



World Energy Assessment

Laying the Groundwork for
a Sustainable Future



agenda 21

Energy is essential to economic and social development and improved quality of life. Much of the world's energy, however, is currently produced and consumed in ways that could not be sustained if technology were to remain constant and if overall quantities were to increase substantially. – Agenda 21, Chapter 9.9

Some 150 countries have committed to Agenda 21, the programme for achieving human-centred sustainable development that originated at the 1992 UN Conference on Environment and Development in Rio de Janeiro. In 1997 the Special Session of the UN General Assembly (UNGASS) convened to review progress on Agenda 21. It noted the critical role of energy in achieving sustainable development objectives, and declared that the Ninth Session of the Commission on Sustainable Development (CSD-9), in 2001, should focus specifically on energy and transport issues.

As a way to inform discussion and debate about sustainable energy, the United Nations Development Programme (UNDP), the UN Department of Economic and Social Affairs (UNDESA), and the World Energy Council (WEC) have initiated the World Energy Assessment. The WEA will provide an evaluation of the social, economic, environmental and security issues linked to energy, and the compatibility of different energy options with objectives in these areas. The report will be distributed widely prior to CSD-9, and will be offered as an informal input to the CSD-9 process and the "Rio Plus Ten" meeting the following year.

"Current patterns of production and use of energy are creating a number of very real global problems," said Professor José Goldemberg, Chairman of the WEA. "Inequities of energy supply are unsustainable for humanitarian, political and environmental reasons. The World Energy Assessment will examine these concerns and explore actions and policies to resolve them."

The Substance of the World Energy Assessment



substance

The World Energy Assessment Report is based on the premise that energy is an essential component of sustainable development: of social and economic progress that meets the needs of both present and future generations. The report analyzes the linkages between energy and economic, social, environmental, and security issues, and considers the contradictions between current patterns of energy use and objectives in these areas.

The WEA also reviews energy resources and technology options from the point of view of sustainability — including better end-use efficiency, greater reliance on renewable sources of energy, and next-generation nuclear and fossil-fuel technologies. Further, the report examines plausible scenarios for combining various options to achieve a sustainable and relatively prosperous future. A scenario based more closely on current trends, serves as a point of comparison. The report concludes by examining policy options for producing and using energy in ways that are compatible with sustainable development.

The volume will be divided into the following parts:

Part I: Linkages between energy and major global issues, such as:

- the economy
- social issues
- the environment
- security issues

Part II: The resources of energy.

Part III: Technology options for sustainable energy

- energy end-use efficiency
- renewable energy technologies
- advanced energy technologies

Part IV: Integration of options: Do viable energy futures exist?

- energy scenarios
- rural energy

Part V: Policy options for sustainable development.

part I

Linkages between energy and major global issues

Chapter 1 examines the economic aspects of energy and considers the relationship between energy and economic growth, the investment requirements needed to ensure sufficient and affordable energy for the future, and various aspects of energy pricing.

Chapter 2 addresses key social issues that affect and are affected by the way energy is produced and used, including poverty, women, urbanization and population. It stresses the critical challenge of finding ways to meet the needs of nearly one-third of the world's people whose choices in life are limited by inadequate access to energy services. The possibilities for the developing regions to take a development path that reduce harmful emissions are also discussed.

Chapter 3 considers the effects and limitations of current energy systems and trends in terms of the environment. The consequences of various energy technologies, from indoor air pollution caused by household cooking stoves to urban air pollution, acidification, and to chemical changes in the global atmosphere, will be analyzed in this context.

Chapter 4, on security issues, discusses how energy supply and demand affect issues of national, regional and global security.

part II

The resources of energy

Chapter 5 reviews the potential of known energy fossil fuel and renewable resources to meet the world's projected demand for energy well into the next century.

part III

Technology options for sustainable energy

Chapter 6 looks at the potential for energy end-use

efficiency to offset demand by applying known technologies to provide people with more energy services from a given quantity of energy resources.

Chapter 7 discusses the potential role renewable energy resources and technologies — including biofuels, hydropower, wind and solar energy — can play in meeting local and global demand.

Chapter 8 considers advanced energy technologies that may be able to improve the safety and environmental soundness of nuclear power and fossil fuels.

part IV

Integration of options: Do viable energy futures exist?

Chapter 9 evaluates three energy scenarios, showing how different patterns of energy production and use, relate to the issues discussed in chapters 1–4. One scenario is based on the extrapolation of current trends; the other two project more sustainable patterns of energy distribution and use.

Chapter 10 takes a closer look at the key role rural energy can play in improving the lives of people currently without access to modern energy services.

part V

Policy options for sustainable development

Chapter 11 will examine how policy issues can impact patterns of energy production, distribution and use and in particular how the sustainable futures discussed in Part IV may be realized. It will analyze past successes and failures in the policy arena, as well as barriers to change.

Engaging a World of Discussion About Energy Options

the kinds of global actions required for a tenable future are likely to occur only when the issues and options regarding energy are widely understood. No publication, in and of itself, is likely to generate the policy and investment changes needed to reach sustainable energy goals.

For that reason, a consultative process will run in parallel and beyond the editorial phase of the World Energy Assessment. The process is intended to offer a wide audience of stakeholders and policy-makers the opportunity to provide input to the report and engage in dialogue and informal debate on energy and sustainable development issues. Broad participation is particularly important to address the diverse priorities of different stakeholder groups.

The drafting of the report will involve teams of experts from both developed and developing countries. Each chapter will be subject to peer review, which will inform and broaden the editorial process. Once the final report is issued, discussion and consultations will serve to disseminate the findings and encourage dialogue about them.

The entire process will include discussions and consultations with:

- Regional groups, including South-South/North-South exchanges
- NGOs, including environmental, consumer and development organizations, and the academic, technology and scientific communities
- International organizations and development banks
- Financiers and representatives from industry and the private sector
- Governments

These discussions will take advantage of other ongoing forums, and will be offered as an informal input to the preparatory process of the CSD-9 in April, 2001. The World Energy Assessment is also intended to provide background material for a major "Rio plus Ten" conference in 2002, which will consider progress made in the ten years since the 1992 UNCED "Earth Summit."

discussion

The report analyzes the linkages between energy and economic, social, environmental, and security issues, and considers the contradictions between current patterns of use and objectives in these areas.



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UNDP promotes sustainable development by focusing on four key areas: eradicating poverty, improving the situation of women, providing people with income-earning opportunities and sustainable livelihoods, and protecting and regenerating the environment. Production, dissemination and use of fuels and electricity are clearly linked to all four of these goals.



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DESA contributes to sustainable development through three types of activities. It undertakes statistical and analytical work for monitoring environment and sustainable development. It supports UN global conferences and the implementation of their findings. It also provides technical advice and manages technical co-operation projects at the request of developing countries. DESA will serve as a link to the Commission on Sustainable Development and coordinate the WEA process with other UN activities and debates.



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WEC is a multi-energy, non-governmental, global organization founded in 1923. In recent years, WEC has earned an excellent reputation in the energy field through its studies, policy analysis and recommendations. Its work covers long-term energy scenarios; developing country and transitional economy energy issues; the financing of energy, energy efficiency and liberalization policies, and environmental concerns. Through its member committees in 98 countries, it will encourage private industry's participation throughout the WEA editorial and consultative processes.