

*Let's tackle
your challenges
together*

2018 Activity Report

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your challenges
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60 years
of Seureca



CHRISTOPHE MAQUET
President

“*Seureca plays an essential role in incorporating an engineering culture and project-oriented approach within Veolia.*”

A determination to go one step further

What's your view on Seureca's role as a member of the Veolia Group ?

Seureca's primary role is to develop the consulting engineering business and strategic and operational assistance for Veolia. Serving numerous public and private clients, in a wide range of countries, is a substantial asset to the Group. In addition to consulting and assistance, Seureca plays an essential role in incorporating an engineering culture and project-oriented approach within Veolia through a continuous interaction with the Business Units and Corporate Departments.

Across the globe and in all of the business activities (Water, Waste, Energy), Seureca furnishes development support directly to the Veolia Business Units.

The Seureca teams work closely with the Technical and Performance Department providing operational support to contribute to improving operational efficiency and applying best practices. This operational efficiency also involves investment optimization to which Seureca lends its expertise in planning, project management, and asset management.

In addition, the Engineering Division is a major actor in the digital transformation of the Group's Operational Units via its participation in the implementation of various digital business tools.

How does Seureca fit into the Veolia Group's 2023 Business Strategy?

Seureca is fully incorporated into the 2023 Business Strategy because it plays an essential role in assisting the Veolia Group to execute its operational strategy and the digital changeover of its business activities.

Seureca must be able to readily anticipate the answer to emerging needs and to contribute to the creation of new business models.

What development opportunities do you visualize for Seureca on a long-term basis?

These opportunities are at two levels: business lines and geographic locations.

A counterpart to Veolia's corporate orientations on business lines, Seureca has plans to develop in a number of promising sectors such as solutions for recycling and waste recovery and hazardous-waste management. It also aims to boost its skills in energy efficiency and energy mix. These are unquestionable opportunities for the Engineering Division.

Seureca's business, geographically speaking, has been focused on Europe, Africa, and the Middle East. It will also develop and expand in Asia and Latin America, regions in which Veolia has significant growth ambitions. ■

A determination to go one step further

Seureca celebrated its 60th anniversary early in 2019, veritable proof of durability for a company. How has the company succeeded in adapting over time?

One reason is our continual concern to maintain a close relationship with customers, which is one of Seureca's cornerstones. This has resulted in progressively developing permanent offices in France, the Middle East, Africa, Asia, and today in Latin America.

Built on a solid expertise in the water sector over 50 years, this client-oriented approach has been reinforced over the past 10 years by assimilating waste treatment and recovery, energy-related activities, as well as strategic and operational assistance, to meet the increasingly complex needs of our customers.

Adaptability is an ingrained element of Seureca's DNA. The world of engineering is changing rapidly and Veolia has undergone fundamental modifications in recent years. Seureca has been able to anticipate these reforms and successfully adapt to new challenges. For example, digital transformation is now at the very core of our business and of the solutions that we offer.

Why does a Corporate Social Responsibility policy matter to Seureca?

The Veolia Group has adopted a strategy that authenticates its mission "Resourcing the World", contributing to human progress and enforcing the United Nations' sustainable development objectives to achieve a better and a more durable future for all.

Seureca is an integral part of this approach, assisting its clients in installing environmental

solutions that address a wide range of issues quite often associated with access to fundamental services or optimizing resources management. The diversity of Seureca's existing skills and our ability to transfer them into the field guarantees long-term assistance to our clients and partners as well. I firmly believe that Seureca, consistent with Veolia's strategy, must pursue its own commitment to CSR.

How do you anticipate facing future challenges?

We will keep forging ahead!

Seureca will continue to consolidate client-oriented relationships, developing or reinforcing its geographic presence globally. We provide a central support to sites in our geographic areas of operation, through sound operational and technical expertise adapted to the management of large-scale projects. Our recent acquisition in Brazil is a good example of this development.

We will also accompany the Veolia Group's new 2020-2023 Business Strategy in the implementation of its operational developments.

In addition to the expansion of its current activities focused on emerging countries, Seureca aims to reinforce its ongoing activity in developed countries, as well as bolstering its business in other sectors such as hazardous waste, industrial services engineering, and combating hazardous pollution.

By consolidating the business synergies with our capacity for innovation, Seureca will preserve the reactivity and adaptability necessary to carry out its missions, respond effectively to tomorrow's environmental challenges, and maintain its status as a leading consulting engineering company. ■



PHILIPPE BLOCH
General Director

“Adaptability is an ingrained element of Seureca's DNA.”

