

# 2010 ISSUE

# **COMMITTED** TO SUSTAINABLE DEVELOPMENT

REDISCOVERING ENERGY

### Group profile

One of the leading power utility companies in the world, GDF SUEZ is active across the entire energy value chain, in electricity and natural gas, upstream to downstream. The Group develops its businesses (energy, energy services and environment) around a responsible-growth model to take up the great challenges: responding to energy needs, fighting against climate change and maximizing the use of resources. GDF SUEZ relies on diversified supply sources as well as flexible and highly efficient power generation in order to provide innovative energy solutions to individuals, cities and businesses.



### ACTIONS COMMITTED TO SUSTAINABLE DEVELOPMENT



# SUSTAINABLE DEVELOPMENT THE 21st CENTURY



Since the end of 2008, a global crisis has affected job and financial markets throughout the world. Of the many lessons this has taught us, one is undeniable: our expansion models focusing solely on extended growth and the unrealistic use of natural resources are not sustainable over the long term. This crisis is also an opportunity to re-think fundamental aspects pertaining to lifestyles and societies of tomorrow to direct them toward a more sustainable path.

National and international institutions, as well as companies, have given much thought to the changes needed to find a new way of developing that combines human progress, economic growth, and environmental protection. Accordingly, 2010 has been declared the International Year of Biodiversity and the European Year for Combating Poverty and Social Exclusion. This will also be the year when negotiations will be pursued to fight climate change and in which GDF SUEZ is actively participating.

The role of large-scale companies, such as ours, is essential in changing this model. As industrial suppliers of products and services in the 20<sup>th</sup> century, these companies are now also becoming bona fide agents of change in society that are committed to human and economic development, while taking into account all of the stakeholders. The social responsibility assumed by companies is a duty, and it is proof of their participation in sustainable development.

GDF SUEZ intends to build its growth on shared values: daring in transforming our expansion model; commitment



### THIS PROFOUND SHIFT TOWARDS RESPONSIBLE GROWTH FAVORS THE EMERGENCE OF NEW TECHNOLOGIES, PROVIDING CUSTOMERS WITH GREATER CONVENIENCE AND RELIABILITY.

to respecting the planet and social progress; drive towards success and excellence; and cohesion among our employees, customers, and stakeholders. This represents a profound shift towards responsible growth that favors the emergence of new technologies and a reliance on greater efficiency in the energy and environment sectors, all while improving consumer-oriented services by providing greater convenience and reliability.

In this profound economic and social evolution, we can reflect on the place of mankind which faces greater uncertainty, more instability and an increase in inequalities. As an industrial player, GDF SUEZ intends to fully carry out its commitments to society by fighting social exclusion and promoting equal opportunity in countries where the Group is expanding.

Besides, can we imagine a world that has been dispossessed of its natural heritage that goes back thousands of years, without which life would be impossible? Nature must be preserved and protected from growth models that result in irreversible biodiversity losses on the planet. Our Group seeks to ensure that, thanks to its processes, the wealth of regional fauna and flora is preserved within the scope of exercising its activities and its investments.

The new urban centers will be home to more than twothirds of the world population in 2050. GDF SUEZ is taking on this challenge by developing innovative, custom-tailored solutions in professions relating to energy, water, and waste disposal to respond to one of the major issues of the 21<sup>st</sup> century, which the quality of life in towns and cities. The Shanghai World Expo will allow all of us to expand our vision of this new urban world of tomorrow.

2010 is also France-Russia Cross-Year. GDF SUEZ, through its partnerships with Gazprom, aims to ensure that its natural-gas supply sources are diversified and a reliable supply to its customers is provided. Indeed, the Group is convinced that natural gas constitutes a key component of the transition period to a low-carbon economy and represents an energy source with high-efficiency potential and lower CO<sub>2</sub> emissions than those from other hydrocarbons.

These are the topics that I invite you to discover.



Gérard Mestrallet President and CEO of GDF SUEZ

After the Copenhagen Summit, "to decarbon" the production of energy is now, more than ever, a global aim to combat climate change. For several years GDF SUEZ has responded by using natural gas, nuclear, water, wind, sun and biomass. Firmly committed to promoting growth that respects the environment, the Group also encourages energy efficiency by using the latest technologies.

DEVELOPING RENEWABLE ENERGY

# **WIND-BORNE ENERGY FOR CHILE**

Inaugurated in October 2009 by Chilean President Michelle Bachelet and GDF SUEZ CEO Gérard Mestrallet, Monte Redondo is one of the country's biggest wind parks. It had to overcome several challenges before it could supply 57,000 Chilean households with 38 MW of clean energy.

Turning since January 2010, 19 wind turbines have been supplying the Coquimbo region in central Chile with electricity. "We wanted to complete this project in ten

months," remembers Pascal Brancart, Business Development Manager for SUEZ Energy Andino in Chile in 2008. "We ended up taking 12 months, but I would have liked to do better." Appointed CEO of Eólica Monte Redondo in 2009 and thus responsible for the future park's completion, Brancart is not likely to forget the experience. To build Chile's third wind park, 19 wind turbines made in Denmark and Spain had to be imported, and then shipped across the Atlantic Ocean around Tierra del Fuego and up the Pacific coast to Coquimbo, the primary port of this central Chilean region.

### Technical challenges...

Another problem from the start was that Chile only had one jib crane high enough to raise the towers, but it was

> not available. "The most realistic solution then was to import a crane from Venezuela that was able to accommodate their 80-meter height. However, after about two weeks, the crane broke down." Brancart needed nerves of steel to find the best solution to meet the deadline.

Should he import a new crane from the US or Europe at the risk of causing a two to three-month delay? Should he engage in tough negotiations with the Venezuelan company to get the crane repaired, or obtain compensation or a replacement for the broken crane? >>>

PASCAL BRANCART Business Development Manager, SUEZ Energy Andino - Chile

# AGAINST CLIMATE CHANG



TURNING SINCE JANUARY 2010, 19 WIND TURBINES HAVE BEEN SUPPLYING ELECTRICITY TO THE REGION AROUND COQUIMBO, IN CENTRAL CHILE.

### >>>

Losing time was out of the question and negotiation was the solution finally chosen. Fifteen days later, there was a collective sigh of relief when the crane, duly fitted with spare parts, resumed operations.

### ... And economic ones

At the very beginning of October 2009, the 19 2MW towers were in place and ready to operate. This project was very

well received by the population because it would initiate independence from fossil fuels. **b** On October 9, Chilean President Michelle Bachelet

together with Gérard Mestrallet inaugurated the

third wind park, and Chile's biggest at the time. The symbolic moment underscored the partnership's success in supplying the entire region around Coquimbo with electricity, thereby making a positive contribution to the various issues associated with the fight against climate change.

For GDF SUEZ, the \$100 million investment proved to be strategic in more ways than one. First, it represented a key stage in the diversification policy of the Group's energy portfolio. Second, the project brought benefits: it would decrease  $CO_2$  emissions by 54,000 metric tons annually, thereby allowing the country to replenish its carbon credits. Lastly, this diversification would have a stabilizing effect on energy prices and contribute to Chile's energy independence. For GDF SUEZ, which also has a presence in the country via Edelnor, northern Chile's biggest energy producer, the project allows it to establish its position and thereby participate in the economic development of a hitherto less favored region.

Thanks to the commissioning of new wind parks and hydroelectric power plants already being planned in the country, GDF SUEZ will continue to offer Chile a beneficial impetus to gradually free itself from fossil energy.

CO<sub>2</sub> emissions will be decreased by 54,000 metric tons each year.

# **FACTS & FIGURES**

**%** is the proportion of renewable energy sources in the electricity production installations of GDF SUEZ.



BY THE GROUP'S WIND FARMS THROUGHOUT THE WORLD. Hydroelectric power station in São Salvador (Brazil)

### A source of energy and development

Growing by 5% annually and requiring an additional 4,500 MW every year, Brazil's energy consumption is climbing upward. In this context, the new hydroelectric power station developed by GDF SUEZ Brazil and operated by Tractebel Energia, GDF SUEZ Group, should help support the country's growth efforts that are clearly based on low CO<sub>2</sub> emission energy. With a capacity of 241 MW, the power plant will generate sufficient electricity to supply a city of 1 million people. In order to systematically involve the populace in the project's execution and to limit its environmental impact, GDF SUEZ Brazil developed 38 programs within the scope of this project. In addition, the power station created 10,000 jobs, of which 3,000 are on site.



PlaNet Finance (China)

# In Gansu, people cook using processed waste

Almost 400 families spread among eight villages in Gansu Province in northeastern China can make their own cooking fuel. A microcredit program developed by PlaNet Finance China with GDF SUEZ has made this initiative possible. With the aim of improving living conditions in the county of Tongwei, the program consists of manufacturing "digesters" that transform household and agricultural waste into natural gas (methane). The families are being supported by the initiative to become completely independent in their cooking fuel production. Eventually, 32 districts and villages will be equipped with 170 new digesters.





