



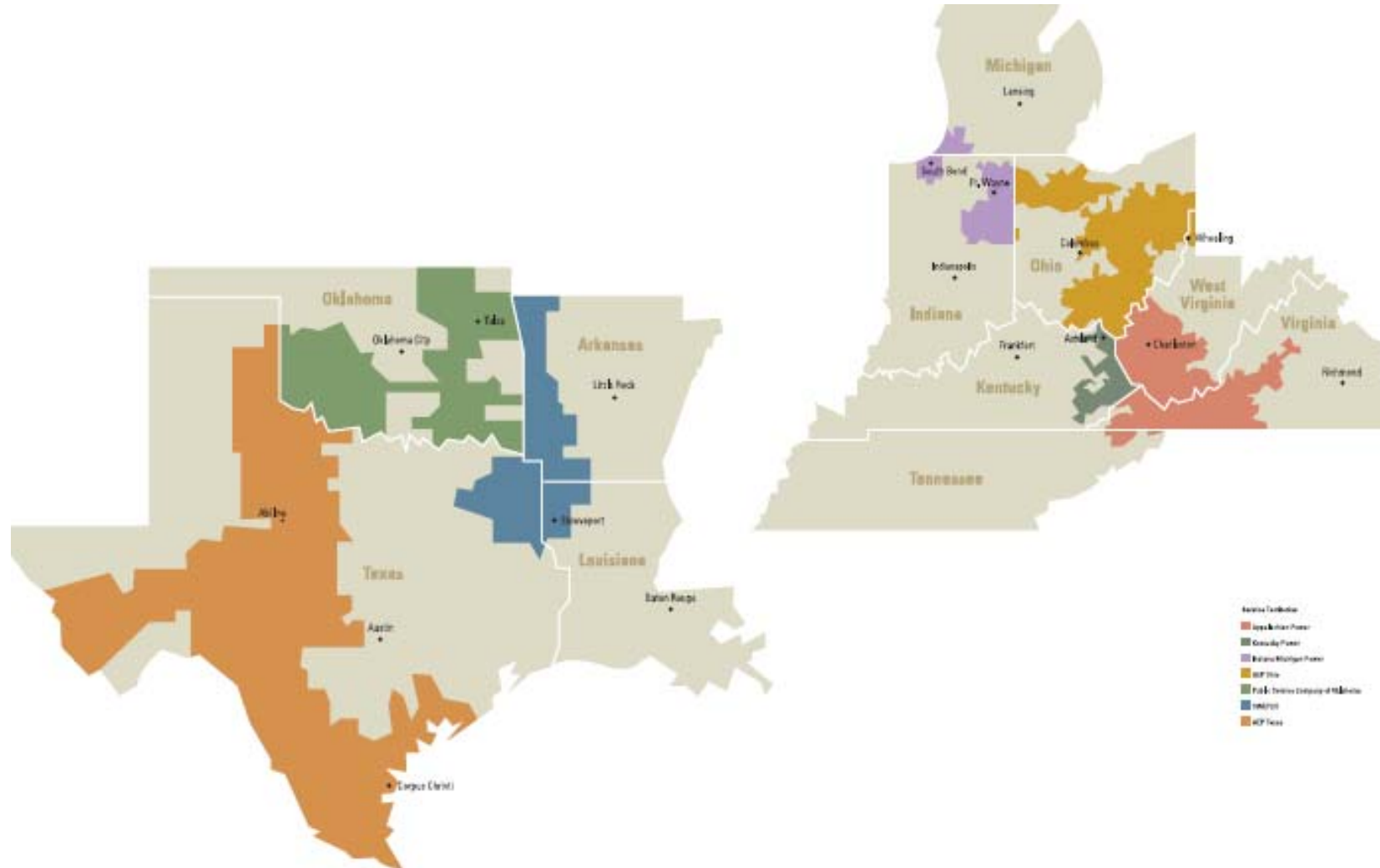
**Presentation To  
Commission on Electric Utility Restructuring  
And  
Virginia Coal and Energy Commission**

