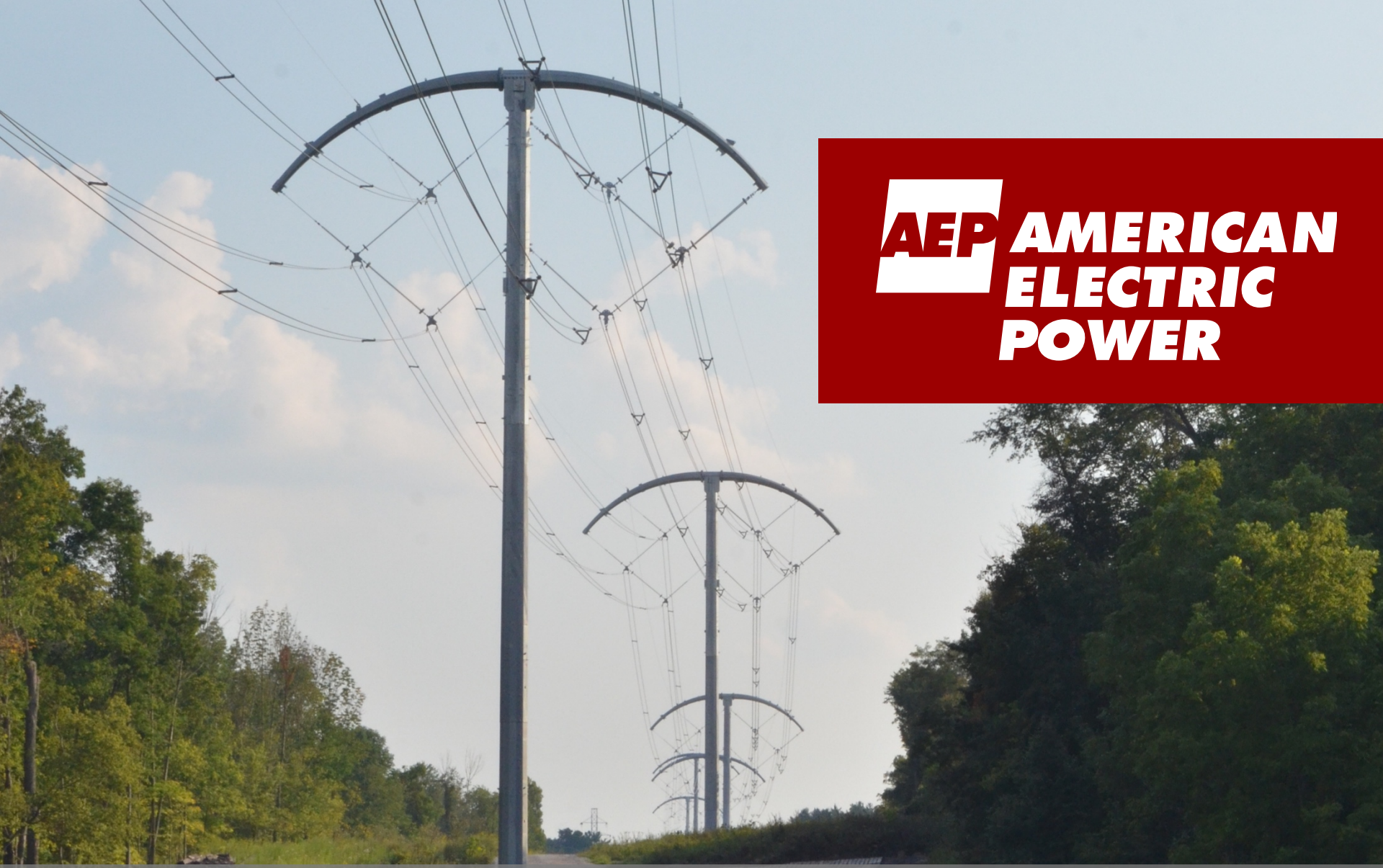


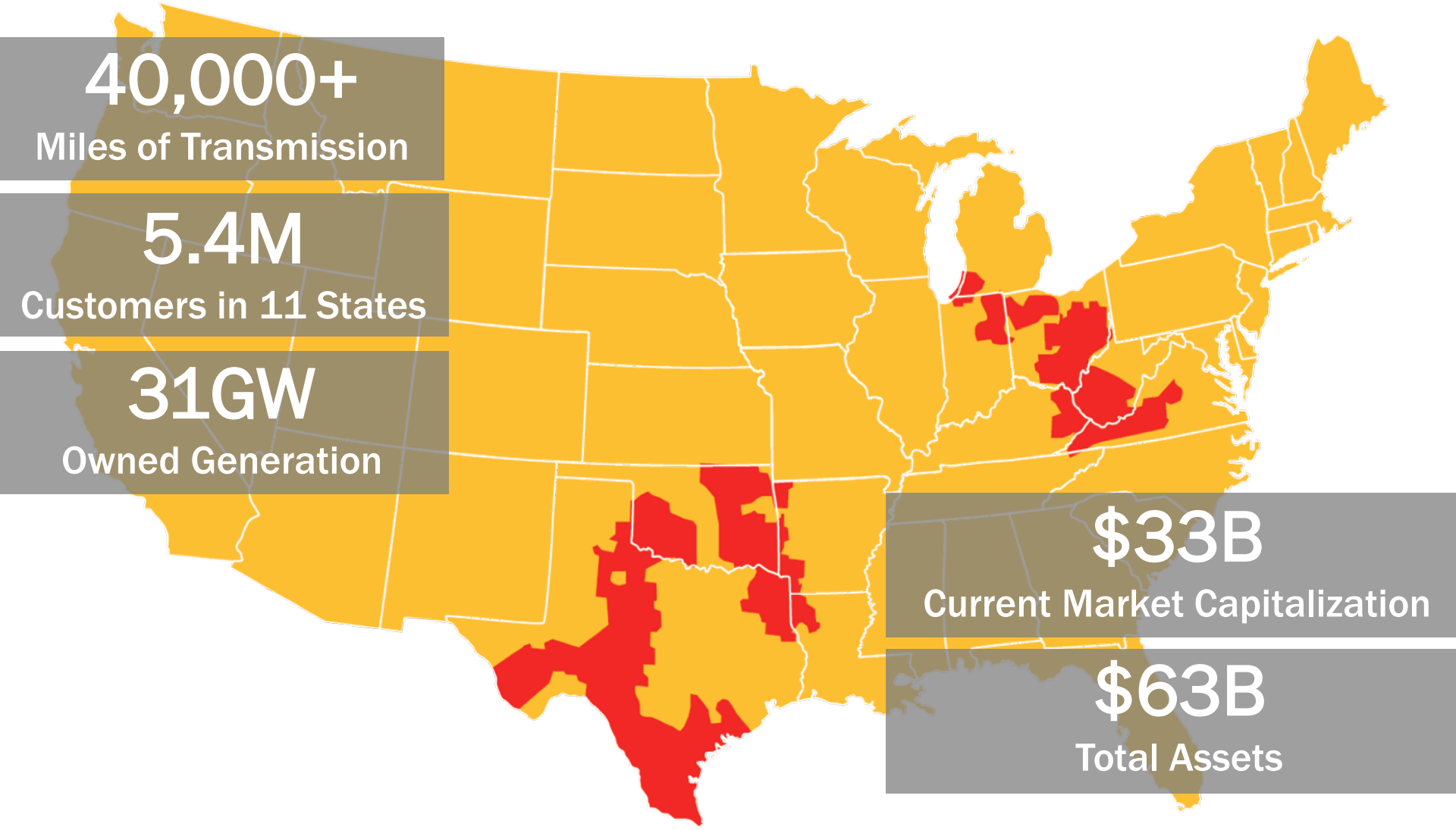
AEP AMERICAN ELECTRIC POWER

Arkansas Alternative Energy Commission – Presentation on AEP/SWEPCO's Approach to Renewables Modeling

Little Rock, AR

September 29, 2016

America's Energy Partner



40,000+
Miles of Transmission

5.4M
Customers in 11 States

31GW
Owned Generation

$33B
Current Market Capitalization

$63B
Total Assets

Note: Statistics as of June 30, 2016, except market capitalization which is as of August 8, 2016