The year 2018

in figures

33.7 M€

IN TURNOVER



236

EMPLOYEES

58% IN FRANCE | **42%** ARE ABROAD

TURNOVER BY ACTIVITY (%)



75%



10%



9%

AIR

6%

TURNOVER BY SECTOR

75%

MUNICIPAL SECTOR

25%

INDUSTRIAL AND TERTIARY SECTOR

DIVERSITY

A powerhouse of performance and innovation

31% OF THE WORK-FORCE IS FEMALE OF WHICH 66% ARE EXECUTIVES | **56%** OF THE WORKFORCE ARE EXECUTIVES

HEALTH AND SAFETY

37% OF THE WORK-FORCE HAS HAD SAFETY TRAINING | **0%** RATE OF SEVERE ACCIDENTS

6% FREQUENCY RATE OF WORKPLACE ACCIDENTS | Seureca is continuously vigilant and maintains a high safety standard by informing and involving all its employees.

VOCATIONAL TRAINING

71% OF EMPLOYEES FOLLOWED A TRAINING COURSE






2.5 DAYS OF TRAINING PER EMPLOYEE

Our international expertise
















In 2018, our teams completed close to 300 projects in more than 65 countries around the world

-  Water
-  Waste
-  Energy








AMERICAS

- | | | | |
|----------|---|---------|---|
| BRAZIL |  | EQUADOR |  |
| CHILE |  | MEXICO |  |
| COLOMBIA |  | PERU |  |
| DOMINICA |  | URUGUAY |  |













EUROPE

- | | | | |
|---------|--|-----------------|---|
| ARMENIA |  | LUXEMBOURG |  |
| BELGIUM |  | THE NETHERLANDS |  |
| CROATIA |  | PORTUGAL |  |
| DENMARK |  | SERBIA |  |
| FRANCE |  | SPAIN |  |
| GEORGIA |  | UNITED KINGDOM |  |
| GERMANY |  | UKRAINE |  |
| ITALY |  | | |

AFRICA MIDDLE EAST

- | | | | |
|----------------------------------|---|----------------------|---|
| ALGERIA |  | MAURITIUS ISLAND |  |
| ANGOLA |  | MOROCCO |  |
| BAHRAIN |  | NAMIBIA |  |
| BENIN |  | NIGER |  |
| BURKINA FASO |  | OMAN |  |
| CAMEROON |  | PALESTINE |  |
| CHAD |  | QATAR |  |
| DEMOCRATIC REPUBLIC OF THE CONGO |  | THE CONGO REPUBLIC |  |
| DJIBOUTI |  | RWANDA |  |
| ETHIOPIA |  | SAUDI ARABIA |  |
| GHANA |  | SENEGAL |  |
| GUINEA |  | TANZANIA |  |
| IVORY COAST |  | TOGO |  |
| JORDAN |  | UGANDA |  |
| KENYA |  | UNITED ARAB EMIRATES |  |
| LESOTHO |  | ZAMBIA |  |
| MADAGASCAR |  | | |
| MAURITANIA |  | | |

ASIA / OCEANIA

- | | | | |
|------------|---|-----------------|---|
| AUSTRALIA |  | INDONESIA |  |
| BANGLADESH |  | KAZAKHSTAN |  |
| CAMBODIA |  | KYRGYZSTAN |  |
| CHINA |  | MONGOLIA |  |
| EAST TIMOR |  | THE PHILIPPINES |  |
| INDIA |  | SOUTH KOREA |  |

-  Seureca projects
-  Permanent offices

The digital changeover of our activities

ACHIEVING AN ACROSS-THE-BOARD GREATER COMPANY PERFORMANCE

Digitalization has profoundly redesigned all our working methods today as well as our focus for clients.

For our customers and our employees, digitalization makes both our organization and the execution of our projects significantly more efficient and more secure. A real-time interaction and a collaborative operational approach have radically helped to increase our overall flexibility and responsiveness. Both the collection of data and its processing time tend to have a broad-brush reduction in favor of the time made available for completing studies, engineering work, and in the decision-making support.

Today, our digital package is a fundamental component that underpins Seureca's entire value model, whether this be in giving our support to operations, engineering, or the restructuring of environmental public service companies.

