Global
Sustainable Electricity
Partnership

Formerly e8

Special
20th Anniversary
Edition

ANNUAL ACTIVITY REPORT
2011–2012

CELEBRATING 20 YEARS OF PROMOTING SUSTAINABLE ENERGY DEVELOPMENT

1992 2012

GLOBAL SUSTAINABLE ELECTRICITY PARTNERSHIP

The Global Sustainable Electricity Partnership –which comprises the leading electricity companies from the global electricity sector– promotes sustainable energy development through electricity sector projects and human capacity-building activities in developing nations worldwide.

In June 2011, the e_8 adopted its new name, Global Sustainable Electricity Partnership. The change reflects the opening of the organization's membership to countries in transition, and our commitment to a truly global mission of promoting sustainable energy development.

MEMBER COMPANIES

American Electric Power
United States

Comisión Federal de Electricidad
Mexico

Duke Energy
United States

Électricité de France
France

Eletrobras
Brazil

ENEL S.p.A.
Italy

Eskom
South Africa

Hydro-Québec
Canada

JSC "RusHydro"
Russia

Kansai Electric Power Company, Inc.
Japan

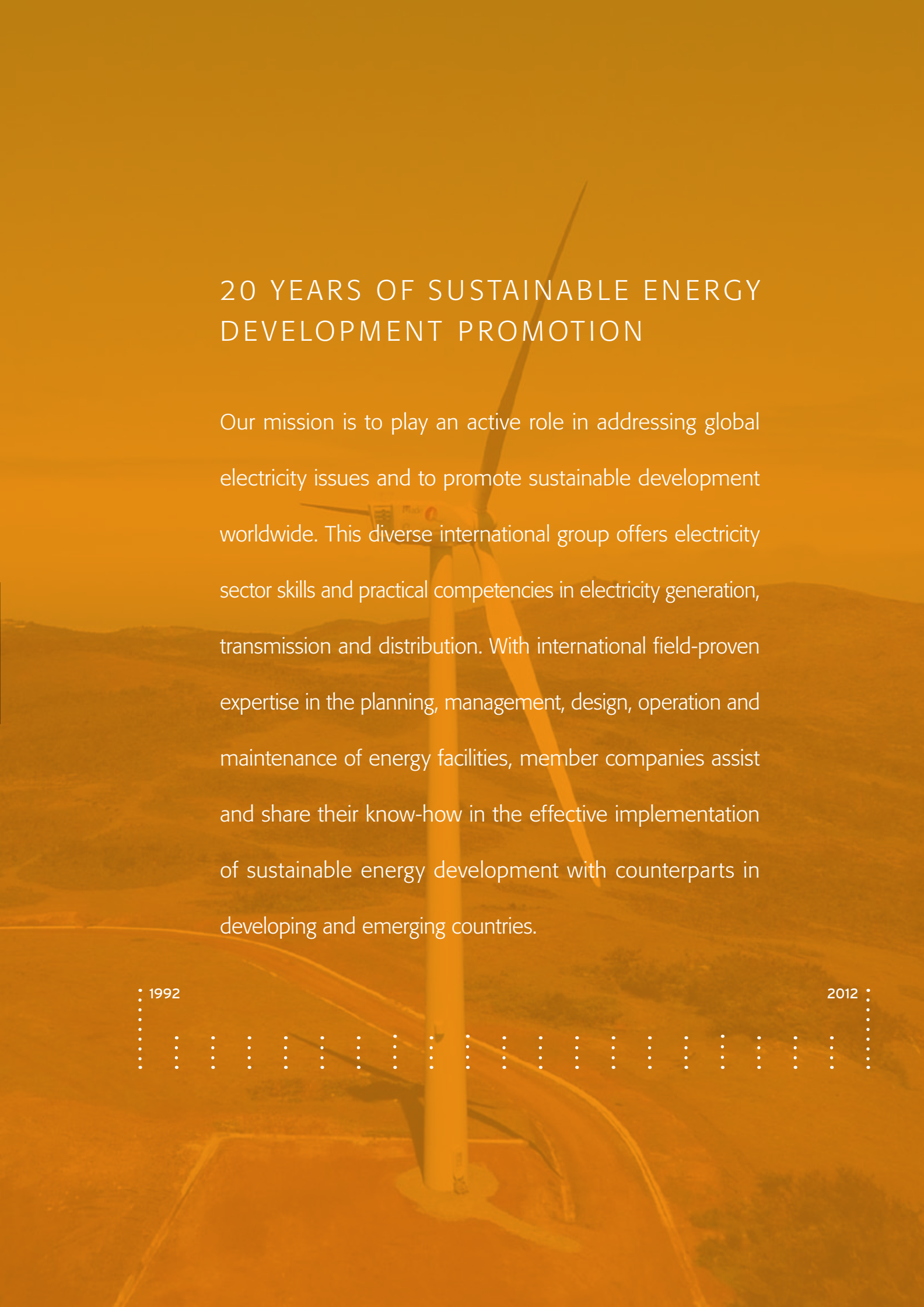
RWE AG
Germany

State Grid Corporation of China
China

Tokyo Electric Power Company, Inc.
Japan

Cover, from left to right:
Partnership's projects fuelled with solar energy;
Laying down of the penstock for the Ifugao-Ambangal Mini-hydro project;
Partnership's projects fuelled with wind energy;
Project team for the San Cristóbal Galapagos Wind Project;
Partnership's projects fuelled with hydropower

Page 1:
San Cristóbal,
Galapagos Wind Project



20 YEARS OF SUSTAINABLE ENERGY DEVELOPMENT PROMOTION

Our mission is to play an active role in addressing global electricity issues and to promote sustainable development worldwide. This diverse international group offers electricity sector skills and practical competencies in electricity generation, transmission and distribution. With international field-proven expertise in the planning, management, design, operation and maintenance of energy facilities, member companies assist and share their know-how in the effective implementation of sustainable energy development with counterparts in developing and emerging countries.

1992 2012

MESSAGE FROM THE CHAIR

MARKING A MILESTONE

When a group of leading power companies met in 1992 to form the Global Sustainable Electricity Partnership, then called e_7, the world was much different from today. Lifestyle was globally questioned for the first time and the urgency of a deep change in consumption and production patterns was publicly acknowledged. Growing concerns caused governments to convene under the UN flag for the first "Earth Summit" in Rio and to rethink future economic growth.

