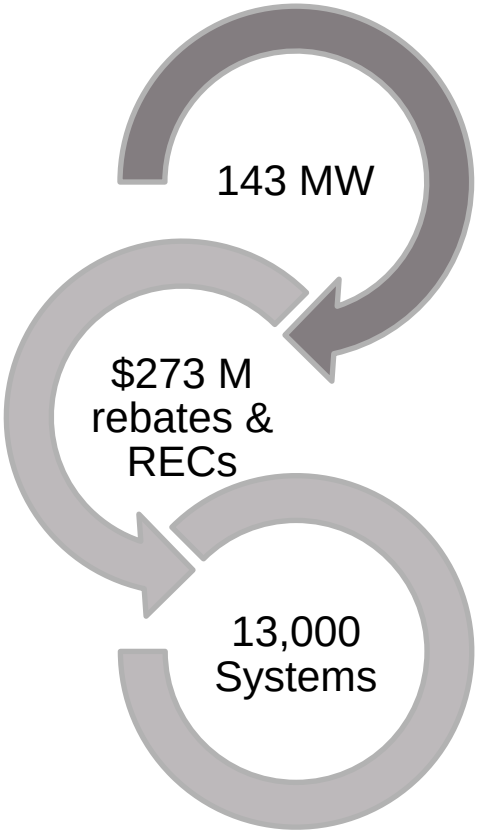

PSCo 2013 Wind Integration Cost
Assumed Gas Cost - $3.69/MMBtu
Cost Components of Wind Integration:
1. Regulation
2. System Operation
3. Gas Storage
Current Nameplate Wind Capacity on PSCo System
Average Wind Integration Costs ($/MWh)
$3.30
$3.25
$3.20
$3.15
$3.10
$3.05
$3.13
$3.16
$3.17
$3.19
$3.22
$3.24
$3.27
2000
2146
2200
2400
2600
2800
3000
MW of Nameplate Wind Capacity

Reducing Wind Forecasting Error

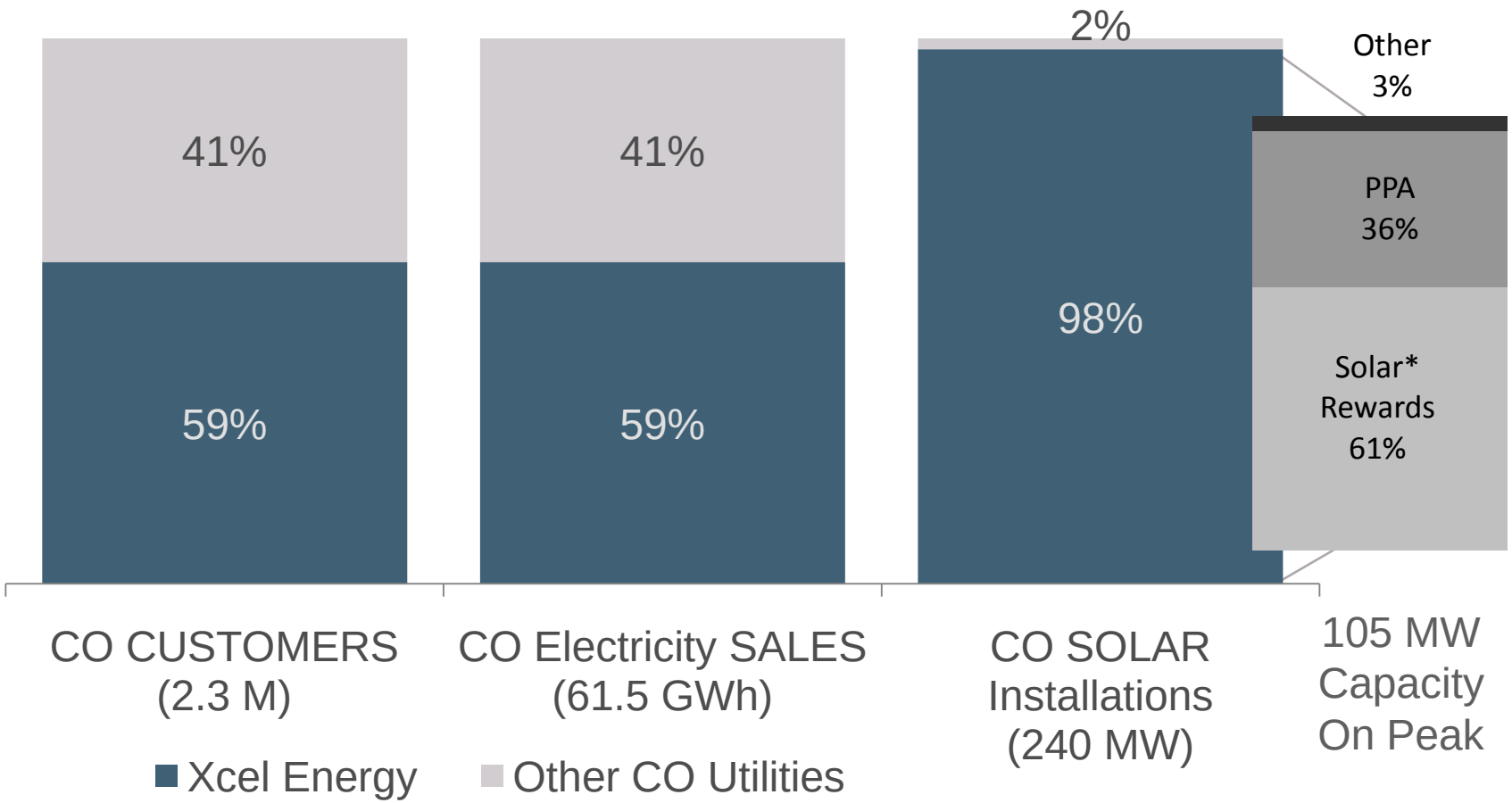
- **Wind forecasting system developed by NCAR**
- **Xcel Energy implements system 2009 4th Quarter**
- **In three years, 32% reduction in forecast error**
- **Approximately $11.6 million in fuel cost savings in Colorado ($22 million Xcel Energy wide) due to improved efficiency in system dispatch**
- **In 2011 alone, Xcel Energy in Colorado saved over 238,000 tons CO2 due to forecast confidence allowing cycling of baseload units**
- **Contracted with NCAR for further enhancements – probabilistic forecasts, wind ramp forecasts, extreme weather event forecasts, distributed solar generation forecasts**

