



## Potential Opportunities – Alaska's Coal Industry

Senate Resources Information Hearing

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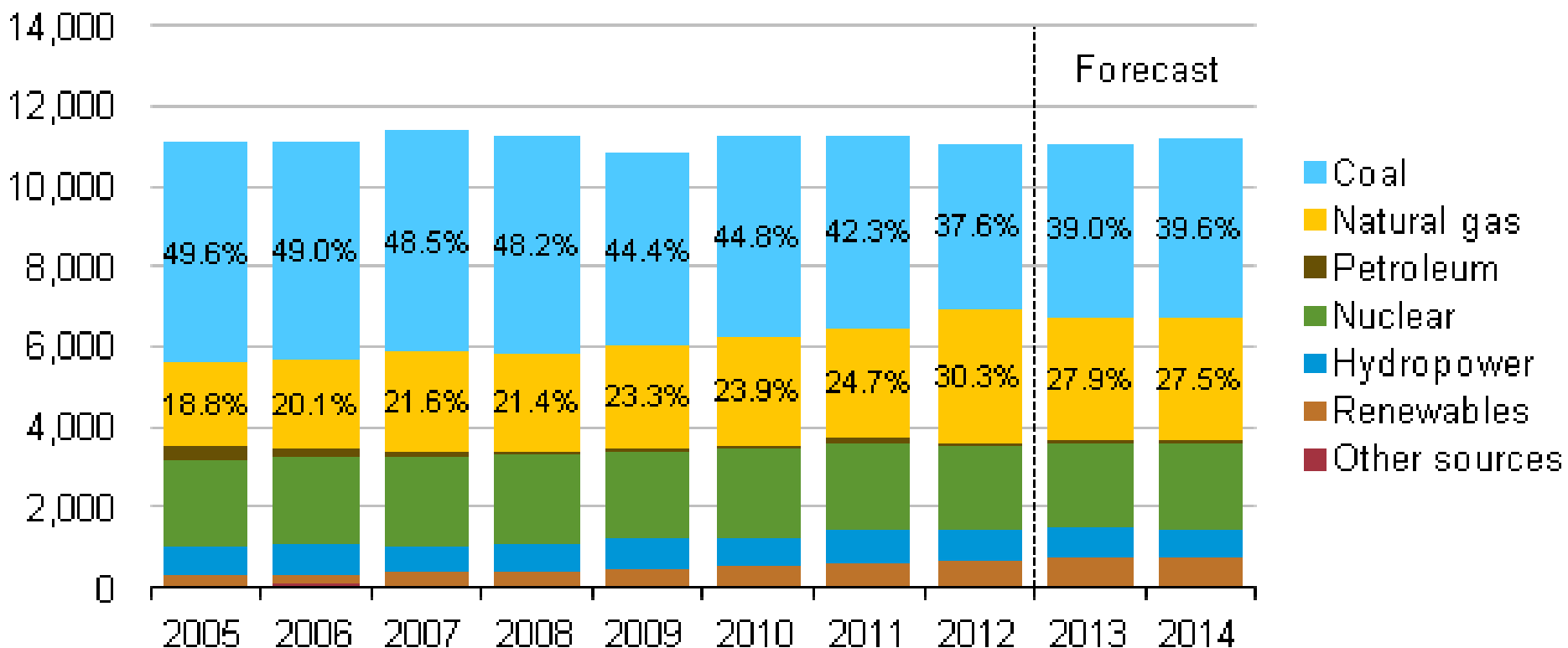