Twenty years later, State leaders will meet again in Rio to assess the progress made to date and to address emerging challenges. The Partnership, celebrating its 20th anniversary, will also convene for its annual Summit Meeting in Berlin. On balance, our strategy to support sustainable energy development by sharing our industry's collective expertise was successful. We have completed 55 human capacity-building activities (HCBs) and 7 capital projects, touching every single region in the world.

This year we held workshops on financing low-carbon electricity supply in Chile, on best practices of large hydropower development in Brazil, and on electricity interconnections in the Republic of Congo. Our Argentina wind and hydro power project designed to electrify two remote villages in Patagonia is moving forward and we have announced a new solar project for the Maldives. Like our previous projects, both of them will demonstrate the replicability of these business models by public or private investors.

Over the last 20 years, we have learned that public and private sectors need to be better coordinated to cope with the immense challenge of giving people in the developing world access to

Mr. Juergen Grossmann
Chair 2011-2012
CEO, RWE

"Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature".

(First principle of the UN Rio Declaration, June 1992)

"As citizens of the world, in harmony with the respective national governments as well as related domestic and international organizations, the e_7 companies strongly wish that their experience, competence, and know-how should serve more efficient generation and use of the world's electric energy."

(James Bay e_7 Joint Statement, April 1992)

affordable, clean and safe electricity. Last year, the Partnership together with UN-Energy published a report with recommendations for strengthening public-private partnerships (PPPs) that support and promote the global deployment of low-emitting electricity technologies. This year, a second global survey of practitioners from private, public and civil society sectors followed. By expanding the dataset and analysis, recommendations of the first report were reviewed and complemented with new insights. The results confirm that we are offering the right tools for building successful PPPs.

One of these is our scholarship program. In terms of popularity, this program for outstanding students from developing countries has surpassed all expectations. In 2012 alone we received 600 applications showing the clear need to support the future practitioners of sustainable energy development.

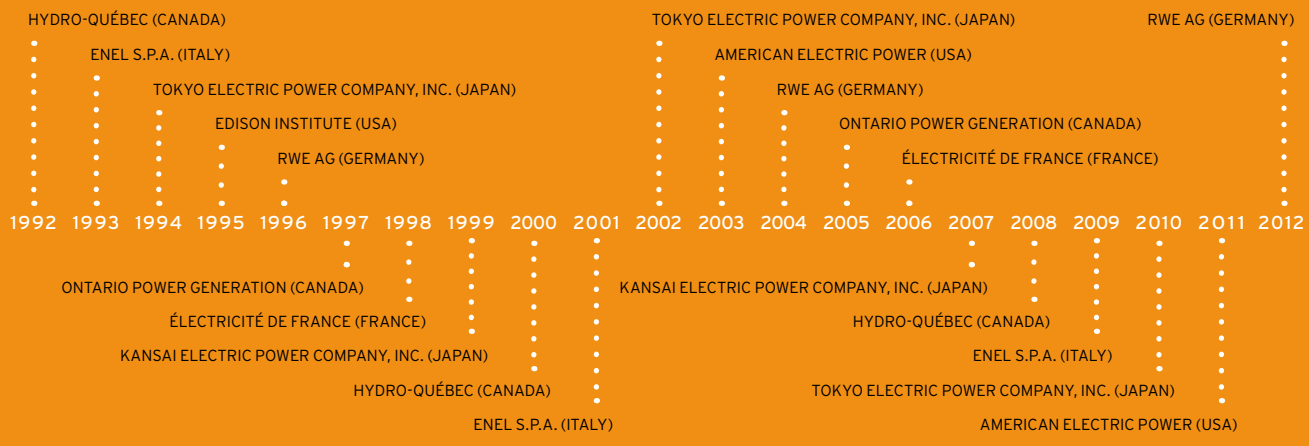
Last but not least, I am pleased to report that, after being our partner for a year, Comisión Federal de Electricidad (CFE) of Mexico has joined us as member.

Over the next decade, the Partnership's members –who deliver about one third of the world's total electricity production– are faced with serious challenges in their own domains: to decarbonize power generation, to optimize transmission and distribution systems and to ensure affordability of supply. Notwithstanding the difficult political and economic situation many of our members are currently facing, we are committed to continuing to develop and globally promote innovative technologies which will harness resources more efficiently, making them more reliable, less polluting and acceptable to all stakeholders.

Mr. Juergen Grossmann
Chair 2011-2012
CEO, RWE

20 YEARS OF PARTNERSHIP

In 1992, on the eve of the first World Summit on Environment and Development, the Chairmen of some of the world's largest utilities came together to create the e7, the Global Sustainable Electricity Partnership's predecessor, outlining the vision and mission we still follow today. To further its foremost objective – the promotion of sustainable energy development – the Partnership has since operated under the principles of shared and rotating responsibilities. Each year, a member company takes the head of the organization and proposes a theme for its chairmanship activities:



"What is unique about the Global Sustainable Electricity Partnership is that we put our words into action through the development of sustainable energy projects in areas where there, often, is little or no electricity access. I find that mission fulfilling as we, collectively, demonstrate the importance of electricity to human development and progress."

MR. JAMES E. ROGERS, CHAIRMAN,
PRESIDENT AND CHIEF EXECUTIVE OFFICER, DUKE ENERGY (USA)

"As a founding member of the e_8, twenty years ago, Hydro-Québec is proud to be part of the Global Sustainable Electricity Partnership (GSEP). As a group we have demonstrated our leadership in sustainable development. An active contributor to renewable projects, Hydro-Québec promotes concrete actions that favor the shift towards a low-carbon electricity generation mix and promote clean and reliable electricity initiatives to satisfy growing energy needs."

MR. THIERRY VANDAL,
PRESIDENT AND CEO, HYDRO-QUÉBEC (CANADA)

NEW YORK SUMMIT

ELECTRICITY LEADERS SHARING VIEWS ON THE IMPORTANCE OF PUBLIC-PRIVATE PARTNERSHIPS

Our Annual Summit is a unique platform for the international electricity industry, allowing for a yearly high-level meeting and discussion among heads of the leading electricity companies in the global electricity sector and their guests.