### **Favorable winds**

## The first GDF SUEZ wind parks built in North America

A little less than three years ago, GDF SUEZ Energy North America (based in Houston, Texas) bought two wind parks from the Canadian wind developer Ventus Energy and whose construction had begun in 2006. The two sites named West Cape and Norway are located on the east coast of Canada on Prince Edward Island. Rated at 99 and 9 MW respectively, the two parks were able to export energy for the first time to the rest of Canada in 2009. Wind energy is especially well suited to the island that is exposed to the winds of the Atlantic Ocean and where the inhabitants have

enjoyed additional economic activity that has given a boost to business, and job creation. The owners of the property on which the wind parks are located receive considerable revenues from this land. While participating in studies

on possible adverse effects to the turbines, it was discovered that at West Cape wildlife seems to have already reclaimed its ground. At the end of 2009, GDF SUEZ also began operating the Caribou wind farm (99 MW) in New Brunswick, which will make it possible to supply the electricity requirements of 30,000 households.





is the number of individuals for whom SUEZ Environnement processes waste throughout the world. Haut-Var (France)

### Curbans solar power plant gives electricity production a boost

Perched at an altitude of 1,000 meters and blessed with a full southern exposure, the small village of Curbans is experiencing a bona fide "green" industrial revolution. Within the next three years, the Col de Blaux plateau will accommodate more than 145,000 photovoltaic panels distributed over 60 hectares to generate an output of 33 MW peak\*, which is the equivalent of approximately 20 wind turbines producing 43.5 million kW/hr annually.

Corresponding to an annual electricity consumption of 14,500 households (not including heat-ing), this amount of 100% renewable energy will decrease CO<sub>2</sub> emissions by 120,000 metric tons annually. This project is part of GDF SUEZ's strategy to have a diversified electricity production facility of 10,000 MW in France by 2013. The Curbans project began with an investment of €300,000 to finance studies on wildlife, flora, and the surface run-off of rainwater. Initial work began with the construction of a road to provide easy access to this plateau which had previously been inaccessible by vehicle.

Elected officials and Curbans' 400 residents, who are proud to have France's biggest solar power plant in their town, are looking forward to the commissioning scheduled for August 2011. Not visible from the valley, the plant will become a source of considerable income from land use.

 \* Unit of measure representing the maximum output of a photovoltaic facility





Rodenhuize (Belgium)

# A coal-fueled power plant goes green

### A world first

Since 2005, this old coal-fired power plant located near Ghent (Belgium) is gradually being transformed into a facility that, starting in 2011, will be able to produce green energy using solely biomass. Wood originating from responsibly managed forests is burned in the form of pellets that will allow the plant to generate 180 MW of power. The technical conversion on this scale is a world first. It required an investment of €125 million made by the joint venture company Max Green SA and consisting of Electrabel, GDF SUEZ, and Ackermans & van Haaren.

This technical feat that supplies 320,000 families with electricity represents the first stage in one of Electrabel's ambitious investment programs in renewable energy (€500 million) to meet the objectives laid down by the European Union in its Energy-Climate plan.

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### Wave-powered plant (Brazil)

### Waves create a new current

The rise and fall of waves – a new energy source for Brazil?

That is what Tractebel Energia, GDF SUEZ Group, is betting on as it develops an innovative prototype of a wave-driven power plant. It specializes in exploiting energy from the waves to generate 100% clean and sustainable energy on the breakwaters of Porto de Pecém, in the State of Ceara on the northern coast of Brazil. This new experiment using an on-shore converter was launched in 2009 in partnership with a research unit from UFRJ (Federal University of Rio de Janeiro), and would supply entirely "green" electricity starting in 2011. The project is part of the research and development program led by Tractebel Energia. The swell at the given location is sufficient to generate electricity 90% of the time. The experiment could be promising. The 8,000 km of coastline along the Atlantic Ocean could allow Brazil to cover up to 15% of its energy demand. Such a wave system would be a boon for countries with ocean coastlines.





# **ENERGY FROM THE DEPTHS**

Enjoy life with less energy – that could be one of the catch phrases that applies to Amsterdam (the Netherlands). This is a major project involving Cofely in the design and execution of an energy system in three eco-districts, including Overhoeks, that symbolize this clean and cost-efficient approach.

Overhoeks is a part of the city that is making a comeback. Located on the shores of the IJ River, it used to be a former hydrocarbon storage facility up until a few years ago. Today, it symbolizes sustainable urban development by excellence and reflects Amsterdam's commitment to sustainable expansion.

### Charting a course towards less energy

Cofely, GDF SUEZ Group, was selected in the Netherlands to provide energy management from the design to the exploitation stages over a 15-year period. For this company specializing in energy and environmental efficiency, the project is especially motivating given that by 2018, this zone will contain 2,200 apartments, 130,000 m<sup>2</sup> of mixed-use space for offices, hotels, and restaurants as well as the Film Museum. A highlight of the energy design for this multi-purpose space is an underground heat/cold storage system that will enable energy consumption to be reduced by 40% and CO<sub>2</sub> emissions to be decreased by 2,900 metric tons per year, i.e., it generates 40% less emissions than conventional systems.

### Taking advantage of the land's natural ecosystem

When it comes to sustainable cities, Cofely has already participated in several projects in other areas of Amsterdam as

well as at the Orbis Hospital in Sittard, in the southern part of the country. How- ever, Cofely could not expect to apply ready-made solutions. "We performed a comprehensive study to fully understand the city's specifications and resources," explains Frans Van den Boorn, the Marketing and Communications Director for Cofely in the Nether-



Marketing and Communications Director, Cofely (Netherlands)

lands. "We use underground storage, which is a technology that has been under development for the last 20 years, since the country's spongy subsoil lends itself to this method particularly well. We take advantage of phreatic layers whose temperatures vary. One layer at 20°C will be used by boiler rooms in the winter, while the other one at 10°C will supply the air conditioning systems in the summer." And what about peak hours? "In Oosterdokseiland, another big district in Amsterdam where Cofely also provides energy management, a biofuel-fed boiler will supplement peak hours if necessary. Everything is planned to make optimal use of the city's energy sources in response to the challenge posed by climate warming." At Overhoeks, three power plants equipped with five pairs of heat/cold storage wells are distributed throughout the areas. Drilled in 2008, the first well into the phreatic layer supplied heating and cooling to the first residential building and the Film Museum in the fall of 2009.

### Taking a step towards a circular economy

By means of this innovative project, Cofely is seeking to obtain a foothold in the virtuous circle of a circular economy, which brings together industrial processes and the cyclical functions of natural ecosystems. "We are proud to be participating in one of the most high-performance, sustainable energy urban pro-



Director of Public Relations, Cofely (Netherlands)

jects in Europe!" emphasizes Ingrid Clauwaert, Director of Public Relations Obviously, it's something to be proud of since this project gives Amsterdam a leg up [ in regard to energy management] and demonstrates that it is wholly committed to clean and cost-efficient energy. Combined cycle power plant (US)

### Astoria lights up New York

**GDF SUEZ** is doubling the capacity of the Astoria power plant, the most modern one in the Big Apple Situated across from Manhattan (New York), in the borough of Queens, the Astoria natural gasfired power plant represents the spearhead of GDF SUEZ in the production of electricity in the US. Holding a 58.5-percent stake in the Astoria Energy I power generation plant, the Group intends to compete with the country's biggest utility companies by doubling its energy output. This is to be achieved by the Astoria Energy II facility, a plant with an output of 575 MW, whose construction began at the end of 2009. By opting for a combined cycle natural gas-fired power plant and a high level of efficiency, GDF SUEZ is helping the global effort to fight climate change in the US. GDF SUEZ's investment should pay off quickly: the Metropolitan Transportation Authority, the Port Authority of New York, and the New York State Office of General Services have signed contracts that commit them to pre-set

prices over 20 years.



### Gheco (Thailand) High efficiency in Southeast Asia

Setting a precedent in Thailand, the Gheco power plant located in the Map Ta Phut industrial zone is the country's first supercritical coal-fired power plant to meet Thai and international emissions standards (NOx and SOx) as well as the European Union's stricter standards. Through this construction, Glow, GDF SUEZ Group, has opted for a high-yield energy production solution that reduces the number of grams of CO<sub>2</sub> emitted into the atmosphere per kilowatt/hour produced. Through its choice, GDF SUEZ is showing that it is committed to combating climate change by using all of the most optimized energy production methods. CO<sub>2</sub> capture and storage

# A solution inspired by nature



# Could this be a solution to capture $CO_2$ ?

Drawing inspiration from nature by replicating the natural storage principles of various gases. Researchers have thus conceived of injecting CO<sub>2</sub> emitted by industrial facilities in depleted reservoirs, unexploitable coal veins, or saline aquifers. However, one must first be able to "capture" the CO2: experiments reveal that it is possible to do so in a postcombustion process in smoke or before burning the fossil fuels. Another method consists of creating combustion with oxygen, making it easier to isolate the carbon dioxide. In this strategic area, the Group's research centers are developing a portfolio of research and pilot projects on various links in the CO<sub>2</sub> capture, transportation, and storage chain.

Once completed, this technology should allow GDF SUEZ in particular to massively reduce emissions of this greenhouse gas into the atmosphere once the regulatory and economic conditions are in place.

The technology should make it possible to substantially reduce emissions.

