The Global Sustainable Electricity Partnership (GSEP), a not-for-profit international organization comprising the leading companies in the global electricity sector, promotes sustainable energy development through electricity sector projects and human capacity-building activities in developing nations worldwide. Our projects and activities are financed mainly by our member companies, which also contribute in-kind resources for their execution.

Together, the GSEP companies serve 1.2 billion customers, and generate and deliver about one-third of the electricity used in the world, with a capacity mix of which approximately 60% is generated with no direct carbon emissions.

Our mission is to play an active role in global electricity issues in an international framework and to promote sustainable energy development. 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.

**Member Companies**

- American Electric Power
- Électricité de France
- Enel
- EuroSibEnergo
- Hydro-Québec
- innogy
- Kansai Electric Power Company
- RusHydro
- State Grid Corporation of China
- Tokyo Electric Power Company (TEPCO)

**Global Sustainable Electricity Partnership**

**Mission**

**Creating A Community For Electricity Industry Leaders**

**Placing Electricity at the Forefront of Sustainable Development for 25 Years**

**Accelerating The Energy Transition**

**Creating A Global Network of Future Academics and Practitioners**

**Commissioning a Solar Project in the Maldives**

**Powering a Fishing Community in Peru**

**Launching a Transportation Electrification Project in Lima**

**Harnessing Biogas to Create Electricity in Uruguay**

Studying the expansion of our Galapagos wind park.
For 25 years, the world’s largest electricity companies have been sharing their experience and expertise to create a better energy future as members of what is now known as the Global Sustainable Electricity Partnership (GSEP). We continually demonstrate our leadership in the field through our participation in global energy debates, our sustainable electricity projects and our capacity-building activities worldwide.

We intend to continue our leadership role in global electrification through education and sharing of innovative technologies to serve policy and market needs around the world. Consistent with the call of the Paris Agreement for unified action against climate change, we reaffirm our commitment to creating available solutions with safer, cleaner, reliable and affordable electricity. By using innovative technologies, we can harness a mix of energy resources in an even more efficient way and support the building of infrastructure and economies.
The Global Sustainable Electricity Partnership (GSEP) is proudly celebrating its 25th anniversary this year. At our founding Summit in James Bay, Québec, the world’s leading electricity companies came together to form an international group dedicated to fostering environmental best practices and sustainable development in the electricity sector. Together, we had the ambitious idea to use our collective knowledge to create a better energy future. We have worked hard over the past 25 years to implement initiatives that have produced real results, responding to the needs of developing and emerging countries.

Our vision is now, more than ever, focused on climate change – a growing threat that will have devastating impacts on the global population if we do not act together quickly. That is why today, our work is more relevant and necessary than before. Solutions to the climate crisis are within reach and we are acting urgently as electricity companies to implement them. Our theme for the past year, "Electricity as a Tool for Carbon Footprint Reduction," underscores the critical role that low-carbon electricity will play in the implementation of the Paris Agreement and building a cleaner future for the citizens of the world.

Under Hydro-Québec’s leadership, the GSEP has accomplished a lot this year. We led several initiatives to accelerate transportation electrification and public-private financing for renewable energies, all of which underline the importance of low-carbon electricity in achieving the energy transition. Under the joint leadership of Hydro-Québec and Enel, the GSEP is developing a pilot project in Lima, Peru to introduce an electric bus into the municipal transit system. And through our scholarship program, we have supported 114 university students since 2001 in their sustainable energy studies, fostering the sector’s next generation of actors and influencers.

All of these achievements are part of Hydro-Québec’s mission and goals, which are shared by all the other members of our organization. Together, we want to bring cleaner, reliable and affordable electricity to the world. We are doing so by leading the energy transition, placing ourselves at the forefront of innovation to drive climate action.

I have been truly honoured to serve as the Chairman of the GSEP this year and I am proud to see the power of cooperation and what it can accomplish. I truly believe that by working together, we can build a brighter future.

