

ACTIVITY REPORT 2022-2023



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INTERVIEW

PHILIPPE BLOCH

Managing Director



Strong business growth for Seureca in 2022, what does this mean?

Philippe Bloch : The strong growth experienced in 2022 was the result of diversifying into new geographies and activities in recent years. It was also due to the simultaneous start-up of various major Operational Assistance contracts in Saudi Arabia, the Ivory Coast and Tanzania, along with the strong development of our solid waste activities.

We expect more moderate growth for 2023, which allows us to consolidate our resources in our sectors of activity and in our geographic areas - with recruitment and skills development being two key areas of focus for our company today - together with our streamlining of project management by stepping up the digitalisation of our businesses and by developing our tools and methods to maintain a high level of customer and stakeholder satisfaction.



PHILIPPE BOURDEAUX

President

What impact has the merger with Suez had on Seureca?

Philippe Bourdeaux : The merger resulted in the creation of the world champion of ecological transformation. For Seureca, as the consulting engineering firm of this world champion, this means more business opportunities thanks to the Group's wider geographical coverage, such as in Qatar, Jordan, Thailand, or Turkey, as well as more intra-group opportunities thanks to work with our new Business Unit colleagues, who wish to benefit from our expertise.

The merger also led to a partnership with Aquatec, Agbar's consulting engineering subsidiary, with the long-term goal of developing joint offerings in Latin America and technical cooperation on future issues, such as climate change adaptation, nature-based or digital solutions.

Finally, for Seureca, the merger will also accelerate its capacity for innovation through closer cooperation with the Veolia Innovation Department.

Ultimately, this has substantially strengthened the Veolia Group's consulting engineering offer.



What are business development opportunities in Latin America and Asia?

Philippe Bloch : Developing our businesses in these two geographical areas is one of our strategic priorities.

In recent years, we have experienced significant growth in Latin America, mainly in the Caribbean, Central America, and Brazil, via our local subsidiary Seureca Latam. Our teams have carried out major projects, such as the Results Based Technical Assistance for the Water Company of San Cristobal in the Dominican Republic, support for the electricity and geothermal sectors in Dominica, and studies to clean up the Choluteca river in Honduras.

We will continue to develop in the area by diversifying our businesses in Brazil, continuing our cooperation with Aquatec — Agbar’s engineering subsidiary — which is widely active on the continent, and implementing the proven business models of Technical Assistance, Performance Contracts, and Management Contracts.

Asia offers huge potential. We plan to establish a permanent base in Thailand in order to strengthen our presence and ensure local development on the continent. Our teams have recently achieved significant successes in the area, including a project to reduce marine plastic pollution in Southeast Asia and an industrial wastewater management project in Mongolia. We are determined to continue on this path to become a major player in preserving resources, combating pollution, and providing access to essential services in the region.

How does Seureca contribute to Veolia’s current strategic plan?

Philippe Bourdeaux : The Group is actively working to prepare its 2024-2027 strategic plan, which will be presented publicly in Q1 2024. Beyond the new aspects to be announced, this new plan will remain structured around the seven growth segments, defined in the previous plan, with a special focus on energy.

Fully in line with the Group’s intentions and interests, Seureca therefore chose to announce its new organisation based on these seven segments in May 2023 and finalised the acquisition of a Spanish engineering firm specialising in the energy sector. As such, just as the Group wishes to balance the weight of its three businesses in its turnover, Seureca is consolidating its water offer, and is developing its waste and energy businesses.



What is Seureca’s mid and long-term strategic vision?

Philippe Bloch : In order to reduce our dependence on our water business, still by far the largest Seureca business line in terms of volume, we will continue to diversify by increasing the share of the energy, waste and industrial services sectors in our business portfolio. However, we will continue to develop our water business, focusing, in particular, on technical assistance and performance contracts, as well as planning and feasibility studies in the major cities of emerging countries, and design and works supervision in selected geographic areas.

We will continue to diversify our business geographically by strengthening operations in Asia, Latin America, Europe, and France, to support the Group’s business, while maintaining operations in Africa and the Middle East, where we have a strong presence.

Seureca’s strategic vision is in line with Veolia’s ecological transformation.