# Why Coal Now?

## U.S. Electricity Generation by Fuel, All Sectors

thousand megawatt hours per day



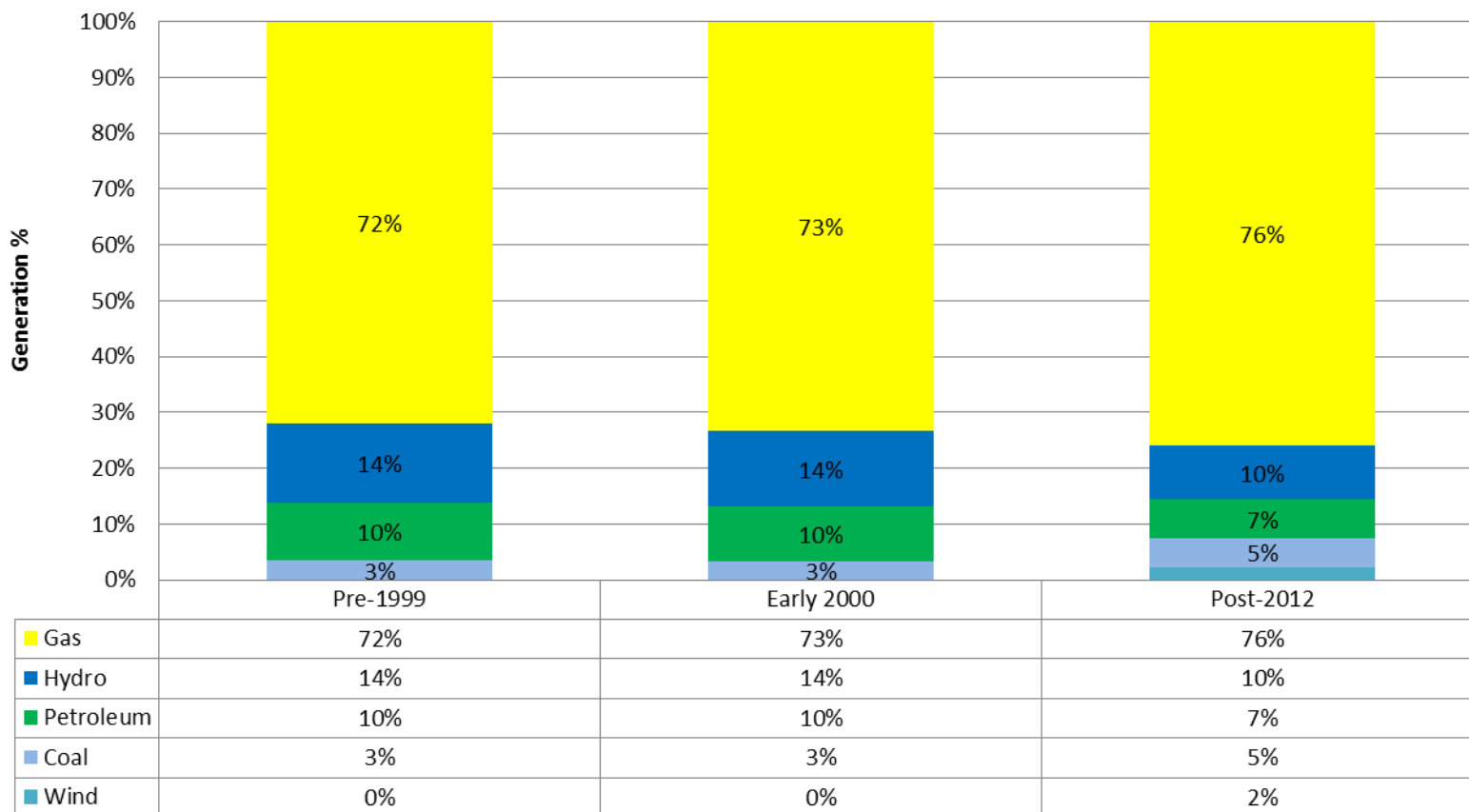
Note: Labels show percentage share of total generation provided by coal and natural gas.

