



IANAS Energy Program

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2017 IANAS - Smart Villages Symposium

Biosphere 2, Arizona, USA. April 24th, 2017



Content:

- Background
- Lighting the way: Toward a sustainable energy future
- Energy Program of IANAS
- Guide Toward a Sustainable Energy Future for the Americas
- Plans of the IANAS Energy Program for 2016-2017





Background. The Science Behind the Book



Background:

- When a sustainable future gained increase attention in the new millennium, international science leaders recognized the importance role of science in achieving this future.
- The InterAcademy Council (IAC) Board created a Study Panel to draft a report on the role of science. The Americas played a leading role in the report.
- The Panel was co-chaired by Steven Chu, then Director, Lawrence Berkeley National Laboratory, and later the U.S. Secretary of Energy, and Jose Goldemberg, Professor, University of Sao Paulo in Brazil.
- The IAC Board is composed by the presidents of 15 leading national academies of sciences of three international organization representing developing world, engineering, and medical scientists.

Steven Chu

- Born in China, Chinese, February 28, 1948.
- He is an American physicist.
- He is known for his research regarding the cooling and trapping of atoms with laser light.
- He won the Nobel Prize in Physics in 1997, along with his scientific colleagues Claude Cohen-Tannoudji and William Daniel Phillips.
- Chu served as the 12th United States Secretary of Energy from 2009 to 2013.
- Chu was a professor of physics and molecular and cellular biology at the University of California, Berkeley, and the director of the Lawrence Berkeley National Laboratory.



José Goldemberg

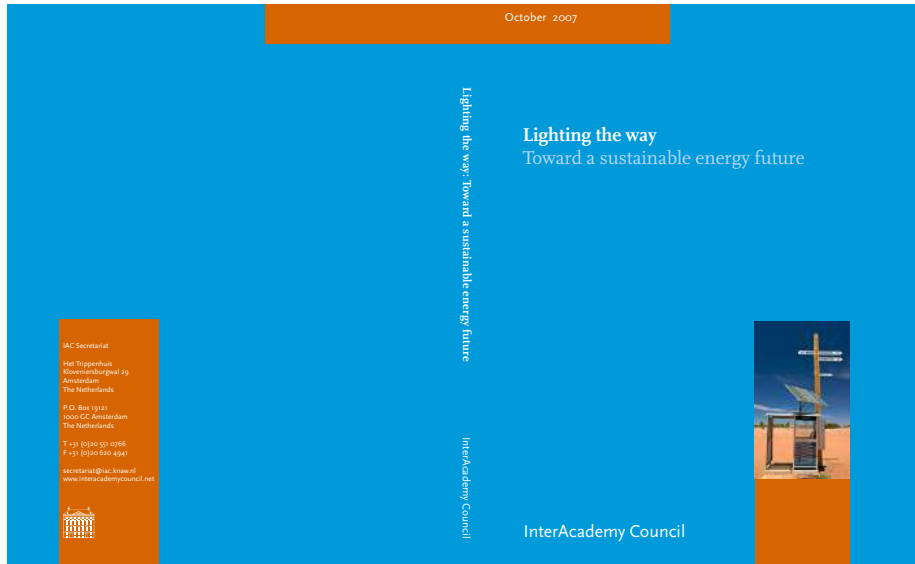
Born in Brasil, May 27, 1928

- He has a Ph.D. in Physical Science from the University of São Paul
- He was President of the University of São Paul from 1986 to 89.
- He directed the Energy Company of the State of São Paulo.
- He was Secretary of State for Science and Technology.
- He modernized the information systems;
- As Secretary of the Environment he administered Brazil's participation in the 1992 Earth Summit in Rio de Janeiro;
- He has authored many technical papers and books on nuclear physics, environment, and energy and
- He was president of the Brazilian Association for the Advancement of Science.
- José Goldemberg also served as Chairman of the Editorial Board (1998–2000) and a lead author of the UNDP World Energy Assessment.



