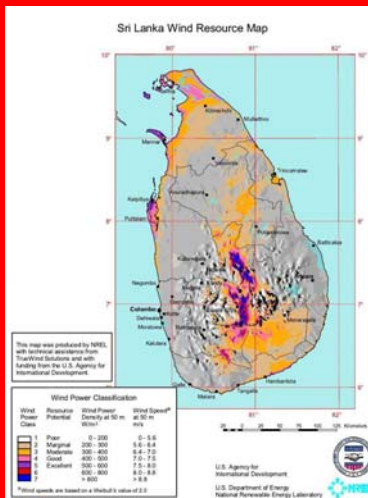


Highlights

Improved access to, and understanding of, information relevant to solar and wind energy project development through high-resolution maps of solar and wind energy resources

Public domain information complemented with user-friendly computer-based geo-referenced data such as roads and transmission lines

World class partners, including DLR, IEA, NASA, NREL and the Risø National Laboratory



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Renewable Energy Resource Assessment

Knowledge is power

Renewable sources of energy, solar and wind in particular, can meet several times the world's energy demands. Making use of these resources saves on national energy import costs, can generate national income in the form of energy exports, and drives innovation and job creation in this increasingly competitive energy market segment.

Solar and wind energy resource potentials differ from location to location. Through a range of well-established techniques mapping these potentials is possible. This allows investors to determine the size of the investments required to exploit these indigenous resources for meeting specific energy demands. This in turn makes it possible to calculate return-on-investment figures – which can be higher than otherwise anticipated without explicit knowledge of the resource base.

It is in every country's interest to conduct high quality assessments of renewable energy resources. These provide financial institutions with reliable information on project performance potential. They allow energy agencies to establish scientifically sound long-term plans of clean energy supply options. They support emission abatement planning by environment agencies.

Innovative support

A Global Environment Facility-sponsored project, the Solar and Wind Energy Resource Assessment (SWERA) project was a five year effort that aimed at developing information tools to stimulate renewable energy development. It covered major areas of thirteen developing countries in Latin America, the Caribbean, Africa and Asia.

SWERA produced a range of solar and wind datasets and maps at better spatial scales of resolution than previously available. This work relied on satellite and terrestrial measurements, numerical models, and empirical and analytical mapping methods. Results were integrated into a user-friendly computer-based geo-

referenced information system containing relevant infrastructure data, such as roads and transmission lines, and could be easily imported into common geographic-information-system software packages.

The project 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 the project transferred to local partners critical skills which allowed them to engage more substantively with foreign investors and project developers in solar and wind energy resource development.

Scaling-up a success story

The United Nations Environment Programme (UNEP) believes that it is possible to scale up the success of the SWERA project by extending its coverage and broadening the range of services it provides. To this end UNEP has reached out to a range of potential partners (such as the International Energy Agency) and beneficiaries (notably financiers and project developers), to determine jointly the scope of an expanded programme.

This larger effort will provide:

- information on renewable energy potentials (technical and economic);
- analyses of the effectiveness of renewable energy policies;
- information in support of financial risk management (such as insurance loss records of project developers) and technical risk management (such as groundwater levels in promising sites) of renewable energy project development, and;
- project-specific information on solar and wind energy technologies.

The goal is to focus on a selection of countries and provide them with a comprehensive package of services to support expanded renewable energy technology deployment. In 2009 work is ongoing in Brazil, China and South Africa.

侧重点

通过高清晰度地图来进入、了解、分析和评估太阳能和风能资源项目的开发潜力

公共领域信息

同时结合方便用户的地理信息系统数据, 例如公路和输电线路

世界领先的合作者:

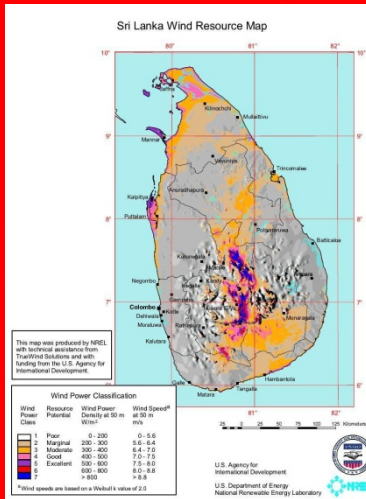
德国宇航中心 (DLR)

国际能源组织 (IEA)

美国国家航天局 (NASA)

美国国家可再生能源实验 (NREL)

丹麦里索国家实验室 (Risø)



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环境署

可再生能源资源评估

知识就是力量

可再生能源, 特别是风能与太阳能, 有着足够的潜力来满足能源需求和改善能源结构。可再生能源市场开发潜力巨大, 竞争力日益提高; 充分地利用现有的可再生能源可以节约进口国家在能源行业的开支, 增加出口能源的利润, 并且促进技术的创新和研发, 提供更多的就业机会。

风能与太阳能的潜力要依据地理位置来观测和评估。利用一系列完善的卫星和地面检测技术来检测可再生能源的潜力是可以实行的。投资者可以通过评估当地资源的潜力来决定投资项目的规模, 以便在未来得到更大的收益来满足能源的需求。同时这项评估将帮助投资者预测未来的利润, 这些利润往往会超过那些未曾作出资源潜力评估的项目。

因此实施可再生能源资源的检测与评估是可再生能源项目开发的核心, 取得高质量的资源评估信息关系到每一个国家的利益。这些数据提供给金融机构值得信赖的信息以帮助他们预测项目的表现潜力; 可以帮助能源机构树立长期科学性的新能源供应计划; 同时为环境机构提供了二氧化碳气体减排的方案。

创新支持

联合国环境规划署 (UNEP) 的太阳能与风能资源评估项目 (SWERA) 是一项全球环境基金 (GEF) 支持的项目, 为期五年, 以开发信息检测工具为目的来协助可再生能源技术的发展。SWERA的研究包括了南美洲, 加勒比海, 非洲以及亚洲的13个国家。

SWERA, 通过卫星技术、地面测量、数据模型和地图分析得到了比起现有的同类项目更丰富的高清晰度的太阳能与风能资源的数据资料和卫星图片。

这些检测的结果将会结合到以计算机为基础的地理信息系统的运用之中, 其它相关数据包括基础设施数据, 例如道路和输电线路。同时, 这些数据可以简单地被贯穿入其它地理信息系统的软件中令更多人受益。

这些评估项目的最终目的是帮助决策者取得更大效益、增加投资者在项目开发上的信心。例如在尼加拉瓜, 评估的结果加速了国家议会在2004年通过的促进风能开发的法令; 在孟加拉国, 评估项目提高了当地合作者的技能, 帮助他们认识到如何在其它类似项目中更准确地选择风能观测点。

延续一个成功的例子

UNEP相信借助增加SWERA项目的覆盖国家、扩大SWERA所提供的服务范围, 这个成功的例子可以得到更充分的延伸。为此, UNEP积极地联络了一系列潜在的合作伙伴 (例如国际能源组织 (IEA)) 和潜在的项目受益者 (尤其是金融机构和项目开发者), 期待能够通过合作将SWERA推向更高的层面。

这些共同的努力将着眼于提供:

- 可再生能源潜力的信息 (技术和经济开发潜力);
- 分析可再生能源政策的强度和效力;
- 可再生能源项目相关的金融风险 (项目开发者的保险损失) 和技术风险管理的信息;
- 太阳能和风能项目的具体信息。

目标: 重点集中在选拔一系列国家并提供给它们一套完善的服务来帮助它们扩展可再生能源的开发与利用。2009年的工作重心将集中在中国, 巴西和南非三个国家。