# **FACTS & FIGURES**



place is GDF SUEZ's ranking in the US as electricity supplier to industry and commerce.



### YEARS

of experience have been acquired by GDF SUEZ as a nuclear operator in Belgium. (United Kingdom)

# Future nuclear sites for CO<sub>2</sub>-free energy

How can one achieve energy independence, confront climate change, and meet the growing demand for electricity? British authorities are persuasively responding with nuclear means. Ten new sites have been officially put aside for new power plants. GDF SUEZ has just purchased a piece of land, next to the already existing Sellafield facility and facing the Isle of Man in northwestern England, upon which the Group is planning to build one or more operational nuclear reactors

between 2020 and 2025. The technological options are currently being studied, administrative and technological processes have been initiated, and a French-Spanish-British joint venture (GDF SUEZ, Iberdola, and Scottish and Southern Energy) has been set up. This project confirms the Group's ambition to play a major role in the revival of nuclear energy in the face of environment and energy related challenges.

Water treatment facility (Jordan)

# 95% energy autonomy to treat wastewater in Amman

A major first in the Middle East, the new wastewater treatment plant in Amman (Jordan) uses advanced technologies to treat sludge and wastewater generated by the capital city's 2.2 million residents. Built and operated by Degrémont, a subsidiary of SUEZ Environnement, this facility does something special.

Thanks to its hydraulic turbines being installed upstream and downstream, connected to engines fueled by biogas, the facility is able to produce 95% of the electricity required for water treatment – virtually a selfcontained system! As another strategic benefit for Jordan, the plant's capacity can return 100 million m<sup>3</sup> of high-quality water back to the natural environment every year, which serves as a lever to limit the use of potable water by industry and agriculture in one of the planet's most water-starved countries.

## ANNUALLY RETURNING 100 MILLION M<sup>3</sup> OF HIGH-QUALITY WATER BACK TO THE NATURAL ENVIRONMENT.



An antarctic adventure

### A polar station with zero emissions

Extreme conditions call for bold solutions. How can one supply the Princess Elisabeth polar research station (Antarctica), located at an altitude of 1,400 m in a white 1,500-km<sup>2</sup> desert, with costefficient energy while protecting the fragile environment around it by producing zero  $CO_2$  emissions?

The teams from the Electrabel research laboratory located in the Laborelec competence center in Brussels (Belgium), found a solution. Solar panels, batteries, bioreactors, pumps, water treatment systems, ventilators, interior and exterior lighting – each piece of the energy puzzle was studied in a Belgian lab and then put back together at the station after being successfully tested. This mission was assigned to six GDF SUEZ Group employees for the winter 2008-09 expedition led by the explorer Alain Hubert with the International Polar Foundation. This human and technological challenge will allow one to study on a large scale future solutions than can be applied elsewhere. It also falls under the scope of corporate sponsored skills that combine the expertise of Laborelec and the International Polar Foundation.



Becoming involved with underprivileged customers, helping to combat precariousness, promoting access to jobs, avoiding any form of discrimination... these social initiatives by GDF SUEZ are in line with the European Year for Combating Poverty and Social Exclusion. This involvement of the Group is naturally part of the civic commitment extended by all of its subsidiaries with the active support of its employees. Convinced that progress is worthwhile only if it is shared by everyone, Group employees are involved together with the inhabitants of all countries where the Group has a presence.



HELPING UNDERPRIVILEGED POPULATIONS

# PLAYING A SOCIAL ROLE

In Hungary where situations of energy-related instability are on the rise, GDF SUEZ is going beyond its legal obligations to help its most underprivileged customers.

"Everything has sped up in these last few months," says Sándor Iváncsics, Director of sales for GDF SUEZ Energia Magyarország Zrt. In this country that has suffered severely

from the financial crisis, the economic situation suddenly deteriorated in 2009, thereby worsening social problems. On its scale, the Group's subsidiary noted the effects: supplying 800,000 private customers with gas in 20% of the territory, it recorded a 50-percent increase in unpaid bills in 2009. Right when the socio-economic situation was becoming more tense, a law passed on February 15, 2009 now regulates conditions resulting in power cuts and a customer protection concept. Between October 15 and April 15, consumers can no longer have their gas supply cut off. For the remainder of the year, they are entitled to

three reminders and they have a 120-day grace period (compared to the normal 90-day period) to pay their bill if they are considered underprivileged customers. In regard to overdue

payments, they are still regulated and must be paid off on an installment-basis.

### Taking account of poverty

Even if GDF SUEZ Energia Magyarország Zrt did not expect the regulation to suspend gas cuts during the winter's coldest months, this new law disrupted the company's modes of operation. Sándor Iváncsics explains, "Since the law went into effect last July, changes are accelerating. Our biggest problem is ensur-ing the traceability of the payment process and adapting to the prerequisite stages, especially regarding reminders, prior to cutting off the gas." >>>

Director of Sales, GDF SUEZ Energia Magyarország Zrt



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However these changes are also an opportunity to reflect more comprehensively on underprivileged customers. To respond to these dire situations, the subsidiary is preparing new offers for its customers, such as measures that promote energy savings as well as provide disability/lost income insurance. The company is also getting involved on a ground level. "In difficult economic situations, we are aware of our social role," adds Sandor Iváncsics. "We are working together with municipalities to identify customers requiring protection because right now only 10,000 of our 800,000 customers have been classified as underprivileged customers. In reality, this is well below the actual figure which is very difficult to assess."

### Looking for a compromise

On a broader scale, GDF SUEZ Energia Magyarország Zrt is establish-ing close contacts with municipalities to avoid gas cuts and to simplify settlement in critical cases. The company is making sure that amounts due are averaged out, and it is also implementing agreements so that the municipalities assume responsibility for occasionally paying up to 75% of the gas bill. The impact is already noticeable. "This year, we decreased the number of gas cuts by nearly 70% compared to 2008," states Iváncsics, adding, "After seven reminders instead of four, and with a desire to work together and look for solutions, we prefer a compromise-type of approach. We have opened nine customer service offices besides the 19 existing ones to simplify serving our customers and strengthening customer relations."

"All these measures are very untypical for utility companies and therefore very new for us. We are aware of reconciliation methods as regards underprivileged customers since these gas cuts, which are both penalizing and costly, are never a good solution."

In this difficult economic situation, GDF SUEZ Energia Magyarország Zrt is aware of its social role. In four years, Isigaz has visited 130,000 homes, changed 25,000 flex hoses, and trained 270 mediators of which 60% were recruited from critical urban areas.



# Visits, tips, and relations

In underprivileged neighborhoods, making gas systems safe and controlling gas consumption help to improve people's quality of life. Nevertheless, the means to accomplish that are not always obvious. The purpose of Isigaz's mediators is clear: to make tenants of social housing aware of safety regulations and good practices, in close collaboration with local institutions, social housing landlords, and associations in the area. Replacing the stove's gas fitting free of charge if necessary, providing information on proper gas usage, and daily energy-saving or environment-friendly measures to reduce customer

bills, Isigaz's approach tends to be primarily educational. But it goes beyond the simple task of giving advice. By having different partners working together, Isigaz recreates a social link among all the relevant parties in a given neighborhood. The Isigaz teams can also identify individuals who have missed the due date on their bill or are in isolated situations. As a solidarity-type of approach toward the most underprivileged, this GDF SUEZ initiative also opens two-way communications between institutions and social service individuals in the field, all operating within a coordinated network.

# International observatory for energy- and water-related problems Better understanding for better anticipation

Difficult access to energy and water, as well as financial vulnerability are just some of the current pressing issues. In 2010 and as a result of the crisis, energy and water shortages affect a growing number of GDF SUEZ's 40 million residential customers around the world. As a preventive response regarding these underprivileged populations, the Group launched an internal international Observatory in December 2009. A tool to be shared among the subsidiaries in countries where the Group has a presence, it seeks to better identify the mechanisms behind instability so they can be remedied more effectively. Obtained from field experience in each country, the data collected from local public authorities and associations involved in the fight against economic and social instability will promote the sharing of knowledge among the various entities. By drawing inspiration from the voluntary involvement of the entities concerned, the Observatory will strive to advance prevention by promoting the sharing of good practices within the Group's various subsidiaries. Public service contract (France)

# A renewed mission and strengthened commitments

The public service contract between the French government and GDF SUEZ was extended for the period from 2010 to 2013. By strengthening the Group's commitments, especially in favor of the more moderate ones, this contract translates into better benefits for the most underprivileged customers by means of a  $\in$ 6 million allocation per year compared to the previous  $\notin$ 3 million allotment.

### (Mexico) Priority given to quality of life



Of GDF SUEZ Mexico's customers, 54% belong in the lowest socio-economic levels. For some of them, the natural gas bill can represent 8% of their income. Given this situation, the company chose to develop together with the Energy Regulation Authority prepayment systems to give the most underprivileged better control over their consumption. Behind the economic issue, the company also wants to address improvements in the quality of life and buying power for individuals in dire straits. In fact, GDF SUEZ has placed this concern at the center of its commitment as evidenced especially by its active support for the "Vive con energía" non-governmental organization that trains individuals to run their own small businesses



# New agreement with Emmaüs

### Energy to give - together

By extending the commitment made by GDF SUEZ in 2007 to the Emmaüs France association, the Group has signed a new partnership for three years based on four strong strategic axes. Information initiatives developed by SOS Familles will make it possible to increase public awareness for households faced with payment difficulties so that consumption can be regulated more easily. The information will also be available through the council regarding energy optimization for buildings in Emmaüs communities.

