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- **Presented by Dr. Cal Kent, Vice President for the Center for Business and Economic Research, Marshall University. This talk was presented at the West Virginia Energy Roadmap Workshop on National Coal Issues held in Charleston, WV on November 10, 2004. The meeting was a part of the Energy Roadmap Workshop Series commissioned by West Virginia Governor Bob Wise.**

COAL IN THE WV ECONOMY

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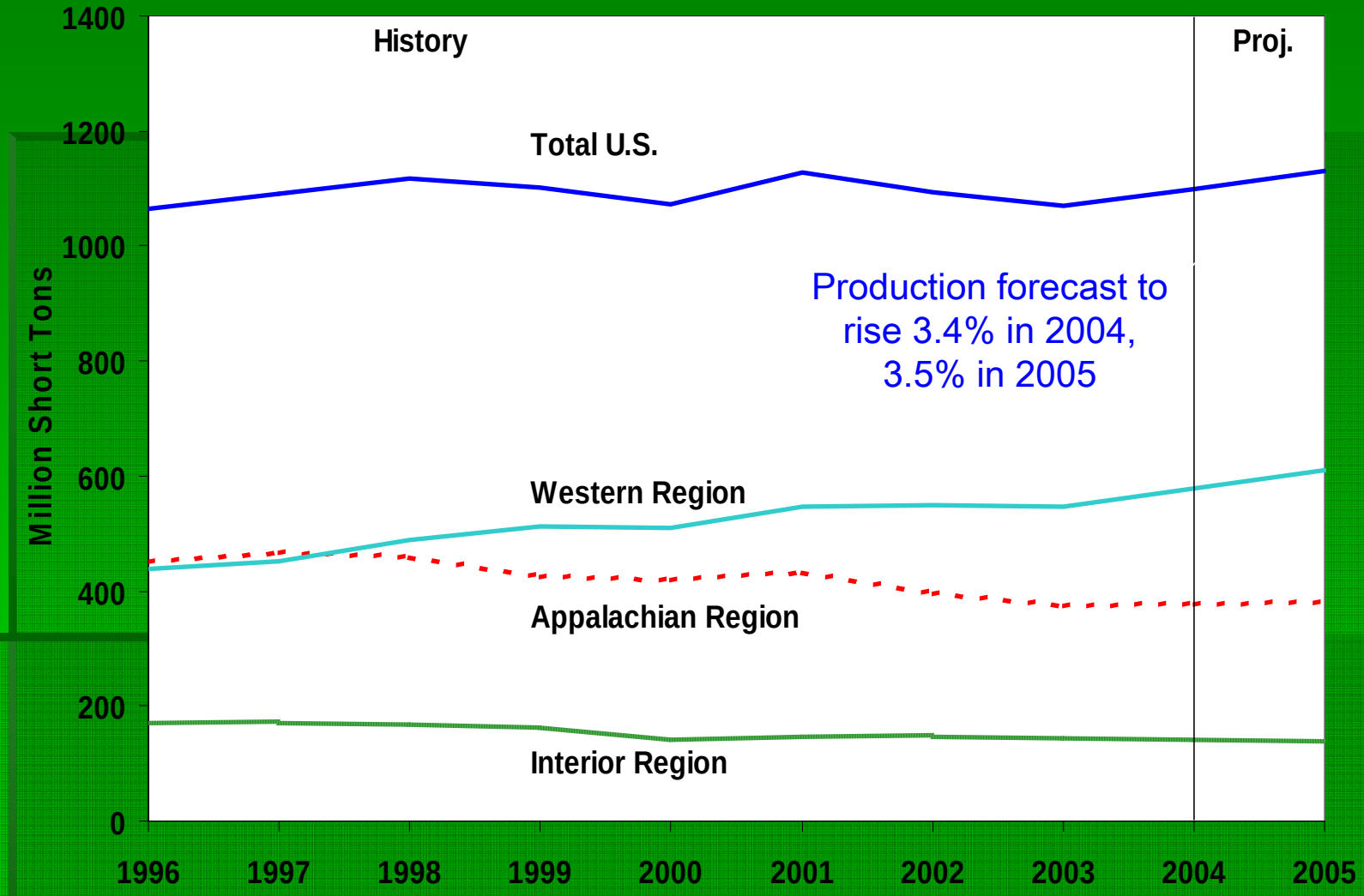
Recent Coal Price and Supply Issues

- Coal demand has increased, but not enough to account for recent supply problems.
- More importantly, coal demand has been inconsistent—the major buyers were unable or unwilling in 2003 and early 2004 to replenish inventories.
- Why? Because coal prices had been inching down for so long, buyers were reluctant to commit too soon and miss the even lower prices that were sure to come.

