

ANNEX 1 WORKING PARTY ON FOSSIL FUELS
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MANDATE OF THE IEA WORKING PARTY ON FOSSIL FUELS

1. Objectives

The Working Party on Fossil Fuels (WPF) shall, within the framework of the IEA Shared Goals, provide advice to the IEA on:

- Fossil fuel technology-related policies, trends, projects, programmes.
- Strategies which address priority environmental protection and energy security interests, including adequate, flexible and reliable supply of power and electrical service of member countries.
- Carry out activities to meet those needs through international co-operation and collaboration facilitated by the IEA.

2. Functions

The functions of the WPF are:

- Identification of the fossil fuel technology-related priority interests, including electric power technologies, common to IEA member countries, including their integration with non-fossil fuel technologies.
- Promotion of collaborative RD&D and technology deployment as well as electric power production, transmission, distribution and end-use efficiency, by arranging studies and technology information exchange on topics of common interest, conferences, workshops and other activities.
- Technology co-operation with non-member countries.
- Initiation, evaluation, and review on a periodic basis of Implementing Agreements and other international collaborative activities.
- Co-ordination with other sectoral bodies of the IEA which conduct fossil fuel-related studies, information exchanges and meetings relevant to the goals of the WPF.
- Review and evaluation of, and participation in, fossil fuel-related activities conducted by IEA bodies.

3. Activities and Procedures

The WPF shall submit to the CERT an annual work plan and an annual WPF report on on-going activities, planned actions and recommendations. The WPF shall carry out its functions without the disclosure of confidential or proprietary data of any entity.

4. Membership

All IEA member governments, and the European Commission, shall be members of the WPF. Members shall be represented through delegates who have responsibilities related to oil, natural gas, coal, and other carbon-based fuel materials. Other national or international entities might be consulted as appropriate. The WPF shall select a Chair and one or more Vice-Chairs. The Chair and Vice-Chairs shall be elected for three-year terms. The Chair can be re-elected only once in succession. The Chair or one of the Vice-Chairs shall report on the activities of the Working Party to the CERT.

**WORKING PARTY ON FOSSIL FUELS
STRATEGY FOR THE FIRST PHASE OF THE
ZERO EMISSIONS TECHNOLOGY INITIATIVE¹**

Vision for the 21st Century

*Zero Emissions Technologies
for Energy Security, Environmental Protection
and Economic Development*

Strategic Plan

Adopted by the Committee on Energy Research and Technology, June 2002

Executive Summary

This document describes a framework of planned activities for the International Energy Agency (IEA) Working Party on Fossil Fuels (WPF) to promote the development and use of Zero Emissions Technologies for fossil fuels over the period 2002–2004. This framework builds on the existing structure of WPF activities, including various advisory groups and collaborative energy technology projects, to focus activities for this new objective.

IEA Working Party on Fossil Fuels

The International Energy Agency (IEA), founded in 1974, is the energy forum for 26 industrialised countries, all members of the Organisation for Economic Co-operation and Development (OECD). The IEA has multiple objectives with a strong emphasis on energy security issues. Two objectives are particularly relevant to this initiative, namely, that IEA plays a leading role in the international effort to combat climate destabilisation and stimulates the development and deployment of new energy technologies.

The Working Party on Fossil Fuels (WPF) advises the IEA through the Committee on Energy Research and Technology (CERT) on technology issues, trends, and R&D programmes regarding fossil fuels and electricity system issues. The WPF is responsible for several Implementing Agreements. In addition, expert advisory groups co-ordinated by the WPF advise on electric power technologies and on oil and gas technologies. At the request of the CERT, the WPF also devotes resources to encourage technology transfer to non-IEA countries such as China and India, where fossil fuel use is expected to grow rapidly and the potential to reduce the environmental impacts is largest. Numerous WPF activities are underway in three broad categories of activities: collaboration (among IEA members), co-operation (with non-member countries), and technology deployment. Each involves a communications component.