The second strategic axis is the expansion of salvage and recycling activities by Emmaüs: the Group will provide material which has reached the end of its service life, laptops, mobile phones or other furniture recovered from house moves. Meetings will also be organized between employees and Emmaüs aid recipients as will as collection activities. The third strategic axis is the professional integration of people at risk, whereby the Group will use employment access programs within its entities. Lastly, the financial support

given to corporate patronage and voluntary work provided by Group employees, will serve to benefit all social and environmental solidarity projects.





have GDF SUEZ teams operating in them.



# COLLABORATIVE INTELLIGENCE IN GUJARAT (INDIA)

Being a responsible player in its business territories when operating a methane terminal in northern India is a major concern for GDF SUEZ – both for humanitarian and industrial efficiency reasons.

"When one knows that in India, 42% of the population lives below the poverty threshold on less than €1 per day, social commitment naturally comes into play," explains Eric Ebelin, Director of the Petronet Project for the Group's LNG Division in India. "One must also understand that in India's sociopolitical situation, access to land constitutes a major problem that determines the success of industrial projects. Within this scope, having a good rapport with local populations becomes a necessity."

It all began in 2004 when Petronet, the Indian owner of India's first methane terminal in Dahej (in the State of Gujarat, west of Bombay) and one of GDF SUEZ's strategic partners, commissioned its terminal with the help of two French experts. On site, these expatriates had to provide consulting services to Petronet's operating teams for the first 18 months of the new terminal's operation. Upon completion of their assignment, Denis Suply, one of the two individuals, became involved in Codegaz (one of the Group's NGOs) offering his services in India based on his familiarity with the region. The humanitarian adventure took off, supported logistically and financially by the LNG Division. The first initiatives were implemented in Luvara, a small village located 12 km from Dahej.

The task consisted of installing a drainage system to drain

cess and says, "When one is the only Western partner around the management board's table, social commitment allows one to highlight the Group's commitment to ethical values. In a country where inclusive growth, which refers to economic growth for all, has become a dominant political theme, these types of positioning issues are critical." DGNL in agreement with Codegaz decided to pursue its efforts in the city of Bharuch, located 45 km from Dahej, regarding a priority task: expanding the VCC College, a boarding school for the region's young girls, most of whom are indigenous and considered "untouchables." The NGO's operational involvement will allow, it along with the school's sisters, to add another floor to the building, thereby doubling the school's admission capacity from 160 to 300 students.

support humanitarian projects. Ebelin considers the pro-

"The success of these projects does not depend solely on their financing. Petronet's active participation in project selection, its understanding of local problems, and its monitoring of the project's execution are the basic factors of success," emphasizes Ebelin. In addition, Petronet designated a project manager to monitor operations in Luvara. And what about the future? "India is packed with villages like Luvara. We have a methane terminal project in Kochi, and there will

certainly be additional needs."



### Social commitment – a basis for mutual agreement

"At the beginning, our Indian partner Petronet settled for supplying logistical support by housing the NGO teams when they came for several days every year. In September 2009, after having shown pictures and reports on the project's progress, Petronet followed our example by deciding to allocate the equivalent of €300,000 in financing to



Director of the Petronet Project, India.

DGNL's social projects deal primarily with health and education.

### Haiti – three group associations on site

In the aftermath of Haiti's earthquake, the involvement of the GDF SUEZ associations was fully evident. With several years of experience in humanitarian assistance, teams consisting of Group employees serving as volunteers deployed immediately to support stricken populations through Aquassistance for emergency situations or through Codegaz and Energy Assistance for projects geared toward future reconstruction.

### Vitally needed water

care units

Once the magnitude of the earthquake's destruction was known, Aquassistance immediately brought on-site assistance. The first task undertaken with Action Contre La Faim (Action Against Hunger) was to distribute drinking water, and build or upgrade latrines in the refugee camps. Aid associations distributed five liters of drinking water per day per person on January 17, five days after the quake. Very shortly thereafter, installing water treatment systems became the new priority for teams who then also trained Haitian personnel in operating the equipment.

Energy Assistance teams started

by identifying the most urgent requirements in terms of electricity as well as hospitals and clinics that had to be placed back into operation quickly.

### Indispensable medical supplies

Involved in local, long-term development, the Codegaz teams prepared an aid mission to assist earthquake victims by sending a container full of medical supplies needed for operating on and treating the wounded. Its principle of operation is to improve projects by involving corporate action over the long term. To fund its activities, the organi-

zation arranged a concert in Feb-**Bringing electricity to medical** ruary with the Institute of Franco-Cuban Music with the proceeds For its part, Energy Assistance used to send teams and supplies offered its services to restore to Haiti. With the involvement of electricity to clinics and hospitals. the Group's active and retired emp-Maintaining continuous contact loyees, all three are planning more with various associations and long-term aid projects to rebuild NGOs operating on site, the buildings and infrastructures in a

more durable manner.



### Health education (Brazil)

### Children as actors for change

In the rural areas near the Estreito hydroelectric power plant, poverty indices are twice as high as the national average and the infant malnutrition rates are worrisome. A health education program was set up to improve the children's quality of life. Its purpose is to make children aware of good health practices and to convey the need to change health and hygiene habits to their families. This action plan includes training instructors and community members, creating educational activities, and integrating relevant information in school programs. Co-sponsored by the Foundation of the Group, the Instituto Alcoa, CESTE and Johnson & Johnson, this program is currently being implemented for 30,000 children in 255 public schools in municipalities located in the power plant's vicinity.



### Water and electricity for all

In Casablanca's underprivileged neighborhoods, water, electricity, and sanitation are not necessarily a given. Involved from the beginning in responsible development programs pertaining to supplying electricity, Lydec, a subsidiary of SUEZ Environnement, expanded its involvement by distributing water, collecting wastewater, and providing street lighting in all neighborhoods, including shanty towns and illegal housing areas. Within the

scope of a 30-year management contract, this successful partnership between public authorities, the company, and local consumers, has already improved living conditions and reduced social exclusion of the city's most underprivileged residents. Providing access to these essential services was an opportunity to create jobs as well as to ensure a sustainable environment conducive to the emancipation of women.

### Social engineering **Dialog preferred**

Creating a dialog with populations and local parties when one is an SUEZ Environnement. Resident associations, the media, and professional organizations are all stakeholders that SUEZ Environnement seeks to better understand by developing a decision-making Tool Kit to be used by managers of its units. How does the external public perceive

the company and its activities? What problems is a unit facing? And addressed step by step in a dedicated section on the Internet site. The answers aim to guide managers in their thought processes regarding a dialog that is open, transparent, and void of any preconceptions. Set up in 11 pilot sites, the tool has already improved relations with local actors.



# FINDING A WAY BACK TO A JOB

Whether they have been unemployed for a long time, are welfare recipients, or are less than 26 years old, SITA Rebond, a subsidiary of the Group within SUEZ Environnement, helps them to get a job. Gilles Bazin has been there and can vouch for its assistance.

Tired of moving from one small fleeting job to the next and looking for work over a long period of time in Caen, Gilles Bazin was 26 years old when he decided in October 2007 to leave for Paris with his 7-year-old son. In making this leap into the unknown, his first thought was to go to the Pôle Emploi, a governmental job assistance agency. He was de-

termined to land a job even if it was only a few hours a week so that he could stop sleeping in a car or hotel room with his son. The first job that came up consisted of sorting waste at a waste separation center in Ivry managed in part by SITA Rebond. Without a moment's hesitation, Bazin accepted. "First and foremost, I was looking for a job and a paycheck." The job at the separation plant gave him 25 hours a week "enough to survive on while I continued to live at the hotel with my kid." At SITA Rebond, he was quickly noticed for his desire to take on more work. To regularly accommodate people who have been unemployed for long periods or young persons without any qualifications in its 14 job integration organizations, SITA Rebond knows how to support job searches. In 2009, the company enabled 554 individuals to be recruited for fixed-term or temporary contracts, as well as long-term contracts by returning 222 individuals to an employed status.

### A positive attitude at work

Thus, after barely six months in his first job, the SITA Rebond team at the lvry center offered Bazin the position of supervisor. He was now responsible for verifying that all products went to the proper pits and to organize the sorting line when workers took their breaks. But the parttime work was hardly enough to meet the needs of two people. He then found a vacant position in another waste sorting center run in part by SITA Rebond in Issy-les-Moulineaux, south of Paris.