OUR CUSTOMERS ARE THE FOCUS FOR OUR SOLUTIONS

- assistance made on a case-by-case basis;
- increased interaction and proximity with our customers;
- transparency in the follow-up of projects;
- an outright increase in confidence.



SEURECA'S SUPPORT TO VEOLIA IN THEIR ROLL-OUT OF DIGITAL PROJECTS

Since July of 2018, the Strategic and Operational Support Department of Seureca has been accompanying Veolia's operational companies with the implementation of their digital business solutions. This has been consistent with the best practices championed by the Technical and Performance Department, and with the tools and modules designed by and/or certified by the Veolia Group's Information Systems Department.

WHY HAVE AN ACCOMPANIMENT BY SEURECA?

- Seureca's inherent method of working in project-mode allows our operational teams to be integrated from Day One for an optimal transfer of skills;
- a permanent interaction in the field, spanning all sectors and business lines alike, as well as in dealings with Veolia's central structures allows us to capitalize on user feedback and to constantly improve on our in-house tools;
- Seureca maintains a continuous watch over the needs expressed by customers and local authorities, and equally keeps a lookout for the solutions and players present on the market.

THE ADVANTAGES FOR OUR OPERATOR CUSTOMER

- a reduction of the non value-added tasks, such as multiple entries, etc.;
- safeguarding and monitoring the operations according to varying timelines;
- baseline analyses of operational data in order to identify the progress margins, deviations, etc. as well as for decisional documentations;
- the application of algorithms for business optimization, machine-learning, and artificial intelligence;
- an automation of the infrastructure management.

Improvement of the service quality and the technico-economic balance of the scope of work.

OUR KEY ACHIEVEMENTS:

CALLS FOR TENDER

- The preparation of chapters concerning digital solutions as well as business tools (Toulouse, Bordeaux, Nîmes - France, Hong Kong).
- Feasibility studies.

ON-SITE PROJECTS

- Participation in the development and support for the roll-out of the WaterLoss expert module (Guayaquil - Ecuador).

- Implementation of business modules:
 - Visualization of operational parameters (Synoptic View - France, Oman);
 - Monitoring and multi-resources optimization (BSH, OMR - France);
 - CMMS (Morocco, Niger, France, etc.).
 - CLEAR odor monitoring, with aerodynamic modeling of plumes;
 - Preparation of targeted renewal plans (CARMS and Sinapse).

Support to Veolia's bids

Seureca accompanies the Veolia Group in the preparation of its bids.

Three categories of support are available:

	1	2	3
	Project Management	Preparation of specific sections of the bid and costing	Pre-studies and feasibility studies
Tender file analysis and definition of the organization to be used for the bid.	✓		
Management of the technical aspects of the bid, including subcontractors and partners.	✓	✓	
Preparation of the cost estimate and the financial bid.	✓	✓	
Due diligence / on-site audit.	✓	✓	✓
Preparation of the necessary notes and chapters, with the mobilization of appropriate expertise.		✓	
Tailor-made studies to investigate the feasibility of an element deemed differentiating or critical for the tender or the contract.		✓	✓
Cost estimate of recommendations, OPEX savings estimation, and their impact on the service standards.	✓	✓	✓



OUR RECENT ACHIEVEMENTS

1	2	3
1 PROJECT MANAGEMENT:	PREPARATION OF COST ESTIMATE CHAPTERS:	PRELIMINARY AND FEASIBILITY STUDIES:
BP Khazzan (Design, Build, Operate and Operation & Maintenance - Oman)	Asset management, maintenance and renewal costing, model for decision-making assistance in penalties versus investments (Design, Build, Operate plant for desalination - Hong Kong)	Pressure modulation and automated control of network-plant couplings (ex. Toulouse - France)
Outsourcing of Public Services, Drinking water (Metz - France)	Asset management, GIS, energy mapping (Bordeaux, Toulouse - France)	
Operation of a wastewater plant (Maxeville - France)	Remote Plant Management of works (Nîmes - France)	



14 CONTRACTS SCRUPULOUSLY EXAMINED



STREAMLINING THE ACCESS TO BASIC VITAL FACILITIES FOR POPULATIONS

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Technical assistance to JIRAMA for the improvement of commercial management in the Diana region urban centers - Madagascar

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Pre-feasibility study for an artificial recharge of aquifers and water resource storage - Sultanate of Oman

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Project management to supply drinking water from the Sanaga River to the city of Yaoundé and its surroundings - Cameroon

