

**BUILDING
THE RENEWABLE
ENERGY MARKET**
IN NORTH AMERICA

**HACIA UN
MERCADO DE
ENERGÍA RENOVABLE**
EN AMÉRICA DEL NORTE

**BÂTIR LE MARCHÉ
DES ÉNERGIES
RENOUVELABLES**
EN AMÉRIQUE DU NORD



CONCLUSIONS

On 28–29 October 2004, the CEC hosted a public meeting, “Building the Renewable Energy Market in North America.” The objective was to bring representatives from industry, government, international investment firms and NGOs together to recommend how best to meet the challenges faced by the North American renewable energy market and to help develop partnerships among the participants.

More than 150 people participated in this important event and contributed, by their presentations or comments, to make it a very successful meeting.

Below are the five main conclusions we can draw from the discussions that took place. All presentations are available for download from our web site at <http://www.cec.org/energy>.





BUILDING THE RENEWABLE ENERGY MARKET IN NORTH AMERICA

1. Conditions for renewable energy are favorable and promising

Resources are abundant

There is widespread recognition that the renewable sources of energy in North America are abundant enough to supply our energy needs.

These sources include: wind, solar, biomass, geothermal, tidal, and hydro in all three countries. Although the quantity and quality of the sources vary across North America, they have tremendous overall potential, as the participants demonstrated. Still, resource assessment and mapping is a critical first step that has yet to be completed.

The potential of renewable energy must be portrayed for what it is: an opportunity for business and sustainable growth.

“A paradigm shift is underway, whereby fossil fuels may be considered the alternatives to renewable forms of energy.”

Ralph Overend, NREL

Technology is available

The technology to support, tap, and improve the efficiency of renewable sources of energy has improved greatly over the last years. Wind power has seen the fastest technological growth, nanotechnology is already being used for improving the efficiency of solar cells and panels, and other developments are happening for other renewable sources.

As new technology emerge and production increase, costs decline, making energy produced using renewable sources more affordable. Furthermore, aging infrastructure and power plants present a significant opportunity for renewable energy development. However, access to the electric power grid remains an important issue that needs to be resolved.

The international context is favorable

Indeed, Minister Stéphane Dion, of Environment Canada, stated that “the Government of Canada intends to ensure that unprecedented growth will occur in renewable energy in this country.”

Ing. Carlos Domínguez, director of Conae, mentioned that President Vicente Fox has declared energy a national priority for Mexico.

Dr. Robert K. Dixon, from US Department of Energy, underlined a few important recommendations from the “National Energy Policy,” including aggressively reducing demand through energy efficiency, enhancing the diversity of energy sources, and building on the record of environmental protection.

Moreover, internationally, the Bonn conference confirmed the commitment voiced at the 2002 Johannesburg Summit to increase the global share of renewable energy.

Related presentations:

- Country report: Renewable energy in the United States (**Dr. Robert K. Dixon**)
- Las energías renovables y la planeación del sector Energía (**Juan Cristóbal Mata**)
- Mexico effort in favor of the intelligent use of energy (**Ing. Carlos Domínguez**)
- Outcomes from International Conference for Renewable Energies in Bonn (**Norbert Gorissen**)
- Perspectiva del mercado de la energía renovable en México (**M.C. Juan Rafael Elvira Quesada**)
- Renewable energy potential in the USA and Mexico (**Ralph P. Overend**)
- Renewable energy potentials in Canada (**Martin Tampier**)
- Renewing our energy (**The Honourable Stéphane Dion**)

2. The benefits of renewable energy are numerous

Green attributes are recognized and valued

The main benefits of renewable energy over traditional sources remain its green attributes. If these often seem intangible, they nonetheless contribute undeniable social benefits.

In some cases, residential, institutional and industrial consumers are willing to pay a premium in recognition of the environmental benefits of using renewable energy.

In other cases, the environmental attributes are sold separately from the energy produced in order to comply with regulation in place or on a voluntary basis, through renewable energy certificates (REC)—even though challenges remain in tracking and verifying these certificates across jurisdictions.

An issue that was raised was the potential impact of renewable energy production on wildlife. A better understanding of such impacts is necessary.

Economic benefits are undeniable

Economic benefits of renewable energy are threefold. First, as research and development advance and energy production increases, economic activities and jobs are created.

Second, as oil and gas prices are very volatile and as they have been steadily increasing over the last few years, renewables can free countries from fluctuating international prices.

Lastly, as many projects occur in rural areas, renewables are often perceived as a means for bringing about rural and regional economic development, including for First Nations. For example, in Mexico, wind projects and solar systems are benefiting local farmers. “*Dendroenergía*” (“tree-energy”) projects encourage farmers to plant trees for later use as a source of biomass energy. These projects also tie in with a forest biodiversity program as well as with the carbon sequestration initiative.