SITA



GILLES BAZIN Employee - SITA Rebond

### IN 2009, SITA REBOND MADE POSSIBLE THE LONG-TERM REHIRING OF 222 INDIVIDUALS.

### >>>

Starting from scratch as a simple waste sorter did not worry him as much as when in the following week, he was once again promoted to supervisor. September 2008 marked the almost one-year anniversary of his arrival in Paris. His situation stabilized but insecurity remained because he was on a fixed term contract. "A job at SITA Rebond is not an end in itself," explains Erkia Benouda, responsible for recruiting and social integration at SITA Rebond IIe-de-France. "We have a role in helping individuals to get a job but the aid recipients must understand that they are not meant to stay in the waste sorting line forever." That was exactly what Bazin was thinking, whose aspirations then turned to the profession of driving heavy trucks.

### **Excellent support**

Aware of Bazin's tough and determined nature, Benouda then gave him an opportunity to participate in PLIE (a local employment integration program) to enable him to pass the CACES (safe driving aptitude certificate) test, followed by his heavy truck permit over the course of a four-month training period. He had all the skills to jump into a new professional career. "After what SITA Rebond did for me, I wasn't going to leave them in the middle of a contract." He continued with his assignment until November 2009.

In January 2010, with a driver/maintenance operator certificate in hand and a 40% higher salary, he finally found an apartment. "I just stuck with it. The integration team at SITA Rebond opened doors for me and boosted my morale. They supported me in drawing on some of my skills. Today, thanks to the journey I've been on, I feel good in my life and I can be proud. And I'm thankful that I persevered."



GEPSA (France)

### Getting back into the working world

Transitioning more easily from the prison world to a work environment and finding a job after completing a prison sentence are possible and it happens every year at Belle-Ile-en-Mer, in the Department of Morbihan in northwestern France. Every year, about 40\* people benefit from job integration services provided by GEPSA, a Cofely subsidiary, that manages employment and training in a penitentiary environment. Here, there are no walls or bars during the day. Supervised by specialized teams and over a period of three to six months, they are responsible for restoring the island's man-made legacies and environmental endowments together with the town of Le Palais. The first benefit of the program is that apprenticeships provide them with qualification training as they learn principles and methods that can be transferred to courses of study in the area

of Buildings, Green Spaces, or Road/Service Infrastructures. As they get into the rhythm of having work and personal time, and comply with instructions, they discover a sense of initiative, independence, and team work within the setting of a job site that enhances their development and improves the island's beauty. The initiative doubles as a form of social support geared toward developing a life-long mission, preparing a family environment, or even managing any health problems. A key passage in creating a link between two worlds, this five-year old initiative can claim a good success rate: upon completing their sentences, 70% of the program participants re-integrate back into jobs and the working world.

\* Contracts of three to six months for 12 program participants, or about 40 individuals per year.

Easily moving from a penitentiary environment to a professional context and once again finding a professional occupation is possible, and happens every year at Belle-IIe-en-Mer.





# Recruiting in full swing in the neighborhoods



At GDF SUEZ, recruiting is wide open. By signing up for the Plan Espoir Banlieues (a youth hope outreach program) for three years, the Group set an objective for itself in 2008 to recruit 540 young people under the age of 26, residing in critical urban zones (French acronym, ZUS) or living in areas covered by an urban social cohesion contract (French acronym, CUCS). In two years, the results have exceeded expectations. GDF SUEZ recruited 1,313 young people, reaching 122% of the combined goal. The achievement also represents a proactive attitude as confirmed by Gérard Mestrallet, Chairman and Chief Executive Officer of GDF SUEZ, who stated that "diversity is a competitive advantage" for all large-scale companies and the country itself. "Our company and our people must reflect the regions in which we work." Seniors

# More salaried employees in the prime of life

GDF SUEZ made a commitment in December 2009 to have more than 30% of its salaried employees at least 55 years old and older by the end of 2012. The idea is to increase the ratio of these older employees in France. As part of an agreement signed with French union organizations, the Group also gives priority to job coaching programs, setting precise objectives to simplify the transfer of knowledge and training to salaried employees above 50 years of age to enhance their professional development. Recruiting, improving work conditions and managing the transition to retirement are part of the Group's long-term commitment to encourage the employment of salaried seniors.

### (Brazil)

### Working for good grades

They are between 15 and 18 years old, and most of them come from the most underprivileged areas in Brazil. Every year, Tractebel Energia offers 49 of them an opportunity to hold a paying job for 20 hours a week. Meals and transportation are provided, as is insurance. The prerequisite for participating in this program is getting good grades in school. Since it was established in 1998, more than 300 young people have benefited from the experience and have thereby vastly improved their chances of entering the working world.

# **FACTS & FIGURES**

**38,500** BY THE GROUP ON ITS HYDROELECTRIC POWER PLANT CONSTRUCTION SITES IN BRAZIL.



French high school graduates from underprivileged environments were able to go to university in 2009 thanks to a partnership between GDF SUEZ and the Tremplin Association.



### **Fighting against** discrimination can be learned

How can one ensure diversity within the Group regardless of the country or entity?

What if it took place by training human resource teams, social partners, and management? Changing habits is exactly the objective of the European training program to combat discrimination to be established by FACE (in English, Foundation Acting Against Exclusion), GDF SUEZ and consultants from ALTIDEM. As the long-term partnership between the Foundation and the Group continues, this initiative recognized in particular by HALDE (an organization supporting equality and antidiscrimination) will be in place at a time when GDF SUEZ reaffirms its social and societal commitments. Indeed,

the Group hopes to improve its practices and develop a shared culture, in terms of discrimination prevention as well as equality in treatment, and even fostering diversity. Specifically, it provides interactive and participative training modules to enable each participant to modify their own behavior. The program will be launched in 2010 using a common basis that includes local characteristics unique to each subsidiary and country. It is an opportunity to reconsider their operating methods in recruiting and organizing skills differently. It also rounds out a program by implementing the Réseau Égalité Ile-de-France network that seeks to rally 1,000 companies in the region around Paris in the fight against discrimination.

Social interaction, equal status, generational interaction - the Group seeks to promote diversity in all of its forms and equal access to employment among all of its entities.

### Female Employment

### Women opening new horizons for themselves

One may be inclined to believe that certain jobs are better for men and others better for women. Even though the law prohibits that kind



of discrimination, in reality women do not work in the same fields as men. On the centenary of International Women's Day held on March 8, 2010, GDF SUEZ and FACE Paris joined up with RATP and the Groupe Alpha to encourage women to give a different perspective on jobs and open their employment prospects by entering "male" jobs. Accordingly, 120 women from Paris and the surrounding region from all walks of life came to listen to accounts from others, talk about experiences, and share points of view with companies seeking to open their jobs to women.

Handicap (Belgium)

### **Priority given** to skills

GDF SUEZ is involved with giving the disabled every opportunity to become active in the working world. In Belgium, five Paralympic athletes were hired by two of the Group's companies, Electrabel and N-ALLO, in 2009 based on their actual expertise and not as a result of "positive discrimination." As part-time employees, they can pursue their athletic careers, training schedules, and competitions. This principle will be generally applied in 2010 to all Paralympic athletes through other subsidiaries as part of a hiring agreement signed



by GDF SUEZ with Belgian partners and institutions affiliated with the disabled, sports, and re-integration into the workforce.





is the women's percentage of the Group's total workforce.

Balance, moderation, as well as ideas to give Nature back every opportunity to prosper is GDF SUEZ's wish in preserving fragile or threatened ecosystems and that desire falls in line with the International Year of Biodiversity. The environmental responsibility that is applied at all of its sites has the same objective: to disrupt mankind's irreversible damage to biodiversity and to create suitable conditions for wildlife, plant life, and the living world to find their proper place once again.

# **AN ECOLOGIST AROUND THE PIPES**

There are 55 km of pipes on two new sections to beef up the gas network in northwestern France, between the Departments of Moselle and Meurthe-et-Moselle. It is an opportunity for GRTgaz to go a step further in its sustainable, biodiversity-focused approach – with the help of an ecologist.

Biodiversity is something Frédéric Bosramiez, director of GRTgaz projects, is concerned about on each of his job sites. "Obviously we comply with the recommendations laid down

by the authorities, DIREN (a state-run regional environmental agency), Parcs Naturels, and the Conservatoire des sites Lorrains (a conservation organization created to protect endangered species). However, most of their suggestions lacked any kind of official and systematic monitoring." It's no easy task to ensure that on any given day, a job site's 300 employees follow the exact recommendations, of which they are often not fully aware. GRTgaz was contracted to install 55 km of piping in seven months. It has to be done quickly but the environment could not bring everything to a standstill either. GRTgaz decided to line up all factors in its favor.

"We called upon an impartial ecologist, Samuel Bourdin, right at the start of the project's design phase."  $\ensuremath{\mathsf{C}}$ 

### Advocate for the environment

Thanks to his presence, the dialog with DIREN was facilitated from the start. How should the work be organized in order to take biodiversity into account? Bourdin applied his expertise, validating choices made earlier, including the routing of the gas lines. The problem was that the piping had to cross pieces of land that are home to a rare species of butterfly. Bourdin's assessment compelled GRTgaz to go around the field. "Those kinds of decisions don't always make lives easier, especially for farmers," admits Bosramiez.



FREDERIC BOSRAMIEZ Director of GRTgaz projects



### Before, during, and after installing the piping, the ecologist helps GRTgaz to restore a section of the environment as naturally as possible

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They may have a different perspective from ours when it comes to making an equitable decision between preserving butterflies and bypassing cultivated land.