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Project management for drinking water, sanitation, and waste treatment services associated with infectious-risk healthcare activities in four public hospitals - Niger

ASSISTING OUR CLIENTS TO OPTIMIZE THEIR RESOURCES MANAGEMENT

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Technical assistance in the promising branches of the Electricity and Geothermal Energy sectors - Dominica

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Steady-state and transient hydraulic studies for the desalination plant in Springvale - Australia

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Technical assistance in recycling the plastic from yoghurt containers - France

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Two-phase impact assessment for PepsiCo's future production increases - Belgium

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Audit and advisory services for renewable energies development and energy infrastructure modernization - Ghana

ENSURING REGION-WIDE SUSTAINABLE MANAGEMENT BY PROVIDING SUPPORT TO CLIENTS

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Technical assistance for the operation of the large-scale WSSIP I site at Maseru - Lesotho

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Engineering studies, design, and works supervision to upgrade the water supply, sewage disposal, and flood prevention at three international airports - Kenya

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Works management for the infrastructure of Les Bordes Golf International - France

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Design studies to develop the sorting and recycling of packaging in Santiago - Chile

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The Waternamics Waterloss module development and deployment for the Smart Guasmo project - Ecuador



TECHNICAL ASSISTANCE TO JIRAMA FOR THE IMPROVEMENT OF COMMERCIAL MANAGEMENT IN THE DIANA REGION URBAN CENTERS

Madagascar

As part of a national development plan set up by the government in 2015, JIRAMA, the national electricity company, aims to improve the access to electricity for the Malagasy population.

To complete this mission, the national company must modernize and improve its management.

To do so, Seureca carried out a global operations diagnosis in the municipalities of Ambilobe and Ambanja, in the Diana region, then assisted both municipalities' services with:

- preparation of the specification terms for the meter supply and prepayment management system, bid assessment, and equipment reception;
- the completion of the customer census;
- the creation and follow-up of the communication campaign covering this project;
- piloting the installation of prepayment meters.

Seureca provided recommendations for sustainable improvements in operational management:

- the installation of a Geographical Information System (GIS) and the in-service training of the JIRAMA staff;
- the development of reporting and performance indicators;
- the proposal for a business management organization and corresponding procedures.



“ This technical assistance aims to improve business management by reducing technical and non-technical losses to optimise the electricity supply and service quality for the inhabitants who depend on the Ambanja and Ambilobe facilities. To do so, all the meters were replaced by split prepaid meters placed on top of the poles. This is a pilot project for JIRAMA to demonstrate the utility and benefits of split meters and prepayment. ”

JULIE DOUARD
Project Engineer

PRE-FEASIBILITY STUDY FOR AN ARTIFICIAL RECHARGE OF AQUIFERS AND WATER RESOURCE STORAGE



Sultanate of Oman

In an environment of severe water scarcity, the Omani Public Water Authority (PAEW) is facing a significant increase of water consumption, year after year.

The PAEW recognises that there is a real need to ensure the reliability of its water supply system through increased storage capacity and providing additional supply sources during the peak season and in emergency situations. As a result, PAEW has launched a study to assess the value and feasibility of developing artificial groundwater storage and recovery facilities in the country.

Seureca conducted a hydraulic study including a water demand assessment to determine the supply options from aquifers and their capacity to meet nationwide demands.



“ The study's conclusion showed that PAEW clearly has a vested interest in developing an artificial groundwater recharge system in the country. It is estimated that these solutions will allow PAEW to cover peak demand during the high season and will provide a substantial safeguard for water supply in an emergency situation. ”

RÉMI LUTHEREAU
Project Manager



PROJECT MANAGEMENT TO SUPPLY DRINKING WATER FROM THE SANAGA RIVER TO THE CITY OF YAOUNDÉ AND ITS SURROUNDINGS (PAEPYS)

Cameroon

To reduce the drinking water production deficit in the city and surroundings of Yaoundé, the Cameroonian government launched a project to supply drinking water from the Sanaga River. The principal infrastructures of this project will be designed to produce 300,000 m³ of water per day, expandable to 400,000 m³ per day.

This project is financed by Exim Bank of China; the design and construction were awarded to the SINOMACH company.

Since September of 2015 Seureca is in charge of the project management on behalf of the Cameroonian government, namely in:

- providing legal, financial, and contractual assistance;
- checking both the design documents and the implementation documents;
- supervising the execution of the works;
- assisting with the reception as well as staff-training operations.