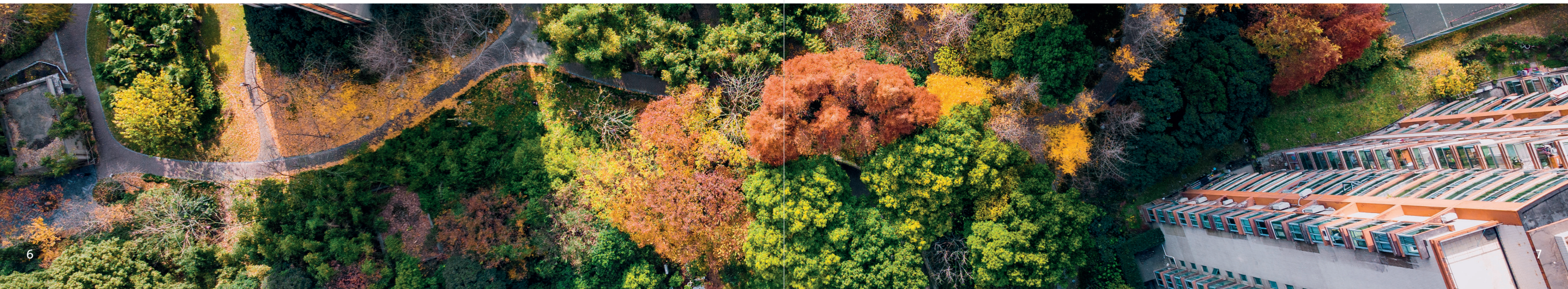
Our experts are now focusing on enriching our offering on issues for the future, such as regional multi-energy schemes, integrated water resource management, wastewater reuse, plastics recycling, and biogas. We are also driving the deployment of the Group’s decarbonisation offer — GreenPath — within our projects.

Finally, we are imagining new solutions by integrating the Group’s innovations into our projects whenever possible and by seizing opportunities for partnerships with start-ups driving innovation in the geographic areas we operate in.

Philippe Bourdeaux : As mentioned previously, in the medium term, in order to continue to provide relevant and innovative solutions and match, as closely as possible, the concerns and needs of operations, Business Units, business operations and its customers, the consulting engineering division of the world champion, must be agile, strengthen its activities in the Group’s strategic fields, and develop business in its new geographic areas, such as in Asia and Latin America, where strong business development is expected.

In the long term, Seureca should aspire to pioneer ecological solutions in emergent countries for the Group. For example, Seureca is present in Tanzania and Kenya under Management Contracts, but tomorrow, we must be able to offer Veolia’s entire value proposition — from decarbonisation to resource decontamination and renewal — for these regions.

As such, who better than a group like Seureca, whose commitment and diverse range of expertise are no longer to be proven, to take up the challenge of engineering the ecology of solutions! In doing so, Seureca is helping to build the Veolia of tomorrow!



KEY FACTS ON SEURECA



Seureca is the Consulting Engineering and Strategic and Operational Assistance Division of Veolia Group.

Our experts design solutions for public authorities, industries, and the tertiary sector to meet the challenges of access to essential services, sustainable resource management, environmental protection, and performance improvement.

Our teams are actively involved from the initial concept phase through to operational implementation including a variety of services covering audits and studies, design and works supervision, strategic and operational assistance, as well as training and skills transfer.



Is backed by the world leader in ecological transformation

As Veolia's Consulting Engineering Division, we draw on the Group's expertise, its network of experts, and its Scientific and Technological Expertise Department at the forefront of environmental innovation.

SEURECA, CONSULTING ENGINEERING...

Designs sustainable solutions

By bringing together multidisciplinary expertise in the water, energy, and waste management sectors, our teams develop technically-reliable, economically-viable, and easily replicable integrated solutions.

Takes a sustainable approach

From study to work supervision and operational assistance, our experts co-construct environmentally-realistic solutions with our clients.

Covers five continents

Seureca's international presence fosters client proximity and allows us to better understand the specific constraints of each region.

Creates added value

Our teams integrate customer issues from the study phase, along with recommendations and the development of action plans, up to operational and managerial implementation for appropriate, efficient, and sustainable solutions.



