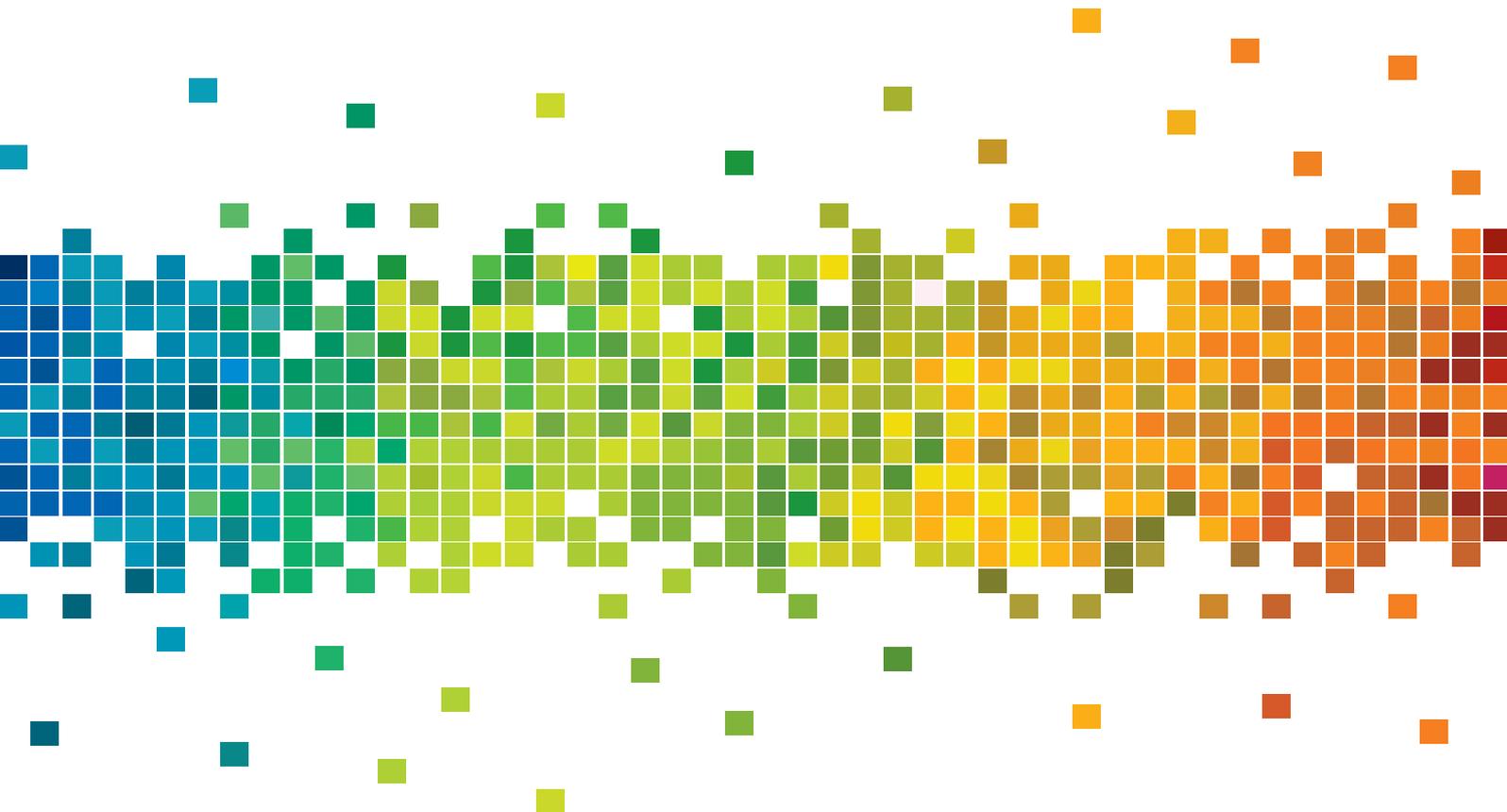




**Green Industry**  
for Global Recovery  
and Growth

**GENERAL CONFERENCE Thirteenth Session**  
9 December 2009, Vienna International Centre

REGIONAL PROGRAMME FOR LATIN AMERICA AND THE CARIBBEAN



## Round Table

Promoting the renewable energy industry  
in Latin America and the Caribbean

**Briefing note**



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



## I. Introduction

The manufacture of renewable energy equipment and components is one of the most rapidly growing industries in the world. Wind and solar power technologies—to name two of the more common technologies in this area—are highly labour-intensive. At the same time, they intertwine with a number of industrial sectors, such as metallurgy, metal finishing, electric and electronic components, plastic materials, construction and engineering.

