

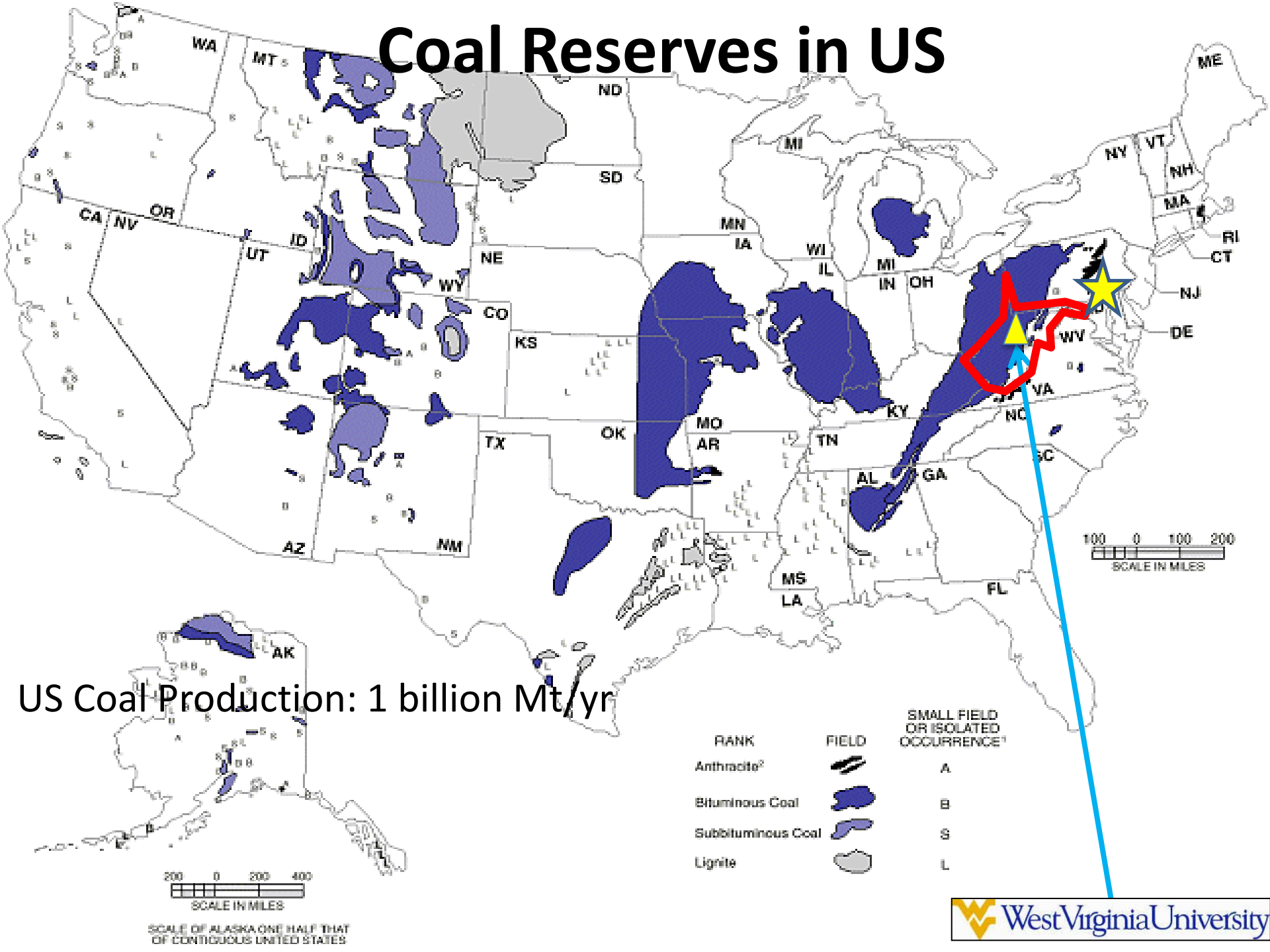
# Recent Changes and Challenges in the US Coal Industry