SEURECA IN FIGURES



300+

employees
of which + 60% abroad

€39 million

in turnover
i.e. + 30% compared to 2021

85 %

Public sector
funders, local authorities,
governments

OUR CLIENTS

15 %

Private sector
industrial
and tertiary

3 BUSINESS LINES



75 %
water



18 %
waste



7 %
energy

3 ACTIVITIES



45 %
Strategic and
Operational
Assistance



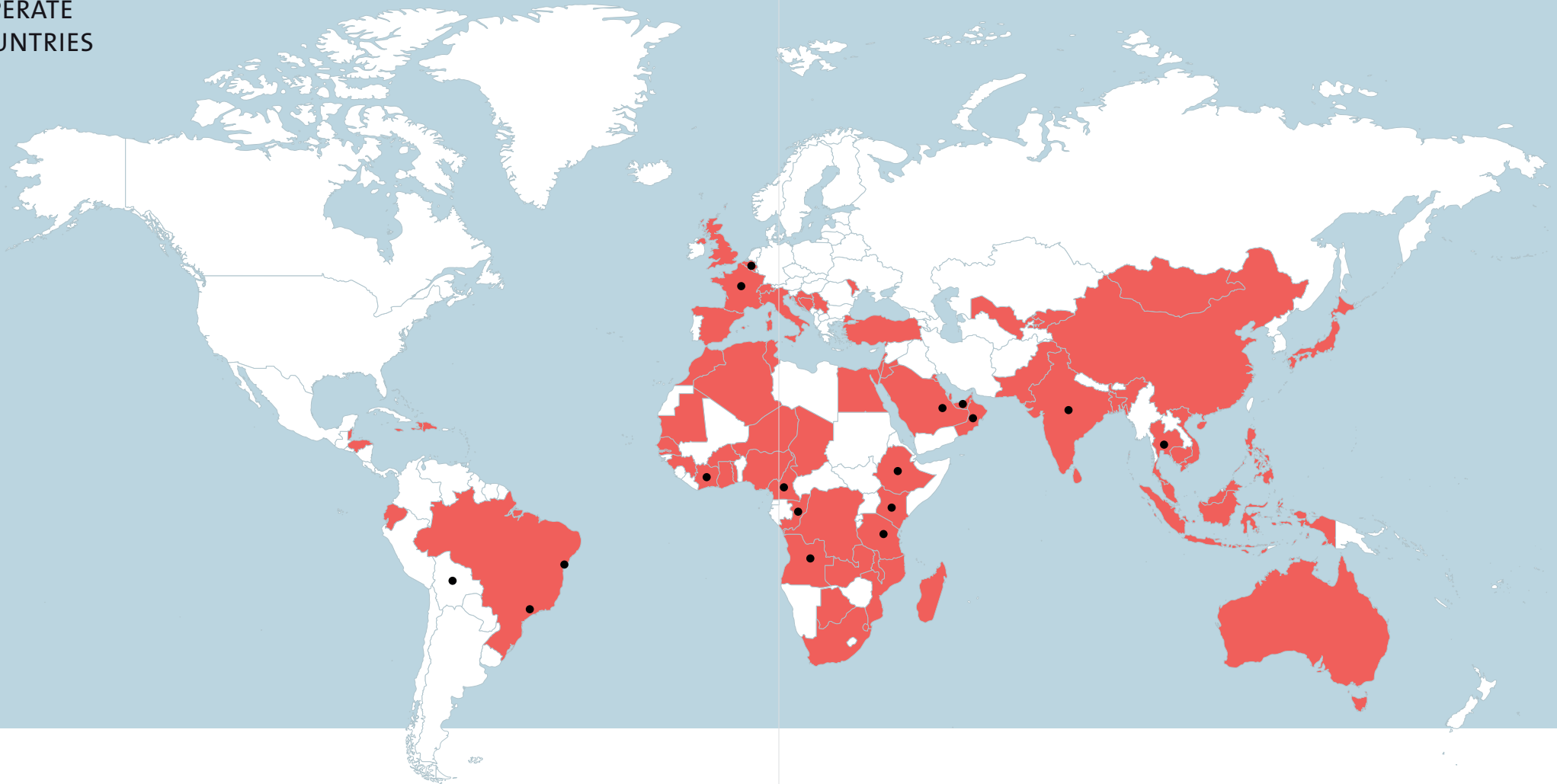
28 %
Design and
Works
Supervision



27 %
Studies

OUR INTERNATIONAL EXPERTISE

OUR TEAMS OPERATE
IN OVER 75 COUNTRIES



Eastern and Southern Africa

Botswana	●
Estwatini	●
Ethiopia	● ● ●
Kenya	● ● ● ●
Malawi	● ● ● ●
Mozambique	● ● ● ●
Seychelles	●
South Africa	● ● ●
Tanzania	●
Zambia	● ● ●

West and Central Africa

Angola	●
Burkina Faso	●
Cameroon	●
Chad	●
Republic of Congo	●
The Democratic Republic of Congo	● ● ●
Ivory Coast	● ● ● ●
Gambia	● ● ●

Middle East

Ghana	● ● ●
Guinea	● ● ●
Madagascar	● ● ●
Mauritania	● ● ●
Niger	● ● ● ●
Nigeria	● ● ●
São Tomé e Príncipe	● ● ●
Senegal	● ● ●
Togo	● ● ●

Middle East

Bahrain	● ● ●
Egypt	● ● ●
Kuwait	● ● ●
Jordan	● ● ●
Lebanon	● ● ●
Oman	● ● ●
Palestine	● ● ●
Qatar	● ● ●
Saudi Arabia	● ● ●
United Arab Emirates	● ● ● ●

Asia

Australia	● ● ●
Bangladesh	● ● ●
Cambodia	● ● ●
China	● ● ●
India	● ● ● ●
Indonesia	● ● ● ●
Japan	● ● ●
Malaysia	● ● ●
Mongolia	● ● ●
Pakistan	● ● ●
Philippines	● ● ●
Sri Lanka	● ● ●
Thailand	● ● ●
Viet Nam	● ● ●

Europe and Central Asia

Belgium	● ● ●
Bosnia-Herzegovina	● ● ●
Croatia	● ● ●
France	● ● ● ●
Italy	● ● ● ●
Kyrgyzstan	● ● ●
Moldavia	● ● ●
United Kingdom	● ● ●
Serbia	● ● ●
Spain	● ● ●
Switzerland	● ● ●
Turkey	● ● ●
Uzbekistan	● ● ●

