



Brazil NEET Workshop

Energy Technology Collaboration

Grand Bittar Hotel
Brasília, Brazil
19-20 November 2007

SUMMARY NOTE

Sponsor



United Nations
Development Programme

Organization



Ministry of Mines
and energy



International Energy
Agency

SUMMARY NOTE

Brazil NEET Workshop Energy Technology Collaboration

Grand Bittar Hotel
Brasília
19-20 November 2007

Summary of the NEET Workshop

The Ministry of Mines and Energy (MME) and the International Energy Agency (IEA) just concluded a successful energy technology collaboration workshop in Brasília, Brazil. The workshop was one of the activities initiated by the G8 Gleneagles summit in 2005, which was attended by Brazil as well as China, South Africa, India and Mexico.

The G8 (Group of Eight) is the international forum for the leaders of eight countries representing about 65 percent of the world's economy. They have supported the IEA to take action to better link the IEA's technology network with the five rapidly growing economies ("Plus-Five" countries) represented at Gleneagles. For this purpose, the IEA has created an outreach programme called NEET—Networks of Expertise in Energy Technology.

In order to facilitate a comprehensive exchange about programmes and to explore opportunities for strengthening international ties, the NEET Initiative has been organizing energy technology collaboration workshops in the "Plus-Five" countries. The first NEET workshop took place in South Africa on 20-22 February 2007, followed by China on 1-2 November 2007 and Brazil on 19-20 November 2007.

Mr. Nelson Hubner, Interim Minister of Mines and Energy, along side Ambassador William C. Ramsay, Deputy Executive Director of the IEA, opened the event on Monday 19 November 2007. More than 100 Brazilian key stakeholders and 12 international experts spent two days exchanging information about their various programmes. Renewable energies, natural gas and future role of fossil fuels, improving energy efficiency, demand side management, and energy modelling were addressed, and possible areas for future joint action were explored.

IEA's collaborative programmes, Implementing Agreements and IEA Working Parties, have issued invitations to Brazilian stakeholders ranging from policy makers, industries, R&D institutions and universities, to share expertise and join forces with the IEA's energy technology network.

The event was instrumental in reviewing the status and challenges of selected technologies and related policies in Brazil and in the IEA's international energy technology network.

The workshop was divided into individual sessions where first the international perspective was presented, followed by an overview about the status in Brazil by a policy maker and a representative of the private sector or university. Finally, the floor was opened to all participants to share in the debates and discuss the opportunities and relevance of enhanced energy technology collaboration with the IEA Technology Network.

From the sessions, the following highlights have been noted by the rapporteurs:

RENEWABLE ENERGIES AND HYDROGEN SESSIONS

The summary of the first five energy technologies below was taken from the report written by Mr. Arnaldo Walter, Assistant Professor at Campinas State University (Unicamp), Brazil.

Hydropower

Brazil is a member of the Hydropower IA. In fact, the country joined the Hydropower IA recently. Brazil has large expertise on hydropower and has, potentially, a lot to contribute to the IA as well as a lot to learn. It seems that even as new member, Brazil has already had an active participation.

Wind Energy

People from the Brazilian Ministry of Mines and Energy (MME) have said during the meeting that there is a strong interest in joining the Wind Energy Systems IA. The accumulated expertise of this Implementing Agreement is impressive, and it is clear that Brazil has a lot to benefit from joining it. It was clear from the presentations from Brazilian representatives that there is a lack of expertise on policies, planning and regulation, as well as regarding specific actions in order to deploy small systems.

Ocean Energy Systems

The presentations made by Brazilian representatives revealed that Brazil is also interested in joining the Ocean Energy Systems (OES) IA. PETROBRAS, the Brazilian oil company, has recently participated as an observer in the IA. It seems adequate to join the IA depending on the priorities of the MME regarding this energy source. There is some expertise in Brazil, both in PETROBRAS and in the Federal University of Rio de Janeiro (UFRJ), and from the point of view of expertise and knowledge, there is no obvious constraint.