The New York Summit was held on June 2, 2011 at the United Nations Headquarters in New York, USA. Unlike past summits, this Global Summit to Strengthen Public-Private Partnerships to Accelerate Global Electricity Technology Deployment was hosted jointly with UN-Energy – an umbrella group of United Nations agencies working on sustainable development. At this Summit, leaders in the public and private sectors and civil society discussed the following issues:

- Role of public-private partnerships' best practices in effectively establishing energy policies;
- Importance of long-term stable policy frameworks to meet goals; and
- Integration of partnerships into electricity and energy services development plans.

Chairmen and guests at the New York Global Summit with Electric Vehicles

from left to right: Thomas Kuhn (Edison Electric Institute), Michael Morris (AEP – USA), Liu Zhenya (SGCC – China), Francisco Acosta (CFE – Mexico), Paolo Andrea Colombo (Enel – Italy), Thierry Vandal (Hydro-Québec – Canada), Shosuke Mori (Kansai – Japan), Assaad Saab (EDF – France), Evgeny Dod (RusHydro – Russia), James E. Rogers (Duke Energy – USA), Frank Kitzantides (International Electrotechnical Commission), José Antonio Muniz Lopes (Eletrobras – Brazil), Jacques Régis (International Electrotechnical Commission), Wendy Poulton (Eskom – South Africa), Not in photo: Juergen Grossmann (RWE – Germany)

Ten high-level practitioners from the international sustainable development field participated as speakers in the event, including Mr. Christoph Frei, *Secretary General of the World Energy Council*, Mr. Timothy E. Wirth, *Member of the Board and President of the United Nations Foundation*, and Mr. André Laperrière, *Deputy CEO, Global Environment Facility (GEF)*, among others.

As a prelude to the UN's "International Year of Sustainable Energy for All" in 2012, the Partnership and UN-Energy launched the global initiative for "Strengthening Public-Private Partnerships" to advance sustainable energy development, which culminated in the New York Summit. The focus of the initiative was to jointly identify effective and meaningful partnerships that support and promote the global deployment of low- and zero-emitting electricity technologies at country, regional and global levels. A global survey was conducted, and the report on best practices and partnership support guidelines, based on these results, was presented at the meeting. Mr. Kandeh Yumkella, Director-General of the United Nations Industrial Development Organization and Chair of UN-Energy, along with the Chairmen of the Partnership, signed a joint declaration expressing their commitment to collaborate in fostering best practices for public-private partnerships to advance sustainable energy development.

On the eve of the Summit, the Chairmen and their guests held a special side-event on the role of strong public-private partnerships in the success of Electric Vehicle deployment. The Chairmen and the International Electrotechnical Commission (IEC) took the opportunity to reiterate the importance of working together with the auto industry and international associations to create favourable conditions for the arrival of EVs.

The Chairmen of the Partnership also took the opportunity to issue a collective statement on nuclear energy at the New York Summit, affirming that a limitation on its use threatens to raise the cost of electricity significantly, compromises the world's ability to reduce greenhouse gas emissions, and undermines the reliability of power supplies. The Chairmen unanimously advocate "a balance of advanced coal, large hydro and other renewables, natural gas, nuclear and energy efficiency."

20 YEARS OF EXPERTISE

Since the Partnership's inception, the Chairmen have gathered at an annual Summit to discuss key issues such as the role of the electricity sector in the fight against climate change, technology cooperation, security of supply and sustainable development. High-level experts in the international energy field are invited to exchange opinions with the Chairmen and debate these key issues. Below is a listing of some of our distinguished guests:

1996: Mr. Herbert Gabrys, then Ministry of Industry and Trade in Poland and Mr. Maurice Strong, then Senior Advisor to the President of the World Bank and Chairman of the Earth Council, among others.

2001: Mr. Donald Johnston, then Secretary General of the OECD, Mr. Dominique Ristori, then General Affairs Director of Transport & Energy at the European Commission, and Mr. Jamal Saghir, then Director, Energy & Water Sectors at the World Bank, among others.

2003: Mr. Steve Specker, President and CEO of the Electric Power Research Institute, and the late Mr. Gerald Doucet, then Secretary General of the World Energy Council, among others.

2008: Mr. Nobuo Tanaka, then Executive Director of the International Energy Agency, and Mr. Yvo de Boer, then Executive Secretary of the United Nations Framework Convention on Climate Change.

2010: Dr. Hiroshi Komiyama, Chairman of the Mitsubishi Research Institute, Inc. and President Emeritus of the University of Tokyo, and Mr. Björn Stigson, then President of the World Business Council for Sustainable Development.

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"The Global Sustainable Electricity Partnership has been promoting sustainable energy development through its unique mix of public policy discussions, workshops and power projects for the past 20 years. Last year we achieved a milestone at our first ever Global Summit held at United Nations Headquarters where the Partnership's Chairmen and UN-Energy leadership presented recommendations to country ambassadors and other private, public and civil society leaders to begin laying out a strategy to ensure universal access to electricity."

MR. MICHAEL G. MORRIS,
CHAIRMAN, AMERICAN ELECTRIC POWER (USA)

"As an original member of e_7, we have participated in many of the human capacity-building projects and demonstration projects looking to expand access to cleaner electricity. The Partnership is a very valuable organization for us, not only helping improve understanding of the energy business around the world, but also contributing to sustainable development of electric power globally."

MR. SHOSUKE MORI,
PRESIDENT AND DIRECTOR, CHAIRMAN OF THE BOARD,
KANSAI ELECTRIC POWER COMPANY, INC. (JAPAN)

PLAYING A ROLE ON THE INTERNATIONAL STAGE

As a voice of the international electricity sector, the Partnership shares its insights and recommendations to help advance the debate on sustainable development and global energy issues.

THE UNITED NATIONS CONFERENCE ON CLIMATE CHANGE

We have participated in the United Nations Framework Convention on Climate Change (UNFCCC) annual Conference of the Parties (COP) as an admitted non-governmental observer organization representing the international electricity sector since 1997.

In December 2011, the Partnership took part in the United Nations Climate Change Conference in Durban, South Africa (COP17/MOP7). This was an opportunity to showcase the Partnership's projects and initiatives implemented over the past years. At our exhibition booth, we had informal exchanges with attendees and relevant partners and organizations. On average, 25 participants per day visited the booth, including delegation parties, NGO representatives, and private sector representatives interested in our experience and field-oriented activities as well as our members' positions on the Durban climate negotiations.

