

Renewable Energy and Regulation



Why Do Bad Things Happen to Good Energy

— Overview of Presentation

— Market fundamentals of renewables are strong...but development lags.

For renewable development to move ahead regulation must reduce uncertainty and risk.

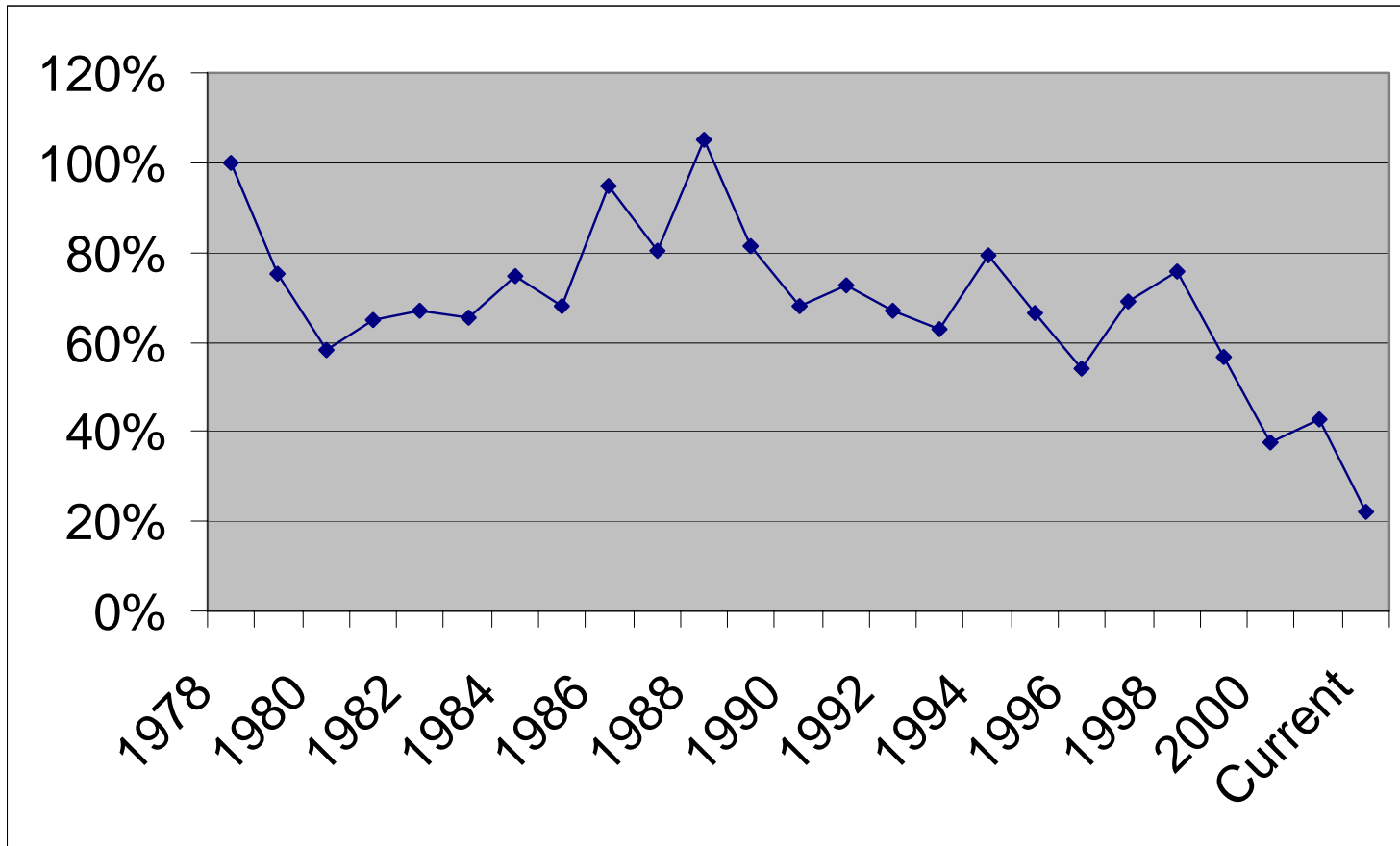
United States a quagmire of multi-faceted agendas.

Federal and state regulatory policies are confused and hostile.

Role of Regulation

- Provide incentives that will encourage electricity providers to act in a manner most consistent with the goals of society.
 - Recognize the advantages renewables offer to meet goals.
 - Provide necessary supports to develop projects.
 - Renewable incentives must be consistent with the basic regulatory policies.

