

## COAL ENERGY: ECONOMY AND ENVIRONMENT

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Coal energy has some advantages and disadvantages. Among positive aspects of coal energy it is necessary to mention the next ones:

- 1) availability;
- 2) cheapness: to make electricity out of coal is cheaper than from oil or natural gas;
- 3) coal converted into a coke remains a substantial initial material in the production of iron.

There are the next disadvantages of coal energy:

- 1) unrenewableness;
- 2) environmental pollution;
- 3) problems of wastes' storage (slag, coke);
- 4) the high level of disease of miners;
- 5) frequent failures on mines;
- 6) huge expenses for fuel transportation for thermal stations.

The coal industry has found several ways to reduce sulfur, nitrogen oxides, and other impurities from coal. They have found more effective ways of cleaning coal before it leaves the mine, and coal companies look for low-sulfur coal to mine. Power plants use "scrubbers" to clean sulfur from the smoke before it leaves their smokestacks. In addition, industry and government have cooperated to develop "clean coal technologies" that either remove sulfur and nitrogen oxides from coal, or convert coal to a gas or liquid fuel.

CO<sub>2</sub> capture and storage (CCS) is the critical enabling technology that would reduce CO<sub>2</sub> emissions significantly while also allowing coal to meet the world's pressing energy needs.

Today, and independent of whatever carbon constraints may be chosen, the priority objective with respect to coal should be the successful large-scale demonstration of the technical, economic, and environmental performance of the technologies that make up all of the major components of a large-scale integrated CCS system — capture, transportation and storage.

Global consumption of energy raises a number of environmental concerns. For coal, the release of pollutants, such as oxides of sulphur and nitrogen (SO<sub>x</sub> and NO<sub>x</sub>), and particulate and trace elements, such as mercury, have been a challenge. Technologies have been developed and deployed to minimise these emissions.

Thus, environmental laws and modern technologies can greatly reduce coal's impact on the environment.