Left photo: Partnership's Executive Director interviewed at COP17

Top right photo: Mr. Mike Morris (Chair 2010-2011 and Chairman – AEP) and Mr. Kandeh Yumkella, Chair of UN-Energy and Director-General of UNIDO sign a joint declaration at the Global Summit in New York

At the event, the Partnership issued a position paper, calling for stronger public-private partnerships to increase climate change mitigation and scale up actions to improve access to energy. In view of the upcoming Rio+20 Earth Summit and the recognition of 2012 as the International Year of Sustainable Energy for All, COP17 was the ideal platform to demonstrate that the leading world utilities recognize the urgent need for optimizing collaboration in a global, coordinated manner to address universal access to energy services and sustainable energy development. The Partnership's members are willing to share their knowledge and expertise in an effort to pursue solutions to climate change through global action.

In addition, our Executive Director was invited to do a presentation at the Access to Electricity side event hosted by the International Chamber of Commerce (ICC) and the Global Electricity Utilities Initiative (GEUI). The topic was public-private partnerships (PPP) and the role they play in bringing both sectors together through concrete projects and human capacity-building workshops. The Partnership's joint initiative with UN-Energy on strengthening PPPs was also presented.

ENERGY FOR ALL PARTNERSHIP

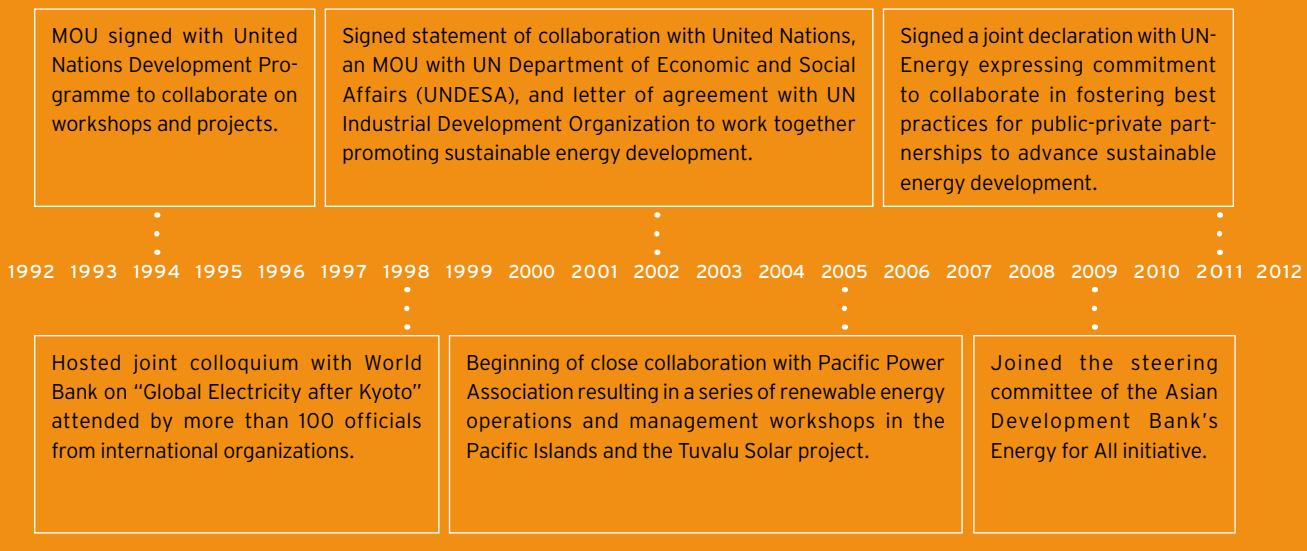
The Energy for All Partnership was launched by the Asian Development Bank (ADB) in 2009 with a view to scaling up access to energy through partnerships. The goal is to provide energy access to 100 million people in Asia and the Pacific region by 2015. We have been a member of the initiative's Steering Committee since its inception.

This year, the Steering Committee meeting coincided with the 12th Delhi Sustainable Development Summit (Feb 2-4, 2012) and with the launch of the International Year of Sustainable Energy for All in Asia. The Partnership presented its activities in the region that promote access to energy, such as the Ifugao-Ambangal Mini-hydro project, the upcoming Dhiffushi Solar Ice project in the Maldives, and training workshops given in the Pacific Islands jointly with the Pacific Power Associations.

The Partnership is committed to working closely with ADB and its partners in Energy for All, confident that, through enhanced international cooperation, we can be more successful in our efforts to increase access to energy.

20 YEARS OF COLLABORATION

The Partnership members have always been committed to cooperating closely with public, private and civil society partners, and pooling different sources of expertise and experiences to advance the debate on international priority issues such as sustainable energy development. For twenty years, we have engaged in more than 60 different partnerships to complete our activities across the globe. Below are some examples of these collaborations:



"The Partnership's implementation of sustainable energy projects in developing countries represents an important example of cooperation to enhance energy access, to facilitate technology transfer among different countries as well as in addressing the global challenge of climate change mitigation."

MR. PAOLO ANDREA COLOMBO,
CHAIRMAN, ENEL S.P.A. (ITALY)

"I am proud to affirm that in 2012 Mexico joins the Partnership with Comisión Federal de Electricidad (CFE) as a member. The expansion to emerging economies is an important milestone that will advance the Partnership's goals, helping accelerate the use of clean energy, support sustainable electrification and improve operating efficiency in countries in transition around the world."

MR. ANTONIO VIVANCO,
DIRECTOR-GENERAL, CFE (MEXICO)

"With growing demand worldwide for electricity that must be affordable, contributes to security of supply, and commits to protect the environment, the Global Sustainable Electricity Partnership aims to set the standard in its industry by working collectively to develop and expand the range of efficient electricity uses. The Partnership has been recently strengthened with new members from major emerging countries, enhancing our ability to meet growing needs and adapt to circumstances and the expectations of customers across the globe."

