

IANAS Energy Program

Energy Efficiency

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Draft Interim Report
IANAS Energy Program Workshop
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La Paz, Bolivia

Outline

- *Lighting the Way...* Highlights
- Past Workshops Recommendations
- Summary of Related Programs
- Focus of Future IANAS Activities
 - Supply Issues: Mix of sources, transmission and distribution, “Smart Grids,” multi-government plans
 - Demand-side issues: Building, industry, transportation and agriculture sectors

Lighting the way... conclusions

- Energy Efficiency is a high priority
- Contrast between the potential and current practices,
 - e.g. **technically possible and cost effective to reduce energy use in buildings by 50% and more**
- Obstacles:
 - **Energy-intensive industries wary of transition to new technologies**
 - **Lack of incentives, e.g. power companies, landlords**
 - **Limited number of professional and technical personnel**
- Recommendations:
 - **Improvements in storage, transmission and distribution**
 - **“Leapfrog” improvements in developing countries**

Summary of:

Energy Workshops

Dec. 6-7,2010, June 9-11, Bogota, Colombia

- Expand R&D on technologies that are high priorities for the Americas
- Improve data on energy use from sources to end uses to focus on high use targets
- Expand education of the scientists, engineers and technicians needed for sustainable energy
- Make contact with government, private sector, and NGO allies for cooperative activities.
- Use upgraded IANAS website and virtual meetings to identify priority collaborative actions.

Finding the IANAS role:

The Scope of Energy Efficiency

1. A Country's Energy Production
changed by exports and imports
2. A Country's Total Primary Energy Supply
reduced by transmission and distribution losses
3. A Country's Total Final Energy Consumption
Building sector's end use
Industry sector's end use
Transportation sector's end use

Today Question:

The role of the IANAS Energy Program...

- In fostering communication among the academies and science organizations.
- In strengthening the influence of the science community in our countries.
- In having an impact in the multi-country sustainable energy programs in our regions.

Initial Survey:

Cross-cutting Activities

- InterAmerican Development Bank
- World Bank Group
- Energy Sector Management Assistance Program
- International Partnership for Energy Efficiency Cooperation
- Energy and Climate Partnership of the Americas
- Clean Energy Ministerial
- National, Regional and Local Programs

Initial Survey:

Sources to End Uses

Electric power sector:

- Generation: from new gas combined cycle power plants, efficient hydropower turbines to thin-film solar panels.
- Efficient transmission and distribution systems, SIEPAC, Caribbean island connections, distributed generation, integrating solar sources, “smart grids.”
- Storage: advanced batteries and pumped storage.
- Decoupling power companies’ profits from sales.

Oil and Natural Gas pipelines:

- Optimal long-term locations; efficient equipment.

Initial Survey:

Building Sector

- Largest consumer of primary energy, 38-40%
- Energy efficient building codes
- Energy efficiency in existing buildings
- Standards and labels for appliances, equipment
- Energy-efficient lighting, CFLs, LEDs
- RD&D: Net Zero-Energy Buildings, LEED
- Capacity building: human resources, facilities
- Financing: ESCOs, government buildings, public-private partnerships

Initial Survey

Industry Sector

- Industry consumes 37% globally
- Sources: IPEEC, ISO, IPI, others
- Electric motors offer widespread savings
- Examples:
 - IDB-Chile industrial loans
 - IDB-Uruguay, dairy farming
 - IDB-MIF, microfinance loans.
- Sector activities vary among LAC countries
- Science offers a diverse mix of contributions

Initial Survey:

Transportation Sector

- Globally: 22% energy; 27% of GHG's
- Unique features of the LAC:
 - Global leaders in the use of biofuels
 - Need to optimize shipping, railroads, highways
 - Assess the impact of subsidies
- “Leapfrog” opportunities, e.g. Curitiba, Brazil; bicycle lanes, transit systems; Colombia; IDB Sustainable Emerging Cities platform
- Multi-country physical and social science role in shaping the region's transportation future

Next Steps:

IANAS Role in Energy Efficiency

Comment: The goal of the La Paz workshop will be to draft the substance of this slide. Here are some suggestions:

- Reach a consensus on the focused, highest priorities for follow-on actions
- Agree that the participating countries will identify representatives who will follow-through on these priorities
- Use the upgraded IANAS website as the tool for communicating and implementing these actions
- Upgrade and complete the Energy Efficiency chapter with input from this workshop and additional information on country activities.