In recent years, Asia has become a key player in the introduction of renewable energy technologies and the manufacture of the related equipment and components. For instance, in 2008 Asia overtook Europe in the introduction of wind technologies and the related manufacturing capacity. This was thanks to that region's rapid absorption of technology, quick deployment of manufacturing capacity and development of national markets.

The Latin American and Caribbean countries have thus far not been successful in developing a competitive industry for renewable energy technologies. If the necessary policies and measures are not introduced in the medium term, the region risks becoming a mere consumer of technologies and follower of industrial trends. Jobs, wealth and value will remain outside the borders of the region.

In support of the effort to move away from fossil fuels and towards renewable energy sources, UNIDO organized three major international conferences in the region: the Ibero-American Ministerial Meeting on Energy Security in Latin America: Renewable Energy as a Viable Alternative, held in Montevideo, Uruguay in September 2006; the Global Renewable Energy Forum, held in Foz do Iguaçu, Brazil, in May 2008; and the Global Renewable Energy Forum 2009, held in León, Mexico, in October 2009. All three conferences explored options for promoting the accelerated introduction of renewable energy technologies in Latin America and the Caribbean, in particular for productive purposes.

Building on the experiences of those three conferences, the present round table aims at addressing the major challenges faced by Latin America and the Caribbean in developing its industry to manufacture renewable energy equipment and components, as well as the strategies and measures needed to reduce the widening technological and industrial gap.

The round table is expected to increase awareness among the region's stakeholders of the opportunities and challenges in developing the renewable energy manufacturing industry in the region. It will also identify opportunities for introducing renewable energy technologies into industrial processes to improve energy security and productivity.

## II. Background

The round table is being held on the eve of one of the largest and most important international gatherings on climate change ever, the United Nations Climate Change Conference in Copenhagen from 7 to 18 December 2009. At the Conference, investors and Governments are expected to take decisions that will boost the renewable energy industry to unprecedented levels. According to some estimates, investment in green technologies between 2010 and 2018 is expected to be in the range of US\$325 billion. It is believed that a large portion of that investment will be in technologies directly related to the production of renewable energy. The challenge will be how to prepare the developing world to actively participate in manufacturing the related equipment and fully benefit from those emerging industries and investments.

Led by China and India, Asia has already succeeded in tapping the benefits of the emerging wind energy industry. It is also actively pursuing technology transfer programmes, promoting investment and enhancing local manufacturing capacity to meet the emerging demand for renewable energy technologies in domestic and international markets. From 2004 to 2008, the annual introduction of windmills in Asia (mainly in China and India) grew by more than 800 per cent, with installed capacity increasing from 1,001 megawatts (MW) to 8,300 MW. By contrast, the countries of Latin America and the Caribbean have been unable to post similar achievements. In fact, in 2008 many Latin American markets still showed stagnation, and the region's overall installed capacity (667 MW) accounted for only 0.5 per cent of global capacity. Brazil and Uruguay alone installed major wind farms in 2008.

A similar scenario can be observed in world solar photovoltaics production. Chinese manufacturers raised their global share from less than 1 per cent in 2004 to 20 per cent in 2006 and 35 per cent in 2008, while the contribution of Latin America and the Caribbean to global markets remained insignificant during that same period. This relatively slow adjustment to new global trends in the energy sector is especially harmful in terms of the region's economic and social prospects. In many countries, people already suffer from power shortages and in some cases do not have access to modern energy at all.

As a region, Latin America and the Caribbean has not yet developed the required elements for large-scale, sustainable deployment of the technologies needed to tap its resources. Few countries in the region are actively working to develop the necessary policies, institutional settings, financing schemes, industrial infrastructure, human resources and other elements required to facilitate the introduction of renewable energy technologies as part of their energy supply options. Joint activities by countries or groups of countries to achieve this objective are rare.

In addition, the legal, regulatory, institutional and financing schemes to foster and facilitate the use of renewable energy technologies for electricity generation are at different stages of development in the region. Despite the common denominators existing among different countries, there has been no observable integration of renewable energy policies.