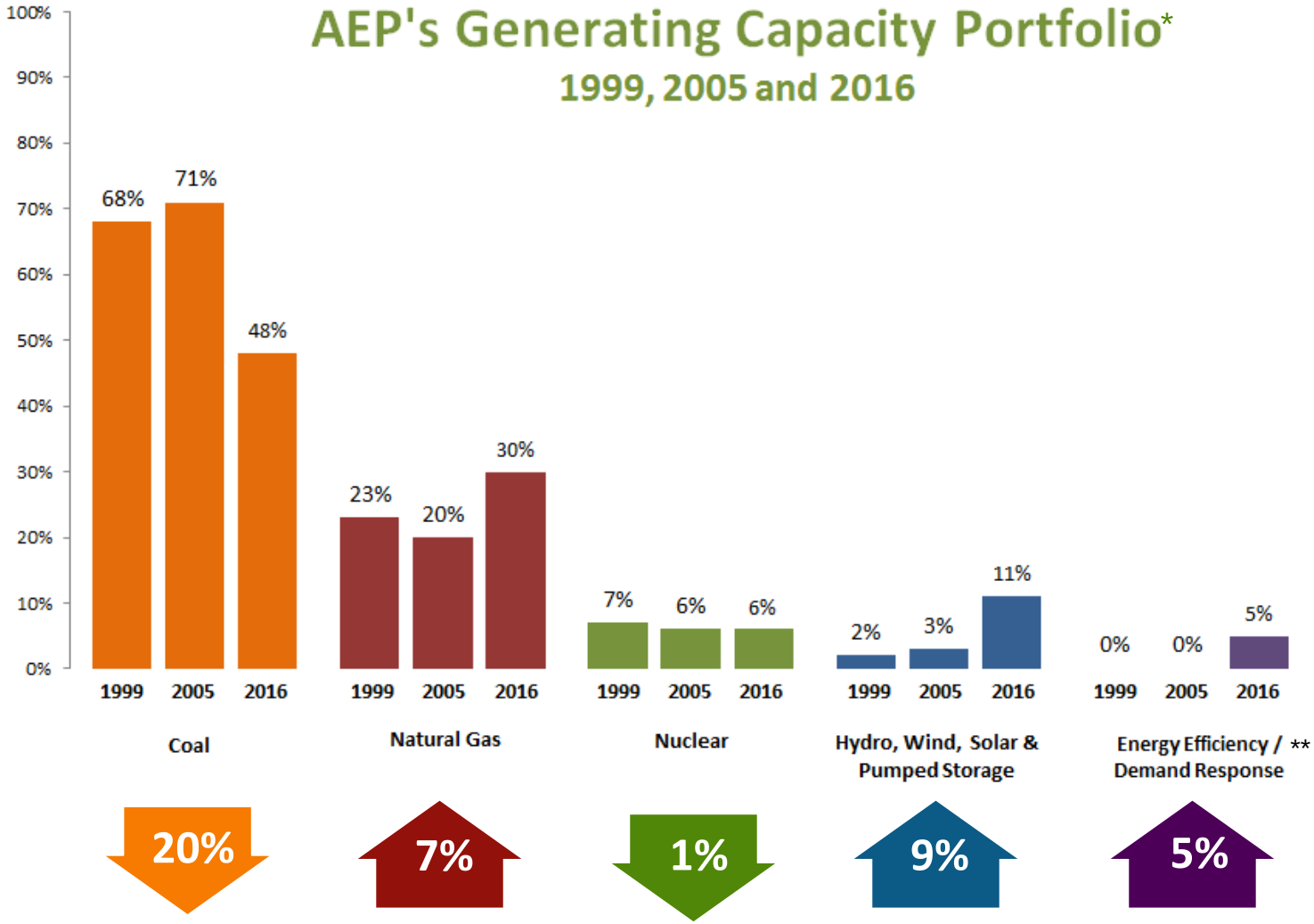
Sustainable energy resources

- Transforming our generation fleet
- Dramatically reducing emissions
- Adding more renewable sources
- Integrating renewables through the nation's largest transmission network

SUSTAINABLE ENERGY RESOURCES

Reducing our carbon footprint

AEP's Generating Capacity Portfolio*
1999, 2005 and 2016



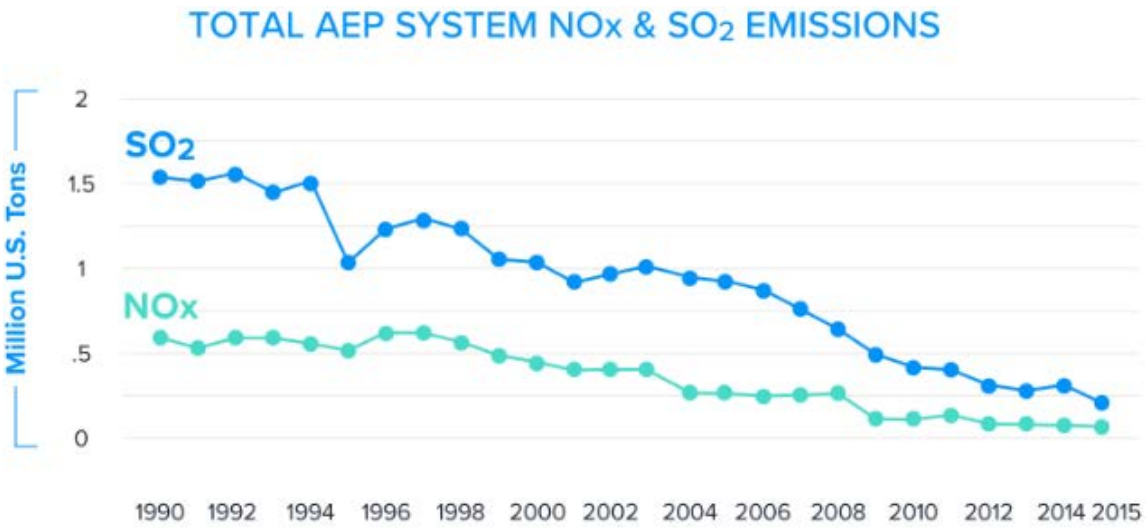
1999 includes AEP and Central and South West generation combined