Solar*Rewards Installations Thus Far

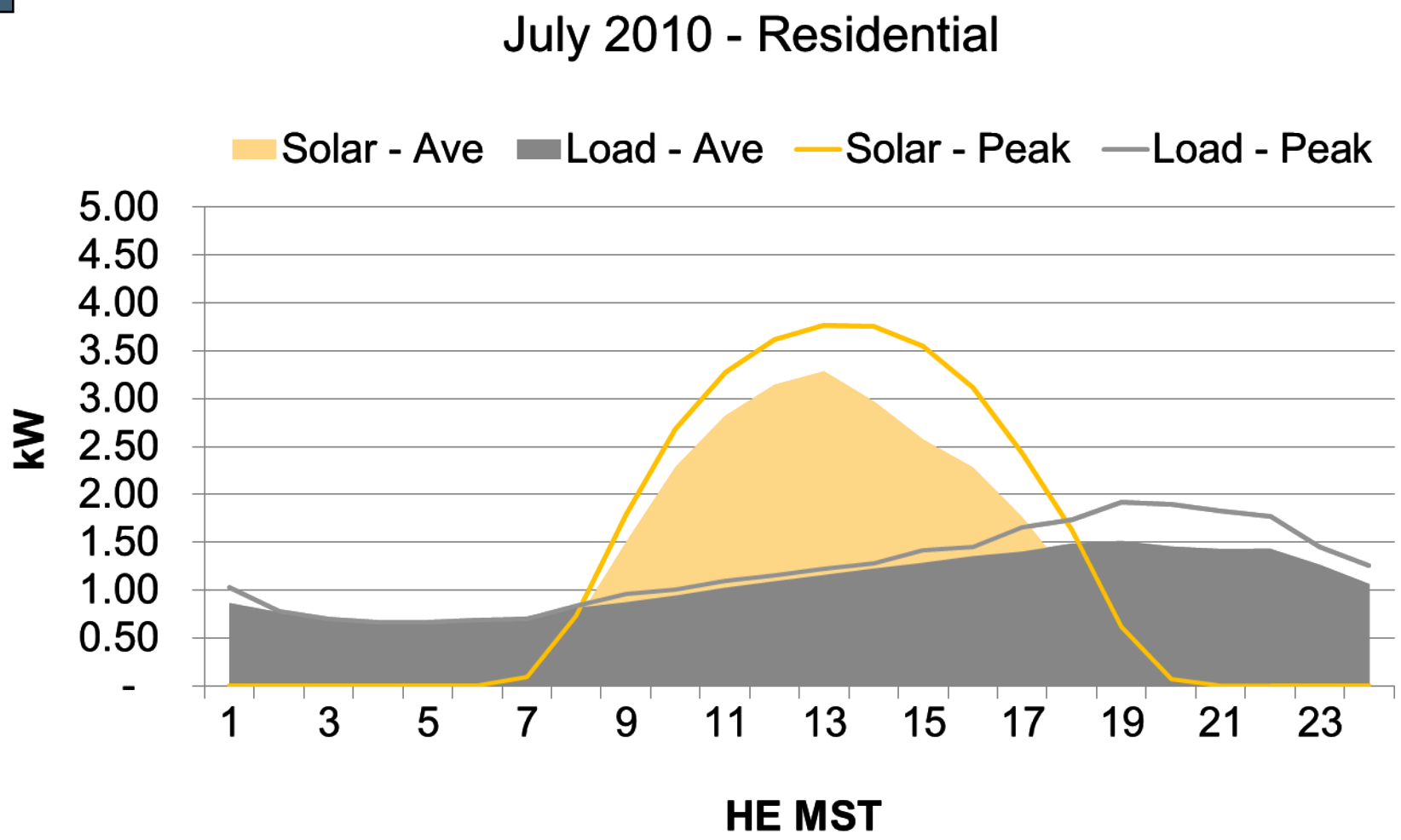
Solar*Rewards Capacity Additions (MW) by Year by Program					
Year	Small Customer Owned	Small Third Party Developer	Medium Tier 1	Medium Tier 2	Large
2006	1.57				
2007	4.09		0.18		0.03
2008	6.75		1.42		9.93
2009	11.16		1.19		7.19
2010	11.73	1.94	4.51	4.99	5.05
2011	5.48	6.35	10.84	11.04	4.92
2012	4.44	13.86	6.35	7.33	0.41
TOTAL	**45.22**	**22.15**	**24.50**	**23.36**	**27.52**