Éric Martel
CEO, Hydro-Québec
GSEP Chairman 2016-2017
This year marks a milestone: the 25th anniversary of the GSEP. Twenty-five years ago, our founding members had a common vision to set up an international network of expertise. The goal of this network was twofold: improve cooperation between the major electricity companies, and act as an ecological and technical advisory group for international institutions and governments, especially in developing countries. What sets us apart from other international organizations in the sector are our concrete actions with local developers and governments, building on the world-class expertise of our members.

This year, GSEP shared its unique on-the-ground knowledge in West Africa, completing a high-level conference on strengthening public-private partnerships and financing mechanisms in the sustainable energy sector. Moreover, we shared our expertise in grid integration of renewable energies at a workshop in Fiji targeting engineers from local utilities, organized jointly with the Pacific Power Association.

In addition, we offered our collaboration to governments and development institutions at the COP22 meeting in Morocco, helping them to identify the most appropriate technology investments and development mechanisms. As an example of this collaboration, we have shared our companies’ expertise with the Energy Sector Management Assistance Program of the World Bank to jointly develop guidelines for the integration of variable renewable energy to the grid. At COP22, we also organized a meeting of high-level representatives of the world’s electricity sector to discuss best strategies to accelerate the energy transition.

We have also been committed to promoting the advancement and implementation of sustainable electricity demonstration projects in developing countries. This year, we are proud to have commissioned a solar photovoltaic (PV) system in the Maldives. We are also continuing the development of a hybrid system (PV, wind, diesel and batteries) in Peru as well as a biogas project in Uruguay. Finally, we launched studies to introduce the first electric bus into the public transit system in Lima, Peru and to extend our wind park on San Cristobal Island in the Galapagos.

All these achievements were made possible because of the strength of the GSEP companies’ network. It is our pleasure to present these achievements to you in our annual report.

Martine Provost
Executive Director
GSEP
PLACING ELECTRICITY AT THE FOREFRONT OF SUSTAINABLE DEVELOPMENT FOR 25 YEARS

WE SHARE OUR MEMBERS’ COLLECTIVE EXPERTISE TO SUPPORT SUSTAINABLE ENERGY DEVELOPMENT.

WE ARE THE LEADING VOICE OF THE ELECTRICITY SECTOR IN GLOBAL ENERGY DEBATES.

73 CAPACITY-BUILDING ACTIVITIES CONDUCTED WORLDWIDE

DEDICATED CAPACITY-BUILDING PROGRAM AND KNOWLEDGE PRODUCTS, NAMELY PROMOTING PUBLIC-PRIVATE PARTNERSHIPS (PPPs) THAT ENABLE EFFECTIVE FRAMEWORKS AND CHANNEL INVESTMENT IN SUSTAINABLE ELECTRICITY

AROUND $\frac{1}{3}$ OF THE ELECTRICITY CONSUMED IN THE WORLD IS PRODUCED AND TRANSMITTED BY OUR MEMBERS

OVER 60% OF THE ELECTRICITY OUR MEMBERS PRODUCE HAS NO DIRECT CO₂ EMISSIONS
RENEWABLE ENERGY PROJECTS COMPLETED OR IN PROGRESS

WE TURN SUSTAINABLE IDEAS INTO SUSTAINABLE ACTIONS.

OUR ACTIONS CREATE A BRIGHTER FUTURE.

15 RENEWABLE ENERGY PROJECTS

PROJECTS

5 SOLAR
3 HYDRO
1 ENERGY EFFICIENCY
1 BIOGAS
1 HYBRID
2 WIND
2 TRANSPORTATION ELECTRIFICATION

57,708 TONNES CO₂ (DIESEL) EMISSIONS AVOIDED ANNUALLY THROUGH OUR PROJECTS

116 COUNTRIES BENEFITTING FROM OUR PROJECTS AND ACTIVITIES IN EVERY CORNER OF THE WORLD

114 SCHOLARSHIPS AWARDED SINCE 2001

ANNUAL REPORT 2016-2017
The GSEP’s key annual event, the CEO Summit, brought together heads of all the GSEP member companies. Hosted by the 2015-2016 Chair Company, State Grid Corporation of China (SGCC), the Summit was held on June 2 and 3, 2016 in Beijing, China.