To support the government in the implementation of one of the largest on-going drinking water projects in Africa, Seureca has set up a multidisciplinary and multicultural team aimed to:

- ensure that the works are executed in compliance with current professional standards;
- respect the deadlines and budgets of the initial construction contract.

“ Our main mission is to ensure that the substantial investment of the Cameroon Government in the construction of this facility has a sustainable and long term impact. ”

PIERRE GAUTHIER
Team Manager



PROJECT MANAGEMENT FOR DRINKING WATER, SANITATION, AND WASTE TREATMENT SERVICES ASSOCIATED WITH INFECTIOUS-RISK HEALTHCARE ACTIVITIES (DASRI) IN 4 PUBLIC HOSPITALS IN NIAMEY



Niger

Niamey has seen a significant increase both in population growth and in its surface area. This creates new infrastructure and service needs, particularly in the water and sanitation sector.

Seureca carries out this project to improve sanitation and hygiene conditions in four public hospitals in the city, in partnership with the Nigerian design office, CEH Sidi, and funded by the Agence Française de Développement (AFD).

The objective is to provide at least 3 of the 4 hospitals with more effective sanitation facilities and hazardous waste treatment systems to reduce the impact of these facilities on the environment and their resulting health risks for the population.

This project management must also define the management and financing arrangements for the operation, as well as the facilities maintenance to ensure the sustainability of these funded systems.

Seureca has carried out:

- field data collection, measurement campaigns, and diagnosis of wastewater, waste, and drinking water installations;
- studies for the preliminary overview and final preliminary design, the environmental impact, and the social impact to determine the optimal technical and economic solutions to be used;
- preparation of business consultation documents and procurement support;
- assistance in capacity-building for the works supervision;
- The follow-up and quality control through the commissioning and carry over of the installations.



“ By reducing the health risks connected with wastewater and hazardous waste management in hospitals, this project improves the living conditions for the population of Niamey. It also contributes to a broader, strategic reflection on sanitation by involving the various stakeholders in Niamey. ”

KOLYAN CHAKRAVERTY
Project Manager



TECHNICAL ASSISTANCE IN THE PROMISING BRANCHES OF THE ELECTRICITY AND GEOTHERMAL ENERGY SECTORS



Dominica

The Government of Dominica (GoCD) has established a policy focused on achieving energy self-sufficiency by 2020. To achieve this goal, the government aims to exploit the island's geothermal resources to produce electricity and meet the population's needs. Meanwhile, it will maintain competitive energy costs, limit the impact on the local environment, and reduce greenhouse gas emissions. The government has created a private company, the Dominican Geothermal Development Company (DGDC), to develop a 7MWe geothermal power plant in the Laudat region of the Roseau Valley. The geothermal plant and accompanying facilities will be built under a single Engineering Procurement and Construction (EPC) contract.

Seureca assists the Dominican Development of Geothermal Energy company in drafting its Environmental, Social, Safety and Human Resources policies.

Seureca's services are structured in terms of the following actions:

- assistance to the management of social and environmental impact studies and in the drafting of a social and environmental risk monitoring plan. Capacity-building in the fields of social and environmental development;
- development of the Health and Operational Safety Policy and assistance in the implementation of dedicated procedures;
- drafting of a plan to mitigate the consequences of natural disasters;
- recruitment of a turbine specialist and locate a company to be charged with the maintenance of this future geothermal plant.

“ The objective of this contract is to help structure the newly-created Dominican Geothermal Development utility. The challenge is to establish a sound foundation for the company's management so that it can contribute to the country's exploitation of this significant geothermal potential. It is a project that offers Seureca an opportunity to sharpen its expertise in the new and growing field of geothermal energy. ”

REBECCA THEBAULT
Project Engineer



STEADY-STATE AND TRANSIENT HYDRAULIC STUDIES FOR THE DESALINATION PLANT IN SPRINGVALE

Australia

Veolia Australia and New Zealand was selected by Springvale Joint Venture and Energy Australia, through Veolia Water Australia Pty Ltd, to build and operate - over a 15-year period - the new water treatment facility for the Springvale and Mount Piper Power Station mine. This contract figures as part of their Design/Build/Own/Operate/Transfer scheme. The project is funded through a partnership with the Australian group Infrastructure Capital Group (ICG).