PSCo vs. Other CO Utilities



Customer Demand Profile



Solar Rewards Community Program Overview

- Solar*Rewards Community (SRC) was designed to provide more customers with the opportunity to purchase solar energy
- Legislation limited capacity 2011-2013
- 9 MW available in 2012
  - 4.5 MW from standard offer (10-50 kW and 50.1-500 kW)
  - 4.5 MW from large RFP offering (500.1 kW-2MW)
- Performance-based incentive
- 20-year contract

Solar Garden Requirements

- 5% of garden allocated to low income subscribers
- No single subscriber can be allocated more than 40% of garden capacity
- Minimum of 10 subscribers
- Minimum subscriber allocation is 1 kW (low income excluded)
- Service meter and production meter with remote communication

REC Incentive For Subscriber Organizations

- **Two components to monthly payment:**
  - **Subscribed energy= kWh production x REC price**
  - **Unsubscribed energy= kWh production x average hourly incremental cost of energy**
- **Amounts calculated and added together to equal total incentive**

2012 Solar*Rewards Acquisitions- Standard Offer			
	Capacity (MW)	**Small Program 10-50 kW REC ($/kWh)**	**Medium Program 50.1-500 kW REC ($/kWh)**
Step 1	3	$0.14	$0.11
Step 2	1.5	$0.13	$0.10

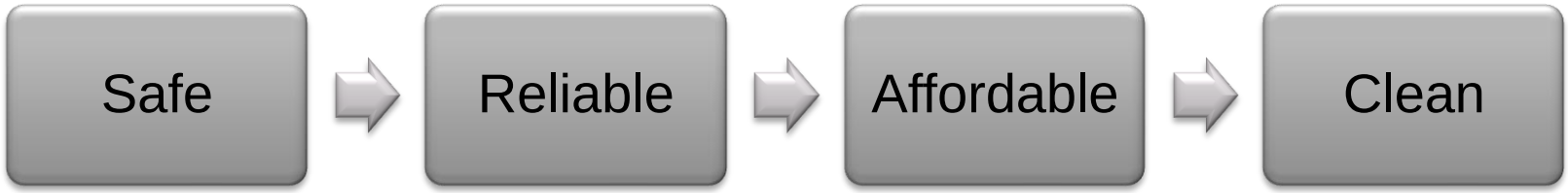
Subscribing Customers

- Can participate in up to 5 gardens
- Must be in same county as garden
- Total share in garden(s) can be no greater than 120% of their usage from previous 12 months
- Receive monthly production credit on bill
  - Expressed in dollars
  - Customer's share of garden kWh production x Company's total aggregate retail rate
  - Less delivery charge
  - May production is credited on June bill

Program Status

- On August 15 the Company opened Solar*Rewards Community
- Within 35minutes we received 13 MW under the Standard Offer program
  - We awarded 4.5 MW
- We received 19 MW under the RFP
  - We awarded 4.5 MW
- Projects located in Denver, Adams, Jefferson, Boulder, Summit, Saguache, Logan, Mesa Counties

Guiding Principles



To help us meet these principles, we need a solar framework to:

- Minimize cost-shifting between customers
- Promote cost-effective solar generation
- Ensure that incentives are transparent and temporary
- Enable reliable and safe grid integration
- Support our customers' choices and priorities
- Provide predictability and transparency to the industry and our customers
- Allow continued recovery of fixed costs

Unresolved Issues

- **Subsidy Inherent in Net Metering**
- **Impact on Non-Participants**