

IEA COAL INDUSTRY ADVISORY BOARD

“The Role of Coal for Energy Security in World Regions”

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Covering the following world regions and countries:

EU-28, USA, Canada, Australia, Japan, China, India and South Africa

The IEA Coal Industry Advisory Board (CIAB) has conducted a study which assesses the impact of coal utilization on energy security in several important world regions. The markets covered in the paper include: the EU-28, the United States of America, Canada, Australia, Japan, China, India and South Africa. These regions cover two-thirds of total global energy consumption and more than 85% of global coal demand. The role of coal in each respective economy and its contribution to energy security is investigated and compared between the regions and countries. The key findings highlight the role coal plays in the energy mix across the geographically diverse areas and economies.

- Coal is a key component of a secure energy supply in all the regions/countries covered. The use of coal contributes not only to affordable energy prices, allowing broader access to electricity but also improved industrial competitiveness of the economy.
- Applying advanced coal-based technologies, high-efficiency low-emission (HELE) coal plants and carbon capture and storage (CCS) technologies, contributes to improving not only the environmental impacts but also leads to increased security of supply. HELE coal technologies provide significant immediate CO₂ emission reductions and are a key step on the pathway to CCS.
- Coal-fired power plants provide dispatchable capacity due to their ability to operate flexibly and compensate for the fluctuations of wind and solar energy supply sources. In addition, coal-fired power plants provide cost-efficient reserve capacity which is needed when there is insufficient wind or solar power and to balance out transmission congestion.
- There is no trade-off between an increased use of renewable energies and the use of coal: rather, coal and renewables complement each other and are partners in the effort to meet present and future energy requirements.
- Coal-fired power plants can also be seen as an economic balance to the higher system costs of most renewable energies and complementary to achieve a stable and secure power supply.

In order to meet the growing global energy demand and to simultaneously reduce global greenhouse gas emissions, the key recommendation from the study is to increase indispensable support for high-efficiency low-emission (HELE) coal-fired plants and carbon capture and storage (CCS) technologies. HELE coal technologies provide a source for significant immediate CO₂ emission reduction and are a key step on the pathway to CCS. CCS and carbon capture and usage (CCU) technology are a reality.

It is recommended that governments promote these technology solutions in order to improve their acceptance and provide a legal framework which allows investment in these advanced technologies. In addition, industry should be enabled to make the needed long term investment in production capacity and clean coal use necessary to support the central targets of energy and climate policy addressing all three areas of security of supply, comprehensive access to modern forms of energy and their affordability and protection of the environment and mitigation of climate change.

For those interested in more information on the study as a whole or individual regions, each section of the report can be downloaded by clicking on the following links:

[Executive Summary](#)

[Introduction](#)

Regional/Country Chapters:

- [EU-28](#)
- [United States of America](#)
- [Canada](#)
- [Australia](#)
- [Japan](#)
- [China](#)
- [India](#)
- [South Africa](#)

[Conclusions and Discussion](#)

[Acknowledgements](#)

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