Source: Short-Term Energy Outlook, January 2013



# In-State Coal Use

## Alaska Railbelt Electric Generation Mix

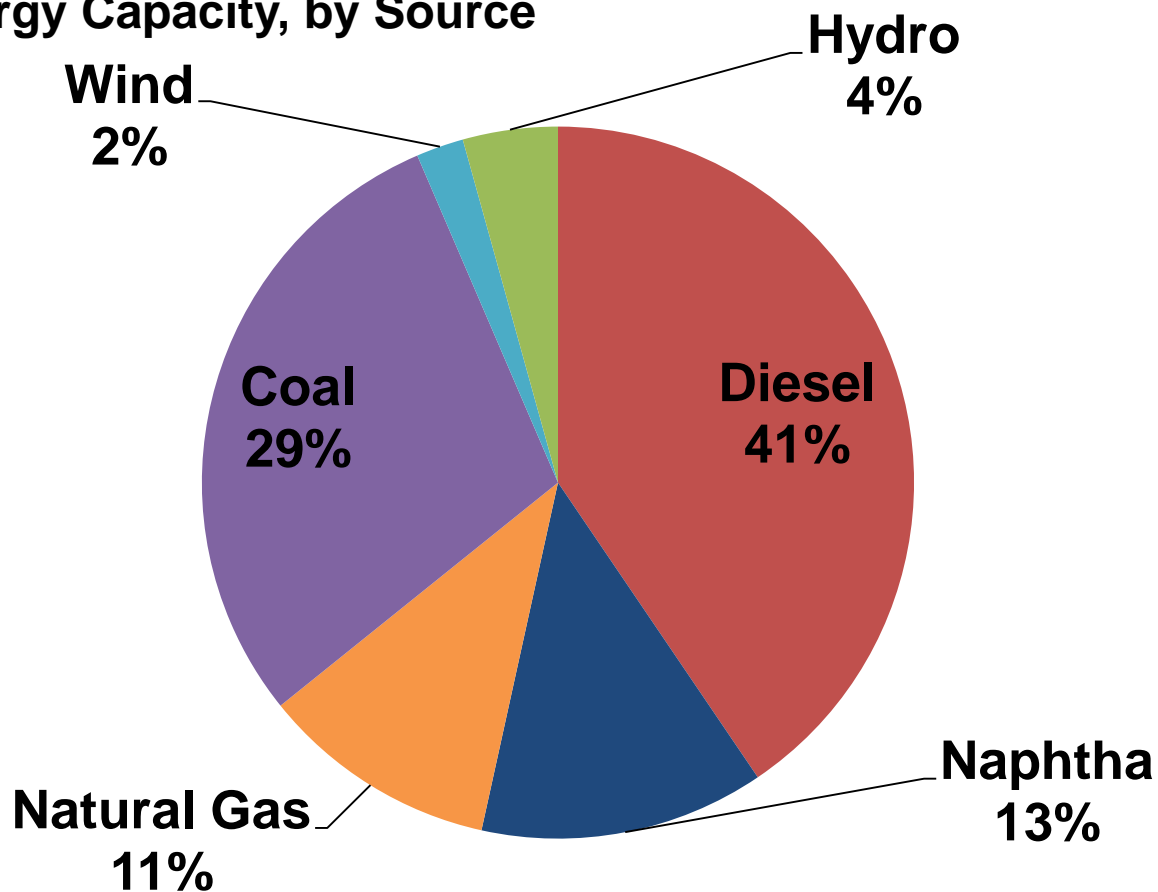


\*Data Sources: Railbelt Energy Study, January 2004, RW Beck; Personal Communications, utilities