* Includes Purchase Power Agreements

** Represents avoided capacity rather than physical assets

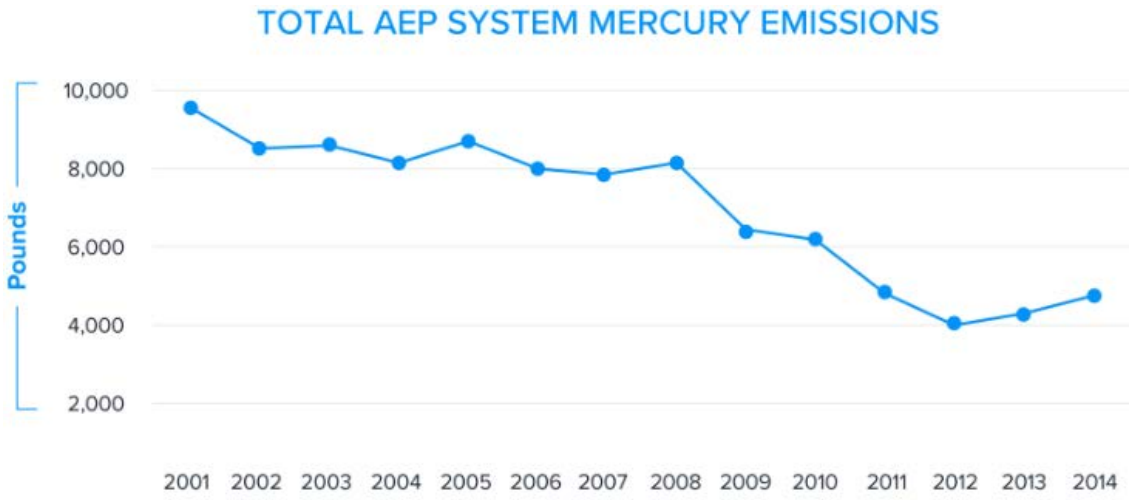
SUSTAINABLE ENERGY RESOURCES

Dramatic emission reductions



SO_2 **88%**

NO_x **87%**

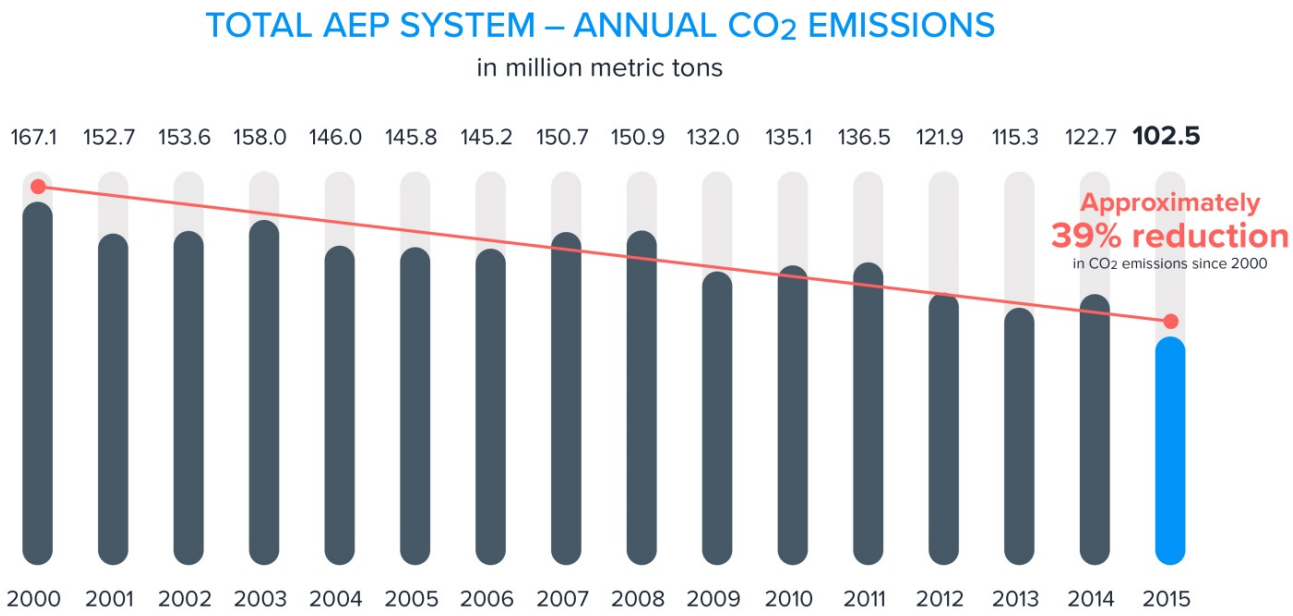


Hg **54%**

2015 Mercury emissions data not yet available

SUSTAINABLE ENERGY RESOURCES

Dramatic emission reductions



SUSTAINABLE ENERGY RESOURCES

Delivering clean energy resources

Over 7,500MW

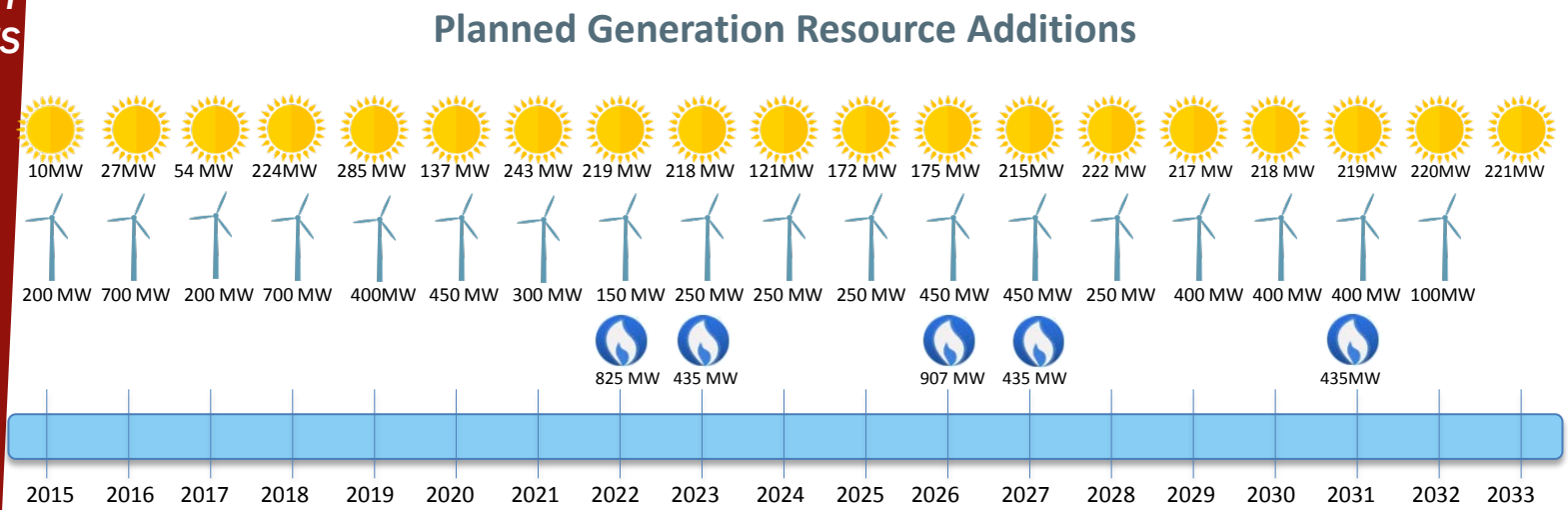
of renewable generation interconnected via AEP's transmission system today

AEP's 2016 wind and solar portfolio (nameplate capacity)	**MW**
AEP Ohio	**209**
Appalachian Power Company	**374**
Indiana Michigan Power Company	**466**
Public Service Company of Oklahoma	**1,138**
Southwestern Electric Power Company	**470**
Competitive Wind & Wind PPAs	**488**
Total	**3,145**

SWEPCO private solar customer – VA Hospital in Fayetteville, 300 kW dc

Large-scale regulated renewable opportunities

SUSTAINABLE ENERGY RESOURCES



Total (MW):

Solar: 3,417

Wind: 6,300

Natural Gas: 3,037

In total over the next 18 years AEP's regulated companies plan to add over:

- 3,000 MW of solar generation
- 6,000 MW of wind generation and
- 3,000 MW of natural gas combined cycle generation

Source: Current Internal Integrated Resource Plans, which largely do not reflect ITC/PTC extension, bonus depreciation or potential impact of Clean Power Plan. Wind and solar represent nameplate MW capacity

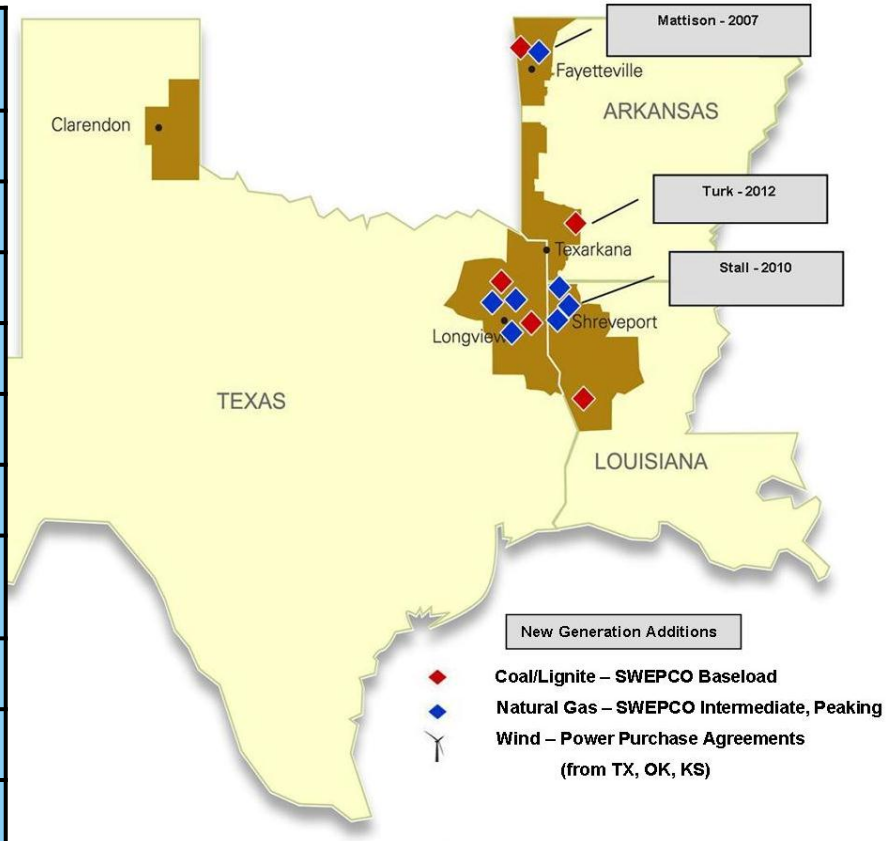
About Southwestern Electric Power Company

- Southwestern Electric Power Company (SWEPCO) is headquartered in Shreveport, LA
- More than 530,000 customers in Arkansas, Louisiana and Texas.
  - 116,000 customers - AR
  - 230,000 customers - LA
  - 184,000 customers - TX
- SWEPCO also serves wholesale customers which represent about 14% of its internal energy requirements, net of customer-supplied generation
- SWEPCO participates in the Southwest Power Pool Regional Transmission Organization which establishes system reliability criteria
  - *Recently SPP has modified the reserve margin requirement from 13% to 12%…this change will impact the needed resources in the future. The data within this presentation that is based on the 2015 IRP will definitely be impacted by this change.*
- SWEPCO is a unit of American Electric Power (NYSE: AEP), which is one of the largest electric utilities in the United States, delivering electricity to more than 5.4 million customers in 11 states.

SWEPCO's generating portfolio

Generation

Plant, Location	Plant Capacity (MW)	SWEPCO Capacity (MW)	Fuel
Flint Creek Gentry, AR	517	258.5	Coal
Mattison Tontitown, AR	284	284	Gas
Turk Fulton, AR	650	477	Coal
Arsenal Hill Shreveport, LA	110	110	Gas
Stall Unit Shreveport, LA	511	511	Gas
Lieberman Mooringsport, LA	242	242	Gas
Dolet Hills (Cleco Corp.) Mansfield, LA	650	257	Lignite
Pirkey Hallsville, TX	675	580	Lignite
Knox Lee Longview, TX	469	469	Gas
Wilkes Avinger, TX	875	875	Gas
Welsh Cason, TX	1,035	1,034.8	Coal
Lone Star Lone Star, TX	50	50	Gas
TOTAL SWEPCO	6,068	5,148.3	

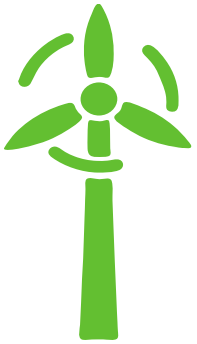


Energy production by fuel type (% of total) for SWEPCO owned and operated facilities EOY '15:

