

**VISION 2020: THE ROLE OF COAL
IN U.S. ENERGY STRATEGY**

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EXECUTIVE SUMMARY

INTRODUCTION

The Secretary of the U.S. Department of Energy (DOE) requested the National Coal Council (NCC) to undertake a study of the contributions to be made by coal to the nation's future energy requirements and outline this vision for the industry over the next 25 years. This report sets forth the NCC's belief that the future role of coal will be defined by the issues and policies challenging the industry now and over the 25-year time period, and advances ideas and recommendations to help address those issues in order to position coal as a viable energy source in the year 2020.

VISION

The coal industry, including the coal production, transportation, and power generation and utilization sectors, will evolve over the next 25 years to preserve and, ideally, enhance coal's contribution in the production of clean, reliable, low-cost electricity. Doing so will provide for the continued electrification of the U.S. economy, improve the nation's trade balance through increased exports, and reduce dependence on imported oil. This vision can be realized if two powerful trends continue to mature into the future: 1) the demand for energy grows, especially for electricity; and, 2) the demand for this low-cost, clean, and reliable electricity can be met through advances in technology.

Coal serves as the low-cost fuel source for more than 55 percent of U.S. electric utility generation. Coal's position as the primary energy source for electric generation in the U.S. now and for the foreseeable future is contingent upon its vast domestic availability, a modern infrastructure for production and transportation, and the capability for use in an environmentally superior manner. As the demand for electricity continues to grow, U.S. coal reserves place the industry in the comfortable role of being able to meet that demand. To remain responsive in the future, the shape and complexion of the coal production, transportation, and utilization industries must keep up with the myriad of change expected in the next 25 years. Based on current trends, the industry will further consolidate. To the extent that this consolidation enhances efficiency and lowers costs, electricity will become even more affordable than it is today.

The coal industry will encounter many challenges and obstacles along the road to fulfilling this vision. The government, at all levels, should base its policy decisions on sound scientific and economic factors that promote the uses of all domestic energy resources. Government and industry should work together in continuing the development of sound technologies for coal use and become partners in educating the public on the significant benefits of relying on domestic resources, especially coal. The public should be shown the fact that coal can meet their needs in a cost-competitive and environmentally sound manner that promotes national security.

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CONCLUSIONS

Coal's Indispensable Role in Our Nation's Economic Health

The U.S. is heavily dependent upon electricity as the primary source of usable energy. The abundant supply and low cost makes utility generated electricity a vital contributor to our nation's standard of living, low inflation, and global competitiveness. What may not be widely known is that over 55 percent of this low-cost, reliable supply comes from coal.

Coal is instrumental in supplying the low-cost, reliable electricity demanded by U.S. consumers. Coal fuels economic growth and is key in maintaining the stability of energy prices. Most technological advances that account for productivity improvements are made possible by electricity. The average price of electricity (adjusted for inflation) is about the same as it was 20 years ago and is expected to fall in real terms unless new policies and regulations adversely impact the use of the predominant low-cost fuel for the production of electricity: coal. Without continued federal and private industry research and development (R&D), the costs of enhanced coal technology will rise, impacting the competitive standing of coal-fueled generation with generation from other fuels.

Maintaining affordable and abundant supplies of energy within U.S. borders is paramount to national security and global competitiveness. True energy security means relative independence from international events and little reliance on a specific industry, such as the oil industry. Coal is a strategic asset to U.S. energy security because of its abundant reserves and availability at a competitive cost. The transportation sector relies heavily on imported oil as its energy source. Substituting gasoline-fueled vehicles with electric cars supplied with coal-fired electricity will further decrease U.S. dependence on imported oil. Enhancing the ability of coal to continue satisfying the public's need for low-cost electricity will profoundly affect the nation's standard of living, economy, jobs, and ability to achieve independence from the use of imported oil and its associated implications on national security.