## Coal is a critical source of Interior Alaska energy.

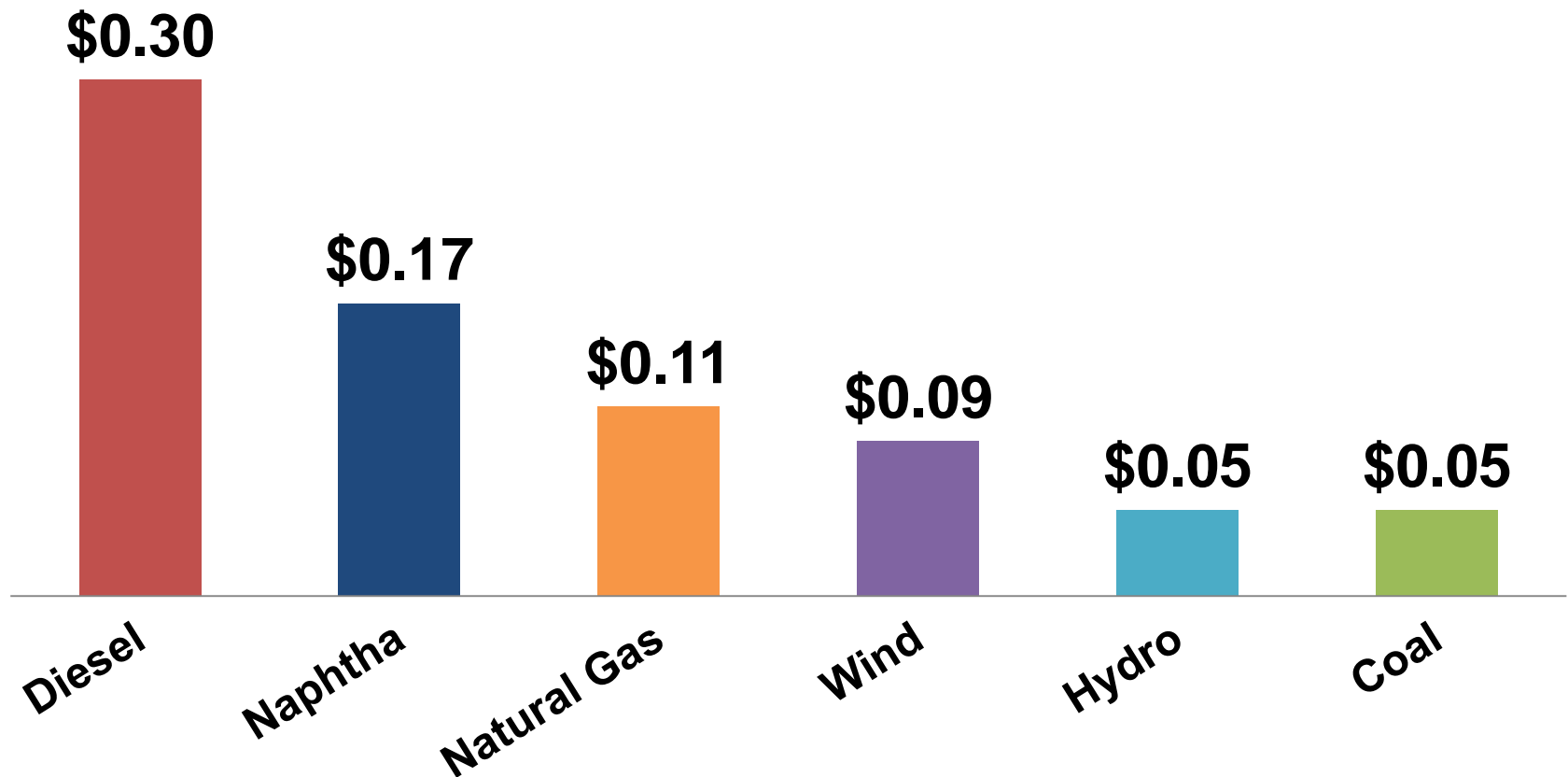
**Interior Energy Capacity, by Source**





Coal is the Interior's lowest-cost source of energy.