MR. HENRI PROGLIO,
CHAIRMAN AND CEO, EDF (FRANCE)

1992–2012

20 YEARS OF ACTIVITIES WORLDWIDE

AFRICA & MIDDLE EAST

Country	Description
Multi-country for Africa	• Improving environmental performance and increasing plant efficiency
Multi-country, based in Cameroon and Kenya	• Rural electricity workshop
Egypt	• Institutional strengthening of the power sector • Seminar on electricity interconnection with UNDESA
Multi-country, based in Egypt	• Environmental impact assessment workshop
Jordan	• Demand-side management plan • Efficiency improvements in thermal power plant (AIJ) • Environmental management programme
Multi-country, based in Kenya	• Regional Financing Electrification Dialogues workshop
Lebanon	• Thermal power plant efficiency
Republic of Congo	• Multi-country, based in Ethiopia and Republic of Congo, Seminar on Electricity Interconnections
South Africa	• Demand-side management • Renewable mini-grid assessment
Southern Africa	• Environmental management • Environmental strategy
Multi-country, based in Syria	• Environmental impact assessment workshop
Tunisia	• Wind power to purify water supplies (ongoing)
Multi-country, based in Tunisia	• Environmental impact assessment workshop
West Africa	• Solar energy supply systems in the W Park

ASIA

Country	Description
Multi-country for Asia	• Improving environmental performance and increasing plant efficiency
Bangladesh	• Assistance to transmission and distribution companies
Bhutan	• Management strengthening • Micro-hydro plant (CDM)
China	• Clean coal technology seminar • Demand-side management • Environmental assessment of thermal power station
India	• Technical assistance for environmental management
Indonesia	• Renewable energy supply systems (AIJ) • Monitoring of renewable energy systems • Renewable energy and rural electrification workshop
Multi-country, based in Malaysia	• Environmental impact assessment workshop
Mongolia	• Thermal power plant rehabilitation
Philippines	• Mini-hydro plant to protect a World Heritage Site
Tajikistan	• Emergency assistance
Thailand	• Strengthening environmental institutions • Strengthening environmental agencies
Multi-country, based in Thailand	• Environmental impact assessment workshop • Rural electricity workshop • Regional Financing Electrification Dialogues workshop

EASTERN EUROPE

Country	Description
Bulgaria	• Energy efficiency in public buildings
Georgia	• Inspection of the Inguri Dam • Seminar on regulation, institutional relations and tariffs
Multi-country, based in Switzerland for Eastern Europe	• Regional Financing Electrification Dialogues workshop

LATIN AMERICA

Country	Description
Argentina	• Micro hydroelectric facility and a wind-diesel plant for isolated communities in Patagonia desert.
Brazil	• Regional Workshop on Best Practices for Large Hydropower Development
Chile	• Assessment of Chiloé wind energy and electrification project
Multi-country, based in Chile	• Regional Financing Electrification Dialogues workshop
Ecuador	• Workshop on the Clean Development Mechanism • Substitution of diesel by wind power in the Galapagos • Solar PV generation and rational use of energy • Micro-Solar Distance Learning Programme
Mexico	• Environmental assessment of transmission line projects
Multi-country, based in Mexico	• Environmental impact assessment workshop
Multi-country, based in Paraguay	• Environmental impact assessment workshop

OCEANIA

Country	Description
Maldives	• Grid-connected photovoltaic (sun) system project
Pacific Islands countries, based in Fiji, Marshall Islands, Palau	• Development of sustainable energy sites with PPA • Photovoltaic (solar) systems workshops with PPA • Demand-side management workshops with PPA • Grid-connected solar power installations workshop with PPA
Tuvalu	• Grid-connected solar power installations

ARGENTINA – PATAGONIA CHORRIACA WIND-DIESEL HYBRID AND COCHICO MICRO-HYDRO PROJECT

TECHNOLOGY:

Hybrid wind-diesel wind and micro-hydro power

KEY OBJECTIVES:

- Reduce CO_2 emissions by reducing diesel use and inefficiencies
- Promotion of local renewable energy sources
- Provide power 24 hours, 7 days a week to end-use customers

LEAD COMPANY:

Duke Energy

LOCATION:

Neuquén Province, Argentina

Cochico village, beneficiary of the micro-hydro project

Community outreach activities in Chorriaca

Located in the Province of Neuquén, in the northern region of Patagonia, Argentina, the project aims at providing sustainable sources of renewable energy to Cochico and Chorriaca, two remote communities in the area. Both isolated from the national grid, they rely on diesel units that operate on a discontinuous basis for their electricity.

This US $2.65 million renewable energy project features the development of a hybrid wind-diesel power plant (75-100 kW) –connecting a wind farm to an existing diesel plant– in Chorriaca and a micro-hydropower plant (65kW) in Cochico. With both systems, the communities will have access to a sustainable electric service 24 hours a day, 7 days a week, using local renewable energy sources. This will allow the local people to diversify their farming and livestock economy and improve their quality of life. The project will also increase local knowledge about renewable energy and the operation and maintenance of these systems through training programmes.

In addition to the sponsoring of local renewable energy schemes, the project also promotes regional economic activities by creating jobs for the local population during the construction and operation of the power plants, and includes the possibility of supporting other economic activities from available off-peak energy, such as pumping water for irrigation.

Following the approval of the project for implementation in 2011, the project team has started the process of creating a local non-profit foundation required to implement the project. Furthermore, community outreach activities have been held in both communities to present the projects and update beneficiaries on their progress. More outreach activities are planned throughout the upcoming year. Construction in Chorriaca is scheduled to begin in September 2012 and in November 2012 for Cochico.

The strong support provided by the Ente Provincial de Energia del Neuquén (EPEN), the local distribution company and our local partner, has proven invaluable for the development of the project.

THE ARGENTINA–PATAGONIA CHORRIACA WIND-DIESEL HYBRID AND COCHICO MICRO-HYDRO PROJECT WILL:

- Promote the use of renewable energy;
- Reduce CO_2 emissions by reducing fuel consumption and inefficiencies;
- Transfer technological know-how of wind-diesel hybrid systems to counterparties;
- Provide a pilot experience for the development of local renewable energy for isolated communities;
- Encourage other power companies to supply sustainable, renewable energy to other communities;
- Promote the importance of developing sustainable, renewable energy as a way to fight climate change and support the social and economic development of otherwise isolated communities.

DHIFFUSHI SOLAR ICE PROJECT

TECHNOLOGY:
Photovoltaic (solar) power

KEY OBJECTIVES:

- **Promote the use of local renewable energy sources**
- **Reduce CO_2 emissions by reducing fossil fuel consumption**

LEAD COMPANY:

Kansai Electric Power Company, Inc.