Coal/Lignite: 72%
Natural Gas: 21%
Wind: 7%

Wind power purchase agreements – 469.15 MW

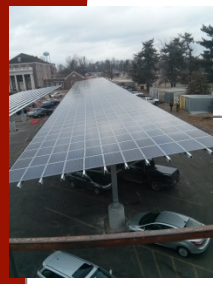
SWEPCO's renewable generation portfolio



Facility Name	State	Name Plate Rating (MW)	COD	Contract End Date	Typical Annual Capacity Factor (%)
Majestic	Texas	79.5	1/20/2009	1/31/2029	40 - 50
High Majestic II	Texas	79.6	7/31/2012	12/31/2032	40 - 50
Flat Ridge 2	Kansas	31	1/1/2013	12/31/2032	40 - 50
Flat Ridge 2	Kansas	77.8	1/1/2013	12/31/2032	40 - 50
Canadian Hills	Oklahoma	52.8	11/21/2012	11/20/2032	40 - 50
Canadian Hills	Oklahoma	48	11/30/2012	11/29/2032	40 - 50
Canadian Hills	Oklahoma	100.45	12/22/2012	12/21/2032	40 - 50
Total		469.15			

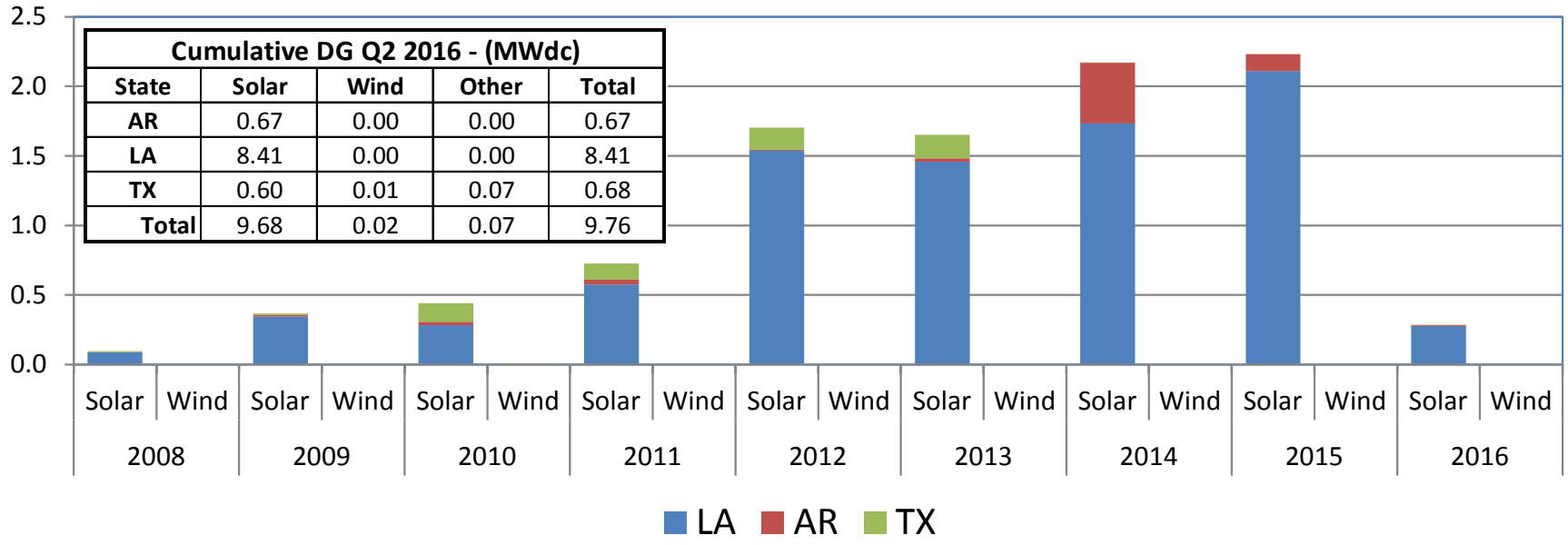
In 2015, wind generation provided SWEPCO customers with approximately 7% of their energy needs

SWEPCO's existing distributed generation – *Private net metered*



SWEPCO's Net Metered Annual Distributed Generation Installs from 2008 - Q2 2016 - (MW_{dc})

Cumulative DG Q2 2016 - (MWdc)				
State	Solar	Wind	Other	Total
AR	0.67	0.00	0.00	0.67
LA	8.41	0.00	0.00	8.41
TX	0.60	0.01	0.07	0.68
Total	9.68	0.02	0.07	9.76



LA growth was predominantly driven by the State Tax Incentive.

Determining future resources to meet SWEPCO's needs

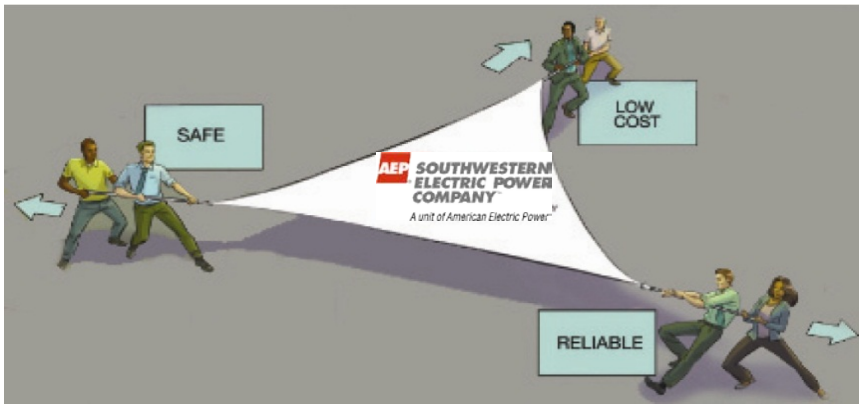
Integrated Resource Planning Process Summary

- Resource planning is a complex effort that must balance the needs of a variety of constituents:
  - Customers,
  - Regulators,
  - Shareholders, and
  - Other Stakeholders…

  …while ensuring that electricity is provided in a safe, reliable and efficient manner at reasonable rates.

- The process involves looking at:
  - "Big-picture" trends that affect energy markets
  - Developing and using forecasting and analysis models
  - Selecting approaches that will meet customer needs in the safest, most reliable and economical way given the uncertainties about the future.

There are many priorities that compete for resources as SWEPCO works toward its objective to provide safe, reliable, clean power at rates that are reasonable.

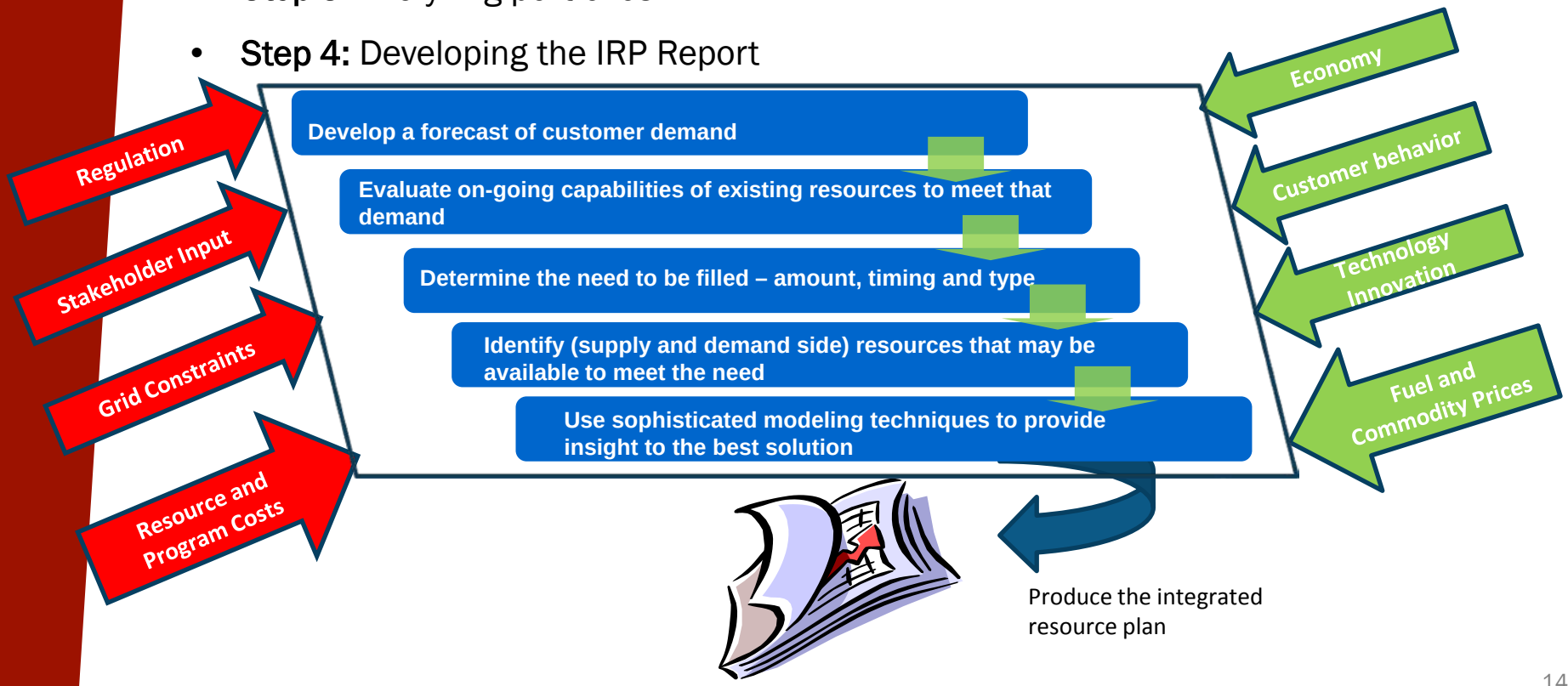


Integrated Resource Planning

The Integrated Resource Plan Development

Creating an Integrated Resource Plan (IRP) involves four basic and interconnected steps:

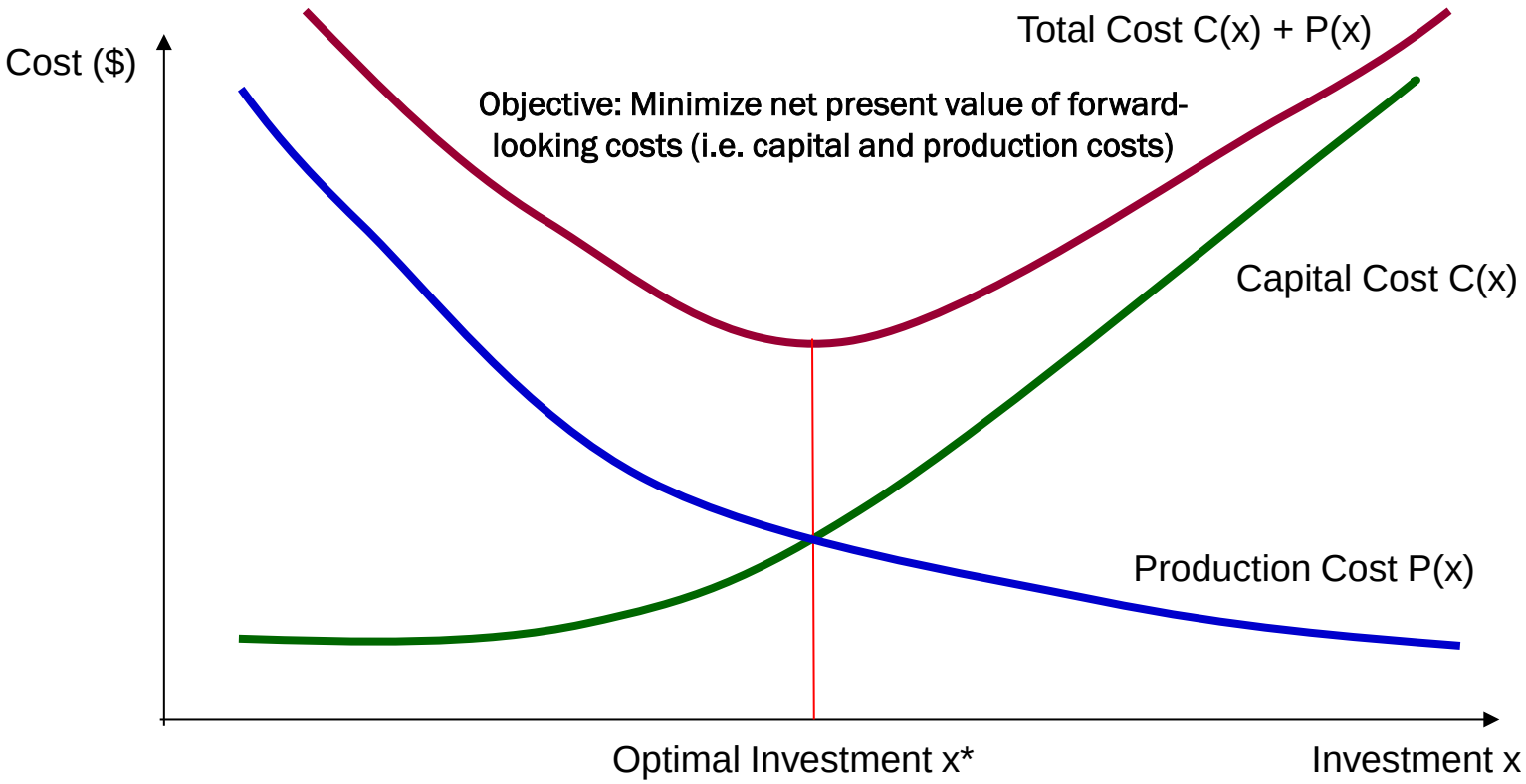
- **Step 1:** Gathering data, developing input assumptions and creating scenarios
- **Step 2:** Developing the portfolio
- **Step 3:** Analyzing portfolios
- **Step 4:** Developing the IRP Report



IRP's objective function

Integrated Resource Planning Process Summary

The PLEXOS LTPlan model selects the optimal (lowest total cost) plan based on resource characteristics (e.g. installed cost, heat rate, fuel costs, min run times, load shapes).



IRP's resources considered

SWEPCO Potential Resources - Overview

Coal

- Baseload and intermediate resource
- Higher CO_2 emissions than natural gas
- Abundant fuel source
- Option to place environmental controls on existing uncontrolled units to lower non-CO_2 emissions, or retire

Nuclear

- Baseload with high capacity factor
- Very low fuel and energy cost
- No air emissions
- Large water use
- Spent fuel storage issues
- High initial construction cost/risks

Natural Gas

- Moderate construction costs
- Lower CO_2 emissions than coal
- Slightly higher variable cost than coal
- Firm gas delivery service may increase costs

Wind and Solar

- Intermittent. Not always aligned with peak demand
- No emissions
- No fuel costs but some technologies have high capital costs
- Currently heavily driven by incentives

Demand-Side Management

- Used to reduce peak load/capacity requirements
- Costs vary, but need to balance cost and customer reliability preferences
- Costs escalate with increased use
- May include customer owned generation

Energy Efficiency

- Low capital and operating costs
- Dependent on customer adoption
- Program costs vary

"Traditional" supply-side generation – proxy cost & performance characteristics

AEP System-West Zone
New Generation Technologies
Key Supply-Side Resource Option Assumptions (a)(b)(c)

Type	Capability (MW) (f)			Installed Cost (d)	Trans. Cost	Full Load Heat Rate	Fuel Cost (e)	Variable O&M	Fixed O&M	Emission Rates			Capacity Factor	Overall Availability
	Std. ISO	Winter	Summer	($/kW)	($/kW)	(HHV,Btu/kWh)	($/MBtu)	($/MWh)	($/kW-yr)	SO2 (Lb/mmBtu)	NOx (Lb/mmBtu)	CO2 (Lb/mmBtu)	(%)	(%)
Base Load														
Nuclear	1,610	1,620	1,540	6,600	64	10,500	1.1	5.6	109.5	0.0000	0.000	0.00	90	94
Base Load (90% CO2 Capture New Unit)														
Pulv. Coal (Ultra-Supercritical) (PRB)	540	550	530	8,000	28	12,500	3.7	9.5	77.7	0.1000	0.070	21.3	85	90
IGCC "F" Class (PRB)	490	490	480	7,700	28	10,300	3.7	9.2	80.6	0.0638	0.062	21.3	85	88
Base / Intermediate														
Combined Cycle (1X1 "F" Class)	380	400	430	1,400	60	6,600	7.7	3.1	16.1	0.0007	0.009	116.0	60	89
Combined Cycle (1X1 "J" Class)	440	450	430	1,200	60	6,500	7.7	3.0	14.8	0.0007	0.007	116.0	60	89
Combined Cycle (2X1 "J" Class)	910	940	910	900	60	6,400	7.7	2.2	8.7	0.0007	0.007	116.0	60	89
Combined Cycle (2X1 "H" Class)	990	1,020	980	900	60	6,400	7.7	2.2	8.4	0.0007	0.007	116.0	60	89
Peaking														
Combustion Turbine (2 - "E" Class) (b)	170	180	180	900	60	11,700	7.7	1.4	12.7	0.0007	0.009	116.0	25	93
Combustion Turbine (2 - "F" Class, w/evap coolers) (b)	470	480	480	600	60	10,000	7.7	1.4	7.3	0.0007	0.009	116.0	25	93
Aero-Derivative (1 - Large Machine)	100	110	100	1,500	60	9,100	7.7	4.3	20.9	0.0007	0.011	116.0	25	95
Aero-Derivative (2 - Large Machines) (b)	200	210	200	1,300	60	9,100	7.7	4.3	17.5	0.0007	0.007	116.0	25	95
Aero-Derivative (2 - Small Machines) (c)	90	100	90	1,300	60	9,700	7.7	3.3	11.6	0.0007	0.093	116.0	25	96
Recip Engine Farm (3 Engines)	50	50	50	1,400	60	8,500	7.7	4.5	20.2	0.0007	0.018	116.0	25	96
Battery Storage (Lithium-Ion)	10	10	10	2,300	--	0	--	--	15.9	--	--	--	25	94

Notes: (a) Installed cost, capability and heat rate numbers have been rounded.

(b) All costs in 2016 dollars. Assume 2.14% escalation rate for 2016 and beyond.

(c) $/kW costs are based on nominal capability.

(d) Total Plant & Interconnection Cost w/AFUDC (AEP-West rate of 7.0%,site rating $/kW).