The Summit focused on the theme of SGCC’s Chairmanship year: “Roadmap for Energy Future – Moving from Today’s Power Systems to a Global Energy Interconnection.” Dr. Shamshad Akhtar, Under-Secretary-General of the United Nations and Executive Secretary of the United Nations Economic and Social Commission for Asia and the Pacific, and Zhenya Liu, President of the China Electricity Council and Chairman of the Global Energy Interconnection Development and Cooperation Organization, delivered keynote speeches on connectivity and cooperation. Both emphasized the need for regional and global collaboration to promote cleaner electricity for sustainable development.

The Summit discussions were attended by the GSEP Chairmen and other high-level representatives from international energy and electricity organizations. Over the course of the Summit, they discussed the role of grid and energy systems in achieving climate goals. While electricity will play an indispensable role in economic and sustainable development, it cannot do so unless there are enabling, comprehensive policies and support for innovative research and capacity building. The Beijing Summit Statement issued by the GSEP Chairmen champions these key messages.

The Summit closed with the transfer of the GSEP Chairmanship to Hydro-Québec for 2016-2017, the theme of which is “Electricity as a Tool for Carbon Footprint Reduction.”
OUR SUMMIT IS A VIBRANT PLATFORM FOR THE INTERNATIONAL ELECTRICITY INDUSTRY TO ADVANCE THE DEBATE ON KEY CHALLENGES

The GSEP Chairmen and representatives, Executive Director, and invitees at the GSEP’s annual Summit in Beijing, China
Accelerating the energy transition

AT COP22, FORWARD-THINKING PLAYERS FROM THE GLOBAL ELECTRICITY SECTOR SHARED THEIR VIEWS ON BEST STRATEGIES

The discussions at our COP22 side event focused on how electricity companies can play a leading role in decarbonizing the economy by reducing fossil fuels in the energy mix, maximizing energy efficiency measures and branching into other sectors (such as buildings and transportation) to reduce society’s carbon footprint.

Assaad Saab, Vice-President of International Relations and Geopolitics at EDF opened the dialogue, highlighting that the discussion continued on the themes of the GSEP’s report prepared for last year’s historic COP21. The report, led by EDF, addressed the electrification of end-use, adapting resilient electricity systems, and achieving affordable decarbonization.

Brice Lalonde, former UN Assistant Secretary-General and Special Advisor on Sustainable Development to the UN Global Compact concluded the conference by emphasizing the need to mobilize business to drive sustainable development.

The event, held on November 15, 2016, was hosted in collaboration with our members EDF, Enel and Hydro-Québec. Other prominent organizations in the field of sustainable energy development such as the Observatoire Méditerranéen de l’Énergie, the Institut de la Francophonie pour le développement durable and the Mitsui Global Strategic Studies Institute, also shared their perspectives at the conference.
“EDF’s strategy for 2030 is about three main axes. The first is a digital revolution that is changing the relationship with our customers, empowering them to be owners of their technology. The second is decarbonizing the electricity mix. We can demonstrate today that decarbonized electricity is available and affordable. The third is innovating the financing of renewable energy.”

Claude Nahon  Senior Vice President of Sustainable Development at EDF

“Digitalization will play a key role in managing, on the one hand, renewable and distributed generation, while on the other, increasingly more complex and energy-efficient consumer behaviour: customers will represent millions of small plants but also respond to market signals through demand response. Such market changes will be accelerated by the increasing electrification of transport and heating and cooling. As a result, the role and value of transmission and distribution networks and infrastructure will surge. The change is not only technological but also cultural: operators and regulators will need to evolve quickly to meet the new challenges.”

Daniele Agostini  Head of Low Carbon and European Energy Policies at Enel

“Hydro-Québec is a utility that is already 99.8% renewable. However, we are also contributing to transportation electrification, as the transportation sector accounts for over 40% of the province’s emissions. Moreover, we are exporting a significant amount of our renewable energy to neighbouring markets. This is our contribution to decarbonization and helping to transition to a low-carbon economy. We also partner with leaders in the sector to develop battery storage technologies that can help us move further towards decarbonization.”

