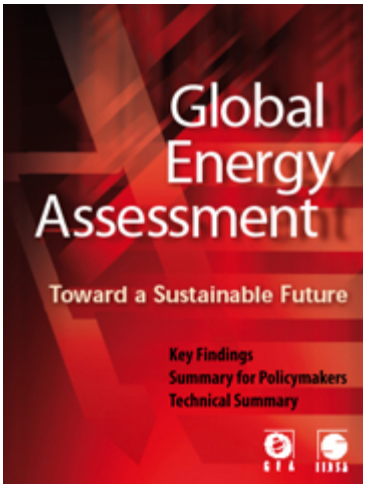
Global Energy Assessment identifies pathways to a sustainable energy future

This new global energy study outlines a range of 41 alternative sustainable energy pathways that offer viable, cost effective choices for policy makers to achieve necessary human health and environmental sustainability goals by 2050.



Global Energy Assessment: Toward a Sustainable Future – Key Findings

Laxenburg, Austria, Rio de Janeiro, Brazil – Access to clean, reliable and affordable energy is one of the major sustainability and human development challenges of the 21st Century. Energy empowers communities, yet reliance on traditional and fossil energy sources has escalated concern about the safety and security of energy supplies in many regions of the world, created enormous inequity, reduced life expectancy, and contributed to many environmental issues, including climate change and ecosystem degradation.

What can be done to help societies continue to develop in a sustainable way and what will be the costs and benefits of achieving this new, clean and equitable energy future?

The key findings of the Global Energy Assessment (GEA) were released on Tuesday June 19th during the RIO+20 Conference on Sustainable Development. The GEA, the most comprehensive and first ever fully integrated global assessment of energy systems, involving many of the world's leading energy specialists, outlines a range of resources, technologies, policy options and pathways that would facilitate a transformation of energy systems and address these challenges. These necessary changes will require significant investment in new energy infrastructure, major improvements in energy efficiency - particularly in the building and transport sectors - decarbonization of fossil-fuel based energy systems, and investment in the development and use of renewable energy sources.

The GEA analysis finds that such a transformation is economically viable and the co-benefits to human health and the environment more than balance the up-front investments needed to bring about this transformation. Additionally these investments would enable the delivery of clean, sustainable energy to the 1.4 billion people living without electricity and the 3 billion without access to modern cooking fuels or devices. This could be achieved without additional increases in greenhouse gas emissions.

(l to r) Jose Goldemberg, Yong Ha Kim, H.E. Nguyen Thien, Pavel Kabat, Hasan Mahmud, Wolfgang Waldner, Kuntoro Mangkusubroto speaking at the launch of the Global Energy Assessment, RIO+20 2012

The GEA analysis indicates that a rapid transformation to clean energy technologies would require an increase in annual investments from present levels of approximately $US1.3 trillion to $US1.7 trillion, about two percent of current world gross domestic product. The difference corresponds roughly to the current energy subsidies that are often impeding the needed transformational change.

A major finding of the GEA is that some energy options provide multiple benefits. This is particularly true of energy efficiency, renewables, and the co-production of synthetic transportation fuels, cooking fuels, and electricity with CCS, which offer advantages in terms of supporting all of the goals related to economic growth, jobs, energy security, local and regional environmental benefits, health, and climate change mitigation.

The GEA explores sixty alternative energy transformation pathways and finds that forty-one of these pathways simultaneously satisfy the following goals:

- Universal access to affordable modern energy carriers and end-use conversion (especially electricity and clean cooking) by 2030;
- Enhanced energy security at regional and national levels;
- Climate change mitigation (contain global mean temperature increase to less than 2°C above pre-industrial levels, with a probability of at least 50%); and
- Improved human and environmental health by controlling household and ambient air pollution, ocean acidification, and deforestation.

The GEA considers all aspects of energy, inclusive of sectors that intersect with the energy system (such as health, water, transport, building, land-use, and forestry) and offers direction for all sectors and regions on how to achieve necessary reforms.

Involving more than 500 scientists, policymakers, industry specialists, and energy experts, from 70 countries, the GEA is unique in that it involves specialists from a broad range of interests and disciplines that intersect with energy (e.g. health, environment, economics, and security).

This briefing is the first in a series of briefings that will be held around the world in the latter half of 2012 to present regional perspectives and specific policy findings to government, industry and media representatives. More on these briefing will be available via the IIASA website at www.globalenergyassessment.org as they are organized. Interested journalists can be notified of these events by sending a reply email to gea@iiasa.ac.at.

Read the GEA Summary Document (pdf).

Further information: Leane Regan IIASA: Tel: +43 (0) 664 443 0368 regan@iiasa.ac.at

The Global Energy Assessment was formally launched by Kandeh Yumkella Director General UNIDO and Pavel Kabat Director/CEO of IIASA during the UN-Energy Day, high-level dialogue session at RIO+20.

Date and Time: 19th June, 2012 from 19:50 - 21:00

Location: Rio Centro Convention Center, Pavilion 3, P3-1

PROGRAM

INTRODUCTION:
UNIDO: Kandeh Yumkella, Director-General: GEA and its importance as a supporting analysis for Rio+20 and the UN Sustainable Energy for All initiative. The official launch of the GEA.