Americas

Belize	● ● ●
Brazil	● ● ●
Dominican Republic	● ● ●
Dominica	● ● ●
Ecuador	● ● ●
Haiti	● ● ●
Honduras	● ● ●
Jamaica	● ● ● ●
Saint-Lucia	● ● ●

Maghreb

Algeria	● ● ●
Morocco	● ● ●
Tunisia	● ● ●

***ACCOMPANYING
THE RESILIENCE
OF REGIONS AND
POPULATIONS***





ACCOMPANYING THE RESILIENCE OF REGIONS AND POPULATIONS

The impact of climate change on resources, be it water or fossil fuels, is indisputable.

According to the United Nations*, by 2030 the world could face a 40% water deficit, and by 2040, water stress and droughts could be as damaging as floods, and affect up to 40% of the world's population.

Fossil fuel production (coal, gas, oil) accounts for over 80% of total global primary energy production. Two thirds of global electricity generation still depends on these resources, while the International Energy Agency estimates that demand could increase by 45% by 2030.

To deal with these impacts and be resilient, regions must anticipate and adapt, by assessing their vulnerability and exposure, and implement the action plans needed to safeguard their future now. Seureca supports regions in their transformation and their capacity to adapt in the short, medium and long term and to co-construct the solutions of tomorrow.

*United Nations Global Water Resources Development Report 2020.

ANTICIPATE, ADAPT, ACT

PRESERVE RESOURCES AND OPTIMISE THEIR MANAGEMENT

#Improve service quality and quality of life #Protect receiving environments

#Redesign infrastructure #Secure access to resources

ACT ON CLIMATE CHANGE AND THE ENVIRONMENT

#Reduce water consumption #Optimise energy consumption

#Decarbonise #Use renewable energy

PARTICIPATE IN THE CIRCULAR ECONOMY

#Waste-to-energy conversion #Recycle waste

#Recover materials



**MANAGE,
OPTIMISE &
PRESERVE
RESOURCES**



MANAGE, OPTIMISE & PRESERVE RESOURCES

Rapid population growth, global urban development, industrialised use of resources induced by modern living and production patterns lead to the depletion of the availability and quality of resources.

The preservation of natural resources, their sustainable use and, ultimately, the improvement of service quality and quality of life are at the heart of each region's concerns.

Seureca assists its clients over the whole water cycle (from water intake to discharge) as well as to adopt renewable energies. Seureca provides strategic, technical, and operational assistance to water and energy service operators.



Preserving resources

- Assess resources
- Forecast flows
- Diversify water resources and use of renewable energy
- Combat domestic and industrial pollution
- Manage drought and flooding
- Reuse & recycle



Optimising resources management

- Define, size, and design infrastructure
- Meter and reduce losses
- Energy efficiency
- Improve environmental performance
- Support and promote good practices




Supporting Operations

- Develop technical, organisational, and corporate capacities
- Asset management
- Change management
- Digital transformation
- Training and skills transfer



IMPROVING RESOURCE MANAGEMENT THANKS TO DIGITAL TECHNOLOGY

 **3 questions for Damien Million**
Head of Operational Tools and Digital Initiatives at Seureca



How does digital technology help protect and optimise resources?

Integrating digital solutions into asset management helps improve process efficiency, operational management, and data use by facilitating cooperation between different stakeholders.

These solutions make it possible to collect, store, and analyse data in real time, which enables better decision-making and quicker response in the event of an emergency.

What solutions are currently available in the water sector, and what does Seureca offer?

Few digital solutions for water resources management are available and for the most part are provided by the major water companies and utilities, namely Veolia and its competitors. Veolia Water has decided to invest heavily in its new digital solution called Water Resource Advisor (WRA) and has entrusted Seureca with supporting its deployment in its contracts in France, which are currently experiencing a drought emergency.

In addition to its involvement in the deployment of solutions relating to resource management for many years, Seureca provides resource optimisation studies according to variable criteria (cost, abstraction limits, etc.) using our Optim'hydro software. These studies allow our customers to achieve optimal distribution from each resource during the year and to anticipate any incidents or resource unavailability.

How do digital solutions contribute to the resilience of regions?

Digital technology helps regions to reduce consumption, secure resources, and optimise the energy mix.

By making it possible to better control the impacts of resource withdrawals and anticipate extreme situations, digital technology actively contributes to improving operational performance in the use of resources. Thus, optimised resource management allows regions with water shortages to maintain distribution capacity while guaranteeing the sustainability of water resources.

STUDYING THE WATER CYCLE FOR A GREEN ENERGY PROJECT IN KENYA

A global green energy company, is committed to producing green, fossil-free hydrogen from 100% renewable resources. The company wishes to develop a green energy project in Kenya aimed at:

- supplying electricity from renewable resources, as well as producing green hydrogen and ammonia for domestic and international markets;
- using the existing infrastructure and electricity transmission grid and developing a storage and export facility for finished products.