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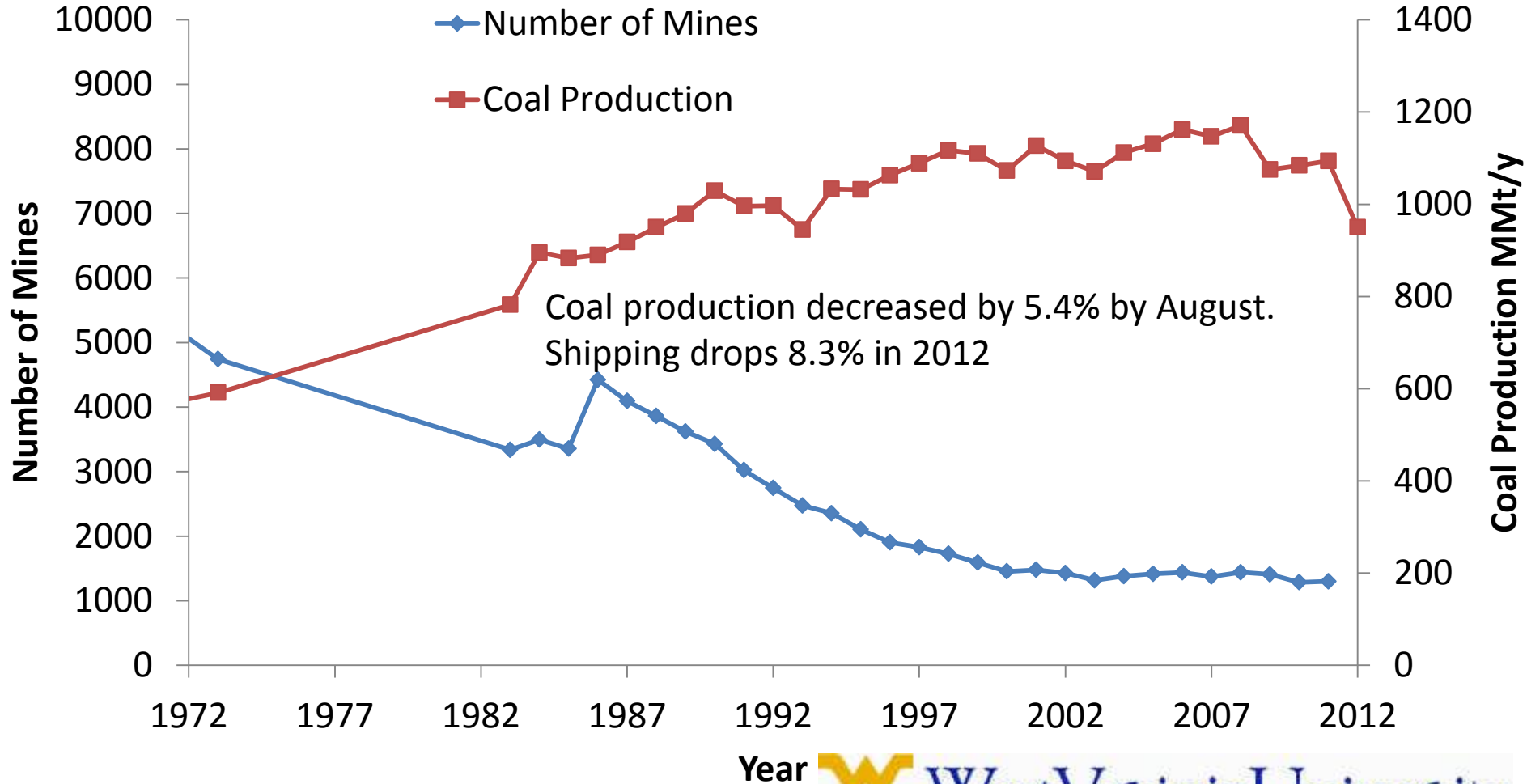
2012 China International Forum  
on Coal Industry  
October 11th, 2012  
Hotel Kunlun. Beijing, China

