



The U.S. Geological Survey National Coal Resource Assessment

Few people realize that more than half of the electricity produced in the United States is generated by coal-fired powerplants (Energy Information Administration, 2000). The United States has abundant supplies of coal. Understanding where coal is available and of sufficient quality to meet current emission standards is important to ensure adequate energy supplies in the future.

The U.S. Geological Survey (USGS) is responsible for providing the Federal Government with objective scientific information to support decisions regarding land management, environmental quality, and economic, energy, and strategic policy. To fulfill this responsibility, the USGS periodically assesses the Nation's endowment of energy resources. The National Coal

Resource Assessment (NCRA) is a multiyear effort by the USGS Energy Resources Program having three goals:

- To assess selected coal beds and zones that will be the most important in the next few decades
- To create publicly available digital data bases of stratigraphic, geochemical, and geographic information to answer questions for government and industry decisionmakers and the general public
- To provide interpretive geologic and geochemical information on the major coal resources of the Nation

Selected coal resources, including those on Federal lands, were assessed in five priority regions: Appalachian Basin, Illinois Basin, Gulf Coast, Colorado

Plateau, and Northern Rocky Mountains and Great Plains (fig. 1). The USGS worked cooperatively with State geological surveys and local U.S. Bureau of Land Management offices in these coal-bearing regions to assess the Federal and non-Federal resources.

The NCRA identified, characterized, and assessed the coal resources that will supply a major part of the Nation's energy needs during the next few decades and, most likely, beyond. For some areas, this study is the first to correlate coal beds and coal zones on a regional basis and the first to provide a regional assessment of coal resources. For other areas, data on the distribution and quality of remaining coal resources have been updated for the first time in decades.

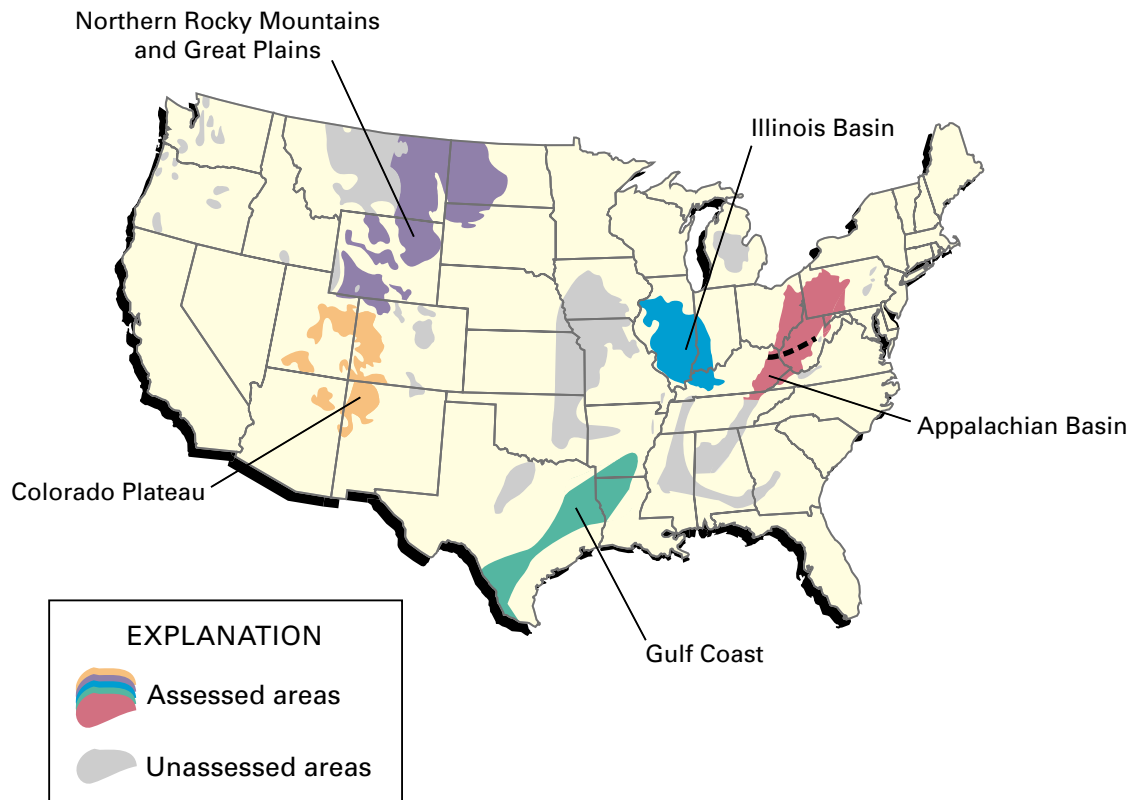


Figure 1. Five priority regions of the USGS National Coal Resource Assessment and unassessed coal-bearing areas of the conterminous United States.