**GVEA Average Cost per kWh, by Source in 2012**

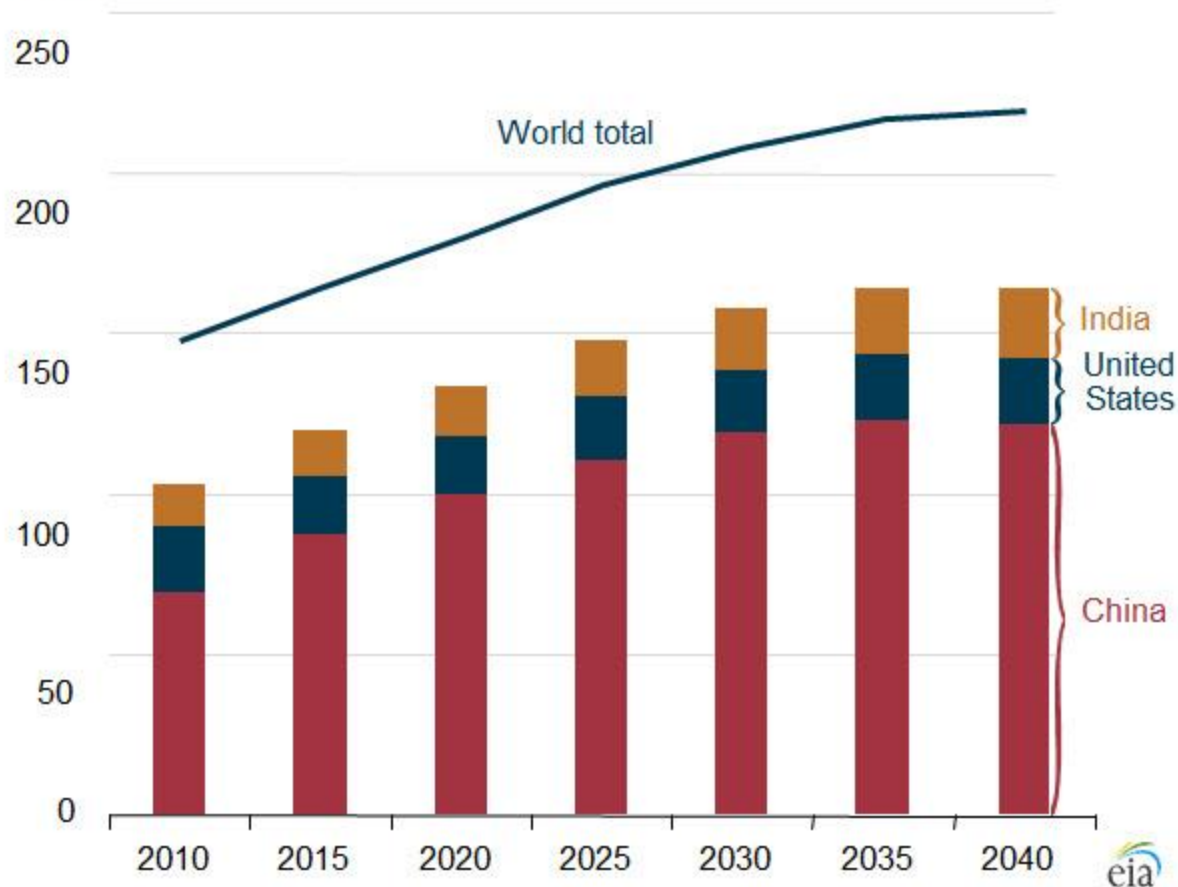




# Markets for Alaska Coal

Figure 71. World coal consumption by leading consuming countries, 2010-2040

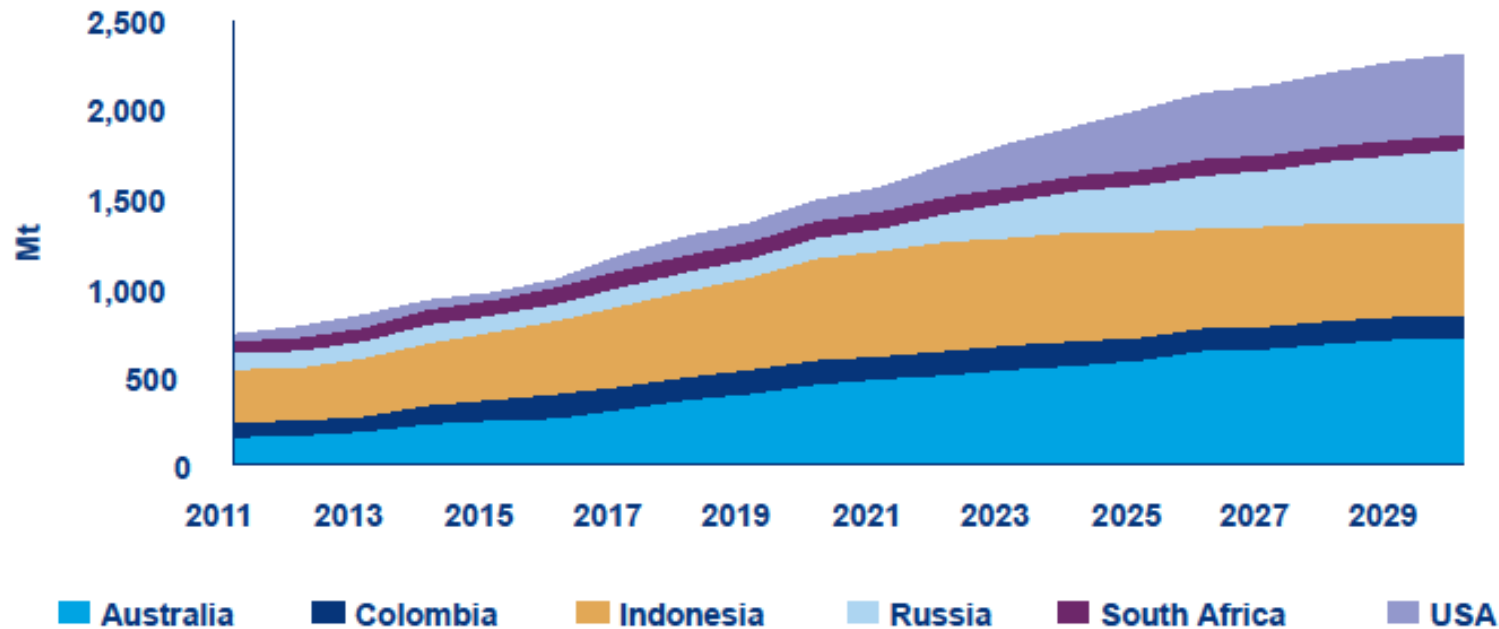
quadrillion Btu



# Future Coal Supplies

www.woodmac.com

## Major suppliers – great expansion required



Source: Wood Mackenzie Coal Market Service





## Benefits of the Coal Industry to Alaska

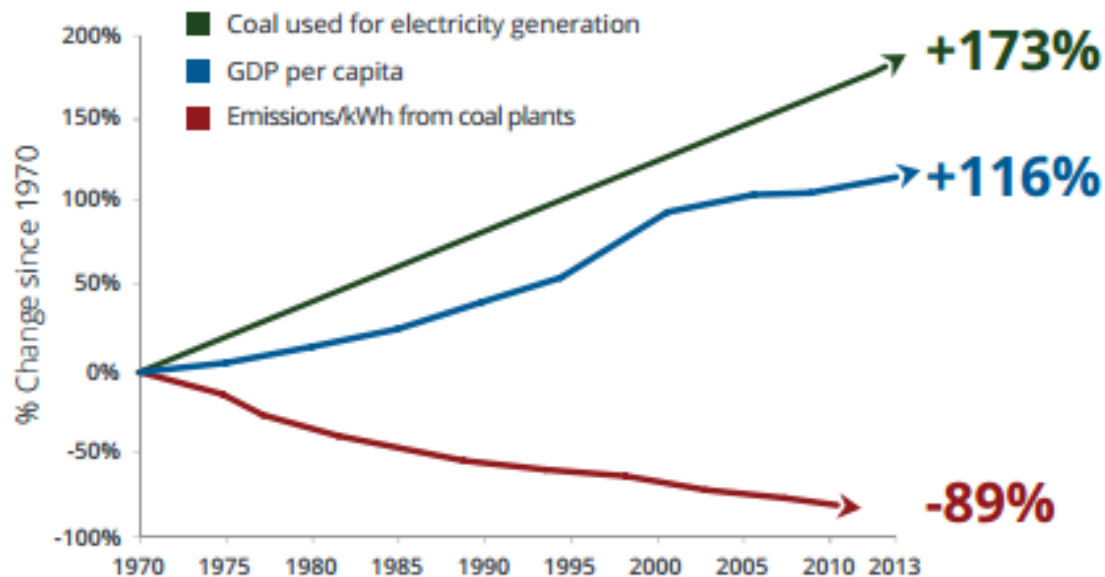
- Statewide, 692 jobs (direct and indirect) and \$52 million in payroll
- Absence of coal in interior Alaska would raise energy costs \$200 million annually
- Coal is Interior Alaska's lowest-cost source of energy
  - Half the cost of natural gas, one-third the cost of naphtha

\*Figures based on McDowell Group 2013 study



# Meeting the Challenges

## U.S. Coal Use Dramatically Increases, Key Emissions Decline 89%



Emissions Reduced due to:  
Changes in Fuel Source  
Scrubbing Technology  
Bag Houses  
Burning Technology  
(i.e. Fluidized Beds)

Source: U.S. Energy Information Administration (EIA) 2014 Annual Energy Outlook, 2013; EIA Annual Energy Review, 2012; U.S. Department of Agriculture, 2013; U.S. National Energy Technology Laboratory, 2012; U.S. Environmental Protection Agency, "Clean Air Markets," 2013.



# Alaska's Clean Coal

- Ultra-low in sulfur – 0.1 %, compared to PRB coals at 0.5% and bituminous grade coals with up to 6.0% sulfur
- Low mercury – Alaskan coals contain up to 2/3's less mercury per pound than most other coals in the Pacific Rim thermal coal market

Alaska's clean coal helps our international neighbors reduce their emissions.



Thank You

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