André Besner  Head of Sustainable Development at Hydro-Québec
Creating a global network of future academics and practitioners

For over 15 years, our Education for Sustainable Energy Development (ESED) Scholarship Program has helped exceptional young people from developing countries build a better future. To date, we have supported 114 students in their studies in sustainable energy development. Today, the need for globally-oriented practitioners and researchers is growing rapidly. We are proud to inspire the next generation of innovators and thinkers, who will use their knowledge to create a sustainable future.

WHERE ARE THEY FROM?

OUR 114 SCHOLARSHIP RECIPIENTS COME FROM DEVELOPING COUNTRIES ALL OVER THE WORLD.

42 AFRICA AND THE MIDDLE EAST
49 ASIA
2 EASTERN EUROPE
21 LATIN AMERICA AND THE CARIBBEAN
Recipients of the 2017-2018 ESED Scholarships

- Kasahun Drar Belay from Ethiopia will pursue a M.Sc. in Electrical Engineering at the Politecnico di Milano in Italy.
- Stephanie Tan from the Philippines will pursue a European Master in Renewable Energy at the University of Oldenburg in Germany.
- Gursharan Kaur from India will pursue a M.Sc. in Wind Energy at the Technical University of Denmark.
- Maria Belen Cevallos Giler from Ecuador will pursue a M.Sc. in Energy and Sustainability with Electrical Power Engineering at the University of Southampton in the United Kingdom.
- Muhammad Tamoor Mughal from Pakistan will pursue a M.Sc. in Sustainable Energy Technology at the University of Twente in the Netherlands.
- Najuma Ashaki Trisha Nelson from Guyana will pursue a M.Sc. in Sustainable Energy Futures at Imperial College London in the United Kingdom.
- Tracy Chepkoech Tunge from Kenya will pursue a M.Sc. in Renewable Energy: Technology and Sustainability at the University of Reading in the United Kingdom.
- Ahmed Mohamed Farag from Egypt will pursue a M.Sc. in Solar Energy Engineering at Dalarna University in Sweden.

“I am working with the Global Green Growth Institute as a Program Integration Lead based in the Philippines, as part of Asia and the Pacific Region. One of the most rewarding moments of my work at the Institute was co-chairing a Working Group on “Energy, Agriculture & Industry” for the development and formulation of Mongolia’s National Green Development Policy. Through close technical and policy consultation work with numerous government agencies of Mongolia and other national and international stakeholders, the flagship policy was approved in 2014 by the Parliament of Mongolia.”

Bulganmurun Tsevegjav, a 2012 scholarship recipient from Mongolia, has been able to use the experience gained from her studies to help her country’s sustainable development.

“The scholarship is helping me gain knowledge in renewable energy. My home country is non-oil producing and one of the world’s least developed, but we have sunshine year-round. This is a big opportunity for me to study solar energy and to take part in the transformation plan of my country to become the power hub of Africa. By working in renewable power plant implementation and research centers, I will share my experience with local engineers. I will also work in motivating companies to invest in renewable and green energy which will help the global environment.”

Hailu Dimtsu Tamene, a 2016 scholarship recipient from Ethiopia, is pursuing a Master’s in Solar Energy Engineering at Dalarna University in Sweden.

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Promoting electricity to reduce our carbon footprint

DRIVING DEVELOPMENT IN TRANSPORTATION ELECTRIFICATION

On June 22, 2016, we organized a panel discussion on how utilities can adapt their business models to accelerate transportation electrification. The event, organized in collaboration with Hydro-Québec and Electric Mobility Canada (EMC), was complementary to the 29th World Electric Vehicle Symposium and Exhibition (EVS29) held in Montreal, Canada.

Panelists shared their experiences and challenges in deploying electric vehicle (EV) infrastructure and agreed that transportation electrification will play a key role in the future of energy systems. EVs can help utilities take a leadership role in electrification, assisting countries in moving toward their decarbonization goals.