In 2007, the study panel reports the book:

Lighting the way: Toward a sustainable energy future



A book of the InterAcademy Council

Co-Chairs

Steven CHU (United States),
 Director, Lawrence Berkeley
 National Laboratory. USA

José GOLDEMBERG (Brazil),
 Professor, University of São Paulo,
 São Paulo, Brazil

<http://www.interacademycouncil.net/File.aspx?id=24548>





Lighting the way: Toward a sustainable energy future



Title of the book

Lighting the way: Toward a sustainable energy future

Content of the book:

5 Chapters:

1. The sustainable energy challenge
2. Energy demand and efficiency
3. Energy supply
4. The role of government and the contribution of science and technology
5. The case for immediate action



Lighting the way: Toward a sustainable energy future



The book contains nine conclusions:

1. Meeting the **basic energy needs of the poorest people** on this planet is a moral and social imperative that can and must be pursued in concert with sustainable objectives.
2. Concerted efforts must be made to improve **energy efficiency and reduce the carbon intensity** of the world economy.
3. **Technologies for capturing and sequestering carbon from fossil fuels**, particularly coal, can play a major role in the cost-effective management of global carbon dioxide emission management of global carbon dioxide emissions.
4. **Competition for oil and natural gas supplies** has the potential to become a source of growing geopolitical tension and economic vulnerability for many nations in the decades ahead.

This book contains nine conclusions... :

5. As a low-carbon resource, **nuclear power can continue to make a significant contribution** to the world's energy portfolio in the future, but only if major concerns related to capital cost, safety and weapons proliferation are addressed.
6. **Renewable energy** in its many forms **offers immense opportunities** for technological progress and innovation.
7. **Biofuels hold great promise** for simultaneously addressing climate change and energy security concerns.
8. The development of cost-effective **energy storage technologies**, new energy carriers, and improved transmission infrastructure could substantially reduce costs and expand the contribution from a variety of energy supply options.
9. **The S&T community** –together with the general public– **has a critical role to play in advancing sustainable energy solutions** and must be effectively engaged.



Energy Program of IANAS

- The Inter-American Network of Academies of Sciences (**IANAS**) is a **network of the 21 science academies** in the Western hemisphere,
- **The book “Lighting the way...” motivated IANAS to initiate an Energy Program (EP) to chart the path to a sustainable future in the Americas.**
- The initial IANAS meeting to work for the EP was held in **Rio de Janeiro in 2008**, where the IANAS academies identified the higher priorities in the Americas in the IAC report.
- **They identified five areas:**
 - a. Energy efficiency,
 - b. Energy for unserved populations,
 - c. Renewable energy,
 - d. Bioenergy and
 - e. Capacity building.



Energy Program of IANAS

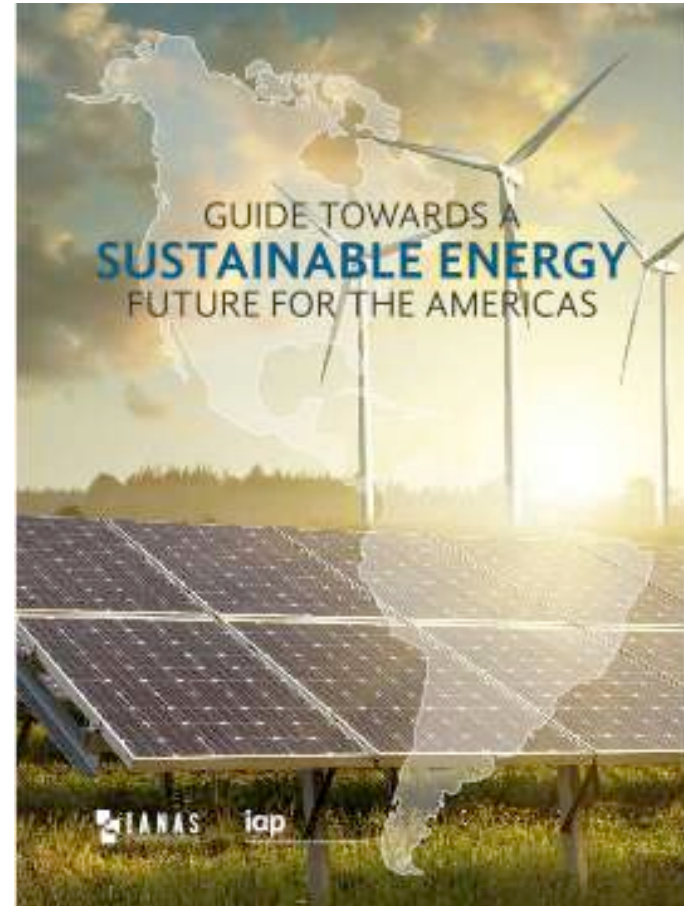


- The **IANAS Energy Program pursued its mission** through annual meetings and interim communications where academy representatives shared their insights on the role science can play in advancing these programs.
- One of the projects that the Energy Program of IANAS has was the elaboration of **the Book Guide Toward a Sustainable Energy Future for the Americas**
- Thanks to the commitment of the 21 Energy Focal Points, experts appointed by the Academies of Sciences, and the support of other people and institutions from different scientific organizations, **this book summarizes the findings and recommendations of the Program.**