LOCATION:

Kaafu Dhiffushi Island, Republic of Maldives

Grid-connected PV workshop held with the Asian Development Bank to train future operators of the project

Project team during a field study for the feasibility stage of the project

The Maldives, with 80% of the total land mass of the islands only a metre above sea level, is one of the places on earth most vulnerable to the effects of climate change. Any rise of the sea level associated with global warming threatens the very existence of the islands.

Furthermore, like many Small Island Developing States (SIDS), the Maldives has been heavily reliant on imported fuel for its diesel power generation system. With oil prices fluctuating higher in recent years and concerns about global warming growing, the Government of Maldives has expressed its will to increase the share of renewable energy sources and become carbon neutral by 2020.

In response to this, and in line with the Asian Development Bank's Asia Solar Energy Initiative (ASEI), which aims to generate around 3,000 megawatts of solar power over the next three years in the region, the Global Sustainable Electricity Partnership proposed to lead a solar energy project in the Maldives that would serve as a pilot project for ASEI.

This project features the installation of a 40 kW grid-connected photovoltaic (PV) system and an ice-making machine on Kaafu Dhiffushi Island in the Maldives. Not only will this project create a momentum for the shift away from full reliance on diesel generation, it will also enable the efficient use of solar energy for an ice-making machine that will help the island residents preserve fish for sale, the main economic activity in Dhiffushi.

Central to this project is the replicability of similar projects across other islands in the Maldives by the Asian Development Bank (ADB), under its ASEI. To facilitate deployment of the replication and to encourage the development of local capacity and know-how, the Partnership and ADB will carry out a full training programme on PV system design, construction, operation and maintenance for Maldivian engineers.

The Partnership is working closely with the Ministry of Housing and Environment of the Maldives, the State Electric Company Limited (STELCO) and ADB to ensure the success of this project. A memorandum of understanding was signed in July 2011 between the partners. After the feasibility study was completed, the first training workshop was given in April 2012, with construction following shortly after.

THE DHIFFUSHI SOLAR ICE PROJECT WILL:

- Send a symbolic message about the importance of global and concerted action for promotion of sustainable energy development worldwide and the fight against climate change.
- Provide momentum in the Maldives for a shift from full reliance on diesel generation to a hybrid system with a renewable energy.
- Promote the use of local renewable energy sources and reduce CO_2 emissions by reducing fossil fuel consumption.
- Transfer technological know-how about operation, installation and monitoring of a complex grid-connected PV system that will benefit the main economic activity of Kaafu Dhiffushi Island.

HUMAN CAPACITY BUILDING INITIATIVES

SHARING SUSTAINABLE ENERGY DEVELOPMENT KNOW-HOW WITH DEVELOPING COUNTRIES WORLDWIDE

In line with our core mission to promote sustainable energy development (SED) worldwide and share our members' expertise with counterparts in developing countries, we have implemented some 50 human capacity-building (HCB) initiatives in key SED fields.

FINANCING LOW-CARBON ELECTRICITY IN LATIN AMERICA

In collaboration with the Economic Commission for Latin America and the Caribbean (ECLAC) and United Nations Department of Economic and Social Affairs (UNDESA), a fourth series of Financing Sustainable Electrification Dialogues was organized in Santiago, Chile on August 22-23, 2011. Twelve countries from the region participated with representatives from their Ministries of Energy, national Regulatory agencies/commissions, and major public and private electric utilities. Discussions centred on how to increase access to electricity and lower greenhouse emissions without hampering economic growth. Participants agreed that a coherent energy development policy is necessary to create the right incentives in order to ensure that financing flows toward low-carbon electricity sources.

Left photo: Financing Low-Carbon Electricity workshop in Santiago, Chile, August 2011.

Right photo: Technical visit to Tucurui powerplant during the Regional Workshop on Best Practices for Hydropower Development, Tucurui, Brazil, November 2011.

SEMINAR ON ELECTRICITY INTERCONNECTIONS

Established in partnership with UNDESA, the Seminars on Electricity Interconnection focus on the necessary harmonization of power system organization, planning and operation on a regional basis, with a view to reaping the full benefits of optimal resource development within the region. The seminars provide a comprehensive overview of the most important issues and features with regard to interconnecting power systems, as well as hints on best practices and ways of minimizing risks.

Following two past seminars (Cairo, Egypt in June 2005 and Addis Ababa, Ethiopia in September 2008), a third seminar was given in Brazzaville, Republic of Congo. This seminar featured two consecutive 5-day sessions from November 21 to December 2, 2011 on interconnected power systems operation and the regional interconnected electricity market. A total of 40 participants from the Central African Power Pool member countries attended.

REGIONAL WORKSHOP ON THE BEST PRACTICES FOR LARGE HYDROPOWER DEVELOPMENT

In collaboration with the Regional Energy Integration Commission of Latin America (CIER), a high-level workshop was held in Tucuruí, Brazil, on November 22-23, 2011. The workshop, which was designed to stimulate discussions on best practices for the successful development of sustainable large hydropower facilities in today's social, economic and global environment, was attended by 50 local and international experts. Participants discussed the best practices in Latin America and worldwide, and shared ways to guarantee the development and protection of the environment, address mitigation measures that would be acceptable to the population, increase transparency and accountability vis-à-vis local stakeholders, and promote sustainable regional development when building large hydropower projects.

20 YEARS OF SHARING AND TRAINING

Human capacity-building (HCB) activities have been at the core of our activities since the beginning. These interactive workshops, seminars and technical training sessions have been developed in partnership with UN agencies and key local and regional partners. Here are some testimonies from participants in our HCB activities over the years.

1994-98: Environmental Impact Assessment workshops in Mexico, Egypt, Syria, Asia-Pacific, Paraguay, Tunisia and Malaysia

"We acknowledge the enthusiastic participation of the e7 experts in the workshop... the team had a very high technical level." Dr. Vicente Aguinaco, then Environmental Protection Manager of the Comisión Federal de Electricidad in his February 1999 letter of thanks.

2011: Regional workshop on best practices for large hydropower developments in Brazil

"Great opportunity to know about different experiences on large hydro developments... professionally [it] was very interesting and important to be there... above my expectations." Mr. José A. Felix-Filho, Natural Resources Lead Specialist, Vice Presidency of Sectors and Knowledge, Inter-American Development Bank when asked to evaluate the workshop.