(e) Levelized Fuel Cost (40-Yr. Period 2017-2056)

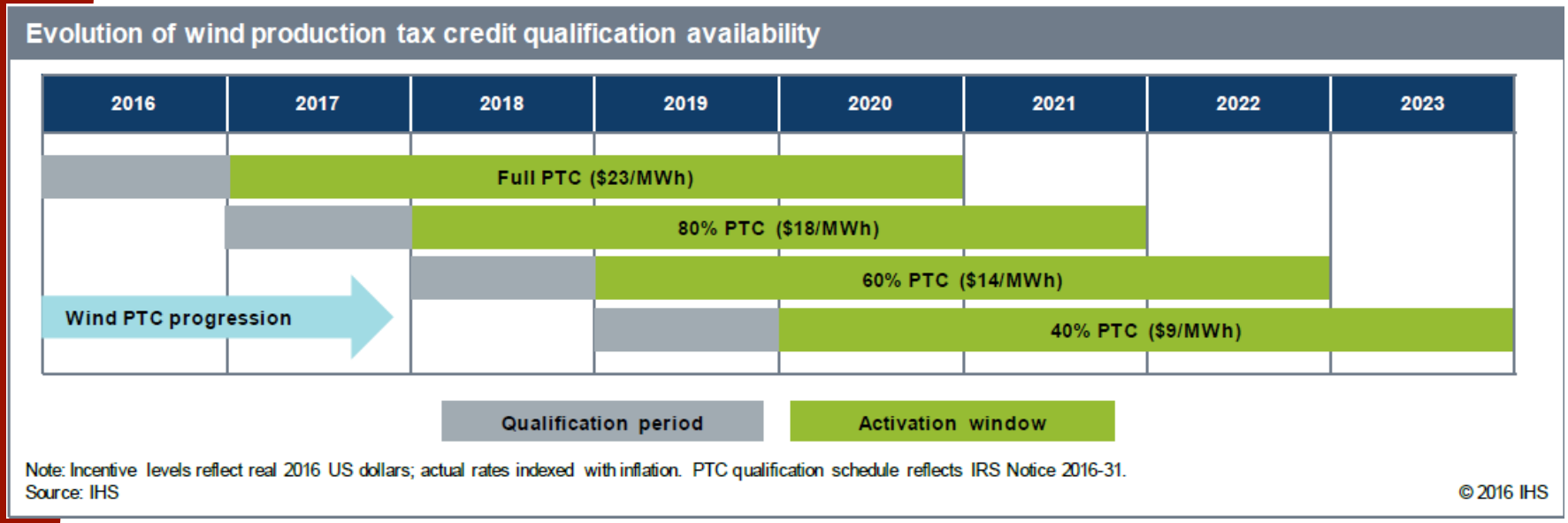
(f) All Capabilities are at 1,000 feet above sea level

(g) Levelized cost of energy based on assumed capacity factors shown in table.

In addition to publicly available data from the US Energy Information Administration, SWEPCO used data from EPRI and vendors to estimate resource cost & performance assumptions.

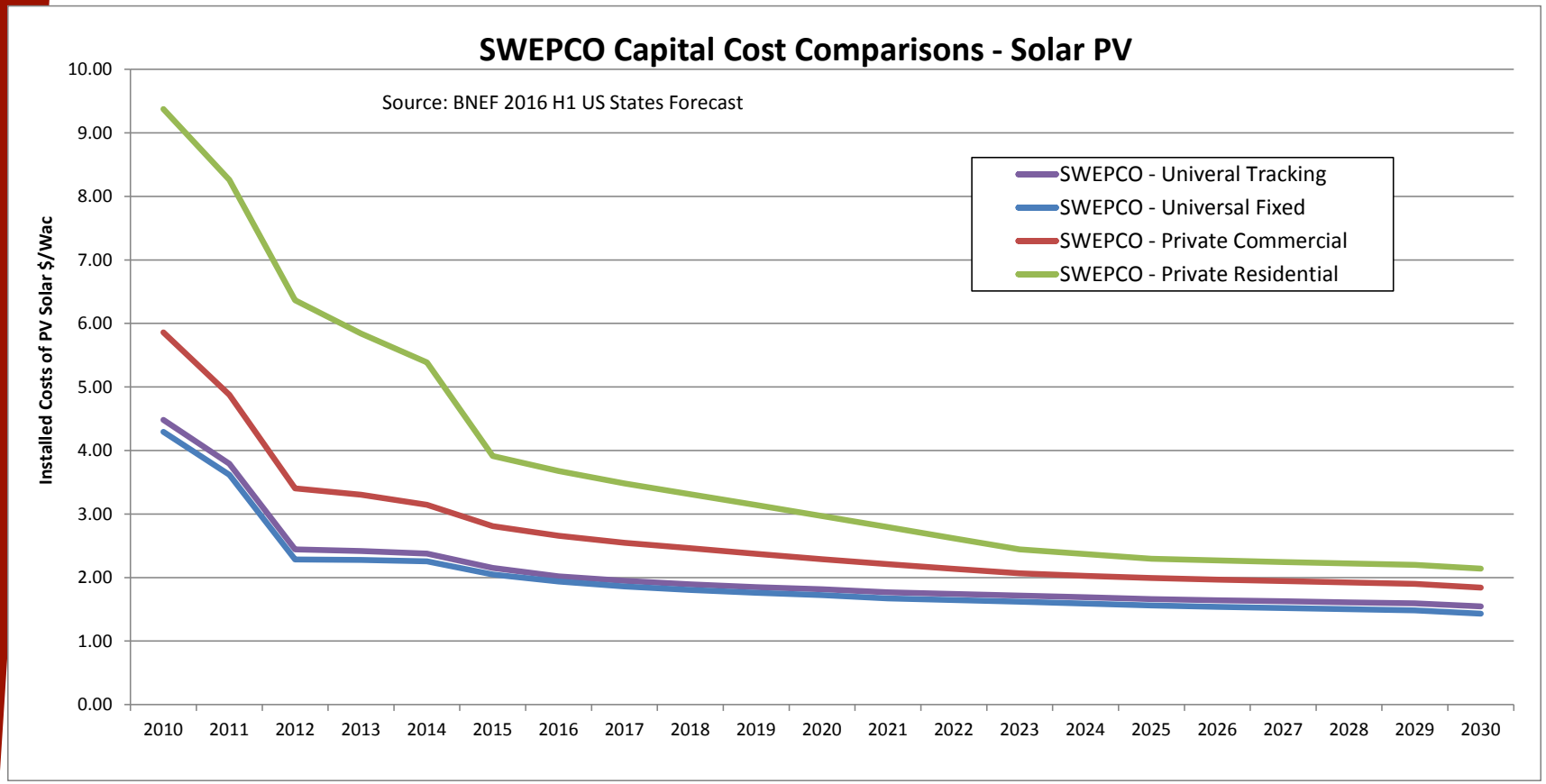
The cost and performance characteristics are considered "Proxy" and reasonable to be modeled within the IRP process.

Renewable generation – Wind resource update



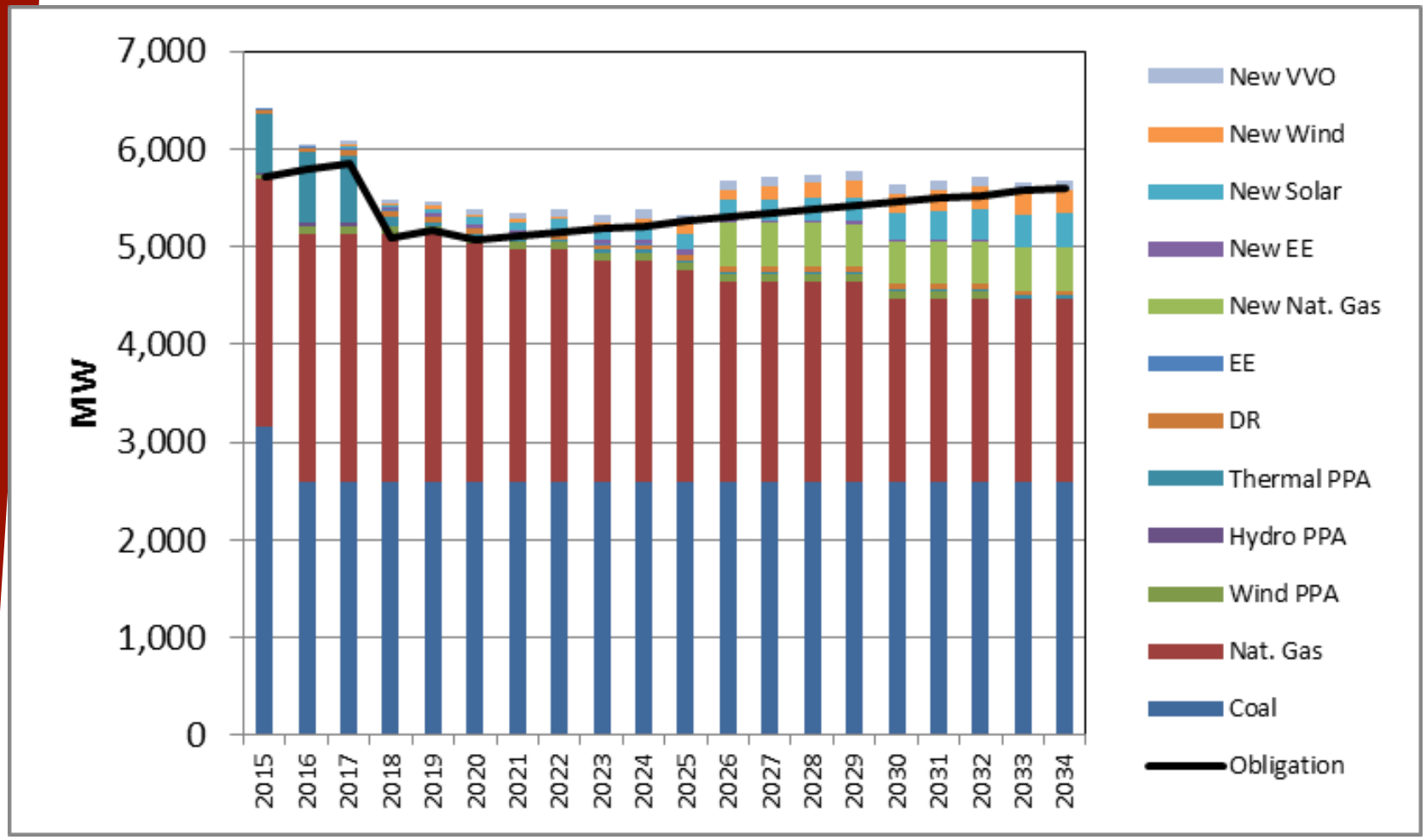
- The Production Tax Credit extension at the end of 2015 provides significant incentives to invest in wind resources, ~$23/MWh
- As well as the Safe Harbor provisions that allow for example a 2016 project to go into service by the end of 2020 and receive the 2016 PTC value
- The PTC extension was not modeled in the 2015 IRP
- Wind resource prices continue to decline and performance continues to improve
- In general cost estimates within the IRP are based on the DOE Wind Vision Report with near term adjustments based on market knowledge
- *Due to the pending SWEPCO Wind RFP no updated pricing is provided.*