Seureca performed a pre-feasibility study covering water access and the infrastructure required by the hydrogen and ammonia production facility.

Key Points

- Reliable process design.
- Comprehensive study with minimal environmental impact.

The missions entrusted to Seureca concern:

- verifying the availability of the resource and infrastructure required to implement this project;
- estimating costs (CAPEX/OPEX);
- drawing up recommendations and technical specifications to define and optimise the design of the water treatment process and implementation schedule;
- defining the approvals and compliance required to build and manage water supply and wastewater discharge from the production facility;
- providing recommendations for waste management: dewatering and disposing sludge produced by water treatment plants;
- taking safety into account in process design, including risk identification and management measures;
- the constructability study integrating logistics and a preliminary schedule.



MODERNISING SÃO TOMÉ E PRÍNCIPE'S ENERGY SUPPLY

The electricity sector in São Tomé e Príncipe, one of the smallest countries in Africa, is limited and institutions are young with varying capacities. The existing networks and production infrastructure are old and deteriorated due to inadequate maintenance, resulting in frequent and long power cuts for consumers. Today, only 17.3 MW of the installed, fully thermally-generated capacity is available, for a peak estimated at 21 MW.

To increase production capacity, the government recently sought to mitigate the supply deficit by securing independent electricity producers for 40 MW of solar power and 12 MW of biomass power.

As such, Seureca is helping the operator, Empresa de Água e Eletricidade (EMAE), develop an energy storage strategy by absorbing a higher-quality solar power production, thereby improving supply system performance and grid stability.

Seureca has been tasked with analysing the electrical stability of the grid to determine the optimum quantity of solar power and battery storage systems to be installed. The location of this infrastructure on the island and the definition of the roadmap needed to modernise the facilities and coordinate them remotely are also being examined.

Key Points

- Improve the energy supply to the population by efficiently integrating different energy resources.
- Assist with institutional, operational, and regulatory changes enabling the country to achieve a level of penetration of renewable energies.
- Attract private sector investment in the renewable energy market.



#Redesign infrastructure

#Secure access to resources

#Secure access to resources

#Improve service quality and quality of life

#Protect receiving environments

REDUCING WATER LOSSES IN SALVADOR, BRAZIL, TO PRESERVE THE RESOURCE

Northeastern Brazil, with a population of over 57 million, is the second region experiencing the largest losses in its distribution systems, wasting almost 50% of drinking water. This situation is all the more alarming since almost 35 million Brazilians do not have access to this resource.

The Bahia Water and Sanitation Company (EMBASA) has launched an operational audit to optimise and reduce water losses in three operational areas of Salvador, equivalent to over 700,000 customers and over 1,500 kilometres of distribution network.



Seureca is assisting EMBASA with:

- evaluating the preliminary data and conducting an operational audit of the water distribution system, including updating the customer register and network maps;
- specific assessment of losses and water demand;
- hydraulic modelling of three areas, with the definition of all zonal boundaries;
- public works implementation projects and technical, economic, and financial feasibility to improve and expand the supply system with a prioritised action plan;
- theoretical and practical training on water loss management and technological transfer.

Key Points

- Reduce physical and commercial losses and improve use of water resources.
- Recommendations and action plan to improve water distribution.
- Transfer of best practice and development of theoretical and technical skills.

#Secure access to resources

#Improve service quality and quality of life

#Reduce water consumption

IMPROVING ACCESS TO CLEAN WATER FOR THE POPULATION OF MWANZA, TANZANIA, AND THE SURROUNDING MUNICIPALITIES

Located on the banks of Lake Victoria, Mwanza is the second largest city in Tanzania after Dar Es Salaam. Despite abundant water resources, the city is struggling to meet the needs of its rapidly-growing population due to insufficient facilities and the poor operation of the existing system. Improving access to drinking water in Mwanza is part of the Tanzanian government's 2025 development vision.

To support the government in achieving its objectives, Seureca, in partnership with NETWAS Tanzania, is designing and supervising works to improve the city's drinking water supply and distribution facilities, as well as extend the service to southern outskirts of the city (Buhongwa, Kisesa, Buswelu, Fela, and Usagara), for an estimated total population of nearly 440,000.



Funded by the French Development Agency, this project is carried out on behalf of the Mwanza Water Supply and Sanitation Authority (MWAUWASA) and is implemented in two phases:

1. The design phase (8 months), including preparation of feasibility studies, environmental and social impact assessments, detailed design, and tender documents.
2. The supervision phase (36 months), covering work supervision (24 months) and the warranty period (12 months).

Works include:

- over 40 km of gravity and discharge pipes;
- 210 km of primary network piping;
- two pumping stations;
- a 3,000 m³ capacity pump sump;
- seven storage tank sites with a total storage capacity of 44,000 m³;
- auxiliary buildings comprising accommodation for the operator's personnel, three chlorination buildings, and eight security rooms.