Recent Coal Price and Supply Issues

- Uneven demand was exacerbated by China's unreliable trading practices in 2003/2004.
- Unmet deliveries of Chinese coal and metallurgical coke, and low $U.S. exchange rates, raised demand for U.S. coal in Japan, Korea, Taiwan, India, and other countries.

U.S. Coal Production - Rebounding



Source: Short Term Energy Outlook, October 2004

Observations . . .

Why coal supplies are short –

- Bad timing: higher than usual rate of mines closing (2003-2005) in the East due to “bad geology” or reserve depletion; several major mines suspended mining due to hazards
- More bad timing: deferred demand – many big customers (electric power generators) delayed full replenishment of coal inventories in 2003 and early 2004

Observations . . .

Why coal supplies are short –

- Economics – chronic low contract coal prices drove six sizable bituminous producers to bankruptcy protection (2002-2004), some production lost, some contracts canceled or renegotiated
- Financial - banks have declined new loans to mines based on the record of low coal prices, growing mining costs, low profits, multi-year permitting processes, and past bad debts with merchant generators

Observations . . .

Why coal supplies are short –

- Externalities: Demand in international Atlantic market captured some South American coal being eyed by coastal southeastern U.S. utilities.
- Externalities: China reneging on coal and met coke exports in late 2003 and 2004 and disruptions in Australian exports sent Japan, India, Korea, and others to U.S. for coal; diverted 6.5* mmst to exports

* 5.5 mmst exports + 1.0 mmst steam coal-met coal conversion loss

Observations . . .

Why coal supplies are short –

- Permitting: Due to 2004 decision in valley fill lawsuit, Corps of Engineers stopped processing multiple permits under National criteria, causing delays in WV region
- Skilled labor: engineers and miners with needed technical skills left for better pay and conditions in 1990's; most not returned
- Skilled labor: other experienced miners are retiring; younger generation left coalfields

Observations . . .

Why coal supplies are short –

- Reduced WV coal truck weight limits, strict fines, and higher license fees in 2004 severely curtailed regional deliveries, especially to river docks
- Because of increased national demand for trains in improving economy, recent rail employee attrition, and producers diverting coal to export docks, coal deliveries chronically delayed in 2004

Looking Forward

Thermal spot coal prices could subside –

- The 2002-2004 coal producer bankruptcies are winding down, best properties being acquired by better-financed companies
- Customers starting to believe higher coal prices are real, signing $40-$44 contracts
- High spot prices do affect baselines for new contracts, less effect on long-term averages
- Backwardation* in forward prices
- Several new mines in the East are opening, or old mines reopening, in late 2004

*Backwardation describes a market in which spot prices exceed forward prices. Typically, forward prices increase in energy markets. Backwardation in prices usually corresponds with an immediate shortage.

Looking Forward . . .

Metallurgical coal prices could subside later –

- International met coal prices have been what the traffic will bear, certainly as high as $150 per metric ton; in U.S., expect $70 and $80/short ton f.o.b. mine
- International demand continues high, e.g., Massey in ’03 shipped 5 mmst of met coal, expects 7-8 mmst in ’04, 8-10 mmst in ’05
- Suppliers have responded: low-vol “swing” mines, Pinnacle mine back on line, new mines in Appalachia and Canada

Looking Forward . . .