Renewable generation – Proxy solar cost & performance characteristics



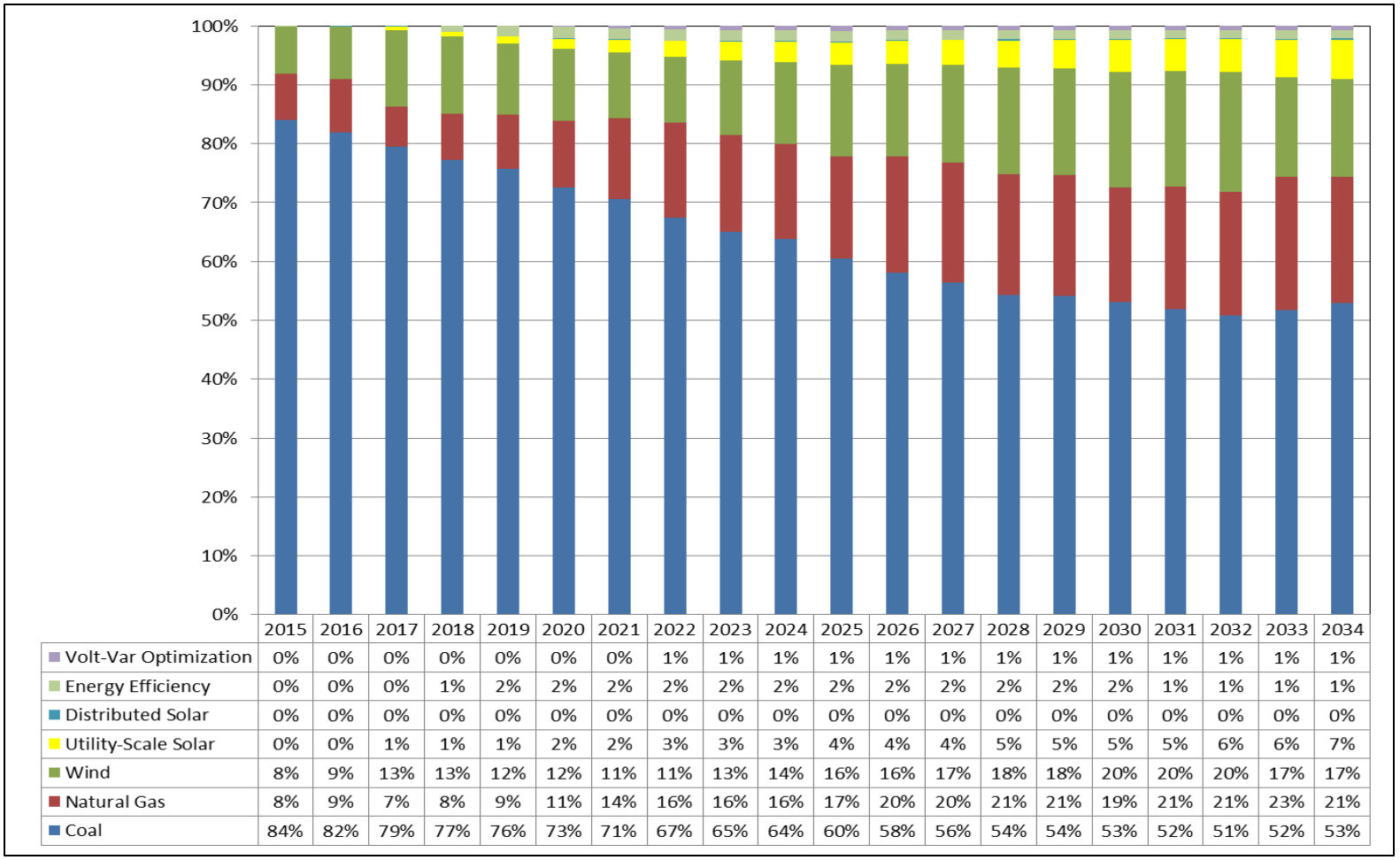
- Pricing for solar resources continues to decline
- Within the IRP modeled universal solar resource as 10 MW single axis resource, limited to 5 per year. With capacity factors ranging from approximately 20% to 32% depending on location & design
- Within the IRP private rooftop solar resources were estimated to grow from the historical installed base of 7.35 MW at 5% per year for a total of 50 MW over the planning period

IRP results – Preferred portfolio - Capacity position



The Preferred Portfolio added 2,094 MW of renewable resources (nameplate); 1,200 MW of wind resources, 842 MW of universal solar & 52 MW of private rooftop solar.

IRP results – Preferred portfolio - Energy position



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Volt-Var Optimization	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Energy Efficiency	0%	0%	0%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%
Distributed Solar	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Utility-Scale Solar	0%	0%	1%	1%	1%	2%	2%	3%	3%	3%	4%	4%	4%	5%	5%	5%	5%	6%	6%	7%
Wind	8%	9%	13%	13%	12%	12%	11%	11%	13%	14%	16%	16%	17%	18%	18%	20%	20%	20%	17%	17%
Natural Gas	8%	9%	7%	8%	9%	11%	14%	16%	16%	16%	17%	20%	20%	21%	21%	19%	21%	21%	23%	21%
Coal	84%	82%	79%	77%	76%	73%	71%	67%	65%	64%	60%	58%	56%	54%	54%	53%	52%	51%	52%	53%

The Preferred Portfolio's energy position shows a significant portion of renewable energy is added to the portfolio

IRP results – Preferred portfolio

Southwestern Electric Power Company
2015 Integrated Resource Plan
Cumulative Resource Changes