By way of comparison, relatively significant efforts in this respect are being made by international organizations and bilateral aid agencies through a number of programmes aimed at identifying and removing the barriers to the use of renewable energy technologies in the region. To date, however, the results have been modest.

In a survey conducted by the UNIDO Regional Programme for Latin America and the Caribbean from May to August 2008, ten countries or institutions of the region were consulted about the status of development of renewable energy technologies in the region. The survey results suggest that the five most important measures supporting the development of those technologies are:

- (a) Developing and promoting investment projects;
- (b) Introducing financial incentives, financial consultancy services and access to credit;
- (c) Promoting technology transfer programmes;
- (d) Promoting cooperation and networks;
- (e) Developing national energy efficiency programmes.



The barriers and constraints affecting the introduction of renewable energy technologies were studied by type of technology and by country. It was found that in the three most widespread technologies—solar photovoltaics, wind energy and biomass—the barriers to financial and market opportunities were perceived as the most important, followed by information and technology transfer constraints and the regulatory framework.

### III. Issues

#### Issue 1:

#### **What do Governments need in order to provide a regulatory framework and launch investment stimulation packages aimed at accelerating the development of the renewable energy industry in Latin America and the Caribbean?**

Supportive legal, regulatory, institutional and financing schemes to foster and facilitate the use of renewable energy technologies are at different stages of development in the region. There is no effective integration of renewable energy policies. The challenge is to identify mechanisms that can be introduced to ensure that the region adopts adequate policies to promote the development of the renewable energy industry.

#### Issue 2:

#### **What should be the financial drivers of renewable energy technologies? Where do the main opportunities lie for the sector over the next five years?**

The region is endowed with abundant renewable energy resources that have thus far been significantly under-utilized, mainly because it lacks the means for proper large-scale and sustainable deployment of the technologies needed to tap those resources.

Asia and Europe are currently relying on a mix of public incentive, regional pressure and promotion of private investment in the development of renewable energy technologies. There is a need to introduce a new set of instruments at the regional and country levels to promote the nascent renewable energy industry and encourage the inflow of investment into the manufacturing side. As a region, Latin America and the Caribbean has been largely unable to mobilize the required investment so far. The present round table will briefly review the mix of instruments to be introduced to promote domestic and international investment in the renewable energy manufacturing industry. It will also discuss whether these instruments should be introduced at the country, subregional or regional level.

#### Issue 3:

#### **How can the technology gap be closed?**

Asia, Europe and the United States are making investments and introducing policies that promote research and development and foster technology transfer programmes. Large multinational firms are creating technological innovations and acquiring patents in this area. The countries of Latin America and the Caribbean have so far played only a passive observer role in the race towards renewable energy technologies and, at best, are becoming a valuable capital goods consumer. There is a need to reverse this trend and enhance the region's potential to absorb, develop and manufacture renewable energy technologies. This could be done through the creation of regional competence centres to increase awareness and assist local capacity in taking advantage of the employment potential that will emerge from the renewable energy industry.

#### **Issue 4:**

##### **How should the regional strategy evolve over the next five years?**

The limited resources available to the region make it necessary to prioritize the actions to be taken, in particular in a context where competition in the development of renewable energy technologies will become ever keener. Wind and photovoltaic energy will become mature industries in the short term, thus heightening entry barriers and competition. Latin America and the Caribbean should therefore set priorities and select the right strategy to enter into renewable energy production markets. For this, all stakeholders must be mobilized. How and in what areas this can be attained still needs to be identified. The round table may wish to reflect on priorities in terms of the technological and financial resources to be put in place, as well as the type of cooperative schemes needed in order to leverage the limited resources in the region.

#### **Issue 5:**

##### **What is the role of UNIDO?**

How can UNIDO support the region in its efforts to set up a competitive renewable energy industry? The round table will review the role of the Organization in promoting supply chains, encouraging technology absorption mechanisms and setting up regional cooperative structures and technology-sharing programmes. It will discuss how partnerships with the private sector have to be encouraged to enhance that sector's participation in the development of renewable energy technologies. Participants in the round table are expected to provide insights on the future role of UNIDO in supporting such regional endeavours.

## **IV. Questions to panellists**

- What incentives should be put in place to accelerate the development of renewable energy technologies in Latin America and the Caribbean?

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- What type of renewable energy holds the most promise for the future? It is universally agreed that the shift to renewable energy is necessary and urgent, but are all types of renewable energy technologies equally "green"?

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- What lessons can be learned from the experience of other regions?