"Dialoging with land owners and farmers is an essential stage. But rather than us making big speeches, we organized a meeting between the farmers who have already dealt with similar issues and the new ones who are affected. Clearly less formulaic in their eyes than promises from an industrial company, this direct exchange largely defused any apprehensions." It also helped to prevent law suits: on the occasion of the public inquiry involving 36 villages, only six comments were made.

### **Employees as essential intermediaries**

On the construction site, it is critical to also make workers and service providers aware of environmental issues. Bourdin organizes information meetings to explain measures taken, such as screens put in place to protect a humid zone or the nests of Montagu's harriers. He uses notice boards to explain things and increase awareness, and in the field, companies abide by the rules. The ecologist asks that trash cans be installed on each of the vehicles so that they do not leave any debris or garbage. Normally, another team takes care of cleaning up a job site, but this simple act helps workers become aware of their impact on the environment.

The fact remains that the construction phase has raised new problems that the ecologist is monitoring in regard to the company's commitments. Certain companies are prepared to modify in good faith a watercourse's flow conditions to run piping. And yet, these are serious decisions that can result in criminal sanctions. Bourdin notifies them immediately. "Having an expert on hand who draws their attention to a problem and advises them on a course of action ensures that our approach is carried out in the field. It changes everything!" Commitments are adhered to, and obviously, the environment benefits. In the field, colonies of yellow-bellied toads are saved, and Bechstein's bats and Montagu's harriers are protected. The approach is altruistic and is fueled by experience and even disappointments. To protect the access road to the construction site used by 30-metric ton vehicles, the teams are used to placing logs along it. Bourdin will announce the qualified verdict a few months later in the assessment phase: the spruce logs have acidic barks that by altering the environment prevented the ground from revegetating properly. At the next site, the problem is corrected immediately.

### **Credibility at last**

On November 30, in line with the planning, the first molecule of gas can pass through the piping. Leaving the premises is out of the question without ensuring proper restoration of the land. The ecologist presents his evaluation to the environmental steering committee. For its part, the GRTgaz project team sends the environmental support plan to its colleagues operating the system to perpetuate the actions taken in regard to biodiversity. "The presence of an ecologist throughout the construction phase allowed our project that was often viewed with hostility to be accepted more easily," concludes Bosramiez. "Ensuring there was an interface with local individuals and entities created trust. We had already started doing work and were not fully aware of the environmental implications. With Bourdin there, we went an extra mile but we finally obtained some credibility!"



### (Brazil)

### Seeds of diversity

With 6,700 different species and of the world's most bio-diversified – and most threatened – regions, Brazil's Cerrado region combines a group of endemic ecosystems. To save indigenous plant species growing near the São Salvador hydroelectric power plant, the local population has unified within the scope of a preservation program that includes Tractebel Energia, owner and operator of the power plant, and the scientific community. The electricity producer built a nursery to collect threatened species and restore damaged areas. Thanks to the commitment of students at the agricultural training college, the nursery has already produced almost 40,000 seedlings.

# **FACTS & FIGURES**



regional nature parks are crossed by the GRTgaz network in France.

# 37,373 km

IS THE LENGTH OF THE NATURAL GAS TRANSPORTATION NETWORK (THE LONGEST IN EUROPE), WHICH IS MANAGED BY GROUP SUBSIDIARIES.

Waste



Compagnie Nationale du Rhône (France)

### The Rhone river reclaimed by nature

Since December 2009, the Rhone River has re-asserted itself in the Pont Saint Esprit region. As one of Europe's most powerful rivers with an average flow of 1,700 m<sup>3</sup>/s, the Rhone has known periods of dramatic floods in 2002 and 2003. As a result of a restoration plan undertaken since by the river's claim holder, the Compagnie Nationale du Rhône (CNR), GDF SUEZ, the Rhone has reclaimed 14 hectares that allow it to flow more freely in times of flooding. In a second phase, it has regained a hydraulic course close to that at the beginning of the

20th century. By recovering its freedom, the river has noticeably slowed its flow speed. Over the course of this rehabilitation program, CNR sought to reduce the impact on the environment and to preserve natural spaces, including: the seeding of reworked ground with local plant species, the creation of a temporary channel that allows shad, saltwater fish that reproduces in fresh water, to swim up the Rhone to reproduce. It also installed a fish spawning area in a confluence zone to give fish critical space to rest and reproduce.

### Panama

### Mangroves being monitored

How are the mangroves in the Bahia Las Minas doing? That has been one of GDF SUEZ's concerns since the acquisition of its thermoelectric complex in Panama. Every year, the status of mangroves growing in the cooling water discharge zones is closely analyzed. Forming ecosystems that are the planet's most productive in terms of biomass and coastal erosion protectors, mangroves are highly valued by sea creatures and a whole world of "micro fauna" born in these tidal areas. This periodic analysis process allows one to monitor temperature variations to prevent any damaging impact on this ecosystem's fauna and flora.

## An indicator of ecological quality

Can nature re-absorb disposal facilities for inert or non-hazardous waste? The answer is a resounding yes! Better yet, given these areas measuring several dozen hectares followed over several decades, these facilities often represent an opportunity to restore highquality natural environments. Up to what point and in what manner? The objective of an indicator developed jointly by SITA France, SUEZ Environnement, along with the National Museum of Natural History, was to measure the ecological potential of these sites. Ten variables, including wealth of plant life and wildlife, the presence of primary habitats, and invasive species, were evaluated to measure the examined site's biodiversity potential. With this at stake, a balanced scorecard will allow one to identify advantages and disadvantages in terms of biodiversity management and to monitor the effectiveness of the implemented measures.

A regional partnership

## **Biodiversity blooms in corridors**



How can easements along gas lines contribute to the protection of biodiversity? With the support of the Ile-de-France Region and France's National Museum of Natural History, GRTgaz conducted a study to measure the impact of the gas lines and their easements on natural environments. The results are promising: the pipe laying methods crossing the land and enabling its restoration to its initial state are proving to be very favorable to the development

of endemic species. By means of this partnership, GRTgaz is ensuring that environmental continuity is created based on these corridors that extend along the 500 km of piping in Ile-de-France. Having decided to extend this initiative to all of France's regions, GRTgaz is also making sure that its impact is limited at each of its project sites by prevention, impact reduction and compensation measures to restore highquality natural environments.



per year are processed by SUEZ Environnement.



is the installed hydroelectric capacity for which the Compagnie Nationale du Rhône holds a 100% renewable certification.

Vallauris wastewater treatment plant

### When work is ongoing, protected species head for green spaces

Vallauris Golfe Juan is known for its sunny beaches, its handcrafted ceramics - and its protected marine life. To deal with the Côte d'Azur's role as a tourist destination, its Nobilis water treatment plant was entirely rebuilt, expanded, and equipped with a new discharge conduit into the sea. To preserve a fragile marine environment, Lyonnaise des Eaux instructed the Lérins Islands Scientific Council (CSIL) to carry out an assessment of the

location of the fauna and flora likely to be affected by the work. A protection plan was in particular drawn up to move a big population of large Mediterranean pen shells (Pina Nobilis), a rare bivalve mollusk, which is one of the largest shellfish in the world. Their new location was tagged by GPS in order to follow-up their resettlement. Three years later, the CSIL reports show that 100% of the large pen shells are thriving!



Discharge from Donzère A new sweet life

### **Could waste storage facilities** be a boon for bees?

In Donzère, located in southern France, the site of SITA Centre-Est, a subsidiary of SUEZ Environnement, has taken on another role. After having completed its service life as a storage facility for nonhazardous waste, the site was reconfigured so that it could be reintegrated into the local environment. Keen on encouraging a return of biodiversity, SITA Centre-Est asked a beekeeper to introduce bees there. Therefore 37 hives housing almost two million bees

now ensure the production of some 200 kg of honey every year. As pollinators, the bees contribute to the reproduction and therefore survival of more than 80% of the world's flowering plant species. Thanks to lavender and other types of plant growing there, the Donzère site has become a bona fide environmental refuge for pollinators.



### **Biodiversity keeps local** governments busy

Welcoming life in all of its forms is a challenge for local governments! A natural legacy that is better protected, more responsible investments, more realistic consumption - these are just some of the issues on which towns are judged today. To help its customers meet their targets to reduce greenhouse gases, protect natural resources and preserve biodiversity, SUEZ Environnement conceived of Edelway, a commitment

to environmental performance. With the assistance of accurate diagnostic tools such as the index of ecological quality drawn up as part of a partnership between SITA and the National Museum of Natural History, SUEZ Environnement helps its customers in particular to measure the environmental impacts from activities carried out in their areas and to preserve biodiversity in this way.

### A world first: "Dragonfly" Zones Nature filters out pollutants

A 100% natural space where biodiversity plementary processing possible at the out-lets of water treatment stations is a feat achieved by a life zone located in the Deas the Libellule Zone (the French word for "dragonfly"). This also happens to be the acronym for "Liberté biologique et de lutte contre les polluants émergents" which against emerging pollutants". Conceived by researchers at Lyonnaise des Eaux with the

assistance of regional players , it seeks to eliminate residual micro-pollutants (metals, pharmaceutical residue and cosmetics) in purified waste water before it is discharged into nature. The zone is designed around cies chosen for their natural ability to ab-sorb certain pollutants and make it possible to vary the speed of flow and water depth to improve treatment. Ten days or so are Just plant to pass through the Libellule Zone and return back to its natural environment.