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2001: Management strengthening for the assessment of transmission and distribution in Bangladesh

"The workshop was conducted in a truly interactive manner... all the participants expressed a deep sense of appreciation for the e7 experts with respect to their skills... the training programme was thoroughly relevant to [our] context and needs" Mr. A.N.M. Rizwan, then Managing Director of the Power Grid Company of Bangladesh and Mr. S.A. Mayeed, Member of Planning and Development of Bangladesh Power Development Board in their letter of thanks to our Chairman.

"During the last 20 years, the Partnership has established an important benchmark for sustainable electricity deployment, through low-carbon projects and human capacity-building initiatives. In the upcoming years, we hope to add more value to this process, by focusing on demonstrating replicability, sustainability and affordability of access to electrical energy."

MR. JOSE DA COSTA CARVALHO NETO,
CEO, ELETROBRAS (BRAZIL)

我们全球可持续电力合作组织的成员，
全球最大的电力企业，将致力于先进电网和可再生能源的发展，共创一个更清洁的地球家园。

"We, the Global Sustainable Electricity Partnership members, the largest global electric utility companies, are fully committed to the development of advanced transmission systems and renewable energy to make our earth a cleaner planet we call home."

MR. LIU ZHENYA,
PRESIDENT, SGCC (CHINA)

EDUCATION FOR SUSTAINABLE ENERGY DEVELOPMENT PROGRAMME

SUPPORTING FUTURE ACADEMICS AND PRACTITIONERS OF SUSTAINABLE ENERGY DEVELOPMENT

The Education for Sustainable Energy Development Scholarship Programme (ESED) was established in 2001 to support scholars from developing countries and economies in transition in their pursuit of advanced studies related to sustainable energy development. In addition to the Masters scholarship offered, ESED also supports a web-based network of scholars designed to encourage the sharing of information and knowledge among scholars and alumni.

Since the Programme's inception, we have awarded nine postdoctoral and 67 Masters level scholarships to outstanding students from more than 20 different countries. The popularity of the ESED Programme has expanded over the years and is reflected in a six-fold increase in the number of applications received since the Programme's first year. This is a testament to the increasing need to support a growing internationally diverse pool of outstanding students who represent the much-needed sustainable energy development experts and practitioners of tomorrow.

Scholarship applications are reviewed by a panel of distinguished professors and experts from universities in North America, Europe and Japan. The Partnership members commend the academic panel for their steadfast, generous support and dedication to making this scholarship Programme a success.

Beneficiaries of the ESED Programme come from all regions of the world and pursue academic curricula in different aspects of the multidisciplinary field of sustainable energy development, with a particular focus on technology, environment and social development. The scholars' host universities are prestigious academic institutions with strong sustainable energy development curricula and research programmes.

In line with the United Nation's Agenda 21, an important element of the ESED Programme is to create a global network of researchers and practitioners in sustainable energy development that will focus on establishing links with experts in academic institutions, industry and non-governmental organizations, among others, while encouraging meaningful contributions to the body of knowledge and research on sustainable development. Furthermore, the ESED Programme wishes to assist in creating these partnerships in developing countries by encouraging ESED scholars to return to their home countries and apply their knowledge and share their expertise. A high proportion of our scholars return to their home countries to contribute locally as future practitioners of sustainable energy development.

SELECTED CANDIDATES FOR THE 2012 ESED SCHOLARSHIP AWARDS

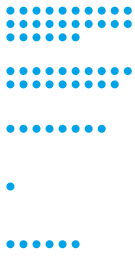
Masters level

- Mr. Farid Ellakany, from Egypt, will pursue a Master of Science in Sustainable Energy Technology at TU Delft in the Netherlands.
- Ms. Maria Alejandra Claure Olivedo, from Bolivia, will pursue a Master of Engineering on Energy and Environmental Management with Specialization in Sustainable Energy Systems and Management in Developing Countries at the University of Flensburg in Germany.
- Mr. Adesola Olufade, from Nigeria, will pursue a Master of Science in Sustainable Energy Engineering at the University of Nottingham in the United Kingdom.
- Ms. Bulganmurun Tsevegjav, from Mongolia, will pursue a Master of Science in Environmental and Energy Management at the University of Twente in the Netherlands.
- Ms. Maham Tabassum, from Pakistan, will pursue a Master of Science in Sustainable Energy Technologies and Management at Brunel University in the United Kingdom.
- Ms. Maite Madrazo, from Mexico, will pursue a Master of Science in Sustainable Systems in the University of Michigan School of Natural Resources and Environment in the United States of America.
- Ms. Lifeng Li, from China, will pursue a Master of Science in Sustainable Energy Technology at Eindhoven University of Technology in the Netherlands.
- Mr. Douglas Yeboah, from Nigeria, will pursue a Master of Science in Sustainable Electrical Power at Brunel University in the United Kingdom.

ESED SELECTED RECIPIENTS

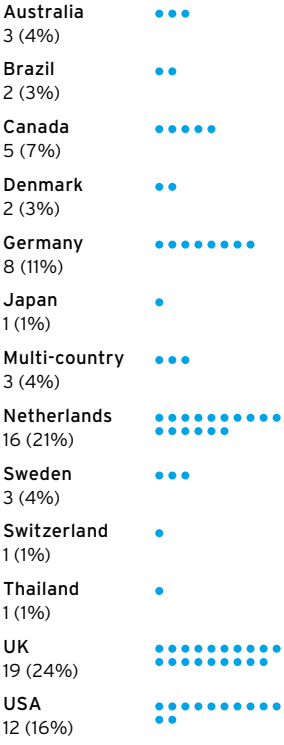
(2001–2012)

By region of origin



By field of study

By host university country



20 YEARS OF SUPPORTING EDUCATION

The Global Sustainable Electricity Partnership has had a long-standing commitment to education under the rubric of its human capacity-building initiatives. With the ESED Programme in 2001, the Partnership's commitment to knowledge sharing was reinforced. Here, some ESED students share how the Programme has impacted their lives:

"The knowledge I have obtained [through the MSc in Sustainable Energy Futures at Imperial College London] is quite unique [...] as it became key to thoroughly understanding energy issues and addressing related problems in my own country as well. The multicultural study environment and the people I have met have contributed additionally to the experience and my educational development. All of this would have never been possible without the ESED scholarship that I have received. Therefore I would like to express my sincerest gratitude to all Global Sustainable Electricity Partnership members who have helped me and granted me this prestigious award."