The USGS NCRA is the first assessment to use digital data bases and geographic information systems (GIS) for a national coal assessment. This new study is also the first to combine into integrated GIS layers all coal parameters. All information used is geographically referenced and can be stored, manipulated, and analyzed digitally. The ability to compile many types of spatial data allowed the USGS to gain an improved understanding of coal occurrence, to make new stratigraphic correlations, and to integrate geologic and resource information across State boundaries.

Affordable and reliable coal supplies are essential because more than half of U.S. electricity comes from coal-fired powerplants. U.S. coal producers sell almost 90 percent of their coal for electricity generation (fig. 2). Formation of an effective national energy policy requires that policymakers receive information on coal quality, geology, distribution, and availability, as well as the economic and environmental issues associated with its use.

The results of the USGS National Coal Resource Assessment provide an impartial assessment of the Nation's coal resources. The digital data bases

and GIS allow for a wealth of information to be combined for a comprehensive look not only at the coal resource tonnage, but also at the relations among hydrology, land and coal ownership, coal-bed-gas (methane) occurrence, overburden, and coal quality, minability, distribution, thickness, and depth. Data from the NCRA provide information essential to:

1. Determine the availability and recoverability of U.S. coal resources
2. Determine areas of potential coal exploration
3. Provide a basis to assess coal-bed-gas resources of the United States and determine areas of potential coal-bed-gas exploration
4. Evaluate and minimize the environmental impacts related to the extraction, production, and use of coal and coal-bed gas
5. Address issues of energy policy, energy strategy, land-use management, environmental policy, economic projections, and human health policy
6. Manage Federal lands
7. Assess the most suitable coal resources in which to potentially sequester carbon dioxide

Results of the USGS NCRA are being released in a series of USGS Professional Papers, 1625-A through 1625-F. More information is available online at <http://energy.er.usgs.gov/ncra>

Reference

Energy Information Administration, 2000, Market trends—Coal, in Annual energy outlook 2001: Energy Information Administration Report DOE/EIA-0383(2001), p. 92–96. (Accessed on the web on 2/21/01 at http://www.eia.doe.gov/oiaf/aeo/pdf/trend_5.pdf)

For more information, please contact:

Brenda S. Pierce
 U.S. Geological Survey
 956 National Center
 Reston, VA 20192
 Telephone: (703) 648-6421
 E-mail: bpierce@usgs.gov

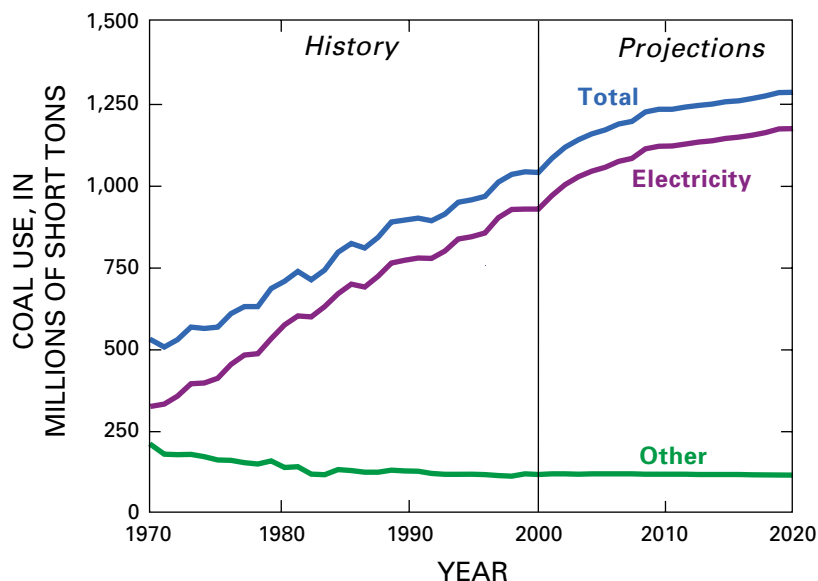


Figure 2. Amounts of coal used for electricity generation and other purposes in the United States, 1970–2020. From Energy Information Administration (2000, fig. 120).