Global Energy Assessment

The Global Energy Assessment (GEA), coordinated by IIASA, provides the scientific basis for the 2012 global initiative, Sustainable Energy for All (SE4ALL), launched by UN Secretary-General, Ban Ki-moon. Further, IIASA/GEA scientists developed analytical tools and policy options for the Global Environment Facility (GEF), the largest public funder of projects to improve the global environment. GEA authors, many from IIASA, also provided substantive input to the 2014 Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5).

Impacts

» IIASA scientists participate in SE4All in scientific research and at the decision-making level. IIASA’s Deputy Director General Nebojsa Nakicenovic continues to serve on the UN Secretary General’s High-Level Technical Group for SE4All. Shonali Pachauri and Arnulf Grubler of IIASA conducted pioneering research on energy access and urbanization, respectively, that is feeding into SE4All. Keywan Riahi coordinated scenario work for the GEF and IPCC report. Luis Gomez-Echaverri is a coordinator of SE4All’s High Impact Opportunities initiative, which spearheads opportunities with the potential to advance all three SE4All objectives.

» IIASA/GEA contributed the scientific foundations for the SE4All Global Tracking Framework (GTF) report, led by the World Bank Group and the International Energy Agency, which monitors progress towards the three SE4All objectives.

» IIASA scientists played a key role in the first annual SE4All Forum, which brought over 700 participants together to discuss strategies and achievements toward attaining universal sustainable energy access. The event built on the GEA and the findings of the UN Development Group’s thematic consultations on energy. Conclusions will feed into the intergovernmental process on the post-2015 development agenda and Sustainable Development Goals (SDGs).

» Two IIASA/GEA tools are being used to assist strategic policy planning processes in the GEF context: the Energy Access Interactive Tool — to improve energy access for the rural poor in developing countries—and the Energy Multi-Criteria Analysis (MCA) tool, designed to help decision makers interactively analyze, compare, and tackle energy’s social, economic, and sectoral impacts in an integrated way.

» The GEA was referenced in 13 chapters of the Working Group III Report (Mitigation of Climate Change) of the Intergovernmental Panel on Climate Change Fifth Assessment Report, published in 2014.

Further information:

www.iiasa.ac.at/impacts/gea

Background

The GEA is the first ever fully integrated energy assessment to analyze energy challenges, opportunities, and strategies, for the world’s economies. Conducted by 500 of the world’s leading energy experts in research, academia, business, industry, and policy from the developing and developed world, the GEA is supported by government and nongovernmental organizations, the UN system, and the private sector. The GEA clusters around four topics that are key to the current, much-needed energy transformation: review of major 21st century energy challenges; assessment of current energy technologies; options and pathways to solutions; and policy recommendations and tools to achieve goals. The scientific assessment, writing, and peer review took five years and results were published by Cambridge University Press in a 1882-page book in December 2012.

GEA – SE4ALL, GEF, IPCC

The GEA database includes detailed quantitative information for 41 pathways or scenarios for sustainability. Six GEA scenarios meet the three SE4All objectives: i) providing universal access to modern energy services, ii) doubling the global rate of improvement in energy efficiency, and iii) doubling the share of renewable energy in the global energy mix. These six scenarios underpin all SE4All scientific work. As Kandeh Yumkella, CEO of SE4All, says: “IIASA’s Global Energy Assessment served as both the scientific basis for SE4All, and the inspiration behind our aims.”

Work for the GEF has centered on the development of GEA scenarios for the GEF, coordinated by IIASA’s Keywan Riahi. Moreover, 42 GEA authors contributed to IPCC AR5, published in 2014.