

# Regional Workshop on Renewable Energy in the Carpathians

## Discussion Paper

### Action Plan for a Regional Framework Approach for Promotion of Renewable Energies in the Carpathian Region



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A Collaborative Initiative between UNIDO, UNEP and the Framework Convention on the Protection and Sustainable Development of the Carpathian Mountains



MINISTRY OF ECONOMY AND TRANSPORT  
REPUBLIC OF HUNGARY



ЛЬВІВСЬКА  
ОБЛАСНА ДЕРЖАВНА  
АДМІНІСТРАЦІЯ



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## **1 Preamble**

The countries of the Carpathian region are to a large extent dependent on the import of external sources of energy, such as natural gas and oil products. Although most of the countries (namely Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia and Ukraine) in the Carpathian region are endowed with diverse energy resources including renewable sources of energy, their energy sectors are characterized by serious constraints which, moreover, differ in the EU and non-EU member countries. At the same time, there is a high potential for the production of renewable energy from various local sources in this region.

This draft action plan for the development of a regional framework approach will provide guidelines for the development and implementation of policy solutions, financial instruments and capacity building measures to support and promote the use of renewable energy. The ultimate aim of the envisioned Regional Framework is to unify the existing and often scattered efforts and promote a coherent approach to renewable energy development in the region.

This draft action plan is designed after taking into account the inputs, comments and discussions of the Regional Workshop on Renewable Energy in the Carpathians held in Lviv, Ukraine from 6. to 7. May 2008. The action plan should be considered as the basis for further discussion among the countries of the Carpathian Convention and other stakeholders.

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## 2 Priority Areas

Among various renewable sources of energy, biomass and hydropower sources have been identified to be dominant in the Carpathian region. Forests cover most of the area of the Carpathian Mountains, and include relatively large share of natural and semi-natural forests comprising of coniferous, deciduous and mixed stands. The second largest form of land use in the Carpathian region is agricultural land. Both of these types of land-use form the basis for the development of biomass-based energy technologies.

The countries of the Carpathian region have a substantial biomass production potential, and production costs are often much lower than in Western European countries. If this potential can be realized, then Carpathian countries can sustainably contribute to EU targets on bio-energy and renewable energy use within their overall national energy mix. Conversion of excess croplands to raise profitable energy crop production can be regarded as one of the options for addressing several key challenges in the agricultural sector, such as the abandonment of cropland, increased unemployment and depopulation in rural areas. Especially the use and development of 2<sup>nd</sup> generation biofuels (e.g. technologies that use non-eatable plants and residues for the production of bioenergy) have excellent prospects in the region.

In recent times, other sources of renewable energy such as wind and solar have also become relevant in some areas of the Carpathians region. On/off grid energy supply systems based on various renewable sources of energy have already been installed and supported by some of the national and local governments of the region as well as by the European Commission. Although these projects are very relevant and valuable in themselves, a coherent, systematic and regional approach for the introduction of renewable energies in the Carpathian region is still lacking. Therefore the provision of coherent incentives and harmonized laws and regulations in the Carpathian region is one of the most pressing issues to be addressed in the future.

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### **3 Key Programme**

The key programme for the action plan addresses the following two broad challenges towards the development of renewable energies in the Carpathian countries:

- a) Policy and Institutional framework
- b) Financing Instruments

As a first step in the action plan and with the objective to establish a comprehensive overview of the status quo of renewable energy application, support and developments in the Carpathian countries, a publication covering the Policy Options and Financing Instruments in the Carpathian Region was prepared. The publication presents the feedback from the countries received during the workshop. It gives an overview about the situation indifferent Carpathian countries as well proposes policy and financing options for the region.

This publication will be available on the UNIDO's webpage in the 3rd quarter of 2008.

#### ***3.1 Policy and Institutional Framework***

Conducive policies are central to the development and promotion of renewable energies markets.

Policies for renewable energy promotion can be diverse. A number of “levers” are available to stimulate technical development and adoption. Although various countries have formulated renewable energy policies, there is still a lack of a common regional approach which could make use of synergies coming from the relatively unique and unifying socio-economic and geographical characteristics of the Carpathian region.

At the regional level, supportive policy instruments such as quota systems, fixed feed-in-tariffs, tax benefits, smart subsidies and loan guarantees are needed to stimulate renewable energy production and use – success of applying those measures will lead to

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increased shares of renewables, especially against the background of rising fuel and energy prices.

The first main activity of the strategic regional framework approach will be to develop the detailed country specific as well as regional policies and strategies to guide the development of renewables in the Carpathians. This will involve streamlining of policies on renewables, and enhancing coordination of institutions involved in the development of different kinds of renewable energies as well as clearly defined roles of the various institutions and stakeholders.

**Outputs and activities:**

*The main outputs expected are technical national and regional studies on policies and institutional structures as well as policy guidelines. A number of policy “events” can be organized, to debate policy options and review policy documents, as well as promote dialogue on policies and evaluate implementation of policy measures and strategies. These policy “events” will be useful in forging consensus over targets for renewable energy contribution to the energy sector. Other outputs may include training workshops.*

*Key indicators of progress and success will include the number of countries that establish supportive policy measures/strategies such as pre-defined prices (€/liter and/or €/kWh) and national targets for renewables (millions of liters of fossil fuel substituted and/or MW installed capacity).*

### **3.2 Financing mechanisms**

Renewable energies (RE), although subject to the same market as conventional fossil energy sources, involve markedly different technologies and thus their financing requires new thinking, new risk management approaches and new forms of capital.