Some 40 representatives from North American and European utilities, electric vehicle makers and associations, and research and development groups attended the conference.

The GSEP companies are committed to leading the global effort to reduce the global carbon footprint, and electric vehicles are one of many technologies that can help do so.
“When we talk about the development of transportation, the first question is: why is a utility working in transportation? In the end, it’s energy storage, and it’s a very important asset in the energy system.”

Jorge Sánchez Cifuentes  Head of Living Labs and Innovation in Network Technology at Enel

“We’ve been involved in electric mobility for over 25 years. Four years ago, we started to deploy our public charging network. Today, we have close to 200 partners and over 830 charging stations, including 70 DC Fast Chargers.”

France Lampron  Director of Transportation Electrification at Hydro-Québec

Teaching and learning through web-based tools

This year, we hosted three public webinars. Our webinars are interactive learning tools that promote knowledge sharing and debate on energy and electricity issues.

The first webinar centred on the themes of energy demand, generation and resilience under a changing climate. Dr. Alberto Troccoli, Managing Director, World Energy & Meteorology Council and visiting professor, University of East Anglia, and Dr. Marco Braun, hydroclimatology specialist, Ouranos Consortium, presented the relationship between energy and climate and the use of climate data for energy applications.

The second webinar was on Hydro-Québec’s 2016-2020 Strategic Plan. Gary Sutherland, Relationship Manager–Business Development for the Business Development, Acquisitions and Strategy group at Hydro-Québec, presented the major objectives that the company will be pursuing in coming years. The plan, “Setting new sights with our clean energy,” lays out the groundwork for doubling the company’s revenue stream over the next 15 years, becoming a benchmark in customer service, contributing to Québec’s economic development and energy transition, and keeping rate increases lower than or equal to inflation.

The third webinar focused on Hydro-Québec’s development of large-scale energy storage systems. Dr. Karim Zaghib, Director–Energy Storage and Conversion at Hydro-Québec’s research institute (IREQ), presented the work of Esstalion Technologies, the company’s joint business venture with Sony, on developing lithium-ion battery technologies.

The GSEP will continue our successful webinar program in order to bring valuable knowledge to electricity sector professionals.

Collaboration with World Bank’s ESMAP

This year, we continued our collaboration with the Energy Sector Management Assistance Program (ESMAP) of the World Bank. The GSEP is creating guidelines to be used by ESMAP’s Variable Renewable Energy (VRE) Grid Integration Support Program. GSEP experts led three working groups to develop guidelines for the procurement of VRE forecasting tools, conduction of grid connection studies, and basic specifications and standards for VRE-associated generation, transmission and distribution system equipment.

The VRE program is a global program that aims to support World Bank client countries to achieve a cost-effective and sustainable scale-up of VRE by providing technical assistance, capacity building and knowledge products for the development and implementation of planning, regulatory, market and operational best practices in VRE integration.
BUILDING CAPACITIES IN SUSTAINABLE ENERGY DEVELOPMENT

Transferring PPP in Western Africa

GSEP organized a high-level capacity-building conference on renewable energies and public-private financing targeting the West African region. Held in Dakar, Senegal on February 15 and 16, 2017, the conference was a part of our flagship capacity-building series, Public-Private Partnerships (PPP) for Sustainable Electricity Development.

The event was a unique opportunity to exchange best practices, local and international experiences for increasing access to sustainable, affordable, and reliable electricity that can accelerate regional social and economic development. Participants and panelists discussed their experiences in implementing renewable energy projects via competitive calls for tenders and bilateral negotiations, the most appropriate renewable energy technologies for West African countries, energy efficiency, project structuring, and innovative financing.

The event was organized in partnership with the R20 Regions of Climate Action, the Centre for Renewable Energy and Energy Efficiency of the Economic Community of West African States (ECREEE), and the Agence Nationale pour les Énergies Renouvelables (ANER) of Senegal.

The two-day conference was attended by more than 60 high-level representatives from ministries, energy regulators, regional institutions, investors, public and private utilities, and companies from 15 countries.