# Coal Reserves in US



# Coal Production in the US

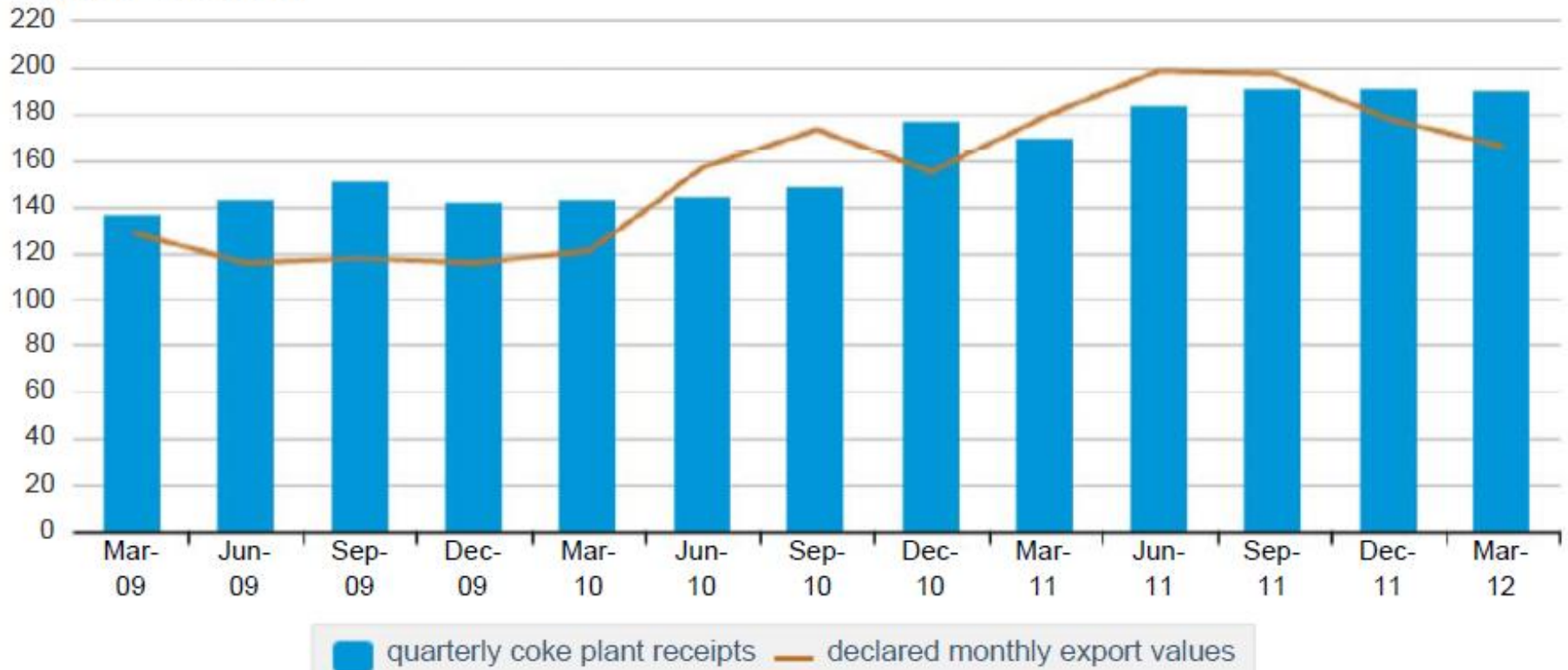
## Coal Production and Number of Coal Mines



# Coking Coal Price Change

Average cost of metallurgical coal priced at coke plants Q12009-Q12012

dollars per short ton



### Thermal Coal CAPP Price

56.42 USD/st

18 Sep '12



**InfoMine.com**

# Challenges in the US Coal Market

- ❖ Coal demand drops and coal price down
  - Warm winter reduces the demand
  - International market down
  - Retired coal fired power plants or change fuels
  - New built power plants using gas
- ❖ Increasing mining production and environment cost
- ❖ Reduction of coal production and close of mines
- ❖ Economics goes bad in coal producing states
- ❖ Miners lost jobs
- ❖ Related industry like manufacture going down
- ❖ Shale gas changes the game

# Impacts of Shale Gas on Coal

- ❖ Short term: low price and over supply of NG reduces the demand of steam coal
- ❖ Long term: coal demand will drop
  - No coal plants will be permitted
  - Shale gas price is cleaner fuel for power
  - Cheap to build new power plant
  - Easy to switch to NG fuel for existing coal plants
  - Cheaper fuels to burn
  - Politic issues