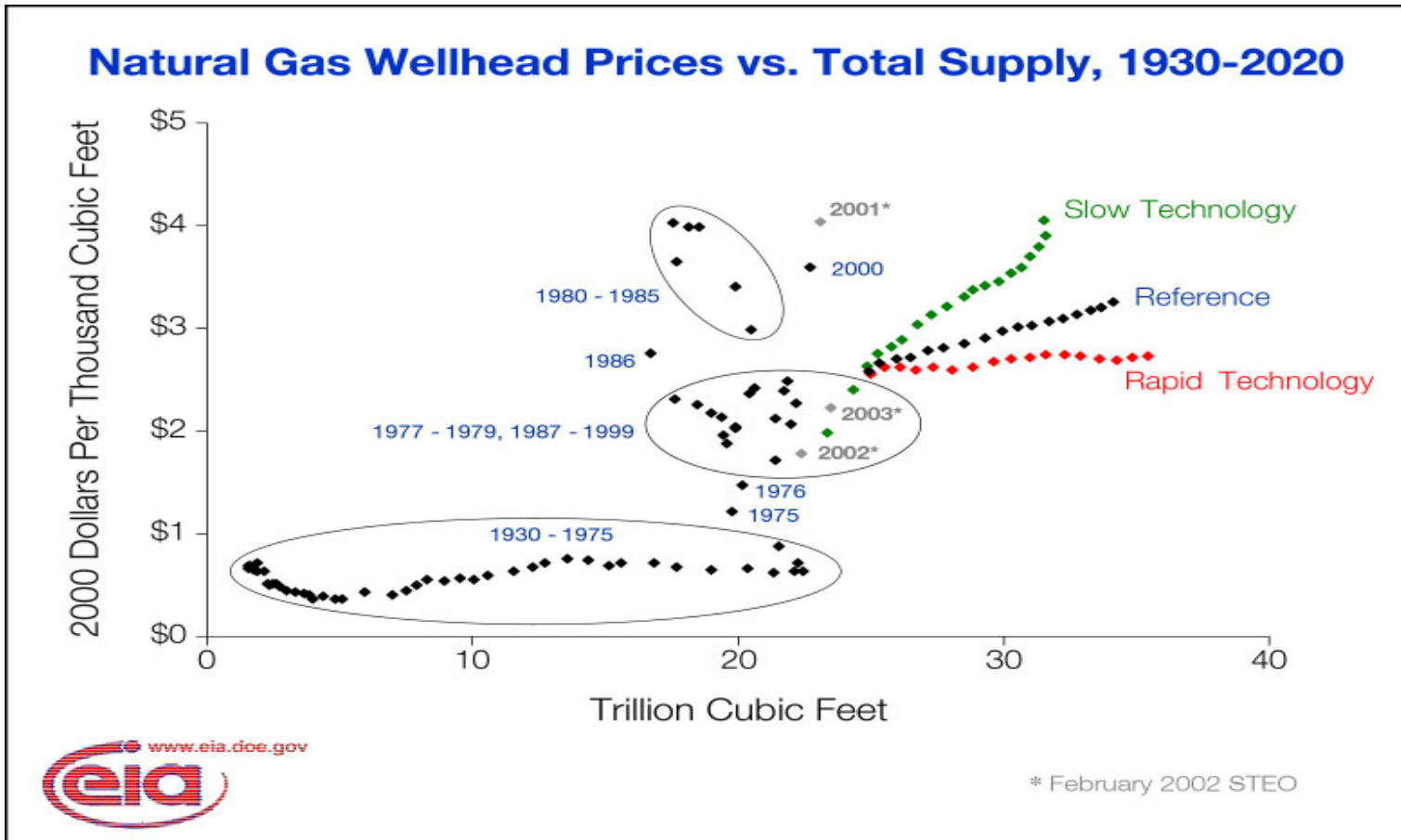
Market Fundamentals: Ratio of Interest Rates and Fossil Prices Shows Cost Advantage of Renewables



