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fact sheet

Renewable Energy Can Help Ease Natural Gas Crunch

**Increasing Renewable Electricity Use From 2.5 Percent Today to 20 Percent by 2020 Would Reduce Natural Gas Use by 6 Percent, While Saving Consumers Nearly \$27 Billion**

An unprecedented surge of natural gas power plant construction (Fig. 1) over the past four years has contributed to rising natural gas prices, hurting American families and businesses:

- Natural gas prices today are more than double their 1990s level of \$2.00-\$2.50 per thousand cubic feet (Mcf).
- The U.S. Energy Information Administration (EIA) has increased its gas price projection for each of the last seven years (Fig. 2.)
- Some analysts believe EIA's forecasts are still too low, and project gas prices staying in the \$4-\$6/Mcf range.
- Some manufacturing plants that rely heavily on gas have already had to reduce operation or move overseas.
- Natural gas accounts for about 90 percent of the cost of fertilizer, creating a hardship for farmers.
- High gas prices may cut U.S. economic growth by 2.1 percent, according to the Federal Reserve Bank of Dallas.<sup>1</sup>

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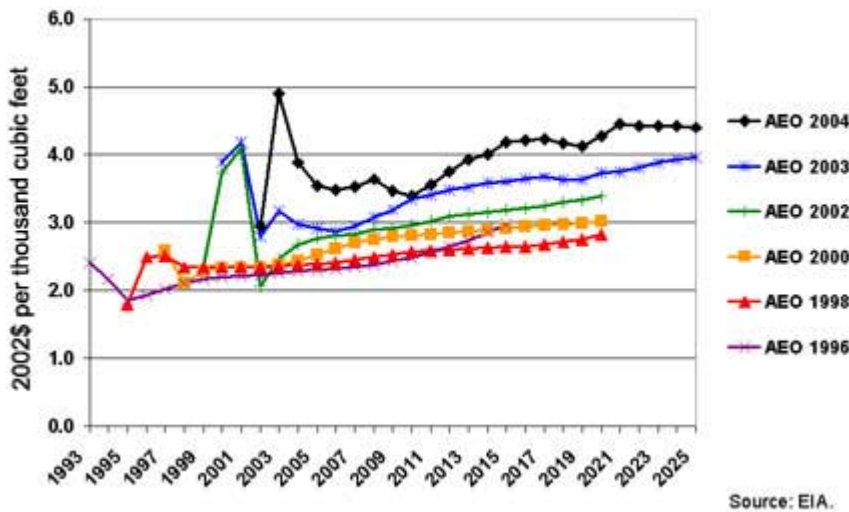
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The primary solution proposed by the White House and many in Congress is to increase gas production. They would provide large new subsidies to gas producers, increase drilling in environmentally sensitive areas, and expand imports of liquefied natural gas (LNG). We would become increasingly dependent on importing LNG from some of the same OPEC countries we are now dependent on for oil.

**Figure 1. Annual Additions to Electric Generation Capacity by Fuel, 1950-2002**



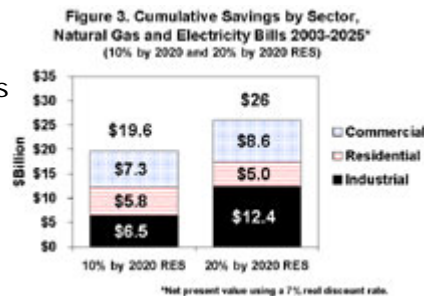
**Figure 2. EIA Wellhead Natural Gas Price Forecasts**



**Renewable energy can save gas and reduce energy bills**

Reducing gas use by improving energy efficiency and developing renewable energy sources (wind, solar, geothermal, and bioenergy) can be faster, cheaper, cleaner and more secure than relying primarily on developing new gas supplies.

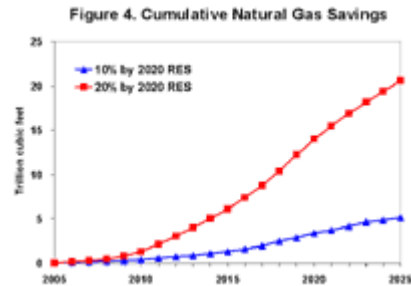
Past EIA analyses have found that consumers could save money on electricity and gas bills if electric companies met a standard of 10 percent renewable energy by 2020.<sup>2</sup> With EIA’s new 2004 gas price forecast, a renewable standard of 20 percent by 2020 would save even more money (\$26.6 billion), according to new analysis by the Union of Concerned Scientists (UCS) using EIA’s National Energy Modeling System (NEMS). Commercial and industrial customers would be the biggest winners (Fig. 3).



Previous UCS analyses have found that a 20 percent renewable electricity standard would save consumers money if renewable energy costs continue to decline as projected by UCS and the Department of Energy’s national laboratories.<sup>3</sup> The new analysis finds that a 20 percent standard is cost-effective even using

EIA's more pessimistic projections for renewable energy technology costs. The analysis assumes the renewable energy tax credits included in the conference report on the national energy bill (Energy Policy Act of 2003) apply to renewable energy facilities entering service through 2006.

