

Investing in a Climate for Change

Engaging the Finance Sector

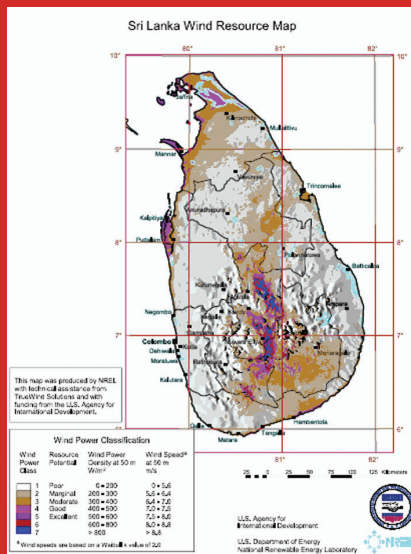
Highlights

Detailed maps of solar and wind energy resources in 13 developing countries to facilitate investment in clean energy

Public domain information with user-friendly computer-based geographic information system data, such as roads and transmission lines

25 partner institutions

New assessment under way in Abu Dhabi with further expansion planned



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Solar and Wind Energy Resource Assessment

From 2001-2007, the Solar and Wind Energy Resource Assessment Programme (SWERA) created detailed assessments of wind and solar energy potential in 13 developing countries. SWERA was principally supported by the Global Environment Facility, with additional support by UNEP, and the US National Aeronautic and Space Administration (NASA).

Knowledge is Power

The world's immense sources of renewable energy are essential to creating a clean energy path for the global economy. Solar, wind, geothermal, biomass, hydro and wave resources have the potential to meet several times the world's present and future energy demands. However, they are not evenly distributed and can vary greatly within even small geographic regions.

Through a range of well-established techniques, detailed and reliable mapping of these resources is possible, and critical for energy planners and financiers. Without timely and reliable assessments of the size and scale of a particular resource, investors cannot determine whether a particular project will be viable, including the potential return on their investment.

High quality assessments of renewable energy resources also allow national and state energy agencies to establish long-term and scientifically robust sustainable energy supply options and policies, including plans and policies by environmental agencies to reduce greenhouse gas emissions.

The relative costs to assess renewable energy resources are low compared with actual project costs. With reliable and timely resource data, project developers can gain confidence their projects will be successful and profitable.

Innovative Support

SWERA was launched in 2001 as a collaboration between 25 international institutions to develop the information tools needed to stimulate renewable energy projects. SWERA initially focussed on major areas of thirteen developing countries in Latin America, the Caribbean, Africa and Asia.

Researchers from partner institutions used satellite and terrestrial measurements, numerical models, and empirical and analytical mapping methods. Results were integrated into a user-friendly computer-based geographic information system containing relevant infrastructure data, such as roads and transmission lines, and into formats easily imported to common geographic-information-system (GIS) software.

This combination of renewable resource maps and data in print quality documents, online mapping, and standalone analysis forms a powerful decision support system for a broad range of clients, including energy planners and developers, policy makers, industry representatives, investors, university researchers, and citizens.

Results

SWERA has produced a range of solar and wind datasets and maps at better spatial scales of resolution than previously available. The renewable energy information provided through SWERA includes:

- Maps of Wind and Solar Energy Potential
- Atlases of Solar and Wind Energy Resources
- National Assessments

Ultimately, SWERA supported informed decision-making and helped increase investor confidence in renewable energy projects. In Nicaragua, for example, project results prompted the Nicaraguan National Assembly to pass the 2004 Decree on Promotion of Wind Energy, while in Bangladesh SWERA transferred local partners critical skills which, for example, allowed them to show that wind measurements taken under a separate project could have been much better sited.

One of SWERA's strengths is the ability to place critical solar and wind energy resource maps and data in the public domain. The expanded SWERA programme aims for an open architecture to include new countries and partners. SWERA also intends to provide training material to users in developing countries, which will contribute to the knowledge and development of renewable energy assessments.

UNEP believes the success of SWERA can be greatly expanded by extending its coverage and broadening the range of services it provides. To this end, UNEP is engaging development aid agencies, investors, and developers, in a combined effort to integrate renewable energy resource assessments into energy and development planning processes, as well as communicating to financiers the profitable investment opportunities offered by renewable energy projects.

At present, most efforts involve a partnership with the Abu Dhabi Future Energy Company, under which a mapping of solar and wind energy resources in several countries of the Middle East and North Africa is being conducted. The online user interface is also being revamped to accommodate the needs of different types of users.