Coal demand projected to grow –

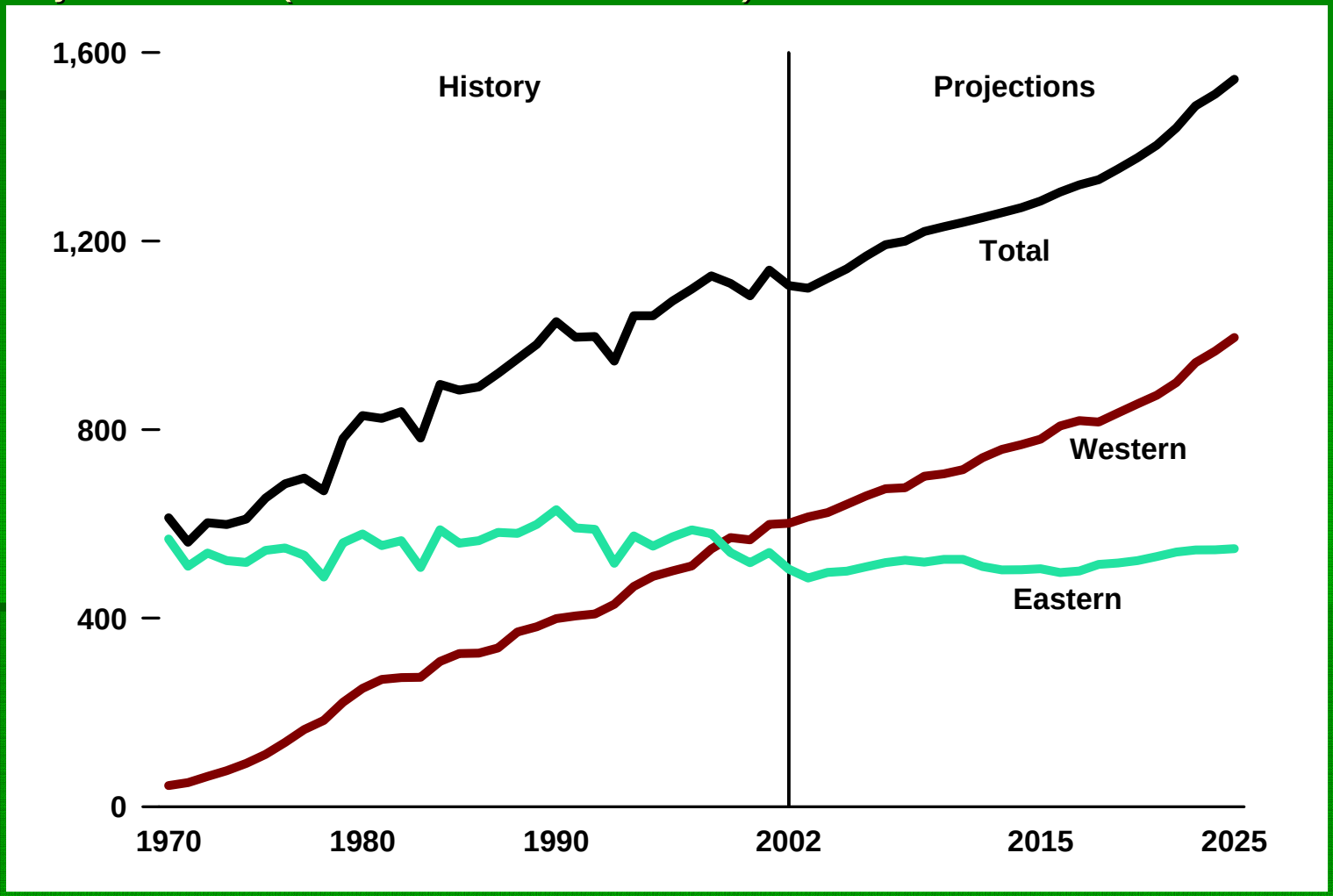
- EIA projects coal consumption will grow by 3.4% in 2004 and another 3.5% in 2005
- A colder-than-normal winter expected in Southeast
- Interest in coal hedge funds growing - trader positions assume oil prices and natural gas prices will stay high and even interruptible gas supplies may be insufficient for expanding electricity generation

Long-Term Energy Projections (to 2025)

- Electricity demand will rise
- Natural gas prices in real dollars will rise
- Coal mining productivity will improve further, keeping coal prices relatively low
- Emission caps will shift even more demand to the West
- Industrial coal demand and coal exports decline, coal imports rise

