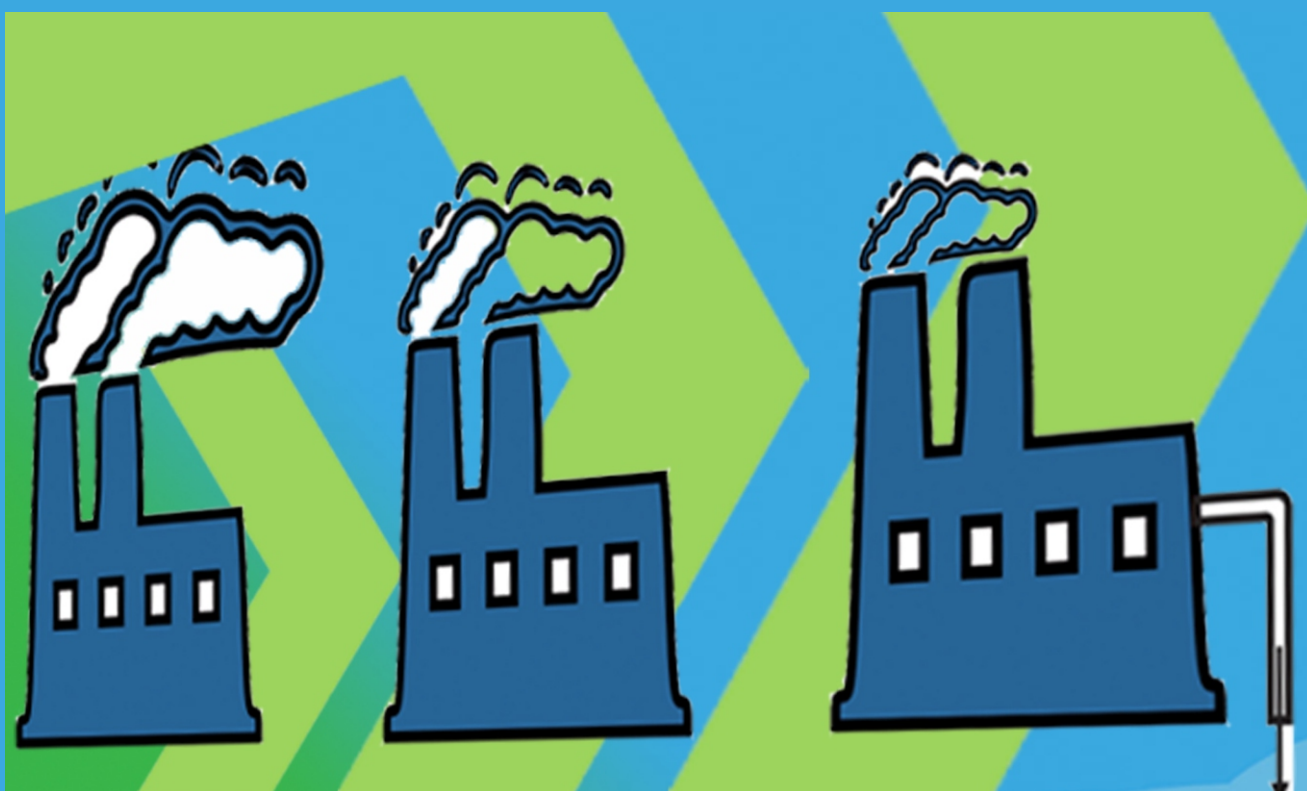


UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

Cleaner electricity production from fossil fuels



UNECE

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CLEANER ELECTRICITY PRODUCTION FROM FOSSIL FUELS



UNITED NATIONS

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Electricity generation through the use of fossil fuels has been a foundational pillar for modern society. Over two thirds of the world's electricity is generated using fossil fuels. The power sector was designed around fossil fuels with power plants constructed in locations with efficient access to fossil fuels and cooling water. The continued use of these fuels in the future is expected in part because global supplies of abundant and inexpensive fossil fuels are estimated to last well into the future. A number of UNECE member States, such as Azerbaijan, Bosnia & Herzegovina, Estonia, Israel, Kazakhstan, Poland, Russia, Serbia, Turkmenistan, Ukraine, USA and Uzbekistan rely to a large extent on fossil fuels. Even countries like Kyrgyzstan and Tajikistan, where electricity is generated mainly by hydro power plants, have begun to develop their coal deposits and construct thermal power plants to ensure energy security.

Both existing and new coal power generation will play an important role in global electricity systems in the short and medium term. Unfortunately, the combustion of fossil fuels releases carbon dioxide (CO₂) into the atmosphere and thus contributes to climate change. The most effective means to benefit from continued use of fossil fuel plants while reducing GHG emissions lies in improving their generating efficiency. For each 1 per cent increase in efficiency of a coal burning power plant there is a 2-3% reduction of CO₂ emissions and other air pollutants. There has been steady technological innovation to improve generating efficiency and reduce emissions, most notably from coal.

The UNECE Group of Experts on Cleaner Electricity Production from Fossil Fuels carries out activities to reduce greenhouse gas emissions from electricity production from fossil fuels. One of the activities of the Group of Experts is an assessment of the current efficiency of the fleet of conventional power plants. This analysis

serves as a basis for developing best practices on the implementation of modernization measures from an economic and environmental perspective. Also a survey of High Efficiency – Low Emissions (HELE) technology best practices across the UNECE region and globally is being prepared. Introduction of HELE technologies that enhance efficiency, environmental performance, and reliability is critical for countries in which electricity generation is based on coal.

Activities under this topic will be developed with a view to developing best practice guidance in the deployment of HELE technologies across the UNECE region and globally. It will provide member States the opportunity to adjust policy and regulation in a way that could find the right answer to ongoing coal utilisation and a pathway towards CCS retrofits.

United Nations Economic Commission for Europe

Sustainable Energy Division

UNECE's work on sustainable energy is designed to improve access to affordable and clean energy for all and help reduce greenhouse gas emissions and the carbon footprint of the energy sector in the region. It promotes international policy dialogue and cooperation among governments, energy industries and other stakeholders.

The Committee on Sustainable Energy and its six subsidiary bodies carry out concrete and results-oriented activities with the aim to achieve the specific objectives identified for each priority area:

Areas of work

- Cleaner Electricity Production
- Coal Mine Methane
- Energy Efficiency
- Natural Gas
- Renewable Energy
- Resource Classification
- Energy Security

For more information



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