Moderation and Chair:
IIASA: Pavel Kabat, Director/CEO. Welcome to speakers and delegates. Introductory remarks on the GEA and the importance of integrated assessments in tackling current and future sustainability challenges?

Key Findings and Policy Implications:
Ged Davis on behalf of GEA Co-Presidents (Ged Davis and José Goldemberg) This session will outline the establishment, structure, governance and sponsorship of the GEA; key findings and new directions for R & D; relevance to the policy environment; and relevance to, and the way forward to achieving the UN "Sustainable Energy for All" goals.
(Joint Statement/Presentation)

Statements by Heads of Government and Ministerial–level Government Officials:

- **Austria: Wolfgang Waldner**, State Secretary, Foreign Ministry
- **Bangladesh: Hasan Mahmud**, Minister for the Ministry of Environment and Forestry
- **Brazil: Jose Goldemberg**, Former Minister and GEA Co-President
- **Indonesia: Kuntoro Mangkusubroto**, Ministerial level Head of Presidential Delivery Unit, Office of President (invited)
- **Republic of Korea: Yong Ha Kim**, Director General, Bureau of International Affairs Korea Forest Service
- **Vietnam: H.E. Nguyen Thien Nhan**, Deputy Prime Minister

Statements from Selected GEA Sponsors:

- **UNDP: Olav Kjørven**, Assistant Secretary-General and Director, Bureau for Development Policy
- **World Bank: Jamil Saghir**, Director of the Sustainable Development Department for the Africa Region
- **GEF: David Rodgers**, Senior Energy Specialist

Questions and Moderated Discussion led by Pavel Kabat.

Further information: Leane Regan IIASA: Tel: +43 (0) 664 443 0368 regan@iiasa.ac.at

Additional information for writers and editors

About the Global Energy Assessment
The Global Energy Assessment (GEA) seeks to examine: the major global challenges and their linkages to energy; the technologies and resources available for providing energy services; future energy systems that address the major challenges; and the policies and other measures to realize sustainable energy futures. Given the linkages between these objectives, the GEA adopts a highly integrated and holistic approach structured into four main Clusters reflecting the following objectives:

Cluster I: Major global issues and energy (regional, national and international challenges).
Cluster II: Energy resources and technological options (assessment of the components available to build future energy systems).
Cluster III: Describing possible sustainable futures.
Cluster IV: Realizing energy for sustainable development (assessment of the policies needed to address the challenges).

Coordinated by the International Institute for Applied Systems Analysis (IIASA) the GEA was led by some of the world's leading energy experts in research, academia, business, industry and policy, representing both the developed and the developing world. GEA is the first ever fully integrated energy assessment analyzing energy challenges, opportunities and strategies, for developing, industrialized and emerging economies. The GEA is supported by national governments, non-governmental organizations, the United Nations System, and the private sector including: IIASA, UNIDO, UNDP, UNF, UNEP, The World Bank, Petrobas, The World Energy Council, First Solar, Climateworks Foundation, The Global Environment Facility (GEF), national governments (Austria, Germany, Italy, Norway, Sweden, USA). A complete list of all supporters is available in the summary documents.

The GEA is led by Council Co-Presidents: Ged Davis and José Goldemberg, Executive Committee Co-Chairs: Thomas B. Johansson and Anand Patwardhan, Director: Nebojsa Nakicenovic and Associate Director: Luis Gomez-Echeverri.

Convening Lead Authors: Rangan Banerjee, Sally M. Benson, Daniel H. Bouille, Abeeku Brew-Hammond, Aleh Cherp, Suani T. Coelho, Lisa Emberson, Maria Josefina Figueroa, Arnulf Grubler, Mark Jaccard, Suzana Kahn Ribeiro, Stephen Karekezi, Kebin He, Eric D. Larson, Zheng Li, Susan McDade, Lynn K. Mytelka, Shonali Pachauri, Anand Patwardhan, Keywan Riahi, Johan Rockström , Hans-Holger Rogner, Joyashree Roy, Robert N. Schock, Ralph Sims, Kirk R. Smith, Wim Turkenburg, Diana Ürge-Vorsatz, Frank von Hippel, and Kurt Yeager.

Review Editors: John F. Ahearne, Ogunlade Davidson, Jill Jäger, Eberhard Jochem, Ian Johnson, Rik Leemans, Sylvie Lemmet, Nora Lustig, Mohan Munasinghe, Peter McCabe, Granger Morgan, Jürgen Schmid, Jayant Sathaye, Leena Srivastava, Youba Sokona, John Weyant, and Ji Zou. A complete list of authors and reviewers is available in the summary documents available by contacting regan@iiasa.ac.at.

The final 1900 page Global Energy Assessment report, published by Cambridge University Press, will be available in July 2012.

Reference: GEA, 2012: *Global Energy Assessment - Toward a Sustainable Future*. International Institute for Applied Systems Analysis, Vienna, Austria and Cambridge University Press, Cambridge, UK and New York, NY, USA.

About IIASA
IIASA is an international scientific institute that conducts research into the critical issues of global environmental, economic, technological, and social change that we face in the twenty-first century. Our findings provide valuable options to policy makers to shape the future of our changing world. IIASA is independent and funded by scientific institutions in Africa, the Americas, Asia, and Europe. www.iiasa.ac.at