Financial structure and scale pose a challenge to investment in RE. RE projects usually carry higher up-front capital costs and lower operational costs than their conventional counterparts. The external financing requirement is therefore high and must be amortized over the entire project lifecycle. Moreover, most RE projects are small, which

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means that transaction costs (e.g., feasibility analysis, due diligence, legal and engineering fees, consultants, etc) are disproportionately high, as these do not vary significantly with project size. Finally, RE project developers are often under-financed with relatively limited track records, which cause financiers to perceive them as high risk and to refuse non-recourse project finance.

A key tool for catalysing investment in renewables in many countries is creating price support mechanisms that provide stability and predictability over the medium and long term. Such mechanisms reduce the risk premium in the cost of capital, which will increase the amount of investment in RE and lower the price that consumers have to pay. Policy interventions are taking a range of forms including market-based quota mechanisms such as carbon emissions trading and renewable obligation arrangements, and fixed-price schemes such as the feed-in laws (e.g. in Germany and Spain).

No single approach will be equally appropriate in all markets and regulatory environments. However, all of them must create financial incentives for investors to change the pattern of investment away from carbon-emitting conventional technologies in favour of large-scale investment in renewable/non-carbon emitting technologies.

**Outputs and activities:**

*Key outputs and activities include technical studies on pricing and incentives for renewable energies and especially for bio-fuels, pre-feasibility and feasibility assessments on viability of renewable energy projects and training workshops on financial assessments and pricing maybe organized according to the requirements of specific countries. The volume and the capacity of renewable energy investments (joint ventures, public-private partnerships or other options) that are successfully initiated shall be increased.*

**a) Activity Matrix: Enabling policy and institutional framework for the development of Renewable Energies:**

Existing gaps	Actions	Activities / Outputs	Key Actors and Stakeholders	Roles
<ul style="list-style-type: none"> <li>- Absence of coherent region wide policies and strategies for renewable energy development</li> <li>- Lack of a supportive and well coordinated institutional framework</li> <li>- Lack of proper channels for sharing, disseminating and coordinating lessons and experiences of different players and countries</li> </ul>	<ul style="list-style-type: none"> <li>- Develop detailed country specific policies and strategies to guide the development of renewables in the region.</li> <li>- Develop country specific targets for renewable energy contribution to the energy sector</li> <li>- Streamline policies on renewables in the Carpathian countries</li> <li>- Enhance coordination of institutions and stakeholders involved in development of renewables</li> <li>- Enhance exchange of experiences on renewables policy development</li> </ul>	<ul style="list-style-type: none"> <li>- Technical studies on policies and institutional structures in the energy sector in the Carpathian countries</li> <li>- Proven set of successful policy measures and institutional initiatives</li> <li>- Number of countries with stated targets on renewable energy production</li> <li>- Policy sessions / presentations</li> <li>- Training workshops and exchange of experience</li> <li>- Study tours</li> </ul>	<p><b><u>Key Actors:</u></b></p> <ul style="list-style-type: none"> <li>- Carpathian Convention stakeholders</li> <li>- Governments and Ministries of Carpathian countries (including National Focal Points,</li> <li>- RE businesses and companies</li> <li>- ESCOs</li> <li>- Regional authorities</li> <li>- International organizations</li> </ul>	<ul style="list-style-type: none"> <li>- National governments to spearhead policy formulation, based on technically sound assessments and studies by RE experts and stakeholders</li> <li>- Policy makers to ensure enactment of appropriate legislation</li> <li>- Regional authorities and international organizations can play a neutral role in coordination of the various institutions/stakeholders involved in the development of renewables.</li> </ul>

## b) Activity Matrix: Financing mechanisms for Renewable Energy Development

Existing gaps	Actions	Activities / Outputs	Key Actors and Stakeholders	Roles
<ul style="list-style-type: none"> <li>- Lack of competitive market access</li> <li>- Limited financing as traditional banks/financiers are still unaware of potentials</li> <li>- Limited data and information on the renewables industry to guide investors and financiers in making sound judgments and decisions in RE projects development (this is especially important in the case of biofuels)</li> <li>- Lack in the use of the Kyoto Protocol Mechanism (namely emission trading and JI)</li> </ul>	<ul style="list-style-type: none"> <li>- Expanding local market for renewables (and especially biofuels)</li> <li>- Mobilizing financing for RE assessments and project implementation</li> <li>- Incentive mechanisms for renewables development (fixed tariff structures, special loans, tax reductions)</li> <li>- Promoting investments and joint ventures for development of renewables</li> <li>- Assisting in financial analysis of renewable energy projects.</li> <li>-pricing of CO2 emissions</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-feasibility and Feasibility studies on viability of renewable energy projects</li> <li>- Technical studies on pricing and incentives for renewable sources of energy</li> <li>- Additional investment funds successfully mobilized for renewable investments</li> <li>-Implementation of operational CO2 trading schemes</li> <li>- Training workshops and sessions</li> <li>- Study tours</li> </ul>	<p><b>Key Actors:</b></p> <ul style="list-style-type: none"> <li>- Carpathian Convention stakeholders</li> <li>- Governments and Ministries of Carpathian member countries</li> <li>- RE businesses and companies</li> <li>- ESCOs</li> <li>- International organizations</li> </ul>	<ul style="list-style-type: none"> <li>- National governments to spearhead detailed feasibility and assessments of renewables, as well as technical studies on pricing and incentives for renewable energy markets</li> <li>- Regional bodies and international organizations can assist countries in the region to expand local markets for renewable and especially biofuels.</li> <li>- Regional authorities and international organizations can also play an important role in promoting investment and joint ventures for the development of renewables.</li> </ul>