http://www.ianas.org/books/books_2016/libro_energia_web.pdf



http://www.ianas.org/books/books_2016/book_energy_web.pdf





Guide Toward a Sustainable Energy Future for the Americas



Title of the book

Guide Toward a Sustainable Energy Future for the Americas

Content of the book:

Introduction

Chapters:

1. Energy Efficiency in the Americas
2. Energy for Underserved Populations: Meeting the basic needs of the poorest people in Latin America and the Caribbean
3. Renewable Energy: Immense Opportunities for Renewable Energy in its Many Forms
4. Women, Energy and Water: The Effects of Gender and Culture on the Roles and Responsibilities of Women
5. Understanding Bioenergy
6. Current status and perspectives for bioenergy in Latin America & Caribbean: addressing sugarcane ethanol
7. Capacity building in Latin America and the Caribbean



Guide Toward a Sustainable Energy Future for the Americas



Content of the book....:

Boxes:

1. Firewood Use in Latin America and its Effects on the health
2. The Atacama Plant: A Bright Spot for Chile
3. Current Energy Status and Perspectives in Mexico
4. Research and Development in the Energy Sector in Argentina
5. The Cuban Experience: Using Renewable Energy Sources of Energy to Improve the Quality of Life in accessible Rural Areas
6. Two way link between Energy and Water
7. Renewable Energy projects in the Dominican Republic
8. Current Status and Perspectives of Energy in Colombia
9. Sugarcane Bioenergy in Brazil: Current Situation and Perspectives





Guide Toward a Sustainable Energy Future for the Americas



Authors:

Ricardo Baldassin Jr. Cruz | Brazil; Tomás Bazán | Panama; Nicole Bernex | Peru; Carlos Brito-Cruz | Brazil; Andrea C. Bruce | Jamaica; Anthony Clayton | Jamaica; Luis Cortez | Brazil; Mónica M. Gómez | Perú; Rafael Espinoza | Perú; Claudio A. Estrada Gasca | Mexico; Wilfredo César Flores Castro | Honduras; Frances Henry | Canada; Manfred | Perú; Jorge M. Islas Samperio | Mexico; Mario Jiménez | Nicaragua; Miguel Kiwi | Chile; Miguel Laborde | Argentina; John Millhone | United States of America; Luiz. A. H. Nogueira Cruz | Brazil; José Rincón | Colombia; Gustavo Sequiera | Nicaragua; Patricia L. Serrano-Taboada | Bolivia; Katherine Vammen | Nicaragua; Walter Wehrmeyer | Jamaica.

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Coordinators: John Millhone (USA), Claudio Estrada (Mexico), Adriana de la Cruz (USA-Mexico)

Totals: 29 Authors, 14 Countries of Americas





Guide Toward a Sustainable Energy Future for the Americas



The book contains 10 Points Global Action Plan:

1. Accelerate low-carbon transformation by integrating climate into core economic decision-making processes
2. Enter into a strong, lasting and equitable international climate agreement
3. Phase out subsidies for fossil fuels and agricultural inputs, and incentives for urban sprawl
4. Introduce strong, predictable carbon prices
5. Substantially reduce capital costs for low-carbon infrastructure investments
6. Scale up innovation in key low-carbon and climate resilient technologies
7. Make connected and compact cities the preferred form of urban development
8. Stop deforestation of natural forests by 2030
9. Restore at least 500 million hectares of lost or degraded forests and agricultural lands by 2030
10. Accelerate the shift away from polluting coal-fired power generation



Plans of the IANAS Energy Program for 2016-2017



Plans of the IANAS Energy Program for 2016-2017

Between the main points are:

- Update of the energy book/ or edit a new book
- Presentation and dissemination of the new energy book
- Participation in the project Smart Villages, including the possible publication on the topic
- Symposium on Smart Village in collaboration with Smart Village Initiative (Tucson, April 25th, 2017)