**September 19, 2007  
Dan Carson, Vice President  
Appalachian Power**

# Content

- Introduction of AEP and Appalachian Power Company
- Load forecasts (Virginia and total company)
- Compliance-related expenditures, viability of existing generating capacity
- Resource plan, IGCC filing in Virginia

# The AEP System Footprint



# AEP East System



## AEP System

- Generation needs are provided for on a single, integrated-system basis
- Load diversity and other factors contribute to comparatively low costs of service and, thus, rates



# AEP Interconnection Agreement

- In place since 1951 among the five operating companies owning generation
- Prescribes arrangement for sharing costs and benefits of generating resources
- APCo is a “deficit” company with respect to its generation and its customers’ requirements

# Appalachian Power System Footprint



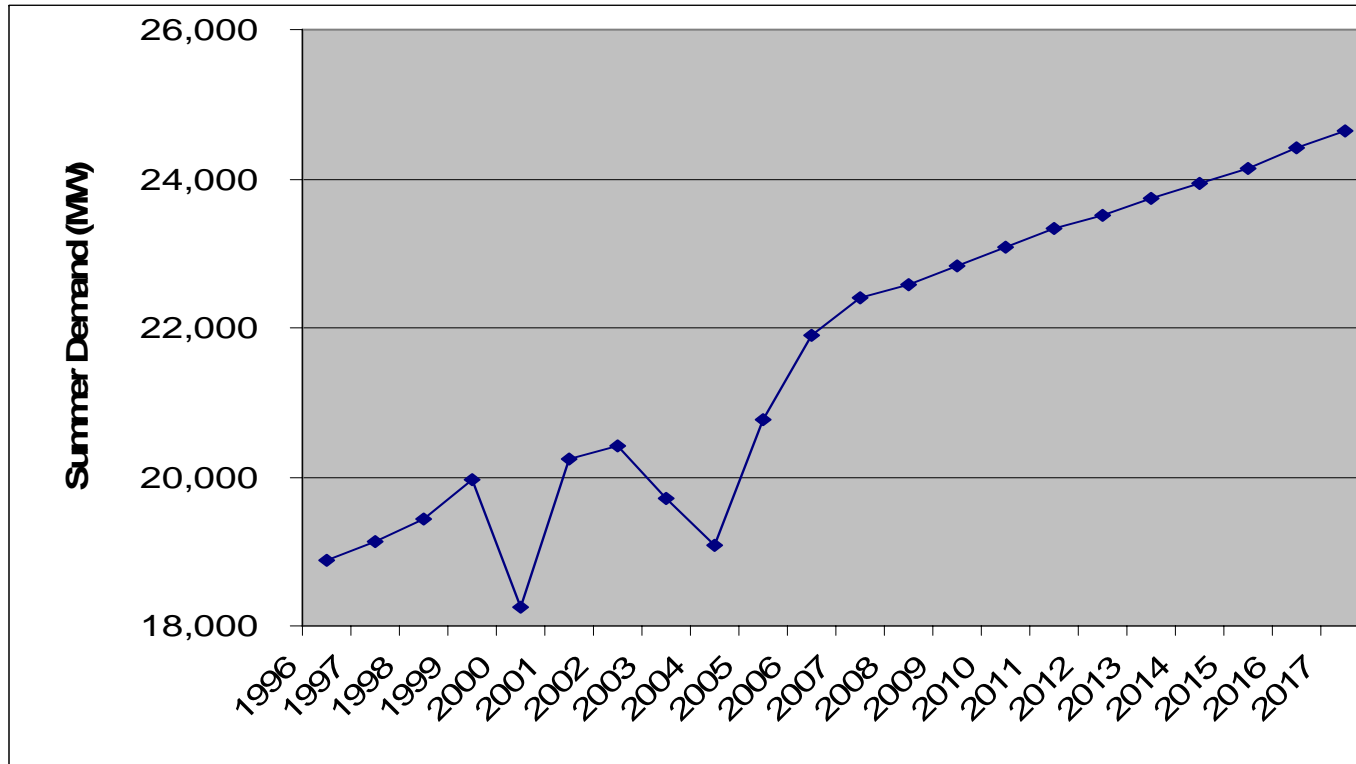
# Appalachian Power Company

- 948,000 customers
  - 512,000 Virginia customers
- 6,415 MW of generation
  - 5,093 MW of baseload, coal-fired generation
- In Virginia, Clinch River and Glen Lyn coal plants