Under the 10 percent standard, renewable electricity could save as much as 0.5 trillion cubic feet (Tcf) per year compared to business as usual in 2020, and 5.1 Tcf cumulatively from 2005-2025 (Fig. 4). Achieving 20 percent renewable electricity by 2020 could increase the natural gas savings to 1.8 Tcf per year (20.6 Tcf cumulatively), equal to six percent of total projected 2020 gas use, or more than one-third of the natural gas consumed by U.S. households today.

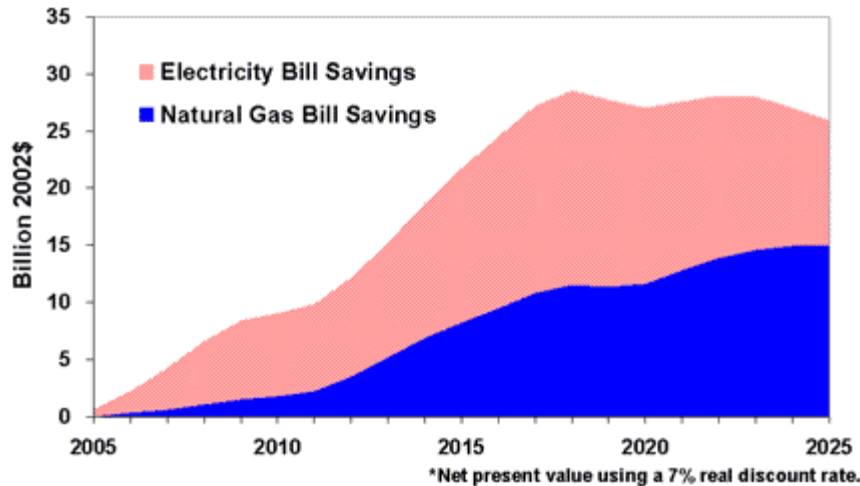


### Renewable energy can reduce gas and electricity prices

Because increased renewable energy use reduces the demand for natural gas, and creates new competitors to traditional power plants, increasing renewable energy would reduce natural gas prices. Achieving the 10 percent RES could reduce gas prices by 1.9 percent (\$0.12 per million Btu) compared to business as usual in 2020. A 20 percent standard could reduce natural gas prices by as much as \$0.25/million Btu, resulting in cumulative gas bill savings of \$15 billion (Fig. 5) through 2025. Under current EIA forecasts, renewable energy begins to displace new coal-fired power plants (which become economically competitive) instead of natural gas facilities after 2020. As a result, renewable energy has less of an impact on natural gas prices in these later years, but it continues to provide total energy bill savings to consumers from lower electricity prices, and even greater air pollution reduction benefits.

The analysis found that a 10 percent renewable standard would decrease electricity prices throughout the study period. Under a 20 percent standard, electricity prices would be lower than business as usual through 2018. Between 2019 and 2025, as renewable energy displaced more coal, electricity prices would increase slightly (7.0 ¢/kWh) compared to business as usual (6.9 ¢/kWh). Electricity prices under a 20 percent RES would still be 1.7 percent lower in 2025 compared to today's prices. Cumulative electricity bill savings would reach \$10.9 billion through 2025.

**Figure 5. Cumulative Natural Gas and Electricity Bill Savings\* (20% by 2020 RES)**



Implementing effective energy efficiency measures can be the fastest and most cost effective approach to balancing gas demand and supply, with renewable energy providing a critical mid-term to long-term supplement. A recent study by the American Council for An Energy-Efficient Economy (ACEEE) confirms that modest near-term reductions in gas and electricity consumption through efficiency measures coupled with increased renewable energy use could significantly impact natural gas prices and availability, while saving consumers more than \$75 billion on their natural gas bills over the next five years.<sup>4</sup> The model used in ACEEE's analysis also demonstrates that the near-term natural gas price response and consumer savings from increasing energy efficiency and renewable energy could be much greater than projected in EIA's NEMS model.

## References

1. Tom Doggett, "High natural gas prices seen as drag on US economy," Reuters, June 19, 2003.
2. See UCS, Renewable Energy Can Help Alleviate Natural Gas Crisis, June 2003.
3. While EIA has updated some data sources and made other improvements in the projections of renewable technology costs in recent NEMS versions, there is concern that EIA is still over estimating the costs of implementing these technologies. In the past, UCS has performed analyses using a modified version of NEMS with assumptions more in line with DOE's national energy laboratories. Once again, UCS intends to make modifications to the most recent version of NEMS and then re-evaluate the renewable energy policies.
4. Elliott, Neal Ph.D., A. Shipley, S. Nadel, and E. Brown. Natural Gas Price Effects of Energy Efficiency and Renewable Energy Practices and Policies, ACEEE, December 2003.