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Natural Gas 1930 - 2020

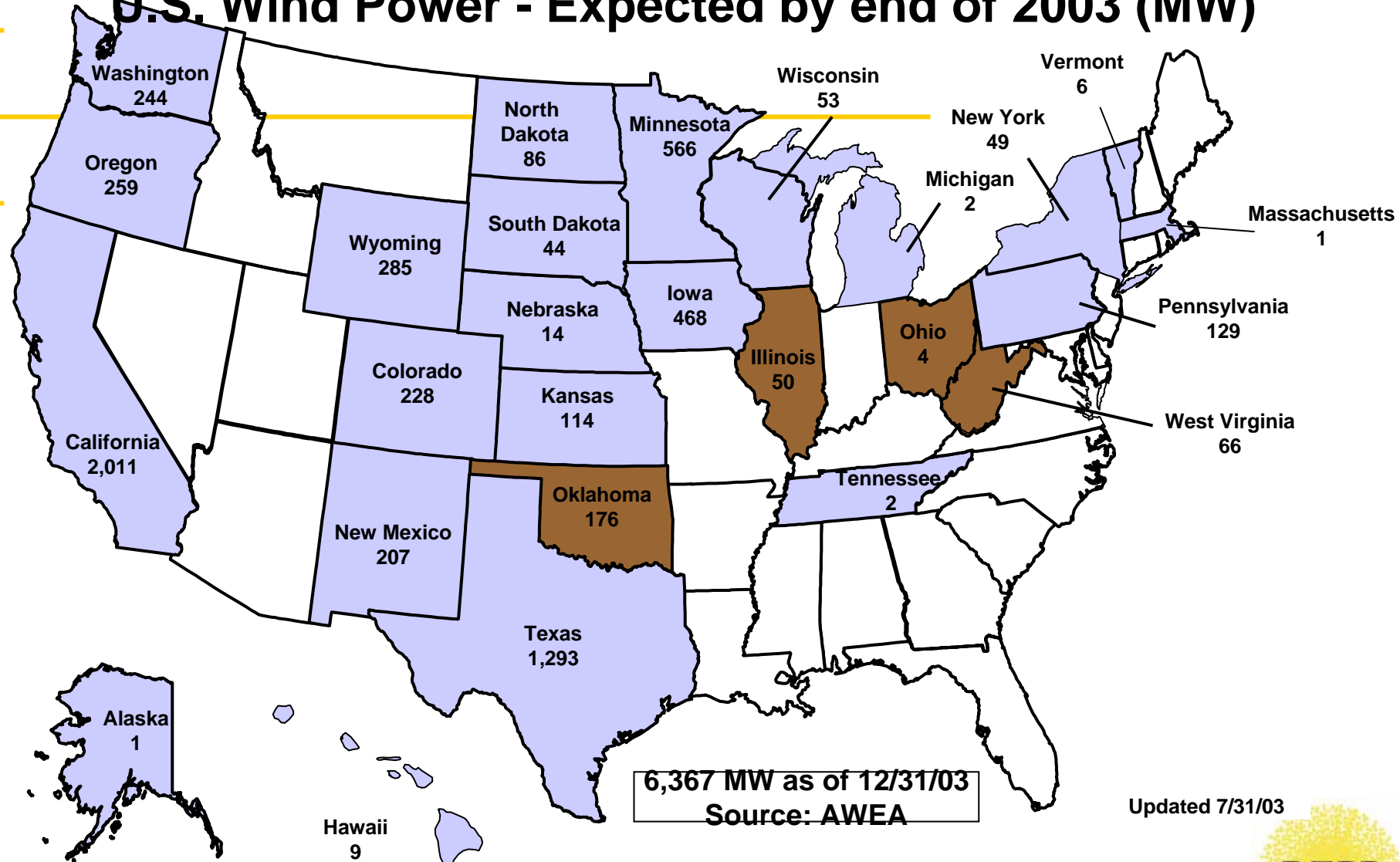


Wind Edge: Wind versus LNG

Technology	Capacity Cost	Fuel Cost per kWh	Capacity Cost per kWh	Total Cost per kWh	Benchmark Wind Cost	Wind Edge
Gas Fired Peaker	\$500/KW	\$.054	\$.029	\$.083	\$.03	\$.05
Gas Fired Peaker – Fuel Only	N/A	\$.054		\$.054	\$.03	\$.024
Combined Cycle	\$650/KW	\$.036	\$.012	\$.048	\$.03	\$.018
Combined Cycle – Fuel Only	N/A	\$.036		\$.036	\$.03	\$.006

(Fuel Costs are calculated using a 12,000 BTU per kWh for peaking plants and an 8,000 BTU per kWh for the Combined cycle plant. Gas costs are \$4.50 per MCF. Total costs are derived by calculating a levelized capital cost recovery assuming a combined cost of capital of 10% and a twenty year life and a 23% capacity factor for peaking units and a 75% factor for combined cycle plants.)

U.S. Wind Power - Expected by end of 2003 (MW)



6,367 MW as of 12/31/03
Source: AWEA

Updated 7/31/03



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— Framework: Renewable Hurdles

— Initial cost of technology.

Infrastructure to support development.

Financing to reduce the impact of capital costs.

Incentives to align private and public interests.

Regulatory Challenges

Regulatory policies on stand-by tariffs, transmission interconnection, intermittency and reserve requirements harm renewables.

Trend towards merchant plant financing stops renewable financing and project development.

Natural gas price risk is shifted onto end users.
The advantage to renewables is not reflected in market.

Confusion and hostility paralyze development.

— Regulatory Confusion

— Merchant financing is default method for new generation.

FERC natural gas pricing decisions diminish renewable advantage.

Carbon policy is lacking.

— Regulatory Hostility

— Stand-by tariffs.

Transmission access: rolled in versus incremental.

Transmission pricing: pancaked versus postage stamp.

Cost responsibility for intermittency.

Opportunities for Regulatory Reform: Federal

- Federal energy legislation could establish goals. Production tax credit could be the foundation of a federal carbon reduction strategy.
- Federal programs could support and encourage aggressive state actions.
- If possible, federal supports for training, enterprise development, and poverty alleviation should be tied to state renewable actions.

Opportunities for Regulatory Reform: State

Renewable Portfolio Standards will force regulation to reduce confusion and hostility.

Local Development Initiatives.

Emerging Labor/Environmental Alliances.

Critical Tasks

- Establish national goals.

Resolve “reform” versus “deregulation” confusion.

Identify transparent and fair process for selecting next generation of plants.

Blend federal and state actions.