Key Points

- Improve drinking water storage and supply infrastructure to better meet demand.
- Design sustainable infrastructure while minimising the environmental impact.
- Improve access to clean water for the city's population and neighbouring towns.

#Protect receiving environments

#Improve service quality and quality of life

SUSTAINABLY IMPROVE SANITARY CONDITIONS FOR THE POPULATION OF DOUALA, CAMEROON

With a population of over 3 million, Douala is one of the cities in Africa where rainwater drainage shortcomings are most critical. The city was built in an estuary and is affected by tides for several kilometres upstream and is increasingly subjected to flooding.

Douala does not have any wastewater or sewage sludge treatment infrastructure, and 98% of the population is not connected to any wastewater network.

To face these challenges, Seureca has been entrusted with reviewing the Douala Urban Community master plan, with the aim of identifying:

- the amenities, measures, and works to be carried out on the drainage and wastewater system by 2040;
- the means to support the services of the Urban Community under its management mandate.

This master plan comprises six stages: an update of basic data, an inventory of the wastewater treatment system, a zoning of the wastewater system in the study area, a hydraulic model, an environmental and social assessment, and the definition of a multi-year works programme. In addition to the development of the master plan, the project covers a second phase including preliminary design studies and the preparation of tender documents for the performance of priority works.



In addition to the master plan, Seureca, in a consortium with ICEA, is supporting the Urban Community in improving wastewater management services. This assistance makes it possible to jointly define a suitable roadmap to strengthen the institutions and generate tangible value for the Urban Community of Douala, which now benefits from:

- a new detailed and scaled organisation chart to adequately manage wastewater treatment services in accordance with the Master Plan;
- an estimate of the means and resources necessary to provide suitable services, along with appropriate financing strategies (including estimates for the implementation of wastewater treatment and drainage tariffs);
- a performance service agreement that clarifies the new operating entity's roles and responsibilities with regards to the Community;
- a set of operating manuals, procedures, and service plans to guide teams in the maintenance of the new infrastructure, maximise life cycle efficiency, and increase service levels;
- a detailed training plan to align the current skills of Urban Community teams with the requirements of the new system;
- a performance dashboard with operational and financial key figures.

🔍 Key Points

- Develop scenarios to reduce flood risks.
- Limit the environmental impacts of pollution.
- Organisational alignment and consistency.
- Transfer skills to ensure service quality continuity.
- Improve the long-term performance of the wastewater treatment service.
- Improve living conditions for the population by giving them access to a clean environment.

#Protect receiving environments

#Improve service quality and quality of life



OPTIMISING THE OPERATION OF WASTEWATER TREATMENT SYSTEMS AND THE RESILIENCE OF THE URBAN COMMUNITY OF PAYS DE FONTAINEBLEAU, FRANCE

Located in Seine-et-Marne, the Urban Community of Pays de Fontainebleau (Communauté d'agglomération du Pays de Fontainebleau - CAPF) has a population of almost 70,000 and covers an area of 437 km².

In a context of urban development and transformation, without losing coherence between the issues due to its location, the CAPF wishes to develop a wastewater master plan for 14 of its 26 towns, in order to prepare a programme to improve its wastewater treatment systems.

Over the course of four years, Seureca will review wastewater and stormwater systems, update the geographic information system, identify malfunctions, carry out measurement campaigns (installation and monitoring of 97 sensors) and additional inspections (102 km of remote visual inspections, 20 km of night-time smoke tests, and 650 home visits), as well as building drainage and wastewater network models.



The study should provide the community with a document to plan long-term works and a strategy to manage rainwater at the source. Wastewater and rainwater zoning will be established for use in the future inter-municipal urban plan.

Key Points

- Improve and update the current state of knowledge on wastewater treatment infrastructure in the region and characterise its operation by identifying existing issues.
- Identify sustainable solutions for the current and future population to drain and treat rainwater and wastewater, taking into account the urban development guidelines issued by the municipalities. This involves planning and managing the issues linked to wastewater collection and treatment in order to ensure the continuity of urban development without posing risks to people and property.
- Long-term vision and action plan for the community to improve its wastewater systems.
- Understand and consider environmental impacts. This objective must be achieved while maintaining consistency between the development wishes of the CAPF and the issues related to its location (outstanding natural sites, NATURA 2000 zones, proximity to the Seine and Loing rivers, and perched aquifers).

#Protect receiving environments

#Improve service quality and quality of life

IMPROVING LIVING CONDITIONS FOR SYRIAN REFUGEES IN TURKEY

Turkey is home to many migrants and refugees due to its geographical position, putting significant pressure on water supply and wastewater and waste management services in the areas where these populations are based.

Under the European refugee assistance programme in Turkey (FRIT II), the European Union entrusted the French Development Agency (AFD) with the financing of an infrastructure improvement project for municipal services of communities accommodating a large number of refugees.

