

# UNEP Handbook for Drafting Laws on Energy Efficiency and Renewable Energy Resources

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# PREFACE

The UNEP Handbook for Drafting Laws on Energy Efficiency and Renewable Energy Resources is written in response to needs expressed by developing country energy law draftsmen to UNEP for assistance in drafting legislative provisions for promotion of energy efficiency and renewable energy, and particularly their environmental dimensions.

The Handbook is designed to be a user-friendly guide rather than a technical compendium or comprehensive collection of relevant legislation. The focus is on national legislation, but encompasses national constitutional provisions, regulations and state and local laws where they are the key determinants of the promotion of efficiency and renewable resources. Emphasis is placed on adaptation to local country needs and conditions.

The Handbook describes the key environmental and implementation issues associated with efficiency and renewable energy resources and presents legislative options from both developed and developing countries for dealing with them, including sample excerpts from legislation. Reference to the full text of legislation is provided.

The Handbook is not judgmental as to what is good or bad legislation, but rather identifies for each issue legislative options that frequently have been used to address the issue, leaving the draftsman to evaluate the usefulness and effectiveness of the presented options for his or her venue or situation. There often is an indication of how provisions worked in the jurisdictions where adopted.

The Handbook is divided into five sections. Section One sets forth the framework for energy resource management, placing energy efficiency and renewable energy in context among other available energy resources. This section also describes the materials covered in the Handbook. Section Two contains legislative information on issues of general application, pertinent to both efficiency and renewables. Section Three deals with energy efficiency laws in the various sectors of the economy. Section Four addresses legislation for each type of renewable energy. And Section Five deals with the special legal needs for bringing useful energy to rural areas in developing countries. The reader interested primarily in any of these topics can look them up in the Table of Contents and go to these materials in the Handbook.

It is the premise of the Handbook that the prime goal of most developing countries is to provide for their people adequate food supplies, housing, health care, clothing, education and jobs to foster economic development and that affordable, clean energy supplies are essential to accomplishing these goals.

# FOREWORD

Energy is essential for development. No developing society can hope to achieve economic sustainability without adequate energy supplies. Energy is needed for cooking, providing light, refrigerating food and medicine, supplying fresh water, eliminating household wastes and heating and cooling buildings. Education, health care, manufacturing goods, providing services, all require energy, as do transporting goods and people and every aspect of agriculture, from seeding and making and applying fertilizers and pesticides, to irrigation, crop collection and delivery to markets. Virtually every aspect of economic and social activity demands energy.

The unavailability of modern forms of energy to some two billion of the world's population, and inadequate supplies to an estimated additional two billion more people, is a major challenge to the achievement of the poverty, gender and health objectives of the UN Millennium Development Goals and the Plan of Implementation of the World Summit on Sustainable Development.

At the same time, energy generation using fossil fuels is the principal source of greenhouse gas emissions that are causing global warming. The mining and processing of fossil fuels can also endanger the lives of miners, cause severe land disruption and pollute land, air and waters. Furthermore, burning fossil fuels emits nitrogen and sulphuric oxides that are themselves toxic and are the precursors of urban smog and acid rain, while coal burning power stations are responsible for mercury emissions that bio accumulate in ecosystems, presenting a threat to human health as well as the environment.

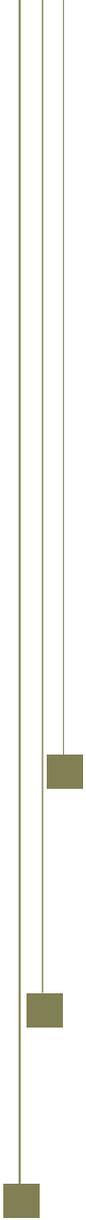
Providing the energy essential for development while minimizing environmental hazards is one of the principal challenges of the twenty-first century. Energy efficiency offers perhaps the greatest potential to greatly reduce the amount of polluting energy needed to achieve current and future development targets. By eliminating waste, efficiency can often be accomplished at a profit or with a very short payback period of a year or two. Renewable energy, in the form of energy produced from solar, wind, sustainably managed hydro, geothermal and biomass resources, offers the potential to significantly displace the need for polluting fuels. These renewable resources are emphasized in the Plan of Implementation of the World Summit on Sustainable Development. It is on these resources of energy efficiency and renewables that this Handbook focuses.

Much has been written about the science, technology and policies for promoting energy efficiency and renewable energy. Little has been written about the legislation necessary to implement these technologies and policies that make them a reality in practice. This Handbook responds to the needs expressed by legislative draftsmen in developing countries for assistance in drafting legislative provisions for achieving these objectives. It will also be useful to decision makers in the energy sector who are the initiators of policies that will eventually translate into law. By promoting clean and efficient energy use at the legislative level, governments can ensure that all stakeholders have the opportunity and incentive to adopt new practices that will help to mitigate climate change and reduce pollution while keeping to the path of economic and social development.

Mr. Achim Steiner

EXECUTIVE DIRECTOR

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# SECTION ONE

## FRAMEWORK FOR ENERGY RESOURCE MANAGEMENT

**Richard L. Ottinger\***

### **A. Traditional Energy Resources**

Energy is essential for economic development. Its value is not intrinsic, however. Its value is in the services it can provide. In rural areas, these services consist primarily of creating heat for cooking food and warming homes in cold climates. It also can provide electricity for lighting homes and community centers, permitting nighttime reading and study for students; refrigeration to keep foods fresh and to permit safe storage of medicines; radios that can transmit educational and entertainment programs; transportation to bring agricultural goods to market and permit access to urban areas; and for agricultural irrigation. In more developed areas, energy services include electricity and direct use of fuels for running factories and businesses, electricity for home appliances, fuels for modern transport, etc.

Energy also is an essential ingredient in meeting the Millennium Development Goals of lifting the standard of living for the billions of the earth's population that now suffer abject poverty, live in unhealthy environments, lack basic health services, suffer gender inequality, and whose children lack primary education. Indeed, energy is required as the engine to support all economic and social development. Yet some two billion people today lack modern energy services and an additional two billion have grossly inadequate energy.

No form of energy is free from monetary and environmental costs. These costs may make certain energy supplies prohibitively costly or environmentally unacceptable. The challenge for achieving sustainable development is to select energy media and end-use technologies that are best suited to community needs: most affordable and least environmentally damaging. A brief discussion of

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