# AEP Internal Peak Demand (Summer)



(Actuals for 1996- 2007, Forecast for 2008- 2017)



# AEP Capacity vs. Load

Winter Peak Demand	21,702 MW (2006/07)
Winter Capability	29,117 MW
Summer Peak Demand	22,411 MW (2007)
Summer Capability	28,461 MW

# Appalachian Power

Winter Peak Demand	8,003 MW (2006/2007)
Virginia Portion	3,860 MW
Summer Peak Demand	6,795 (2007)

# AEP

## Load and Capacity (2008-17) Component Summary

### Projected Customer Demand

- **Less** Interruptible customer demand
- **Less** Newly-employed demand-side management

AEP

## Load and Capacity Forecast (2008-17) Component Summary

### Existing Capacity Resources

- **Less** De-ratings associated with new scrubbers (2007-14)
- **Less** Potential capacity retirements
- **Plus** Efficiency improvements

# AEP

## Load and Capacity Forecast Key Factors Considered

- Reserve Margin
- Fuel source diversity mix
- Portfolio of potential resources
  - Market purchases
  - Purchase existing assets of others
  - Unit additions / Technology options

# AEP

## Load and Capacity Forecast Key Factors Considered

- Load shapes to be served
- Transmission impacts
- Environmental regulations
  - Continued physical and economic viability of existing resources

# AEP/APCo

## Load and Capacity Forecast

### Maintaining Viability of Existing Capacity

### Environmental Compliance Expenditures

#### Clean Air Interstate Rule (CAIR)

Phase I                      2010

Phase II                     2015

#### Clean Air Mercury Rule (CAMR)

Phase I                     2009

Phase II                    2018

**AEP Phase I expenditures of \$ 3.7 billion through 2010, of which \$1.2 billion is APCo responsibility for APCo plants.**

# AEP/APCo Forecast Conclusions

- By 2012, a minimum 687 MW of new generation required to meet resource obligations; 3,262 MW required by 2017
- Of all AEP operating companies, APCo will have the largest reserve margin deficit in 2012

# AEP/APCo Forecast Conclusions

- Additional baseload generating capacity will be needed
- Appalachian Power's responsibility to add capacity through 2017 will total 1,863 MW

# Appalachian Power Planned Resource Additions

635 MW	Integrated Gasification Combined Cycle (Coal fueled)	2012
72 MW*	Wind energy	2008-11
1156 MW	Other capacity resources, including DSM, intermediate and peaking units	2013-17
<b>TOTAL 1,863 MW</b>	<i>*For capacity planning, it is estimated that wind intermittency will limit its firm capacity attribution to 20% of nameplate capacity: 360MW x 20% = 72 MW</i>	

# Appalachian Power Proposed IGCC Facility

- Virginia application filed July 16, 2007
- Will serve APCo customers in Virginia, West Virginia, Tennessee
- “Carbon capture compatible, clean coal plant”
- Represents important technology advancement for power generation and the coal industry
- The least expensive option *over the life of the plant given government imposition of restrictions on carbon dioxide emissions*

# Appalachian Power Future Considerations: Capacity Resource Planning



- Definitive plans for 2013-2017 time frame
- Virginia's energy efficiency goal
- Virginia's renewable portfolio goals process
- Future environmental requirements
  - Possible federal CO<sub>2</sub> emission restrictions
  - Virginia Energy Plan CO<sub>2</sub> reduction goal



**THANK YOU.**