Key Points

- Safe access to clean water, wastewater and improved waste management for host communities and refugees under temporary protection.
- Preserve freshwater resources despite growing demand.
- Reduce greenhouse gas emissions by improving municipal solid waste and wastewater management.
- Operational and financial viability of solid waste management, drinking water supply, and wastewater management services by supporting municipalities and authorities.

Through a level two monitoring mission, Seureca is assisting the AFD to ensure that all investment sub-projects meet the expected quality, performance, and safety requirements. Special attention is paid to:

- the technical and financial monitoring of the works and deadline compliance;
- compliance and operability of all facilities, networks, and equipment;
- the supervision quality for these works;
- compliance with good environmental and social practices and safety standards during construction and operation;
- measurement of the expected impacts of the project, including with regard to climate change.



#Protect receiving environments

#Improve service quality and quality of life



IMPROVING THE RESILIENCE OF KINSHASA URBAN DISTRICTS IN THE DEMOCRATIC REPUBLIC OF CONGO

Every day, Kinshasa's population generates around 7,000 tonnes of waste, much of which ends up in rivers and streets due to the lack of a suitable waste management system. This situation promotes the spread of diseases, especially during the rainy season.

To reinforce the urban resilience of the districts of N'danu, Salongo, and Abattoir in Kinshasa, which are exposed to significant flooding and health risks, the French Development Agency (AFD) is financing the TO PETOLA project. This project aims to support civil society in the pre-collection, sorting, and reduction of household waste, maintenance of the river banks, roads, and adjacent drains and assist with adaptation to climate change through better urban governance and the shared management of essential urban services.

In partnership with VSI Africa, Seureca is leading the project management of all contractual and fiduciary aspects by awarding contracts, monitoring and coordinating the project on behalf of the contracting authority (increase capacities, emergency works, and structuring works), as well as implementing the environmental and social management plan.

+ Key Points

- Improve public health by determining the prerequisites to implement a household waste collection system, while contributing to the fight against epidemics and pandemics.
- Reduce flooding risks by reinforcing dikes, dredging rivers, and implementing a more efficient waste management system.
- Consolidate the social structuring of districts and urban governance through the shared management of waste collection and essential urban services.

#Redesign infrastructure

#Improve service quality and quality of life

MANAGING WASTE IN BEIRA, MOZAMBIQUE FOR A CLEANER CITY

Beira is a port city located in the province of Sofala, Mozambique. It is home to around 600,000 people, who generate around 300,000 tonnes of waste annually, of which only 65% is collected by municipal services. In addition, the configuration and geography of the city renders it very sensitive to climate change.

To ensure the development and financing of the infrastructure necessary for waste management, the government of Mozambique launched the ValoRe programme in 2019, which specifically targets Beira.

Financed by the French Development Agency, Seureca is carrying out the studies necessary to construct economic, sustainable, and resilient waste management infrastructure for the city.

The first phase of the project involves a detailed review of the studies and existing documentation, the selection of the future engineered landfill site, technical studies, and a validation workshop.

The second phase includes the closure of the former landfill and the rehabilitation of the site, a feasibility study for a composting and sorting unit, detailed preliminary design and preparation of tender documents of the engineered landfill site.

+ Key Points

- A study integrating the city's climate change challenges.
- Sustainable and resilient infrastructure.
- Improve sanitary conditions for the population.



#Protect receiving environments

#Improve service quality and quality of life

HELPING THE NATIONAL WATER COMPANY IN SAUDI ARABIA RESTRUCTURE THE WATER DISTRIBUTION AND WASTEWATER MANAGEMENT SECTOR

Veolia Middle East and its Saudi partner, Alkhorayef Water and Power Technology provide management, operation, and maintenance of water and wastewater services to nine million people in the capital Riyadh and 22 surrounding governorates.

This seven year contract was launched by The National Water Company (NWC), as part of the Saudi National Water Strategy (NWS 2030) aiming to restructure the water and wastewater management sector.

The contract aims to improve levels of service and operational performance for:

- 3 Mm³ of drinking water distributed per day via a network of approximately 30,000 km ;
- 1.4 Mm³ of collected and treated wastewater via approximately 11,000 km of sewers, serving 700,000 customers

Seureca is delivering a number of major enabling projects and strategic programmes to help achieve the ambitious targets, including:

- the design of distribution zoning, comprising 290 District Metered Areas for the 30,000 km of distribution networks, to enable efficient network operations and reduce Non Revenue Water;
- the design of the pressure monitoring system to measure continuity of supply;
- deploying asset management strategies and methods throughout all operations;
- updating the water network synoptic maps and improving the quality and accuracy of the Geographic Information System;
- preparing the customer service plan;
- preparing and updating the strategic business plan.



Key Points

- 290 District Meter Areas for 30,000 km of water networks.
- Reach the national target of 15% water losses by 2030.
- Increase the continuity of drinking water supply to enable continuous distribution over the entire service area.
- Improve operational efficiency and customer service standards.