The GSEP is committed to continuing its cooperation with local partners in the region. To date, our PPP capacity-building program has empowered decision-makers in developing and transitioning economies worldwide to define the best strategies for successful PPPs. By sharing lessons learned and best practices, this program creates a bottom-up approach to sustainable electricity development.
knowledge and expertise

“The West African region has high potential in terms of renewables – be it solar, wind, bioenergy or hydro - but we pay a high price for energy which is really unfortunate. We need concrete results on the ground. People want light and energy to improve their quality of life and the way they do things.”

Mahama Kappiah  Executive Director of ECREEE

“I am convinced that participants at this gathering have understood the huge hope our governments pin on these proceedings. Governments understand the significance of this conference in providing for development of financing for renewable energy projects.”

Djiby Ndiaye  Director General of ANER
Strengthening technical skills in the Pacific Islands

From March 27 to 31, 2017, GSEP partnered with the Pacific Power Association (PPA) to organize a technical workshop on grid connection of renewable energies.

The workshop, led by GSEP member Kansai Electric Power Company, was held in the Republic of Fiji, which will be the first Pacific country to lead the United Nations climate negotiations at COP23 in November 2017.

This workshop was part of a series of capacity-building programs GSEP has led in the region in partnership with the PPA over the past 12 years. With this program, we are developing local capacity and knowledge in the different aspects of energy project development and implementation in Small Island Developing States that are the most vulnerable to climate change. The beneficiaries of these programs take the knowledge and information from these workshops and use it in their day-to-day work.

The week-long workshop provided training to 19 managers and engineers from 12 countries in the Southern Pacific Islands.

“This conference is quite timely, as many of our members are now increasing the capacity of renewable energy connected to their grids. This workshop will enhance their ability to incorporate more renewable energy into their energy mix.”

Andrew Daka  Executive Director of the PPA
The Maldives is a small island country in the Indian Ocean that is heavily impacted by climate change. People on most of the country’s low-lying islands are already living with the consequences of global warming and rising sea levels. However, the country still relies largely on imported fossil fuels to satisfy energy demand. Fortunately, the country’s warm climate and tropical location make it an ideal site for solar energy development. By tapping into this resource, our Dhiffushi Solar Ice Project in the Maldives is making a sustainable energy future a reality in the country. The 40 kW grid-connected solar photovoltaic (PV) system harnesses the power of the sun to provide cleaner energy to Dhiffushi Island’s residents. An ice machine coupled with the PV system uses excess energy to produce ice, which is used to preserve fish, supporting the island’s main economic activity. The system will prevent the emission of 52 tonnes of CO$_2$ annually and displace 19 tonnes of diesel per year, representing approximately $18,000 US in fuel savings.

This year, we celebrated the project’s completion and handing over of the facilities to the Maldivian government and Dhiffushi’s residents. The project was led by GSEP member Kansai Electric Power Company. The engagement of local and regional partners - the Ministry for Environment and Energy of the Maldives, the Dhiffushi Island Council, the State Electric Company Limited (STELCO), Japan International Cooperation Agency, and the Asian Development Bank - was key to its success.

The GSEP will continue to monitor the system for two years, supporting STELCO to ensure that the necessary skills and know-how are in place to guarantee the project’s long-term performance and sustainability. The project is a successful example of local renewable energy development and will be a replicable model to accelerate climate action in the region.
Enel, with support from the GSEP, is working closely with the Ministry of Production in Peru and the local fishing community board, COPMAR, to implement the project. Permitting and procurement activities are ongoing and the plant is scheduled to be operational in 2018.

The cultivation plant will improve the local fishing economy by diversifying the products cultivated by the community, which will help boost its competitiveness and long-term economic sustainability. Finally, potable water will be produced as a by-product of the hatchery’s water purification system, for use by the community for drinking and other purposes.

Capacity-building workshops have involved the local community in the development and revision of the business model, in order to ensure the project’s economic and environmental sustainability. Local fishermen have also been trained in safe diving techniques and first aid. A part of the training program included technical training for women, who will now be empowered and educated to play a more active role in the community’s economic activities.