### Natural Gas Price

2.78 USD/mmbtu

6 Sep '12



**InfoMine.com**

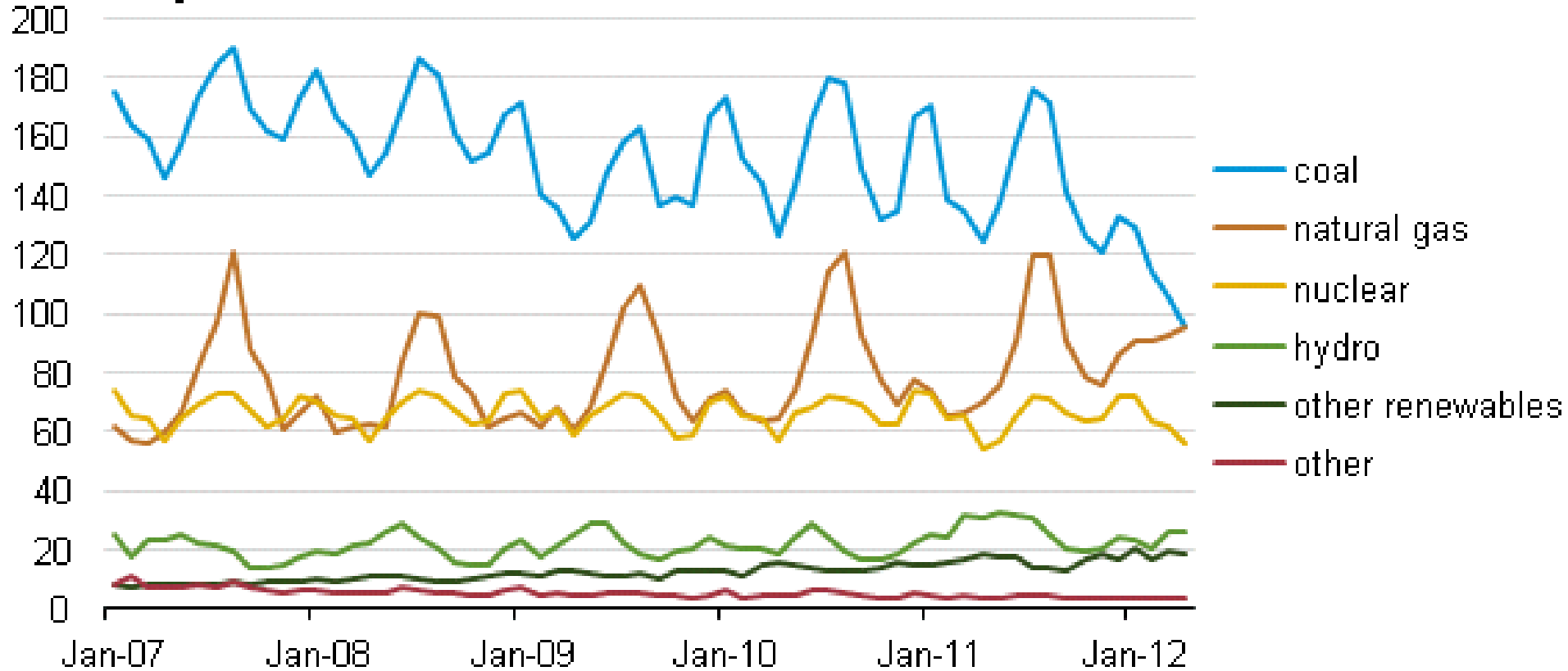




# US Electric Power by Energy Sources

U.S. monthly net electric power generation, January 2007 – April 2012

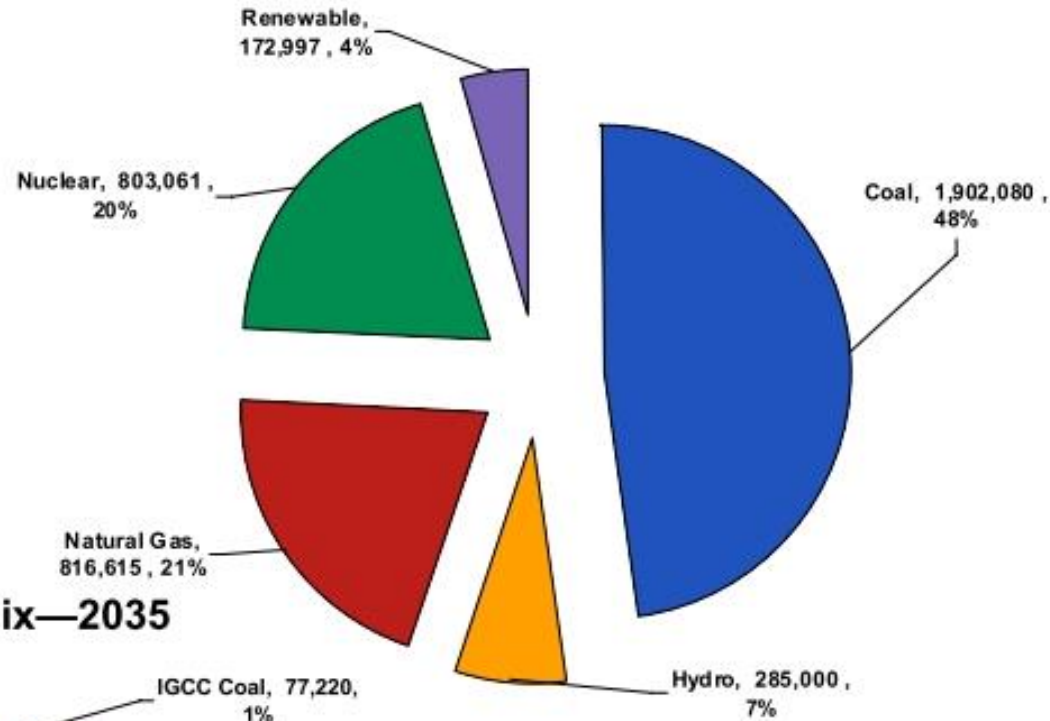
million megawatthours



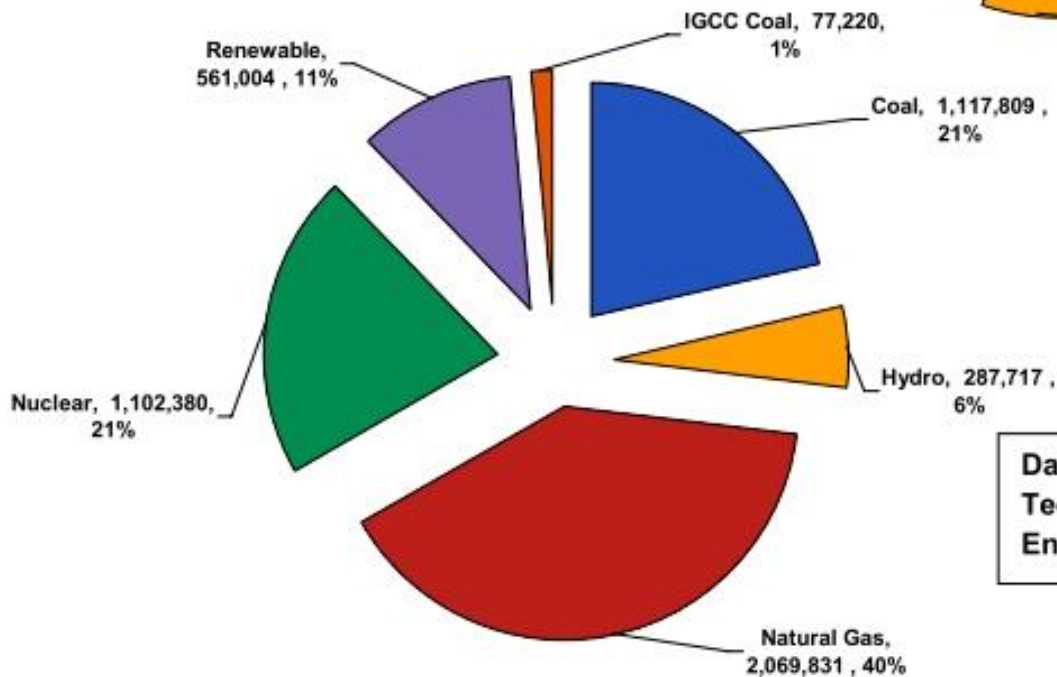


US

### Energy Mix—2011



### Energy Mix—2035

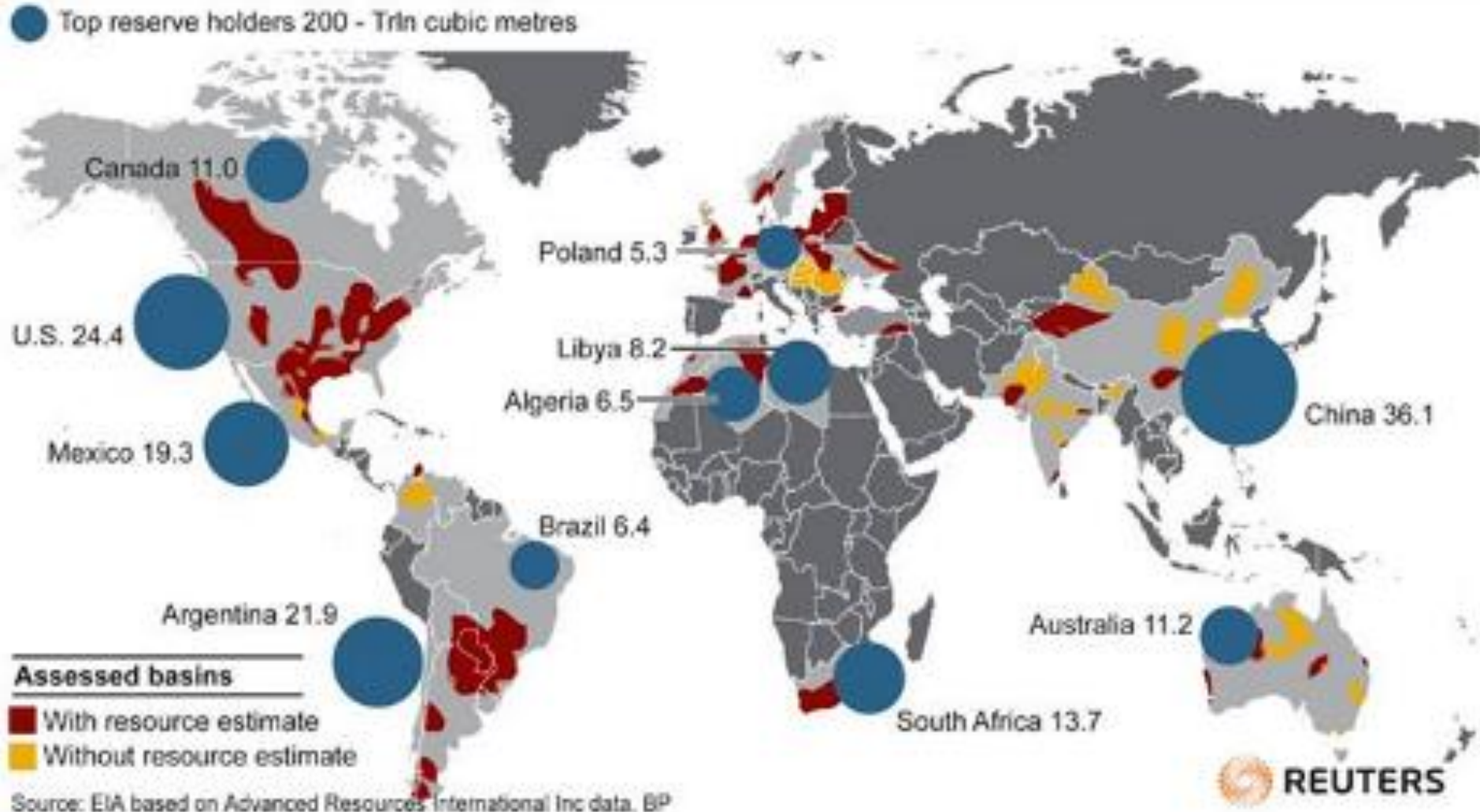


**Data Label Legend:**  
**Technology,**  
**Energy (GWh), Share of Total (%)**

Source: B&V Analysis



# Shale Gas in the World





# Conclusion

- ❖ Shale gas is changing energy structure
- ❖ Shale gas will greatly impacts coal industry in the US
- ❖ Similar case may happen in China as shale gas development
- ❖ Coal companies need to think about diversifying business, i.e. drill shale gas in coal fields
- ❖ Also business opportunities for acquisition of met coal mines and shale gas companies

An aerial photograph of the West Virginia University campus. The central focus is a large, ornate red brick building with a central tower and multiple gables, surrounded by a green lawn. Other large brick buildings are visible on the left and right sides. The campus is interspersed with trees, some showing autumn foliage, and paved walkways. The overall scene is a well-maintained university environment.

**Welcome to West Virginia**