Seureca has been commissioned by Veolia to carry out the steady-state and transient hydraulic studies of the reverse osmosis plant to ensure that it operates properly under normal and exceptional conditions (plant power failure, improper valve handling, etc.) and to do so, determine the size of all the necessary devices, in particular water hammer protection.

“ These studies enabled Seureca to be involved in a major Veolia project and to assist a component of the Veolia Group with whom we had not yet worked. This emphasizes the potential of Seureca to meet to a specific request for expertise, which can be found particularly in the construction projects of desalination plants. ”

GUILLAUME GERMIER
Project Manager





TECHNICAL ASSISTANCE IN RECYCLING THE PLASTIC FROM YOGHURT CONTAINERS

France

Veolia commissioned Seureca to assist one of its industrial customers in the development of a closed-loop recycling solution for the recycling of 4000 tons of yogurt container packaging waste in order to produce new containers.

The waste to be recycled is composed of polystyrene and a lid welded with heat-sealed lacquer. The objective is to obtain a high-quality recycled plastic by separating the polystyrene and the lid.

Because it must meet the requirements for food use, the quality of the recycled plastic is extremely critical. The appearance must be identical to new plastic and the recycled plastic must be approved by the manufacturer producing the containers.

Seureca's services focused on:

- determining which recycling processes could be used to achieve the necessary quality;
- the implementation of trials for the selected processes, and a quality protocol with analyses of the recycled product obtained after testing;
- defining the quality-grade threshold.



“ Seureca played the role of main expertise coordinator for Veolia in the recycling of plastic containers for a industrial manufacturer. ”

MARIE LANOE
Project Manager

TWO-PHASE IMPACT ASSESSMENT FOR THE PEPSICO COMPANY'S FUTURE PRODUCTION INCREASES



Belgium

Pepsico Veurne Snack Foods plans to increase its Doritos production in two phases, a first boost of 300% by the end of 2020, and a second growth phase by 2022. PepsiCo questioned whether the current sanitation system in place was adequate to accommodate this growth or whether investments were needed to expand its treatment capacity. The company commissioned an impact study on the evolution of treatment capacities and treatment processes, with a focus on pre-treatment processes, biogas production, nitrogen treatment and chemical oxygen demand, and sludge quality.

THE IMPACT STUDY IS BEING CONDUCTED IN TWO PHASES:

Phase 1 - 2018: Assessment of the current impact and a theoretical impact during the business growth phase

- A complete evaluation of the existing wastewater yield from various sources, the capacity and efficiency of the wastewater treatment plant, and characterization of the main flows, including an assessment to determine the physico-chemical treatability;
- A final evaluation of the theoretical impact of the two planned growth phases, and a predictive hydraulic and mass balance for chemical oxygen demand and nitrogen.

Phase 2 - 2019 : Verification of the theoretical calculations through laboratory pilot tests

A comprehensive simulation of wastewater treatment is conducted in our laboratories to measure key performance indicators while regularly increasing the load according to the theoretical studies.



“ The result of this study is a clear action plan for the customer in terms of investments to remain in compliance with wastewater emission standards. ”

NICOLAS STEEMAN
Project Manager



AUDIT AND ADVISORY SERVICES FOR THE RENEWABLE ENERGIES DEVELOPMENT AND ENERGY INFRASTRUCTURE MODERNIZATION

Ghana

Through an agreement between the Millennium Challenge Corporation and the Government of Ghana, the Millennium Development Authority is implementing a project "Energy efficiency and energy demand management". One component of the program features energy audits of seven selected institutions in the public sector.

These audits, delegated to Seureca, have the following objectives:

- to reduce energy consumption by upgrading facilities through investments in energy efficiency and renewable energies;
- to draw up elements for the development of policies and regulations facilitating the application of energy efficiency and renewable energy solutions.

“ This study covers the entire life cycle of a project (the identification, design, procurement, supervision, and measurement of potential savings). The audits provide a solid foundation for the development of energy-efficiency policies and regulations in Ghana. ”

RAJMOHAN RANGARAJ
Project Manager



Seureca assists the Millennium Development Authority in:

- selecting the facilities to be audited;
- conducting preliminary energy audits and associated investments;
- the development of an action plan to reduce energy consumption;
- purchasing policy;
- studies to optimize the necessary set-ups in sensitive medical institutions;
- the structural study of load-bearing capacity of rooftops for the installation of photovoltaic systems;
- supervision of the design, construction, and commissioning of the infrastructure;
- assistance during the warranty period and post-commissioning check-ups;
- the preparation of a report on the achievements, the results obtained, and their impacts on the project.

