

Energy and Climate Change

Contributing to Mitigation and Adaptation through Energy Policy Advisory Services

The EU Energy Initiative Partnership Dialogue Facility (EUEI PDF) through its Strategic Energy Advisory and Dialogue Services offers support on energy access, renewable energy, energy efficiency, and **energy and climate change**.

Climate change and energy are closely connected. The energy sector is one of the main contributors to global greenhouse gas (GHG) emissions. In many developing countries, high GHG emissions from energy production result not only from the reliance on fossil fuels and inefficient technologies but also from a heavy dependence on wood-fuels and related problems with deforestation and land-degradation.

The Work of EUEI PDF Policy Advisory on Climate Change

One recent EUEI PDF project specifically focusing on climate change is our support to **Mediterranean partner countries** (Egypt, Jordan, Lebanon, Morocco, Palestine and Tunisia) in defining the potential for National Appropriate Mitigation Actions (NAMAs) in cooperation with the European Investment Bank. However, nearly all of EUEI PDF policy advisory projects have an important impact on climate.

1) Capturing Renewable Energy Potential

Developing countries often have vast and nearly untapped renewable energy resources but are dependent on imported fossil fuels, and inefficient wood and charcoal technologies. Many local companies could benefit from a more dynamic renewable energy market; yet insufficient policy framework conditions hamper investments in the sector.

- ▶ **Mitigation:** by replacing fossil fuels and traditional biomass with modern renewable energies, GHG emissions can significantly be reduced.
- ▶ **Adaptation:** one consequence of climate change will be a less predictable availability of water resources (e.g. for hydro power generation or for cooling processes in thermal power plants). Developing alternatives like solar and wind power reduces climate vulnerability.

EUEI PDF projects in this area supported:

- ▶ The Government of **Senegal** for the implementation of the Renewable Energy Law.
- ▶ Member countries of the **Economic Community of West African States (ECOWAS)** in the development of a Regional Renewable Energy Policy.



2) Increasing Access to Sustainable Energy Services

1.3 billion people worldwide have no access to electricity and depend on wood, charcoal and inefficient diesel-generators to cover their basic energy needs. Expansion of the national grid to remote rural areas is not always economical. Sustainable energy solutions for off-grid areas include mini-grids based on renewable energy sources as well as solar-home systems, solar lanterns and efficient biomass stoves.

- ▶ **Mitigation:** access to renewable and efficient energy services significantly reduces the consumption of biomass and fossil fuel and provides low-carbon growth possibilities.
- ▶ **Adaptation:** one likely consequence of climate change is the reduction of biomass availability due to increasing floods and draughts. Therefore, access to alternative energy sources becomes crucial.

EUEI PDF projects in this area supported:

- ▶ Governments in **Zimbabwe** and **Namibia** on framework conditions for renewable mini-grids.
- ▶ The Ministry of Energy in the **Democratic Republic of the Congo** in the establishment of a Rural Electrification Agency.



3) Energy Efficiency

Facing a rapidly growing energy demand, many developing countries struggle not only with old and poorly maintained power generation and distribution systems, but also with the use of inefficient electrical equipment by households. Another problem is the inefficient use of traditional biomass (e.g. efficiency of traditional cooking stoves is only 10–15%).

- ▶ **Mitigation:** higher efficiency in generation, distribution and consumption reduces primary energy consumption and subsequent GHG emissions.
- ▶ **Adaptation:** the expected rise in ambient temperatures caused by climate change lowers efficiencies in power generation and distribution. This can be compensated by more efficiently designed energy infrastructure.

EUEI PDF projects in this area supported:

- ▶ The Energy Ministries of **Cameroon** and **Cambodia** in the development of National Energy Efficiency Policies, Strategies and Action plans.
- ▶ The Governments of **Botswana, Ethiopia, Mozambique, Rwanda** and **Malawi** in developing national strategies on efficient biomass use.

4) Energy Security

More severe climatic conditions can threaten energy supply when storms and floods damage energy infrastructure such as dams or electricity lines. Many developing countries are especially vulnerable to those risks, as they often have limited resources to repair the damages and are located in more affected areas.

- ▶ **Mitigation:** in countries where energy supply is unstable, diesel generators are often used as back-up options; energy supply based on renewables can offer a secure and less carbon intensive alternative.
- ▶ **Adaptation:** energy infrastructure must be designed to resist fluctuating temperatures as well as stronger weather phenomena, such as floods and storms.

EUEI PDF projects in this area supported:

- ▶ Member countries of the **Secretariat of the Pacific Commission** in developing energy security indicators.

EUEI PDF Flagship Publications

- ▶ Biomass Energy Sector Planning Guide
- ▶ Building Energy Access Markets
- ▶ Mini-grid Policy Toolkit
- ▶ Low-Cost On-Grid Electrification



Note: EUEI PDF's assistance to Namibia, Senegal, Zimbabwe and ECOWAS was funded through the Africa-EU Renewable Energy Cooperation Programme (RECP). The "Mini-grid policy toolkit" is a joint EUEI PDF - RECP publication. / **Pictures:** front page and back page top left © GIZ; back page top right © EUEI PDF.

The **Partnership Dialogue Facility (EUEI PDF)** currently receives contributions from the European Commission, Austria, Finland, Germany, Italy, the Netherlands and Sweden.



Austrian
Development Cooperation



Federal Ministry
for Economic Cooperation
and Development



Ministry of Foreign Affairs of the
Netherlands



For more information,
please contact:

EU Energy Initiative
Partnership Dialogue Facility
(EUEI PDF)

c/o Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH
P.O. Box 5180
65726 Eschborn, Germany

T +49 (0) 61 96-79 63 12
E info@euei-pdf.org
I www.euei-pdf.org

July 2016