Solar Heating and Cooling

The Solar Heating and Cooling IA is one of the oldest and most productive IEA Implementing Agreements. Considering the existing potential in Brazil and the lack of local expertise in some application areas (in fact in all applications, except direct solar heating e.g., solar cooling and solar drying), it seems clear that the MME should seriously consider joining the Solar Heating and Cooling IA. However, nobody from the MME has given a clear sign about this decision. A possible solution is to join as an observer for one or two years, on condition that solar energy is really a priority of the MME.

Renewable Energy Technology Deployment

The advantages that Brazil could gain from joining the Renewable Energy Technology Deployment IA are clear. It is obvious that there is a lack of expertise in Brazil regarding deployment of renewable energy sources and technologies, but it would possibly be more beneficial to exchange experiences – and get knowledge – in this area inside specific IAs, like Wind and Solar Heating and Cooling.

The summary on the Bioenergy session was taken from the report written by Mr. Antônio Holtz, former Secretary of Energy and former Acting Minister of State of the Brazilian Ministry of Mines and Energy.

Bioenergy

An alternative scenario for 2050, including an expressive participation of bioenergy, was discussed, focusing on the problem of sustaining, at the same time, this participation and the food production in an adequate level. According to the presentations and the discussions that followed, it was concluded that, as Brazil is self-sufficient in terms of oil and bioenergy—specially the biodiesel—it is important to generate jobs and to diminish CO₂ emissions in a scenario that its production sums up with food production, while using its dejects as a source of raw material.

The summary below was provided by Ms. Maria Helena Troise Frank, Senior Consultant and Researcher at CENPES (PETROBRAS Research Center).

Hydrogen

This session started with a presentation (remotely, through Skype) by Mary-Rose de Valladares, Secretary of the Hydrogen IA. She showed the HIA's impressive activities within the frame of its twenty-five tasks. After her presentation, Dr. Symone Araújo, from the Brazilian Ministry of Mines and Energy (MME) brought the country's main actions towards a Hydrogen Economy Development, such as the Brazilian Hydrogen Road Map. She was followed by Dr. Fernando Baratelli, from Petrobras' R&D Center (CENPES), who presented the company's project portfolio and activities on Hydrogen & Fuel Cell developments. At the end, the audience started an interesting debate: Dr. Eduardo Serra, from the Electric Energy Research Center (CEPEL), chairman of the session, made a summary of the presentations and stressed that there are clearly many points of interest in all HIA activities. A discussion followed on the costs of joining the IA and on the tasks. The next interesting point of discussion was intellectual properties issues, but unfortunately the connection through Skype with Ms. de Valladares dropped. It was suggested that the remaining questions should be sent to Ms. de Valladares.

END-USE TECHNOLOGY AND CROSS-SECTIONAL SESSIONS

The summary on the Energy Storage IA was provided by Maurício Cantão, Researcher at LACTEC (Instituto de Tecnologia para o Desenvolvimento).

Energy Storage

Brazil is interested in electrical energy storage or in storage for electricity generation. These issues are not currently focused in the Energy Storage IA, but can be addressed in the future. There are opportunities for cooperation in: energy storage and transportation applied to remote communities in Brazil; industry processes optimization; air conditioning in urban centers for peak load shifting; small scale drying and cooling (commercial device); demonstration projects in Brazil. The rapporteur recommends the attendance of a Brazilian representative in the next IA meeting, for better identification of the collaboration opportunities.

The summaries on the Demand Side Management and the Hybrid Electric Vehicles sessions were provided by Ms. Maria Helena Troise Frank, Senior Consultant and Researcher at CENPES (PETROBRAS Research Center).