Renewable energy increases our security

Recent events have heightened the importance of energy security in North America. Major blackouts, political tension with the Middle East, fear of terrorist attacks and oil price volatility are a few of the energy security issues and concerns.

The energy portfolio must be diversified to reduce dependence on any individual source of energy. For many reasons, especially resource depletion and political tension, our present dependence on oil jeopardizes our security.

Across our continent, energy security is perceived differently. For Canada, energy security suggests a steady supply of energy generated in an environmentally respectful way. For Mexico, energy security is closely tied to sovereignty. And for the United States, energy security is practically synonymous with national security.

Related presentations:

- Building the renewable energy market in North America (**Ken Ogilvie**)
- Current status and perspectives for renewable energy in Mexico (**Ubaldo Inclan-Gallardo**)
- Les énergies renouvelables: au coeur de la sécurité énergétique nord-américaine (**Christine Fréchette**)
- “Next generation” green power products for corporate customers in North American markets (**Craig Hanson**)
- Perspectiva del mercado de la energía renovable en México (**M.C. Juan Rafael Elvira Quesada**)
- Status of Renewable Energy Certificates and markets (**Jan Hamrin**)

3. Costs: Leveling the playing field

Innovative products are emerging

Low impact technologies are still relatively costly today. Consequently, renewable energy is often more expensive than energy produced using fossil fuels. To narrow the cost gap, innovative arrangements are proposed.

Selling the green attributes separately from the electricity through renewable energy certificates is one way to reduce price premiums. Another way to provide additional value is to offer green power at a price fixed over the longer term. As oil and gas prices are very volatile, this type of commitment yields certainty and thus greater value.

Finally, green contracts for differences (CFD) would also provide additional value and a hedge against electricity price volatility. Such financial contracts allow consumers to support the development of renewables by receiving from the generator the difference between the value of the CFD and the market price when the latter is higher (or paying the difference when the market is lower than the CFD).

Prices do not reflect all costs

As underlined previously, renewable energy yields positive externalities. In contrast, many participants strongly emphasized that fossil fuel energy generates negative externalities.

The price paid for energy should reflect all costs and externalities. As traditional forms of energy produce greenhouse gases as well as other pollutants, internalizing their environmental costs would make renewable energy more competitive.

Investment is increasing but still inadequate

More equity funds, pension funds and market funds are looking favorably to clean technologies and renewable energy. Although investment in renewable forms of energy shows a high return in the three countries, the level of funding is still insufficient.

Several obstacles to investment in renewable energy projects were identified: insufficient access to appropriate technical assistance; lack of investment incentives; insufficient technical, financial and managerial capacity; lack of external awareness; and insufficient constitutional limitations.

In addition, smaller renewable energy project opportunities—that would be good for communities and the environment—suffer from lack of awareness and financing.

“Renewable energy is not too expensive; our present standby—oil—is too cheap.”

Matthew Kiernan, Innovest

Related presentations:

- Current status and perspectives for renewable energy in Mexico (**Ubaldo Inclán-Gallardo**)
- Developing renewable energy projects in the US-Mexico border (**Scott D. Storment**)
- Harnessing the “Clean-Tech” wave (**Dr. Matthew J. Kiernan**)
- Les énergies renouvelables: au coeur de la sécurité énergétique nord-américaine (**Christine Fréchette**)
- “Next generation” green power products for corporate customers in North American markets (**Craig Hanson**)

4. Consumers’ responsiveness is fundamental

Public education is key

The “not in my backyard,” or NIMBY, syndrome has been identified as a major barrier to the development of the renewables market. A comprehensive public education and outreach strategy needs to be set out. Increased awareness of the environmental and socio-economic benefits of renewable energy can get people on board and thus counteract the NIMBY syndrome.

Community-based projects are an important part of renewable energy development. These projects can be realized if communities are fully engaged and well aware of their costs and benefits. Here again, education is key.

Consumers want to save money. Therefore, energy efficiency promotion should address the important benefits for consumers while reducing demand for energy. Finally, people need to be convinced that renewable energy is just as reliable as any other source of energy. Misinformation regarding the alleged intermittent nature of renewable energy must be critically examined.

Special attention has to be given to First Nations to take into account their specific energy requirements, their socio-economic needs and cultural uniqueness, and their rights in project development. Representatives from those communities should participate in discussions and be fully engaged in the project development process.

Commercial and institutional purchasers must lead

The private sector needs to be convinced that environmental good sense makes economic good sense, that renewable energy reduces fuel costs and risks while enhancing public and brand image, and that it is good business to be cleaner and more efficient in terms of energy use.

