



Making energy systems more resilient to climate change

A set of indicators has been devised to assess the vulnerability of energy systems to climate change and suggest possible adaptation measures that could be taken in response.

Access to modern forms of energy is essential in any economy, but is especially important for the development of poorer countries in the world. Energy access is also central in supporting a quick recovery from damages sustained during extreme, weather-related events.

The energy sector, in particular, is susceptible to the anticipated impact of climate change and effective adaptation strategies are needed to cope with this threat. The authors of the report suggest that this is best achieved through focusing on adaptation measures that improve the resilience of energy systems.

The concept of resilience acknowledges there will be failures and works to limit damage. A resilient energy supply system contains relatively small components with a low individual cost of failure. Key to this resilience are sources of energy that can be renewed, such as solar, wind or water, rather than non-renewable fuels, supplies of which are diminishing or could be interrupted due to shortages or accidents.

This global report presents a methodology and two sets of proposed indicators to assess the vulnerability and resilience of energy-systems to climate change. Since countries in the African sub-continent are among the most vulnerable to the effects of climate change, the indicators were tested on the energy systems in 10 countries in this region. The authors suggest the indicators can help policy and decision makers identify policies and measures best suited to support the adaptation measures necessary to protect energy systems.

In addition, a number of recommendations to increase the resilience of energy systems were made:

1. Current and future energy systems must be "climate-proof". This is achieved through systematic assessment and monitoring of energy systems; including improved data collection on climate change and adaptation and mitigation strategies; mapping of potential renewable energy areas susceptible to the impacts of climate change; and using the indicators to develop monitoring protocols.
2. Climate and poverty factors should be included when assessing new energy systems.
3. Medium and long-term strategies must be developed to secure a diversified, decentralised, accessible, affordable and modern energy system, more resilient to climate change.
4. Improve energy efficiency as an essential adaptation measure. This will reduce the need for new energy sources and lower the burden on existing ones. Using renewable, low energy sources will reduce the vulnerability of the energy supply sector to the adverse effects of climate change.
5. Local expertise within countries needs to be developed about the effects of climate change on energy supply, production, distribution and use.
6. Ecosystem services that support existing and future energy production must be protected and developed. These include water and biomass resources, which support power plant production and provide millions of households with their main energy source.
7. Transparent technology transfer and financing procedures should be established.
8. Consultation and involvement of end-users in decision-making processes for energy systems must be ensured in order to develop appropriate energy systems that meet both energy and community needs.

Source: HELIO International report. (2009). Climate-proofing Energy Systems. The report can be accessed from: www.helio-international.org/projects/VAR09.cfm

Contact: laura.williamson@helio-international.org

Theme(s): Climate change and energy

Opinions expressed in this News Alert do not necessarily reflect those of the European Commission
To cite this article/service: "[Science for Environment Policy](#)"; European Commission DG Environment News Alert Service, edited by SCU, The University of the West of England, Bristol.