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- What assistance can be given by the international community, particularly by United Nations entities such as UNIDO, to help support the accelerated development of the renewable energy industry in the region?

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## V. Agenda

1. Welcome address and introduction: Georgina Kessel Martínez, Minister of Energy of Mexico
2. Keynote speech: Jürgen Jesenko, General Manager, AMSC Windtech
3. Panel discussion (moderated by Gustavo Aishemberg, Senior Adviser to the Director-General of UNIDO)

### Panellists:

- Ary Vaz Pinto Junior, Head, Department of Special Technologies, Sérgio de Salvo Brito Reference Centre for Solar and Wind Energy of the Electric Power Research Centre of Brazil
  - José Luis Chicoma Lúcar, Vice-Minister of SME and Industry, Ministry of Production, Peru.
  - Raúl Rodríguez Barbará, Ministry of Basic Industry of Cuba
  - Erico Spinadel, President, Argentine Wind Energy Association
  - Carlos Arturo Flórez Piedrahita, Executive Secretary, Latin American Energy Organization
  - Gustavo Aishemberg, Senior Adviser to the Director-General of UNIDO
4. Open-floor discussion
  5. Concluding remarks by the moderator

The Director-General will participate in the discussion.

## VI. Biographies

### **Georgina Kessel Martínez** **Minister of Energy of Mexico**

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Ms. Kessel has extensive experience in the civil service, in particular in the energy sector. She served as the first president of the Regulatory Commission for Energy and was the Head of the Finance Ministry Investment Unit in charge of reviewing Governmental investment projects, in particular energy-related projects. Ms. Kessel holds a doctoral degree in economics from Columbia University.

### **Gustavo Aishemberg** **Senior Adviser to the Director-General of UNIDO**

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Mr. Aishemberg is an agro-industrial engineer. Before joining UNIDO, he worked for various international organizations and was the general manager of the Agro-industrial Department of Laboratorio Tecnológico del Uruguay. Since joining UNIDO in 1995, Mr. Aishemberg has held different posts, both in the field and at headquarters.

**Jürgen Jesenko**

**General Manager, AMSC Windtech**

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Mr. Jesenko has a background in physics and marketing. Since 2006 he has worked with AMSC Windtech of Austria, serving as Managing Director of Business Development since 2008. Mr. Jesenko has been instrumental in developing business in new markets, global sales, supply chains, service and training, particularly in Central Asia, China, India and Latin America and the Caribbean.

**Erico Spinadel**

**President, Argentine Wind Energy Association**

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Mr. Spinadel is a university professor and currently offers classes on renewable energy sources, especially wind, and their application in hydrogen production and electricity generation. He is also President of the Argentine Wind Energy Association and an adviser on wind energy and hydrogen to several members of the National Congress.

**Ary Vaz Pinto Junior**

**Head, Department of Special Technologies, Sérgio de Salvo Brito Reference Centre for Solar and Wind Energy of the Electric Power Research Centre of Brazil**

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Mr. Pinto Junior is an electrical engineer and holds a Master of Business Administration degree in energy management. He has worked at the Electric Power Research Centre of Brazil since 1989, where he is currently the head of the Department of Special Technologies; that Department is responsible for renewable energy (with emphasis on solar and wind energy), energy efficiency, distributed generation, and materials and metallurgy.

**Raúl Rodríguez Barbará**

**Productive Technical Director, Ministry of Basic Industry of Cuba**

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Mr. Rodríguez has over 20 years of experience in the areas of industrial automation, energy management, photovoltaics and electronics and has completed postgraduate studies in management. Since 2007, he has been Technical Director of the Electronic Group of Cuba and Executive Coordinator of the National Group of Photovoltaics of Cuba.

**José Luis Chicoma Lúcar**

**Vice-Minister of SME and Industry, Ministry of Production, Peru.**

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Prior to his current position dealing with SME and industry, Mr. Chicoma Lúcar served as an adviser to the Minister of Trade and Tourism. He holds a Harvard M.A. in public policy.

**Carlos Arturo Flórez Piedrahita**

**Executive Secretary, Latin American Energy Organization**

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Mr. Flórez Piedrahita has 27 years of experience in the social sector and 14 years in the public sector, 11 of which have been in the energy sector. He has worked for Unidad de Planeamiento Minero Energética, Empresas Públicas de Medellín and Interconexión Eléctrica S.A.



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