TECHNICAL ASSISTANCE FOR THE OPERATION OF THE LARGE-SCALE WSSIP II SITE AT MASERU



Lesotho

The municipal authorities in the city of Maseru have constructed new large-scale water infrastructure (the WSSIP II project) including:

- 1 dam (roller-compressed concrete - 83 m high and 278 m wide at crest);
- 1 pipeline for raw water (800 m long and Ø 1100 mm of steel);
- 1 water treatment plant with a capacity of 93,000 m³/d;
- 1 pumping station with an average capacity of 859 l/sec;
- the transportation of water and its connected installations (127 km of steel pipeline, reservoirs, SCADA system).

Accustomed to managing smaller infrastructures, the local authorities needed to be technically accompanied and have their agents trained in the operation of these infrastructures. Seureca stepped in for this assistance.

Our team of experts provided their expertise on:

- operation of the dam;
- operating water treatment plants;
- operational monitoring, control, and maintenance of the network;
- financial management and asset management;
- "Non-Revenue Water" expertise;
- regulatory and compliance reporting.

“ The service already had in-house capabilities. The skills-transfer provided by Seureca allows the agents to operate larger infrastructure while optimizing the operation of smaller units sustainably and meeting regulatory compliance standards. ”

MIKE MAKURO
Project Manager



ENGINEERING STUDIES, DESIGN, AND WORKS SUPERVISION TO UPGRADE WATER SUPPLY, SEWAGE DISPOSAL, AND FLOOD PREVENTION AT 3 INTERNATIONAL AIRPORTS

Kenya

The water supply and sewage systems of the three Kenyan international airports are no longer efficient enough. While work to improve drainage has already been launched at Mombasa Airport, studies and work are expected to start at the Nairobi and Kisumu airports.

Seureca provided studies and design services under this contract for:

- wastewater outflow systems at the three airports, including redimensioning the size of the networks and relocating a pumping station located at Kisumu Airport;
- drainage systems for handling the overflow of rainwater throughout the airports during rainy seasons. Seureca has also designed outlying drains to treat the water from lakes near the sites.

Seureca recommended that boreholes be dug to diversify the water supply. Given that in the cities involved, the water distribution companies were increasing their distribution capacity, requests for additional water supplies were delivered to each of the sites.



“ Effective flood prevention has been observed at Kisumu and Nairobi airports. There is no more flooding on cargo areas, terminals, and runways. The additional water supply allows the airports to maintain their status on the FAA list and increase their rating according to IATA (International Codification System) rules. Once the sewer lines are installed, any overflow will be eliminated. ”

SHIRLEY MURIUNGI
Project Manager



WORKS MANAGEMENT FOR THE INFRASTRUCTURE OF LES BORDES GOLF INTERNATIONAL

Operational support provided by Seureca includes:

- comprehensive modeling for all the hydraulic networks;
- design for the networks and plant;
- preparation of tender documents and finalization of contracts;
- preparation of the necessary authorization or declaration files and the follow-up of their implementation;
- supervision of the works until the reception and guarantee of total completion;
- commissioning and delivery of the works to the client.

France

Located on the border of the Loiret and the Loir et Cher counties, Les Bordes Golf International aims to become a major hub for tourism in the Loire Valley.

In 2021, Les Bordes Golf aims feature two world-renowned golf circuits and their driving range, a riding center, a sports complex, several conference rooms, various shops, a 5-star hotel, as well as leisure activities. The center will also have a substantial real-estate development project.

To bolster this ambitious project, Seureca is the prime contractor for the implementation of water, wastewater treatment, and energy services.

The construction started in 2014 for drinking water distribution networks, a collection system, and a wastewater treatment plant containing a Vegetated Discharge Area (VDA). In compliance with Best Practices in resource management, re-use systems of wastewater and rainwater for irrigation have also been installed. Networks for fire protection and energy distribution were also part of this construction project. To date, the first phase has been completed, covering half of the site.

In 2019, Seureca is coordinating the general construction work for a new 18-hole golf course, its driving range, the creation of five ponds, and a pumping station for irrigation.