The use of coal to replace oil imports is vital to our nation's economic future. The need to improve our trade deficit was never more evident than today. According to the U.S. Department of Commerce, the 1996 Trade Deficit was \$114.2 billion, the worst showing in 8 years. A major contributor — increasing oil imports.

Environmental Issues

The American people rely on coal to supply more than 55 percent of utility generated electricity and this demand for electricity continues to grow. Additional environmental laws or regulations that lead to a shift away from the use of plentiful domestic coal supply will mean higher costs for generating electricity and possible disruptions in electricity supply, with the attendant loss of jobs, and a downturn in the economy.

The future of coal in the U.S. hinges on the course selected to address such issues as global climate change, implementation of the Clean Air Act and its 1990 Amendments, the Environmental Protection Agency's (EPA) Clean Air Power Initiative (CAPI), the requirement that "environmental comparability" direct existing generation, and establishment of monetized externality costs. Without thorough examination and rational assessment of the impacts of present and future actions, a reliable

and inexpensive supply of electricity resulting from the continued use of coal, will be lost. The most pressing of these issues is action on greenhouse gases and global climate change.

Generation and End Use Technologies

Coal will remain a dominant fuel source throughout the world for many decades. In response to environmental challenges, the coal industry and related power generation and utilization industries must cooperate in the adoption of environmentally sound, economically viable coal utilization and electricity production technologies. It is in everyone's best interest that these and other advanced technologies be encouraged in support of using coal more cleanly and efficiently.

The federal government has a critical role in achieving this vision of coal as a premier clean fossil fuel through continued development and initial application of mid-term and long-term energy technologies. This role is being shaped by the near-term competitive pressures on the coal and electric utility industries, the increased desire for greater environmental protection, and the necessity that the U.S. remain a leader in energy technology to maintain its global competitive edge.

Low-cost, abundant, and reliable electricity is pivotal to improved U.S. international competitiveness. Domestic coal resources are the answer with abundant availability and competitive costs. Clearly, U.S. competitiveness is tightly linked to continued advances in the technology of extraction, conversion, and use of these energy resources in an environmentally acceptable manner. The combination of advanced power generation technologies, which use coal cleanly and efficiently, and electric technologies will provide the low-cost electricity for economic growth while continuing to protect the environment.

International Issues

International challenges to continued consumption of coal will escalate over the next two to three decades. It is vital that coal proponents learn how to participate in the international negotiation processes of the U.N. in order to protect the interests of U.S. consumers. The most accurate facts and data must be readily available during the Framework Convention on Climate Change (FCCC) negotiations to show beyond a doubt how coal is meeting the challenges of increased efficiency and decreased emissions through industry implementation of clean coal technologies both in the U.S., and in other parts of the world. The goal is to show how the increased use of efficient, clean coal technologies actually reduces the emissions of sulfur dioxide (SO₂), nitrogen oxides (NO_x), and metals, as well as carbon dioxide (CO₂). It must be shown that the efficient use of coal has caused a direct rise in economic growth in developed countries and standards of living in developing countries, and that this trend can continue if coal remains a dominant fuel source not only for the near-term, but for the future.

Given that developing countries will increase their use of coal, DOE should scrutinize more closely the factors and policies affecting the price of exportable coal. A review of taxes and fees that make U.S. coal, versus other coal sources, less competitive should be undertaken immediately to eliminate roadblocks to increased consumption of U.S. coal by our trading partners.

Programs for international funding and partnerships need reconsideration if they put domestic coal at a disadvantage on the international market. DOE should closely examine policies and programs that help other countries develop their coal resources, causing displacement of U.S. coal in the global

market. Clearly, that is a detriment to the domestic coal industry. On the other hand there are advantages to encouraging development of clean coal technologies in other countries, such as -- additional opportunities for export of U.S. technology, new markets for domestic coal, and better controls on global emissions of CO₂.