# HELPING THE FOREST'S OFFSPRING

The diversity of the landscapes and its ecosystems makes it a magical place. At the extreme southern end of Brazil, the Fritz Plaumann Park has a mission to safeguard the last vestiges of the original forest that covered the Uruguay River in the State of Santa Catarina.

The deciduous forest characteristic of the Uruguay River region was one of the ecosystems especially threatened in Brazil. Behind agriculture, livestock raising, and fishing, unrestrained forest exploitation has contributed to the worrying deforestation in this region. In 2000, the construction of the Ita hydroelectric power plant may have helped to save this forest for it was an opportunity to create the Fritz Plaumann Park for environmental compensation purposes.

"This 741-hectare park has a special mission. And that is to preserve fully protected areas to protect plant life and also enhance the natural propagation of various species," explains José Magri, Environmental Manager at Tractebel Energia. The joint effort provided by Consórcio Ita, Tractebel Energia, the FATMA environmental agency, and the park's management organization ECOPEF, who have all rallied

around the same objective of preserving the forest, enabled the program to be implemented. Tractebel Energia assumed a greater role when the company received approval in 2005 to co-manage the park, equally dedicated to scientific research, environmental education, and ecotourism.

### Fragments to perpetuate the lineage

"This park creates a link between the ecosystems that exist near the reservoirs and the shores of the Uruguay River. It thus proves to be an essential tool in conserving biodiversity in the region," continues Magri. Given a situation where the forest is severely threatened, the park holds a significant and usable number of threatened species despite its modest size. As small as they may be, samples and fragments characteristic of this forest offer favorable conditions pertaining to the ecosystem's recovery that are critical in restoring the original vegetation. Once recovered, these specimens will actually allow seedlings to be produced that can reforest the sector in turn.

This pioneering experiment in the State of Santa Catarina could become a model in southern Brazil and thanks to easily transferable methods, it could, like the forest, generate "offspring." Besides, another park is already being planned in the State of Rio Grande do Sul that will cover 450 hectares on the other side of the Ita reservoir. From now on, these two zones that are essential to flora and fauna conservation are sure to become reference projects.



Environmental Manager for Tractebel Energia

This innovative experiment in the State of Santa Catarina could become a model in southern Brazil. Energy efficiency, renewable energy, social interaction, respect for biodiversity...what if the city of the future represented a synthesis of all sustain-ability-oriented behaviors? **The Shanghai World Expo** will serve as an opportunity for GDF SUEZ to reaffirm its vision. From now on, our habitat must certainly evolve toward ecocompatible urbanization, and cities capable of living intelligently with their resources and able to adapt to changes over time.



# **BARCELONA, A CITY FOR LIFE**

In Barcelona's new "22@" district, an old industrial wasteland located along the northern coast, the future is already being lived on a human-scale combined with high environmental quality. It reflects a certain excellence among European pilot projects in which Cofely Spain and its subsidiaries are partners.

On this reclaimed stretch of coast in this eco-neighborhood, everything has been thought of to live well in the city. Children born in 2010 could go to elementary school, high

school, and university right here. And thanks to many cutting-edge industries, they would be able to find work to their liking. Living, working, and leisure time in one place in harmony with one's environment - that too is "sustainable." This equation was addressed by the Catalan authorities in the eighties to restore what residents once called the "Manchester of Catalonia," one of the biggest industrial textile centers in Spain. Thirty years later, the new "22@" district has become a showcase for the city's forward-thinking policies in terms of sustainable development. It may also be an international showcase, empha-



BERTRAND MARTIN Managing Director - Cofely - Spain

sizes Bertrand Martin, Managing Director of Cofely in Spain: "Through its local subsidiaries, GDF SUEZ has been involved since 2000, and every week, we receive visitors from

around the world who are curious about our advanced technologies."

### An efficient synergy

In Barcelona, when you throw your garbage bag into one of the bins that discretely dot the urban landscape, you help fuel a plant that incinerates waste. It is separated by an automated pneumatic system to recover recyclable items, while non-recyclable objects are burned in the furnace.

Its heat produces steam that serves the heating and cooling plant, which itself uses seawater to cool its machines.



### >>>

In the formerly abandoned neighborhood, 360,000 m<sup>2</sup> of housing, schools, universities, recreational spaces, hotels, restaurants, and companies have emerged that are supplied with heat and cooling by piping buried in the substrate and originating from the central facility. In this neighborhood, seawater is transformed into fresh water and supplies the heating/cooling station, thereby significantly reducing CO<sub>2</sub> emissions into the atmosphere as compared to individual facilities: 7,000 metric tons less in 2009 and 9,500 metric collection of waste eliminates the usual nuisance of garbage bins and blocked sidewalks.

### A sustainable future

"It's such a success," says Martin, "that Cofely is building a second heating/cooling plant in 2011 and a third one is already being planned." The companies, sponsors, and local managers appreciate not having to plan for control rooms or air conditioners placed on building facades. Other advantages include: the system's simplicity, reduced costs, demonstrated energy efficiency, decreased water consumption, a clear reduction in chemical processing, and fewer cooling towers. The plant, tucked under a green hill, fits into the surroundings nicely. "The technologies will adapt over time," says Bertrand Martin in closing, "Our shared approach is to use local resources for the benefit of the city. All the partners, both private and public ones, are united on this issue. Here, we're not developing more than we need."

Seawater is transformed into freshwater and supplies the heating/cooling station, thereby reducing CO<sub>2</sub> emissions into the atmosphere.



Eco-District of Limeil-Brévannes (France)

# Energy for the city without side effects

To find out what cities of tomorrow could look like, all one would have to do is pay a visit to Limeil-Brévannes, located in the Paris region. Distributed over approximately 10 hectares, 1,076 living units as well as businesses are currently designed and equipped according to a "sustainable neighborhood" principle. This is where Cofely is developing a heating network with zero carbon dioxide emissions. Everything has been anticipated: a woodfueled biomass power plant will provide heat; electricity required for the grid will be supplied by photovoltaic panels integrated into building roofs; and hot water will be produced thanks to thermo-solar panels. The combination of all these progressive technologies will allow the neighborhood to generate 95% of its heating needs without producing any waste. It's enough to make one dream about the future!

### DolceVita ZenBox

MON

# Cost-effectiveness and safety thanks to a box that never sleeps

GDF SUEZ's latest high-tech innovation allows one to get a sense of one's energy consumption to better control it, detect incidents (such as smoke, water leaks, broken cooling lines, and so on), and even detect any disruptions. Cost-effectiveness and security are thus combined in a small box one can install at home. How does this revolutionary device work? Sensors are installed by a technician on the gas, electricity, and water meters, as are smoke detectors, and temperature transducers. All of these devices are then linked to the DolceVita ZenBox which transmits the consumption data via a remote system to a dedicated Internet site. Individuals can thus compare their gas, electricity, and water consumption by the hour, day, month, and year. They can even be notified if they exceed a given energy consumption level or if a utility service is disrupted in their home.





Suzhou (China)

### Sludge as clean fuel

By the end of 2010, Suzhou's first sludge treatment plant will be able to process 300 metric tons of industrial and municipal sludge per day, thanks to the implementation of cuttingedge technology. Once dried, these sludges will be recycled into fuel and will be burned with coal to power the electric plant of Suzhou's massive industrial park. The advantages are two-fold: reduced coal consumption for the overall production of the region's electricity, and to top it off, a processing plant whose output is balanced in terms of CO2 emissions!

This initiative run together with SUEZ Environnement is an opportunity for this industrial park to reconsider its mode of operation and to adopt responsible environmental behavior as it continues to expand Spread out over 288 km<sup>2</sup>, this park is home to industrial companies from around the world as well as 610,000 residents. It's a big challenge for SUEZ Environnement which was contracted by the China-Singapore Suzhou Industrial Park to design, build, and operate the first sludge processing plant in the Province of Jiangsu.

### Shanghai World Expo

# GDF SUEZ is a partner in the French pavilion

A 6,000 m<sup>2</sup> guadrangle suspended on a mirror of water, cloaked in concrete fishnet and brightened up with a vertical garden, much like the Museum of Primitive Arts in Paris that is what the French pavilion will look like at the Shanghai International Expo. In line with the official theme of "Better City, Better Life," the building designed by architect Jacques Ferrier, champions construction principles that respect the environment. GDF SUEZ provides its expertise through its subsidiary ETC, a company specializing in the visualization and lighting of buildings, which will design the pavilion's multimedia and audiovisual content. As part of the program, giant monitors, plasma screens, and video projectors will depict images of the City, the theme of the 2010 Shanghai Expo, from different aspects: the City and the climate, the City and nature, the City and the future, the City and movement, the City and water, and so on. The Shanghai World Expo will thus also serve as an opportunity for GDF SUEZ to reaffirm its entrenched presence in China and make it a part of the group of builders working on pilot projects for cities of tomorrow. Present in China for the last 30 years with 7,000 employees in 16 cities on mainland China, the Group holds a strategic position in the country, especially through SUEZ Environnement, in regard to the management of urban and industrial water systems, the construction of water treatment plants, and the management of waste

and hazardous waste incineration. This long-term presence naturally places it at the heart of the global exhibition, which can be visited from May 1<sup>st</sup> to October 31, 2010.