– Alma Ademovic, ESED Scholar 2009-2010, Bosnia & Herzegovina

1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012

"For an individual from a developing country, the importance of becoming a part of an international community cannot be overstated; gaining new perspectives is critical for us to deal with the challenges that face us back home. The ESED scholarship went a long way in helping me pursue a Master's degree in Sustainable Energy Technology at the Delft University of Technology, The Netherlands and complete the degree with honours in Active Control of Dynamic Wind Turbine Loads. I am grateful for having received my first break through the ESED scholarship."

– Sachin T. Navalkar, ESED Scholar 2008-2009, India

"Being a member of the Partnership, an international organization of energy companies representing one third of global electricity generated, is a great opportunity to make real contributions to sustainable energy development. With members sharing a common vision of sustainability, this is a unique platform for building the power industry of the future and we are proud to be a part of it."

MR. EVGENY DOD,
CEO, JSC RUSHYDRO (RUSSIA)

"Eskom has set itself the goal of becoming a high performance organization, one which can provide sustainable electricity solutions to improve the quality of life of all in South Africa and the region. We pride ourselves on best practice and this can only be achieved through interaction with our peers. The Global Sustainable Electricity Partnership provides an invaluable platform for us to share learnings and to learn from the global leading utilities that make up the Partnership."

MR. BRIAN DAMES,
CEO, ESKOM (SOUTH AFRICA)

1992–2012

20 YEARS OF ADVANCING OUR MISSION

Inaugural James Bay Summit hosted by founding fathers: Mr. Richard Drouin (then Chairman and CEO of Hydro-Québec – Canada) and Mr. Pierre Delaporte (then Chairman of EDF – France).

The Jordan Thermal Plant Efficiency Measures and Indonesia Renewable Energy Systems AIJ projects are completed – The Partnership's first capital projects.

1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002

The 1st Conference of Parties of the UN Framework Convention on Climate Change (UNFCCC) announces five year pilot phase for "Activities Implemented Jointly" (AIJ) to promote cooperation between developed and developing countries – The Partnership (then e_7) responds by launching two AIJ projects: Jordan Thermal Plant Efficiency Measures and Indonesia Renewable Energy Systems.

Kyoto Protocol is ratified as the outcome of the 3rd Conference of Parties of the UNFCCC – The Partnership (then e_7) was actively present at COP3, organizing on-site a two day "Electric Utility Forum on Climate Change" with the participation of members and 11 developing country utilities, as well as a one day forum open to public and media on global issues facing the electricity sector.

Launch of the

Education for Sustainable Energy Development (ESED) Scholarship Programme.

The Galapagos San Cristobal Wind project in Ecuador is completed – It was registered as CDM thereafter and was awarded the Energy Globe 2009 National Award for Ecuador and the 2009 World Energy Best Practice Award.

The then e_7 becomes the e_8 with the addition of then RAO UESR (Russia).

Global Sustainable Electricity Partnership

The e_8 becomes the Global Sustainable Electricity Partnership after welcoming new members from major emerging countries – Brazil, South Africa and China. The Argentina-Patagonia Chorriaca Wind-Diesel Hybrid and Cochico Micro-hydro projects are launched.

The Financing Sustainable Electrification workshops are launched with the United Nations Department of Economic and Social Affairs – so far 55 countries have participated in the 4 completed region-specific workshops.

2003 2004 2005 2006 2007 2008 2009 2010 2011 2012

The W-Park Solar Power Project in Africa completed.

The Tuvalu Solar Power project is completed, accounting for about 5% of Funafuti's (Tuvalu's capital) peak demand.

The Dhiffushi Solar Ice project in the Maldives is announced.

The Bhutan Chendebji Mini-hydro project completed – The Partnership's first project registered as a Clean Development Mechanism (CDM), as well as the first CDM project for the Kingdom of Bhutan.

The Ifugao-Ambangal Mini-hydro project is completed, featuring the establishment of the Rice Terrace Conservation Fund that helps finance the conservation of this UNESCO World Heritage site with proceeds from electricity sales.

LOOKING FORWARD

In 1992, as the world came together for the first global conference on sustainable development in Rio de Janeiro, the Chairs of some of the world's largest electric utilities jointly formed an international group –then the e_7– aspiring to apply their technical know-how and experience to help achieve sustainable development for the planet in a spirit of cooperation, without pursuing commercial gain.

Twenty years later, the United Nations Secretary-General's international initiative on Sustainable Energy for All, launched in 2012, highlights the key message of the 21st century on sustainable development: the time has come to turn ideas into actions.

The unique strength of the Global Sustainable Electricity Partnership (formerly e_7 and e_8) is not only its members' diverse pool of expertise, but also the variety of activities it carries out. The Partnership attends international conferences and forums, sharing its members' positions on key sustainable development issues. Most importantly, it leads international capacity-building initiatives and develops demonstration projects in developing countries. While these projects are small in size, they demonstrate that local renewable energy development is not only possible, but also sustainable, and that access to cleaner energy plays a role in climate change mitigation. Completed projects undergo a minimum two-year monitoring phase in which we observe all operations to ensure their optimal performance and sustainability in the short- and long-run. Furthermore, the public-private partnerships used to create them provide business models of great importance for sustainable-energy projects needed in countless other places around the globe where energy needs are minimally met.

By the end of 2012, the Partnership's activities will have reached every region in the world, touching more than 60 countries through its workshops and capital projects. However, given the dynamic nature of the world we live in, we have to constantly ask ourselves: how are we doing? On the eve of its 20th anniversary, the Global Sustainable Electricity Partnership reaffirms its commitment to its core mission of promoting sustainable energy development and playing an active role in global electricity issues.

We are only one player among many in the field. Successful international collaboration can effectively help advance sustainable energy solutions and contribute to the sustainable development goals of some of the most vulnerable developing nations in the world. Strong synergies can result when public, private and civil society actors commit to working together for one common goal. The importance of having the right partners that can replicate and scale-up projects cannot be overstated. We look forward to continuing to work together with other partners to promote sustainable energy development.

www.globalelectricity.org

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