Need for Zero Emissions Technologies

The world faces a major challenge in reconciling needs for economic development, energy security and the environment in the 21st century. The tension among these needs is heightened by growing world energy consumption and the resulting expansion of fossil fuels use. The *IEA World Energy Outlook 2000* projects world primary energy consumption to increase by 57% between 1997 and 2020. The largest share of this increase will be met by fossil fuels. The *IEA World Energy Outlook-2001 Insights*

¹ This is currently being updated for the second phase of the initiative, as discussed in the chapter on this Working Party in *Mobilising Energy Technology*.

notes the great abundance of fossil fuels and the reliance of the world on them. Nonetheless, it states that, beyond 2020, new technologies are needed to “hold out the prospect of plentiful, clean energy supplies in a carbon constrained world.” The *IEA World Energy Outlook-2001 Insights* also highlights the security implications of growing international trade in energy. Zero Emissions Technologies for fossil fuel are vital to simultaneously:

- Provide affordable, clean power to meet expanding energy demand.
- Solve critical environmental problems (reduce carbon dioxide and other pollutant emissions).
- Address energy security issues by supporting the use of diverse fossil fuels.
- Ease the economic costs of sustainable development.

Zero Emissions Technologies

The Zero Emissions concept is drawing increasing interest from around the world. This concept envisages input streams to an industrial complex being used in the final products or converted into value-added inputs for other industries or processes. Ideally, the integrated whole produces no wastes.

The Zero Emissions concept can be applied to each of the fossil energy industries. This concept applies, for example, when carbon dioxide from energy conversion processes is used for enhanced recovery of oil and gas. It also applies to power generation from any fossil fuel by using new energy conversion cycles that are closed loop for pollutants rather than the open loop cycles used in traditional combustion-based systems.

Zero Emission Technologies for fossil fuels are in various stages of development. Development requires further progress on components, innovative system integration, and commercial application. Sustained and collaborative effort will be required.

Objectives

The overall objective of this initiative is to facilitate the development and deployment of zero emissions technologies for fossil fuels. This objective will be achieved by activities in four broad categories:

1. Communications: Inform key decision-makers and the public throughout the world about the potential and importance of Zero Emissions Technologies for fossil fuels.
2. Collaboration and Deployment: Forge and implement WPF member commitments to collaboration to develop and deploy Zero Emissions technologies for fossil fuels.
3. Co-operation: Facilitate co-operation with non-member countries to help them improve the efficiency and environmental performance of fossil fuel facilities.
4. Safety and Security: Explore how to enhance the safety and security of fossil energy systems and determine the technical implications and research and development needs and solutions.

Implementation

This initiative involves the following activities to support each of these goals:

- Communications: Inform constituencies of the zero emissions opportunity. The potential for Zero Emissions Technologies for fossil fuels is as yet virtually unknown outside a small group of technical specialists. Yet, implementation will require a broad understanding and long-term commitment to development and deployment by numerous constituencies in many countries. These include public sector decision-makers involved with energy and the environment, the energy industries and the public. Each will be provided information about zero emissions opportunities for fossil fuels.

- **Collaboration and Deployment: Develop and deploy Zero Emissions Technologies.** The WPPF will work to obtain commitments from WPPF members and others to participate by conducting unmet RD&D. Both non-IEA countries and the private sector may participate. Deployment activities will be conducted in the future as the technologies approach commercial readiness.
- **Co-operation: Facilitate major improvements in existing power plants.** The existing base of fossil fuel power plants worldwide is huge and will be utilised far into the twenty-first century. Some of this generating capacity, particularly in developing and transitional countries, is quite poor in efficiency and emissions. Options to re-power and rehabilitate low-performing plants along zero emissions principles will be created. Activities will include:
 1. Co-operation with China and other developing countries.
 2. A conference on Zero Emission Technologies for the Asia/Pacific region.
- **Energy Safety and Security: Enhance the safety and security of fossil fuel supplies, technologies and networks.** The WPPF will hold a roundtable on energy network security and protecting energy infrastructure in the fossil fuel industries and, based on the findings of this roundtable, consider collaborative activities to enhance safety and security.

The Zero Emissions Technology initiative cross cuts the activities of several of the advisory groups and Implementing Agreements for which the WPPF is responsible. Effective implementation will require a co-ordinated approach. As participants in each Implementing Agreement make decisions independently, the co-operation of each will need to be obtained.

New Implementing Agreements for Zero Emissions Technologies may also be needed because the scope of this initiative may go beyond that of existing Implementing Agreements. This issue will be assessed by the WPPF and a recommendation will be made to the CERT.