Long-Term Energy Projections

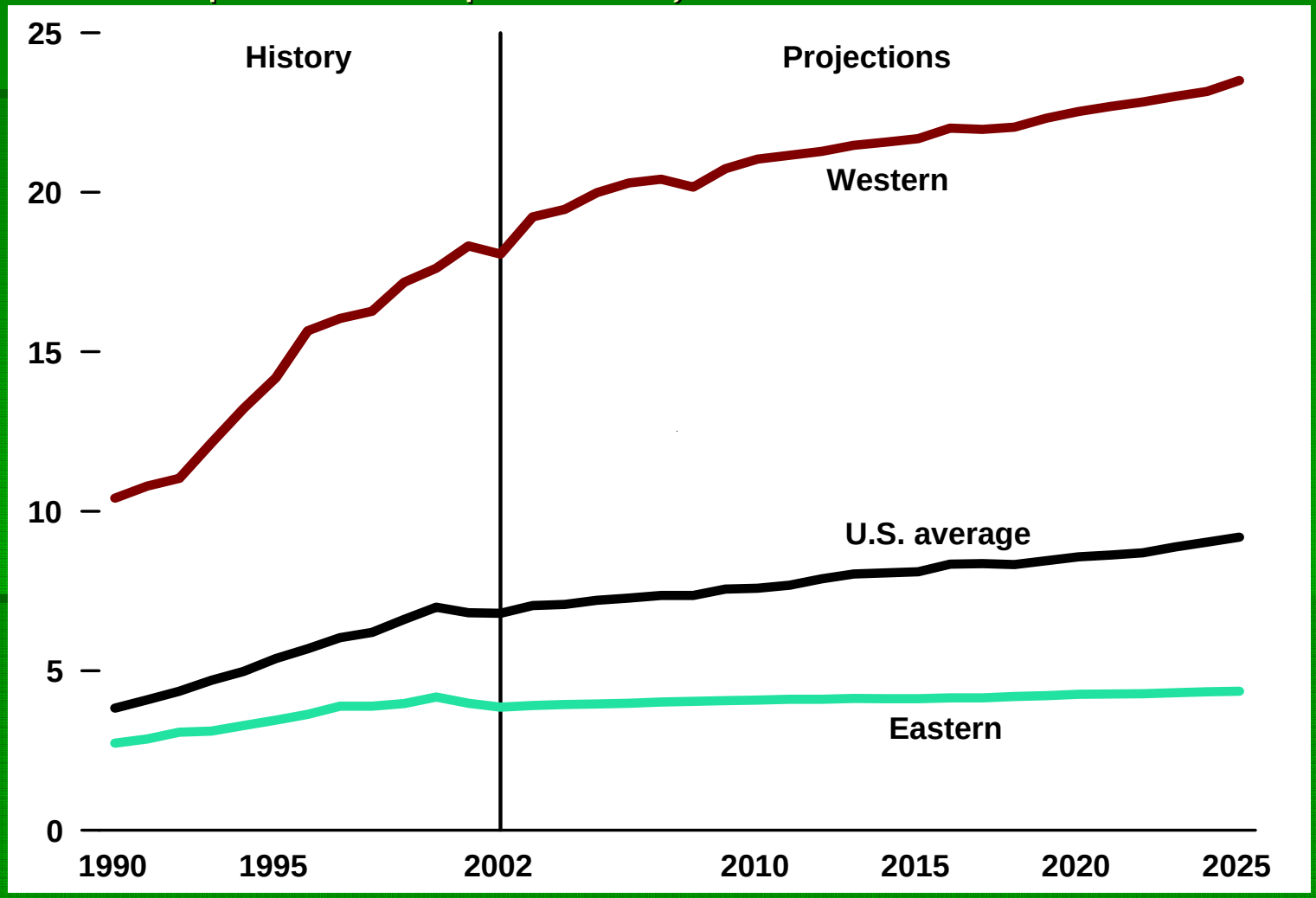
Coal Production by Region, 1970-2025 with Long-Term Projections (million short tons)



Source: Annual Energy Outlook 2004, January 2004

Long-Term Energy Projections

Coal Mining Labor Productivity, 1990-2025
(short tons per miner per hour)



Source: Annual Energy Outlook 2004, January 2004

Impact of proposed Interstate Air Quality Rule (Substitute for Clear Skies Act)

- By 2025 would NOx by 70% and SO2 by 65% in eastern states

Benefits

1. $82.4 billion in annual health costs
2. $1.4 billion in visibility improvements
3. Reductions in acid deposition (forest/streams)
4. Reductions in nitrogen despostion (coastal waters)
5. $22 in benefits for every $1 in costs

Covers 29 states and D.C.

1. All eastern states except New England
2. All Midwestern states
3. In addition Kansas and Texas
4. Phased in 2010 and 2025 standards

State Implementation Plans (SIP)

1. Each state free to determine least costly way to achieve reductions
2. Recommended that states regulate power plants under cap and trade systems (caps at 2000 level)
3. Existing plants to be grandfathered with credits for level of emissions at 2000 level. New plants would have no credits.

Impacts

1. Small increases in electricity prices (1.5-2.7% in 2001 $)
2. Demand for coal will increase by 24% but at a slower rate.
3. Omission of required mercury standards may favor western and Illinois basin coal. Depends on extent states mandate technology (MACT)
4. Switching to natural gas limited by
   - Rising prices for natural gas
   - Difficulty in supply
   - Restricted ability to import