Role of the Federal Government vs. Private Industry

Throughout this report, there will be extensive discussion as to the separate and combined roles of the Federal Government and private industry. Recognizing that the days of big government expenditures for R&D have probably passed, leveraging relatively small investments can achieve tremendous breakthroughs.

As industry takes up the call to arms and provides sound investment in ensuring the future of coal, the government should not become a barrier to achieving this vision for 2020. Rather, the government should assure a level playing field for all fuels to compete in providing the U.S. and the world the most reliable supply of electricity at the lowest possible price.

RECOMMENDATIONS

1. DOE and the coal industry should support and encourage continued generation of low-cost electricity for the benefit of U.S. consumers, regardless of fuel type, including use of coal as a fuel that generates low-cost electricity because its price is competitive and its supply is stable.
2. DOE and the coal industry should encourage the use of technologies that will expand coal's benefits to society in producing electricity, transportation fuels, and chemicals to reduce use of both imported oil and natural gas, reinforcing the major role played by coal in U.S. energy strategy and balance of trade.
3. DOE and the coal industry should continue their collaborative programs for research, development, and demonstration of clean, coal-fueled technologies for repowering and new plant additions. Improvements in technology and efficiency, along with lower capital costs, will make coal-fueled technologies more attractive and more competitive, ensuring that coal-fueled generation will continue to be a source of low-cost energy to drive the U.S. economy.
4. DOE should lead the charge to ensure the development of energy policies and regulations that have a sound scientific basis, are economically justified, are environmentally acceptable, and are strategically consistent for the well-being and security of U.S. consumers. Equally important is expanding outreach programs that educate the public about how new coal-fueled facilities are clean, efficient, and utilize technologies that protect the environment.
5. DOE should work closely with federal, regional, state, and local environmental agencies to ensure that environmental policies and regulations are based on sound scientific principles, have pragmatic objectives, and utilize least-cost control methods in order to minimize the delivered price of electricity to U.S. consumers.

6. DOE should take a lead role in the scientific review of global climate change and the formation of global climate change policy by the Executive Branch to ensure that coal's contribution to low-cost electricity is not disadvantaged. This would include DOE's active participation in the Department of Commerce study on the impacts of global climate change policies on the nation's energy strategy. The coal industry should cooperate with the Executive Branch to support voluntary programs that reduce emissions of greenhouse gases; i.e. the Climate Challenge Program.
7. DOE should facilitate and support the development and application of mid-term and long-term coal technologies that are very efficient and have very low emissions to further the electrification of the U.S. economy. This can be achieved through demonstration of the benefits of integrating low-cost coal generation with the increased use of electric technologies, as well as the exploration of technologies that utilize coal along with alternative domestic fuels, such as solid waste or biomass.
8. DOE, in partnership with the coal industry, should promote the use of highly efficient coal-fueled technologies, along with electric technologies, in developing countries in order to improve air quality and lower the emissions of CO₂ per unit of electricity produced. Enhancements to these technologies will then be available for implementation in the U.S., providing benefits to U.S. consumers.
9. DOE, in partnership with the coal industry, the U.S. Agency for International Development (USAID), and the U.S. Department of State should encourage the use of clean coal technologies as a leading source of power generation in foreign development and within investment agencies (for example: the World Bank Global Environmental Facility; the Export-Import Bank; and the Asian, South American, North American, and African regional development banks), and highlight these benefits within the context of various international negotiations.
10. DOE should study the effects of eliminating taxes, fees, and policies that inhibit competitiveness of U.S. coal internationally, and encourage enforcement of trade agreements that promote the use of U.S. coal by foreign nations.
11. DOE and the Department of State should work together in the formation of foreign policy to ensure that resulting energy directives do not run counter to domestic economic concerns and negatively impact jobs, Gross Domestic Product (GDP), and the delivered price of electricity to U.S. consumers. In addition, a review of foreign assistance programs is necessary to address those negatively impacting domestic coal industry interests, national energy strategy, and balance of trade.