



Economic Commission for Europe

Renewable Energy in
the Russian Federation
and CIS Countries

Renewable Energy Sources

- Biomass, Bio-fuels
- Hydropower
- Geothermal
- Wind
- Solar Power & Solar Heat

Rationale for Renewable Energy

- Multiple advantages :
 - contributes to energy efficiency,
 - environmentally friendly and
 - evenly distributed.

UNECE Long-Term Objective

Development of Renewable Energy in the Russian Federation and CIS Countries:

Promote interregional cooperation to overcome energy policy, regulatory, institutional and financial barriers to the development of renewable energy resources in participating countries

Renewable Energy Sources in ECE

- Renewables 5% Total Primary Energy
- Biomass & Hydro 85% Total Renewables
- Main market: Biomass, Hydro, Geothermal, Wind & Solar
- Large potential Biomass, Wind & Solar
- Limited scope: Hydro & Geothermal

Renewable Energy Sources in CIS

Potential Contribution

- Biomass, Bio-fuels – 20 Mtoe
- Hydropower – 10 Mtoe
- Geothermal – 12 Mtoe
- Wind – 15 Mtoe
- Solar – 6 Mtoe

Renewable Energy Market in CIS

Hydropower Share in Renewables

- Azerbaijan – 17% Total Electricity
- Armenia – 12 %
- Kazakhstan – 13%
- Kyrgyzstan – 78%
- Moldova – 6 %

Renewable Energy Market in CIS

- Russian Federation – 22% Total Electricity
- Tajikistan – 78%
- Ukraine – 8 %
- Uzbekistan – 16%

Renewable Energy Market in CIS

Market Drivers

- Rising costs energy imports
- Decreasing costs renewable technology
- Technology performance
- Energy security
- Greenhouse Gas Reductions

Renewable Energy Market in CIS

Competition for Renewables

- Energy exporting countries: Azerbaijan, Kazakhstan, Russian Federation, Turkmenistan, Uzbekistan
- Nuclear generation: Armenia, Kazakhstan, Russian Federation, Ukraine

Renewable Energy Barriers in CIS

Barriers to Renewables Development

- Absence of national strategy & policy
- Lack of political & regulatory support
- Existing policies not enforced
- Low energy prices & tariff changes
- Strong competition conventional sources

Renewable Energy Barriers in CIS

Barriers to Renewables Development

- Lack of economic incentives
- Electric power grid access not guaranteed
- Political risk considerations
- Unfavourable project risk profile
- Inadequate returns for project finance

Renewable Energy Reforms

Reforms to Promote Renewables

- Policy maker seminars & information
- National renewable energy strategy
- Energy laws renewable market structure
- Legislation on grid access, tariffs
- Government support mechanisms

Renewable Energy Reforms

Reforms to Promote Renewables

- National renewable energy targets
- Government renewable energy agencies
- Financing and tax incentives
- Dedicated Investment Funds

UNECE Project

**Development of Renewable Energy
in the Russian Federation and
CIS Countries**

Eligible Countries

Azerbaijan, Armenia, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan, Turkmenistan, Uzbekistan and Ukraine.

Activities

- Establish network national & regional experts
- Analyse energy policy, regulatory, institutional & financial barriers
- Identify, compare & contract measures to overcome barriers in participating countries
- Strategy to promote enhanced investment climate

Expected Accomplishments

- Increased national capacity to identify and adopt measures to overcome barriers to renewable energy
- Enhanced investment climate for the development of renewable energy sources

Next Steps

- December 2009 – Complete National Reports
- January 2010 – Launch Renewable Energy Strategy Report
- May 2010 – Present Draft Report to EE21 Steering Committee
- November 2010 – Present Final Report to Committee on Sustainable Energy