Demand Side Management

The session started with a presentation by Paul Davidson, vice-chair of the IEA DSM Program, who brought the main concepts behind DSM and the DSM IA's main activities. He was followed by Dr. Paulo Leonelli, from the Brazilian Ministry of Mines and Energy (MME), who presented the country's main programs and initiatives related to Energy Efficiency and Energy Conservation, such as the Brazilian Energy Labeling to Domestic Appliances (PBE), the National Electric Energy Conservation Program (PROCEL), the National Program for the Rational Use of Oil and Natural Gas (CONPET), and the Energy Efficiency Program (PEE), which predicts that 1% of all the utilities' profit should be aimed to energy efficiency projects and related R&D. He also mentioned the 2030 National Energy Plan's Guidelines for Energy Efficiency. He finalized expressing the Ministry's interest in the DSM IA. The next presentation was made by Dr. Ary Vaz Pinto, from the Center for Electrical Energy Research (CEPEL). Dr. Pinto showed Brazil's main activities in DSM. He brought another important concept beside DSM that is the Demand-Side Bidding (DSB). His presentation was focused on the Brazilian main utilities' programs. After the presentations there was an intense debate with the audience and in the end Dr. José Carlos Gomes Costa, from the MME, encouraged his colleagues from the Ministry to initiate agreements towards joining the DSM IA.

Hybrid and Electric Vehicles

Peter Cunz began with a presentation on the activities of the HEV IA, but first he drew some interesting pictures on the world energy scenarios. He stressed the importance of hybrid and electric vehicles towards fuel efficiency, less (or almost-zero) emissions, etc. Some important remarks are the websites for fuel cells (www.ieafuelcell.com) and for advanced materials for transportation (www.iea-ia-amt.org), besides the one for the HEV IA, www.ieahev.org. The second presentation was made by Dr. Paulo de Tarso A. Cruz, coordinator for Energy Efficiency, from the Brazilian Ministry of Mines and Energy (MME), on "Public Policies for Hybrid Vehicles". He showed some figures on the Brazilian profile of fuel consumption. One important initiative from the government is the formation of a Task Group to address related issues, for example, the reduction of urban atmospheric emissions. Other important information was the reduction of energy consumption by 10% on the estimated value for 2030, predicted in the National Energy Policy. The last presenter was Dr. Jayme B. Holanda, Director of the National Institute for Energy Efficiency (INEE), who promoted a reflection on the vehicles' demand for energy. He also pointed out the differences between all hybrid vehicles configurations, and brought the latest news on hybrid vehicles development. The main points addressed in the debate with the audience were the following: General Motor's announcement of electric vehicles, difficulties with the licensing of hybrid vehicles (and others) in Brazil, etc. The final point was that this IA is also of interest, and Brazil will keep in contact with the IEA in order to evaluate joining the HEV IA.

The summary below was provided by Dr. Maysa J. Coelho, professor at the Military Institute of Engineering (IME).

ETSAP

A brief introduction where concepts about Systems Analysis were introduced and how the ETSAP and the IEA could contribute was presented by GianCarlo Tosato (ETSAP IA, Project Head). It was mentioned how ETSAP tools could help global, regional or local police evaluations, the challenges to be faced ahead and the advantages in participating as an ETSAP member. After a brief "Brazil Overview", made by Gilberto Hollauer (SPE/MME, Director), models already in use in the country—such as LEAP, MESSAGE, MELP—and other sectorial models were mentioned. Jorge Machado Damazio (CEPEL, Researcher) presented some issues in Modelling Brazilian Energy System, such as the need of developing interfaces among energy planning models and the models developed by CEPEL.

FOSSIL FUEL SESSION

The summary below was taken from the report written by Mr. Antônio Holtz, former Secretary of Energy and former Acting Minister of State of the Brazilian Ministry of Mines and Energy.

Natural Gas and Future Role of Fossil Fuels

As a result of the presentations and the discussions that took place, some themes of collaboration between the IEA and the Brazilian Government were identified: the IOR (technologies to increase well recovery) matters; heavy oil processing; fuel quality improvement in refineries; natural gas transportation technologies, mainly applied to small markets located at big distances; and studies that aim some standardization of the quality of the liquid natural gas that is offered by the international market.

MAIN CONCLUSIONS:

Brazil showed great interest in learning more about IEA Implementing Agreements and in the work of the IEA in general. Brazilian policy makers, industries and R&D institutions together with the IEA international collaborative programmes' representatives had fruitful debates during the sessions of the workshop. In the end of each session, attendees vividly engaged in the debate that was taking place by asking questions and expressing their opinions, ideas and suggestions concerning the benefits of enhanced technology collaboration. As an outcome of the NEET workshop, discussions are currently taking place in Brazil concerning their involvement in more Implementing Agreements.