### London Olympic-caliber heating and cooling

Think the Olympic Games consume a lot of energy? You bet. Just imagine all the gymnasiums, pools, and stadiums that must be lit, heated, and cooled when hosting the best athletes in the world! Obviously, the CO<sub>2</sub> emissions are substantial. That is why the authorities responsible for organizing the 2012 Olympic Games in London have assigned the design, construction, and operation of the Olympic Park's power plant to Cofely. Innovative technologies were chosen to maximize energy efficiency and reduce the environmental impact. Gas- and biomassfueled boilers will supply heat to the entire Olympic Park, while a cogeneration unit will provide electricity and heat to produce domestic-use hot water and to heat the aquatic center. This system will be able to cover 75% of the site's demand and decrease emissions by 20% (or 5,000 metric tons of CO<sub>2</sub>) for the duration of the 2012 Olympic Games.

### PANORAMA GDF SUEZ : A SHARED ENERGY PROGRAM FOR SUSTAINABLE CITIES

Designed as a decision-making assistance tool, this study of 40 French cities is centered on eight municipal management areas: energy, transportation, urban planning, economy, education, environment, public health, and civic responsibility.

urban heat and cooling

networks are managed

by the Group worldwide.

GDF SUEZ bases the security of its long-terms supplies on diversification of suppliers, which includes Russia as one of the top three. Within the scope of the France-Russia Year, new agreements signed between the Group and Gazprom symbolize this lasting relationship, a shared long-term vision, and a responsible and far-sighted approach in addressing current needs and future challenges.



# NEW PROJECTS BUILT ON THE BASIS OF A 35-YEAR RELATIONSHIP

Shared interests and reciprocal trust have marked 35 years of strong relations between Gazprom and GDF SUEZ. Contributing to the safeguarding of gas supplies, this relationship has now resulted in the Group's participation in the Nord Stream gas pipeline project between Russia and Germany via the Baltic Sea.

Gazprom and GDF SUEZ relations began in 1975 thanks to an "alliance of convenience" between France and Russia regar-

ding the first long-term, natural gas supply contract. The historic partnership made a significant impact on the gas market. One should also add that France's partner was not lacking in appeal: Russia has the world's biggest reserves, greater even than those of Iran and Qatar. Producing 70% of Russia's natural gas and controlling about 17% of the world reserves, Gazprom has become a heavy-weight in the Russian economy and a primary player on the international market.

### The key issue: a reliable supply

The signing of this first partnership contract between Russian and French industrial



XAVIER PERRET General Delegate for GDF SUEZ – Russia

companies marked the start of a business cooperation that has expanded regularly over the last 35 years. The key issue

> is to reliably supply GDF SUEZ's customers in France and in Europe based on a collaboration built on a balance of interests between suppliers and consumers. In this way, France has remained one of the top five buyers of Russian natural gas for the last several years.

> "By providing 16% of the Group's longterm natural gas supply, Gazprom represents a major supplier in our portfolio," says Xavier Perret, the General Delegate for GDF SUEZ in Russia. Since signing the first contract, it has provided the Group with a total of almost 300 billion m<sup>3</sup> of natural gas.







### The stimulating effect of cross-shared expertise

The bond does not end there. Supported by this reinforced expertise and greater reliability, Gazprom and GDF SUEZ benefit by strengthening their relations in other sectors. "We are developing a series of partnerships in various areas, such as training and sharing business expertise, scientific and technological cooperation, communications, and cultural activities," explains Perret. "Every year for example, our two groups organize cross-training for managers to improve a mutual understanding and discuss different perspectives." The scientific and technical co-operation agreement allows the two companies to share experiences and research protocols in various areas such as the operation and maintenance of transportation networks, gas storage, and energy efficiency. "The strength of the cooperative relationship in the area of natural gas will now allow us to expand into additional fields and tap promising prospects in the Group's other businesses and markets."

### The issue: ensuring a reliable supply for GDF SUEZ customers in France and the rest of Europe.

### New horizons give gas new routing

Obviously, this basis built on trust is paving the way for ambitious stakes, primarily in regard to supply, as demonstrated by the signing of a memorandum of understanding regarding both the delivery of another 1.5 billion m<sup>3</sup> of natural gas annually to GDF SUEZ as well as the Nord Stream project. Construction for this massive submarine gas pipeline between Russia and Germany will begin in April 2010. Of strategic importance, this project whose first phase will be completed in 2011, presents additional assurance regarding a reliable gas supply to millions of European customers. "By plotting a new route for Western Europe's gas supply, the Nord Stream project re-affirms a new commitment between the two groups toward a decidedly long-term cooperation," concludes Perret.



# **FACTS & FIGURES**

is the height of

the highest point on the hull of the Neptune, a methane/regasification tanker. Equally impressive is its length which corresponds to three soccer fields.

IOG IS THE ANNUAL VOLUME OF GDF SUEZ'S NATURAL GAS SUPPLY.

### A floating liquefaction plant

### Code name: Bonaparte LNG

The deal has been signed! For \$200 million, Santos, Australia's first oil/gas exploration and production company, has sold 60% of its stake in the natural gas fields located in the Bonaparte Basin, in the Timor Sea (off the northwest coast of Australia), and one of Australia's major natural gas regions. In this way,



GDF SUEZ will be able to make its technologically ambitious Bonaparte LNG project a reality. Specifically, it consists of building a floating, gas liquefaction plant with a projected capacity of 2 million metric tons of liquefied natural gas (LNG) per year. This endeavor constitutes a world first since there is currently nothing else resembling it. However, for the Group, this agreement is also a unique opportunity to expand its exploration, production, and liquefaction activities in the Asian-Pacific Rim region, which is a highpotential market representing two-thirds of the worldwide demand for LNG.

The Group helps to highlight the influence of Russia's rich legacy in terms of history, creativity, and culture.



GDF SUEZ a partner in the Sainte Russie exhibition

# Immersed in Russian art at the Louvre

If visitors can find their way to the Sainte Russie (Holy Russia) exhibition at the Louvre Museum in Paris that will be on display until May 25, 2010, it will be thanks primarily to GDF SUEZ's activities. The event is exceptional on both the artistic and cultural levels. With more than 400 pieces of sacred art originating from the biggest Russian museums, it will be the first time that such a collection dedicated to medieval Russia has been put on display. The exhibition covers 20 centuries of Russian art, from its Byzantine origins to Peter the Great, by way of Ivan the Terrible and the first Romanovs. Religious icons, fragments of rare frescoes, coins, first portraits of tsars, as well as unique manuscripts and books are some of the exhibition's highlights. While the show is ongoing, visitors can also attend conferences, symposiums, concerts of Russian classical music, as well as retrospectives of Russian films. By means of its support, the Group is helping to emphasize the influence of Russia's rich history, creativity, and culture and reaffirm the ties that link it to France. It is truly a pleasure for GDF SUEZ to invite guests and visitors to this fascinating journey through art and time!



### Neptune: a giant regasification plant

With tanks whose dimensions resemble that of a cathedral, the ship holds enough natural gas to heat 40,000 homes for an entire year. Such is the newest member of the GDF SUEZ fleet of LNG tankers. Equipped with its own regasification system, it is capable of revaporizing the liquefied natural gas (LNG) it is carrying and to offload it directly to natural gas networks via offshore systems. The GDF SUEZ Neptune will be used especially at the Neptune Deepwater LNG Port, developed and owned by GDF SUEZ, off the coast of Massachusetts (US). However, it can also carry LNG throughout the world or serve markets that do not have on-shore terminals. This impressive vessel is the result of three years

of construction in the Samsung Heavy Industry shipyard on Geoje Island (South Korea) and a \$300 million investment by ship owner Leif Hoegh & Company. For the Group, the ship represents a major step forward in floating LNG processing and its supply reliability. The Neptune is equipped with a diesel-electric drive system that allows it to use the natural evaporation of its cargo as fuel, thereby improving the overall propulsion efficiency and decreasing greenhouse gas emissions. For this environment-friendly capability, it earned the "Green Passport" given by Det Norske Veritas, which certifies environmental factors taken into account during a ship's construction, operation, and decommissioning.



# NORE INFORMATION



UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE **unfccc.int** 

EUROPEAN ENVIRONMENT AGENCY eea.europa.eu/themes/climate

THE EUROPEAN YEAR FOR COMBATING POVERTY AND SOCIAL EXCLUSION **2010againstpoverty.eu** 

THE INTERNATIONAL YEAR OF BIODIVERSITY **cbd.int/2010** 

SHANGHAI WORLD EXPO en.expo2010.cn

FRANCE-RUSSIA CROSS-YEAR france-russie2010.fr

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### Our values

drive commitment daring cohesion



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