“ Our in-depth knowledge of the administrative workings and specific characteristics of the French market has enabled the investor to carry out his project in compliance with all the regulatory and administrative obligations, as well as Seureca's assistance with its in-house technical skills for more than five years. ”

MICHEL BURGHART
Project Director



DESIGN STUDIES TO DEVELOP THE SORTING AND RECYCLING OF PACKAGING IN SANTIAGO

Chile

The waste-treatment solutions in Chile are primarily landfilling, with very little recovery of materials nor organic matter.

The Metropolitan Region of Santiago, with a population of 7 million, has launched an initiative to develop a selective collection of recyclable waste from households and the recovery of the corresponding waste.

To do this, it is necessary to build sorting centers for separating the materials before being recycled. Based in the municipality of San Bernardo, this project aims to create a major waste sorting and recycling center.

Seureca was in charge of covering the following:

- preliminary design studies for a sorting plant planned to handle 75,000 t/ year of packaging;
- the definition of the flow diagram and theoretical performance of the installation, the mass balance, the pre-dimensioning of the equipment, the layout plan of the installations, as well as the estimation of the investment and operating costs.



“ This project is a unique opportunity for Seureca to showcase the Best Practices used within the Veolia Group. ”

RAPHAEL BERDUGO
Project Director

THE WATERNAMICS WATERLOSS MODULE DEVELOPMENT AND DEPLOYMENT FOR THE SMART GUASMO PROJECT IN GUAYAQUIL



Ecuador

Faced with a very high level of water losses -over 60%- in the Guasmo area of Guayaquil, the "Smart Guasmo" project was started in 2018 by Interagua, the Veolia company managing the city's water/sewage/rainwater concession. This project was created to reduce water losses by combining innovative digital solutions (Hypervision, tele-metering for large-scale consumers, etc.) and operational measures (sectorization, renewing customer meters, leak detection) enabling to strengthen and modernize the follow-up on operational performance for this crucial part of the city's system.

In collaboration with Veolia's Information Systems Department, Seureca's teams provided technical expertise for the development and deployment of the Waternamics Waterloss module. This virtual machine monitor is specifically designed for operational tasks such as the monitoring and reduction of non-revenue water (sectorization monitoring and assessments, threshold alarms, leak repair monitoring, performance indicator calculation, monitoring large-scale consumers, fixed and variable area discharges leak-rate modeling, etc.) by the transversal use of data from various business information systems (SCADA, GIS, Customer Care and Billing, CMMS) continuously incorporated into the Veolia data lake.



“ Our contribution to the creation of a Veolia digital tool like the Waternamics Waterloss module is consistent with the current dynamics of digitalization work at Veolia. We have been able to work on innovative tools in synergy with the teams of the Veolia Information Systems Department, as well as providing Seureca's in-bred international business experience for projects in non-revenue water reduction. ”

RAINER MOREL
Project Head

Seureca

at a glance

1959

A few men concerned with "the necessity and urgency of implementing programs for the supply and distribution of drinking water, irrigation, and sanitation in developing countries", decided to join forces and create an engineering company whose purpose was to carry out, in countries outside of France, assessment contracts dealing with the water and sanitation activity.

This became the **S**ociété d'**E**tudes pour l'**U**rbanisme, l'**É**quipement et les **C**Analyses, or Seureca.

1984

Creation of the Nairobi office in Kenya in connection with the Nakuru project. This office became a Seureca subsidiary in 2004.

1998

Affiliation with the Compagnie Générale des Eaux.

To establish an international design office, the streamlining of the consulting engineering activities was carried out by the Veolia Group with a merging of Seureca and Space International, the consulting engineering office of Compagnie Générale des Eaux, created in 1991.

2002

Official opening of Seureca Overseas in Dubai, in the United Arab Emirates.

2005

Official opening of Seureca Saudi in Riyadh.

2010

Creation of the Veolia Group's Consulting Engineering Division, VEIC, with Seureca as an engineering hub. Extension of the scope to include energy and waste.

2011

Official opening of Seureca Muscat in Oman.

2012

Inclusion of EPAS, a company specialized in industrial water treatment and technical assistance, and DESL, a firm devoted to the development of energy efficiency and renewable energy projects.

2016

The Consulting Engineering activity in France, previously managed by the company Sétude, is transferred to Seureca. Seureca joins Veolia's headquarters.

Early in 2019, Seureca celebrated its 60th anniversary. Having a substantial experience based in the water sector, the company has opened up markets in energy and waste management over the past decade.

With agility and reactivity for coping with complexity throughout the years, Seureca proves that tailor-made assistance is ingrained in its DNA.



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