Some companies are already taking the lead on a voluntary basis. For example, IBM has established corporate energy policies to conserve energy and natural resources through the development and manufacturing of energy-efficient products and through responsible energy use in all IBM businesses, including favoring renewable energy over non-renewable forms.

Such involvement of the private sector will support domestic manufacturing, resulting in reduced component costs, improved project economics and more competitive pricing.

Voluntary programs like EPA’s Green Power Partnership, renewable energy certificates, and other mechanisms provide firms with recognition for their green policies, which can translate into improved public and brand images and in turn be financially beneficial. Anticipated compliance requirements following the ratification of the Kyoto Protocol has already led to some initiatives in greenhouse gas reduction.

Finally, as governments are big energy users, governmental green purchasing programs would set an example and provide additional incentive for market development of renewable energy.

Related presentations:

- Adquisición de energía renovable en IBM (**Aníbal Nuño**)
- Connecting producers to buyers (**Theresa Howland**)
- Country report: Renewable energy in the United States (**Dr. Robert K. Dixon**)
- Harnessing the “Clean-Tech” wave (**Dr. Matthew J. Kiernan**)
- Overview of the US renewable energy market and EPA’s Green Power Partnership (**Tom Kerr**)



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5. Government cooperation is essential

Incentive programs should be reinforced

Throughout North America, all levels of government have put in place incentives to promote the use and production of renewable energy. Voluntary programs have been implemented and are already proving effective in giving recognition to participating companies. EPA's Green Power Partnership has generated considerable enthusiasm so far in the United States. Similar programs might spur interest elsewhere in North America.

Also, renewable portfolio standards (RPS) have proved to be a very important market driver. By setting clear targets and timeframes, they have encouraged the development of numerous renewable energy projects.

Lastly, other policies, such as tax incentives, market-based policies and regulations, have spurred the development of the renewable energy market. However, most participants agreed that those measures have thus far been insufficient and need to be strengthened.

Policies should be harmonized

Although our governments are generally favorable to the development of markets for renewable energy and have put in place some incentives and policies to create favorable conditions, contradictions remain.

Many participants underlined the need for consistent regulatory and policy frameworks. Furthermore, they asked that governments help level the playing field to ensure that renewable energy can benefit equally from the incentives and public investments that favored traditional energy in the past and, in some cases, still do today.

Governments also need to remove contradictory signals and regulations that may hurt renewable energy market expansion. Effectiveness of government interactions at all levels in the energy field needs to be improved.

Finally, it was suggested that public funding for R&D should be increased for smaller and "off-the-grid" projects.

A long-term strategy must be established

As our demand for energy constantly increases, our infrastructure ages and becomes insufficient, and our fossil-fuel resources are being depleted, our reliance on renewable sources increases. In order to secure a sufficient energy supply for our future, essential steps need to be taken now.

A North American vision and energy strategy must be developed. The expansion of a renewable energy market suffers from changing policies. As investment in renewable energy has a very long-run perspective, uncertainty regarding future policy generates additional risks for investors. As long as there remains uncertainty regarding long-term objectives and commitment, development of the renewable energy market will be slowed by this risky climate.

Vision and strategy could be based on success stories, national experiences and best practices. Political leaders need to provide guidance and offer non-distorting incentives.

Related presentations:

- [Current status and perspectives for Renewable Energy in Mexico \(Ubaldo Inclan-Gallardo\)](#)
- [Overview of the U.S. Renewable Energy Market and EPA's Green Power Partnership \(Tom Kerr\)](#)
- [Renewable Energy and Regulation \(George Sterzinger\)](#)
- [Renewable Energy in Mexico: Is Regulatory Change Enough for Market Entry? \(Jorge M. Huacuz\)](#)
- [Status of Renewable Energy Certificates and Markets \(Jan Hamrin\)](#)
- [Utility Regulatory Policy: What Can Be Done \(Ted Ferguson\)](#)

The CEC and renewable energy

Energy is one of the sectors with the greatest direct environmental impacts, and electricity generation and distribution continue to expand in the NAFTA region. Energy efficiency, along with the use of renewable energy and cleaner conventional fuels, can reduce the impacts. The CEC has been working for years to help people better understand how energy use can affect air quality and health. We have also been looking for opportunities to help people find and use "greener" energy. For example, we conducted a landmark study that found the largest commercial electricity consumers in Mexico were interested in buying renewable electricity. Grants from the CEC have supported solar coffee dryers in rural Mexico, wind power in Canada, and energy efficiency in the United States. Across the continent, we have helped develop market-based mechanisms that improve demand for renewable energy. We will continue to increase public awareness and document the environmental impacts of new low-impact, renewable energy technology.



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