The project offers a multidimensional solution for improving the local fishing economy, maintaining the community’s artisanal roots while providing reliable, renewable electricity.

San Juan de Marcona is a coastal fishing community in Peru. Its residents, which include 500 artisanal fishermen and their families, make a living by gathering and selling algae. The community has unreliable and restricted access to electricity.

The Solar- and Wind-Powered Laboratory for Aquaculture project will provide electricity to an algae, scallop, and urchin cultivation plant (hatchery) in the community. The hatchery will be powered by an off-grid hybrid system consisting of a 50 kWp solar photovoltaic (PV) system, a 30 kW mini wind system, a diesel generator, and electrochemical batteries for storage (25 kWh). The system will generate 75% of its total energy from renewable sources and will prevent the emission of 246 tonnes of CO₂ per year, in comparison with a full diesel supply. In addition, 16 rooftop mini solar lighting systems have been installed at check points along the coast to improve night time safety for the fishermen.
Lima, Peru is one of Latin America’s largest cities. Its streets are filled with cars, buses, and taxis that run on diesel or have been converted to use gas. Electric transportation has huge potential to improve the city’s environment.

The project was launched this year under the leadership of GSEP member companies Hydro-Québec and Enel. The project team conducted a fact-finding mission and pre-feasibility study in early 2017. The feasibility study for the project is currently being developed with the support of various local partners and the Peruvian government. The bus is scheduled to be operational in 2018, depending on the results of the feasibility study.

The objective of this pilot project is to demystify the e-bus technology for local policymakers, transit operators and riders, and to encourage the integration of more electric buses into the public transit system.

A technical evaluation of the e-bus will be performed prior to its entry into service. Furthermore, the real-life performance, cost and customer experience will be shared with the municipality of Lima. A dedicated promotional campaign aimed at authorities and end-users will be launched to provide information about this new technology.

The Ministry of Energy and the Ministry of Environment in Peru have confirmed that this e-bus pilot project would fit very well with their efforts to reduce the country’s carbon footprint. Developing electric transportation is among the Peruvian government’s commitments to fight climate change. The project’s high replicability potential makes it a stepping stone toward the massive integration of electric buses into the local transit system.
Dairy farming is a way of life in the Colonia Delta community of Uruguay and a major sector in the country’s economy. Biogas is a promising technology that can provide cleaner electricity to agricultural areas like the Colonia Delta.

This year, the GSEP continued training the project partners in order to guarantee the long-term operation and maintenance of the project. We organized a site visit for nine representatives from the local government of San José and the Development Bank of Latin America (CAF) to two biogas facilities in farming communities in Brazil. A project agreement is now being developed and procurement planning is underway.

The biogas system will prevent CO₂ emissions and will also improve living conditions in the area by protecting surface and groundwater resources from contamination by manure and preventing the proliferation of flies and odours.

This project is being developed in collaboration with the Colonia Delta Cooperative, UTE (the public utility in Uruguay responsible for generation, transmission and distribution), the Department of San José, the government of Uruguay through its Project BioValor and CAF. Once completed, this project will serve as a model for replication in other farming communities in Uruguay, reducing greenhouse gas emissions and agricultural waste, which is the sector’s largest source of pollution.

**THE PROJECT AT A GLANCE**

The GSEP’s Biogas Micro-Generation System Project will feature a biogas production system servicing small dairy farms in the Colonia Delta community. Animal waste will be fed into the biodigester, which uses a bacterial biofermentation process to break down the waste into biogas and a leftover biofertilizer. The installed system will produce 2 x 75 kW of electricity, to be sold to the grid.

In 2016, the GSEP completed a feasibility study to potentially expand and improve our flagship wind project on San Cristobal Island in the Galapagos. The original project is now Ecuador’s longest-operating wind park and has produced more than 26 million kWh of electricity since its commissioning in 2007. The feasibility study, conducted under the leadership of innogy, identifies the potential to integrate more renewable energy options and storage into the island’s grid.