Preferred Portfolio

MW		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)=(1)to(13), ex(6)	(15)	(16)	(17)	(18)	(19)
		(Cumulative) RETIREMENTS	(Cumulative) Firm Capacity Resource ADDITIONS												(Cumul.) NET 'RESOURCE' CHANGE[F]	Resulting SWEPCO Reserves		(Cumulative) 'NAMEPLATE' ADDITIONS		
			New-Build			(ST) PPA	Energy Efficiency (EE)			VVO	DR	Wind[D]	Solar[E]			Above SPP Minimum Rqrmnt[G]	Margin %	Wind[D]	Solar[E]	
(LA) IRP Period	SPP Planning Year[A]	Coal & Gas-Steam	(Frame) CTs	(Flex) CTs	NGCC		'Embedded' Federal EE Regulations[B]	Existing DSM Programs[C]	New		Existing DSM Programs[C]		Utility-Scale	Distributed					Utility-Scale	Distributed
Yr.		MW	MW	MW	MW	MW	MW	MW	MW		MW	MW	MW	MW	MW	MW		MW	MW	MW
1	2015	(61) [F]	-	-	-	-	*184*	5	-	-	55	-	-	1.0	*(0)*	709	*28.0%*	-	-	*9.7*
2	2016	(589) [G]	-	-	-	126	*198*	9	-	-	55	-	-	1.1	*(398)*	234	*18.3%*	-	-	*11.0*
3	2017	(589)	-	-	-	86	*212*	12	-	26	55	30	21	1.3	*(358)*	234	*18.2%*	200	50	*12.5*
4	2018	(589)	-	-	-	66	*225*	12	22	26	55	30	21	1.4	*(356)*	384	*22.3%*	200	50	*14.0*
5	2019	(589)	-	-	-	-	*237*	12	43	26	55	30	42	1.6	*(380)*	291	*20.1%*	200	100	*15.5*
6	2020	(699) [H]	-	-	-	-	*247*	12	49	38	55	30	63	1.8	*(450)*	308	*20.6%*	200	150	*17.5*
7	2021	(699)	-	-	-	-	*261*	12	54	51	55	30	84	1.9	*(410)*	229	*18.8%*	200	198	*19.0*
8	2022	(699)	-	-	-	-	*273*	12	64	63	55	30	105	2.1	*(368)*	225	*18.6%*	200	248	*21.0*
9	2023	(808) [I]	-	-	-	-	*284*	12	75	73	55	50	126	2.3	*(415)*	147	*16.9%*	300	297	*23.0*
10	2024	(808)	-	-	-	-	*297*	12	91	83	55	70	147	2.5	*(347)*	165	*17.3%*	400	347	*25.0*
11	2025	(916) [J]	-	-	-	-	*308*	12	113	92	55	90	168	2.8	*(384)*	63	*15.0%*	500	396	*27.5*
12	2026	(1,026) [K]	-	-	435	-	*317*	12	116	92	55	110	189	3.0	*(14)*	381	*21.9%*	600	446	*29.5*
13	2027	(1,026)	-	-	435	-	*326*	12	118	92	55	130	210	3.2	*30*	369	*21.6%*	700	495	*32.0*
14	2028	(1,026)	-	-	435	-	*335*	12	121	92	55	150	231	3.5	*74*	376	*21.7%*	800	545	*34.5*
15	2029	(1,026)	-	-	435	-	*346*	12	122	92	55	170	252	3.7	*115*	367	*21.4%*	900	594	*37.0*
16	2030	(1,194) [L]	-	-	435	-	*356*	12	123	92	55	190	273	4.0	*(10)*	192	*17.7%*	1,000	644	*40.0*
17	2031	(1,194)	-	-	435	-	*366*	12	124	92	55	210	294	4.3	*32*	191	*17.6%*	1,100	693	*42.5*
18	2032	(1,194)	-	-	435	-	*372*	12	125	92	55	230	315	4.6	*74*	201	*17.8%*	1,200	743	*46.0*
19	2033	(1,194)	-	-	435	-	*381*	12	127	92	55	230	336	4.9	*98*	100	*15.7%*	1,200	792	*49.0*
20	2034	(1,194)	-	-	435	-	*389*	12	129	92	55	230	357	5.3	*121*	96	*15.6%*	1,200	842	*52.5*
							356	*141*											*854*	
							'TOTAL' Energy Efficiency (2015-2034)												*'TOTAL' Solar (2015-2034)*	

[A] SPP Planning Year is effective 6/1/XXXX.

[B] Represents estimated energy efficiency levels already 'embedded' into SWEPCO's long-term load & peak demand forecast based on emergence of PRIOR-ESTABLISHED Federal efficiency standareds (EPAct 2005; 2007 EISA, 2009 ARRA).

[C] Represents estimated contribution from current/known SWEPCO DSM-EE and Demand Response (Interruptible, DLC/ELM) program activity also reflected in the Company's long-term load and demand forecast (*from 'Going-In' SWEPCO CDR*).

[D] Due to the intermittency of wind resources, only 20% for Tranche A and 10% Tranche B of wind resource 'nameplate' MW rating are included for capacity resource determination purposes.

[E] Due to the intermittency of solar resources, Utility Solar receives 42.4% and Distributed Solar receives 10% of 'nameplate' MW rating are included for capacity resource determination purposes.

RETIREMENTS:

[F] Lieberman 1 retirement & Knox Lee 4 50% derate assumed 12/2014.

[G] Welsh Unit 2 retirement effective approximately June 1, 2016.

[H] Lieberman 2, Lone Star & Knox Lee 4 retirement assumed 12/2019.

[I] Lieberman 3 retirement assumed 12/2022.

[J] Lieberman 4 retirement assumed 12/2024.

[K] Arsenal Hill 5 retirement assumed 12/2025.

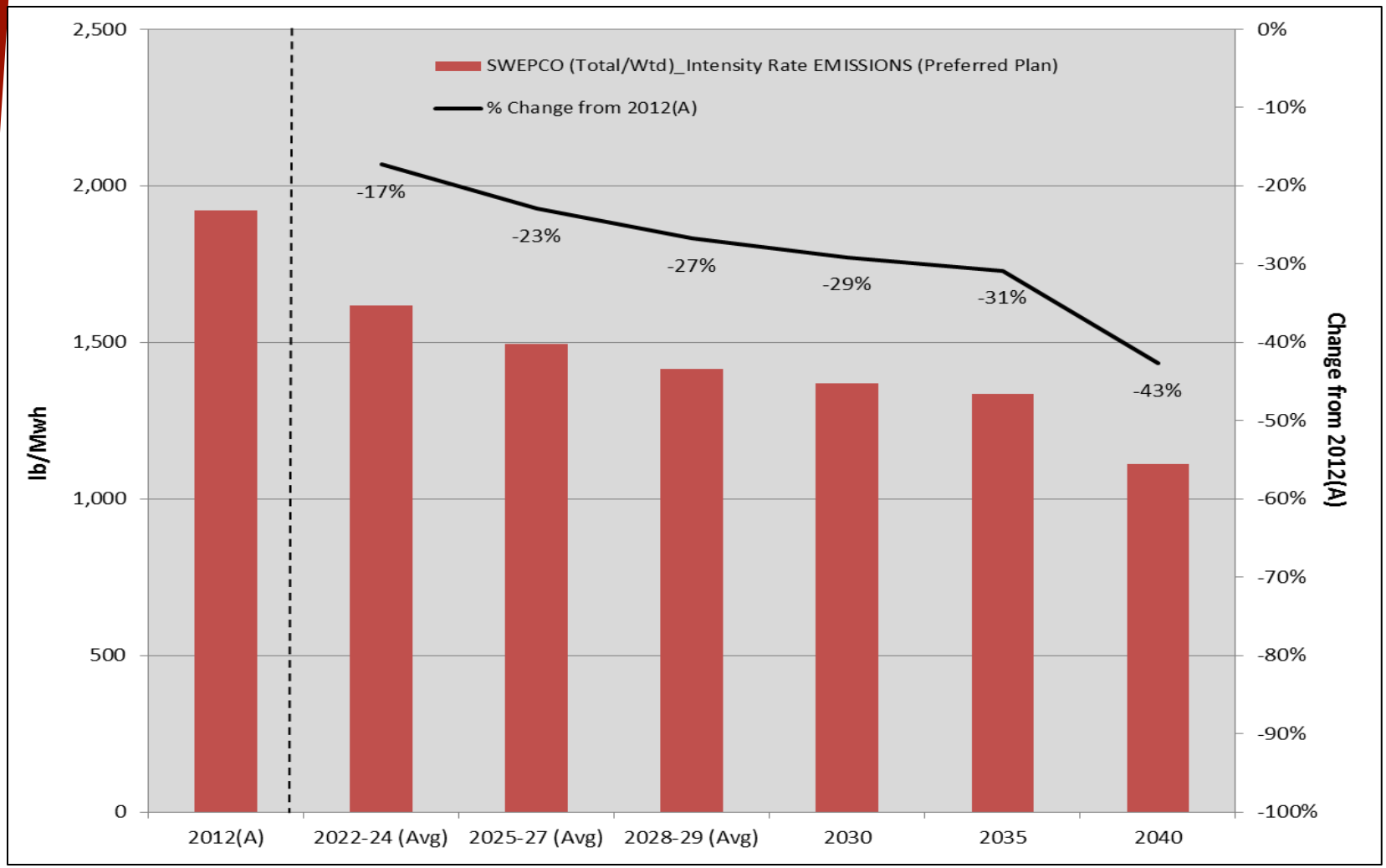
[L] Wilkes 1 retirement assumed 12/2029.

[F] *Excludes* cumulative annual changes in SWEPCO SPP 'Load Responsibility' (coincident peak demand) and 3rd-party resources... which also impacts relative capacity resource position.

[G] SPP minimum criterion @ 13.6% as a function of peak demand.

The Preferred Portfolio added 2,094 MW of renewable resources (nameplate); 1,200 MW of wind resources, 842 MW of universal solar & 52 MW of private rooftop solar.

IRP results – Preferred portfolio – Carbon intensity



The Preferred Portfolio reduces SWEPCO's carbon intensity by 29% below 2012 levels by 2030.

Current activity

- On August 17, 2016, SWEPCO issued a Request for Proposals for the purchase of wind resources
  - Proposals up to 100MW and can be commercial by December 31, 2018
  - Projects must be interconnected to the Southwest Power Pool and located in Arkansas, Louisiana, Texas, Oklahoma, Kansas or Missouri
  - Bids were due September 15, 2016

- Three-year EE portfolio filing was made in Arkansas on June 1, 2016
  - Projected energy savings are 31.9 GWh per year (2017-2019)
  - Projected savings should continue to exceed state mandated goals
  - APSC approval expected during the fourth quarter

- SWEPCO has exceeded the state EE goals since their initiation in 2011