#Improve service quality and quality of life

#Reduce water consumption

RESOURCE MANAGEMENT OPTIMISATION, A DIGITAL SOLUTION FOR TOULON, FRANCE

To support Veolia's digital transformation strategy, Veolia Eau France, in charge of water distribution services, entrusted Seureca to deploy the Veolia Water Loss Management application, in four municipalities of the Toulon Provence Méditerranée Métropole. This tool helps business units assess and reduce water losses to reach the performance levels expected by municipalities and the population and to meet contractual performance indicators subject to financial penalties by:

- centralising and displaying all relevant data in a mapping interface: assets, works, SCADA (supervisory data control and acquisition system), customers, and billing;
- calculating relevant performance indicators while including customisable visual alerts on threshold values or trends;
- displaying and classifying the performance of the district metering areas to prioritise field investigations.

Module deployment involves the following steps:

- functional assessment of the network zoning;
- data analysis (Geographical Information System, time series), gap analysis;
- module deployment action plan;
- validation of data flows (frequency, data format);
- tool configuration, including the data management tool;
- acceptance tests;
- training in the use of the module.

Key Points

- Improve operational performance.
- Visualise operational data relating to losses.
- Participatory approach.



#Improve service quality and quality of life #Reduce water consumption



FIGHTING URBAN HEAT ISLANDS, THE PARVIS DE LA DÉFENSE PILOT PROJECT, FRANCE

To better adapt to climate change and rising temperatures in cities and regions lacking green spaces, Seureca led the experimentation of an independent outdoor cooling island set up in Parvis de la Défense, Paris, during the summer of 2021.

Made up of a 200 m² paved podium incorporating benches, book boxes and planters, the island provided a space in which people could relax and socialise while benefiting from a reduced ambient temperature. This system comprised a cooling solution based on the capture and recovery of rainwater, evaporation from porous paving stones, vegetation, and the use of urban furniture to store non-drinking water.

The aim of this experiment was to:

- test and validate a unique mobile solution for outdoor comfort, that is both water and energy self-sufficient;
- validate a replicable solution to be deployed at large scale.

Key Points

- Validate the performance of an automated, non-intrusive and mobile above-ground device allowing quick disassembly and clearance of the space for other uses, depending on the season.
- Approve a circular economy concept using a water and energy self-sufficient unit and confirmation of the platform's compliance with Paris's biodiversity requirements.
- Measure the attractiveness of this outdoor space for the population and their thermal comfort as well as potential externalities for the region.



#Improve service quality and quality of life

**ACTING ON
CLIMATE CHANGE
AND THE
ENVIRONMENT**



ACTING ON CLIMATE CHANGE AND THE ENVIRONMENT

The increasing concentration of greenhouse gases (GHG) in the atmosphere resulting from human activities is disrupting global climate and natural balances.

The extent of global warming and its effects manifest themselves in a variety of ways, with differences depending on the region and vulnerabilities. These consequences include melting ice caps, rising ocean levels, an increasing frequency of extreme weather events, leading to threats to biodiversity, diminishing drinking water resources, and significant socio-economic impacts, such as food insecurity, health risks, rising population displacements, and worsening conflicts related to access to resources.

Energy sobriety and decarbonisation are essential for both governments and industry to meet environmental challenges and the objective of carbon neutrality by 2050 defined in the Paris Agreement (first universal agreement adopted at the Paris climate conference – COP21 in December 2015).

The issues are technical, economic, financial, regulatory, and social.

In the short and medium terms, there are real benefits to implementing a reasoned environmental approach:

- Economies of scale by optimising processes and consumption;
- Reduced dependence on fossil fuels resulting in reduced risks associated with energy supply and price instability;

By combining its expertise in the water, energy, and waste management sectors, Seureca helps its clients draw up and implement their environmental roadmaps and achieve their energy sobriety and decarbonisation goals.



Rationalising energy production

- Assess energy resources
- Energy balance
- Size, model, design, reinforce, and extend facilities
- Optimise processes
- Support the development of renewable energies



Contributing to energy efficiency objectives

- Regulatory, organisational, and institutional support
- Define objectives and develop roadmaps and integrated smart grid solutions
- Improve energy performance



Drawing up an environmental roadmap

- Environmental impact assessment
- Life cycle assessment
- Adaptation and resilience to climate risks
- Assistance in achieving net zero carbon emissions

CARBON INTENSITY REDUCTION AS A PRIORITY...

3 questions for Julien Grimaud

Climate & Environmental Performance Division Manager at Seureca



Why do we need to decarbonise?

Decarbonisation is now an absolute necessity to limit the rise in temperatures to under 2 degrees, which is the objective set by the Paris Agreement in 2015 and supported by the IPCC (Intergovernmental Panel on Climate Change), and to contribute to global carbon neutrality by 2050.

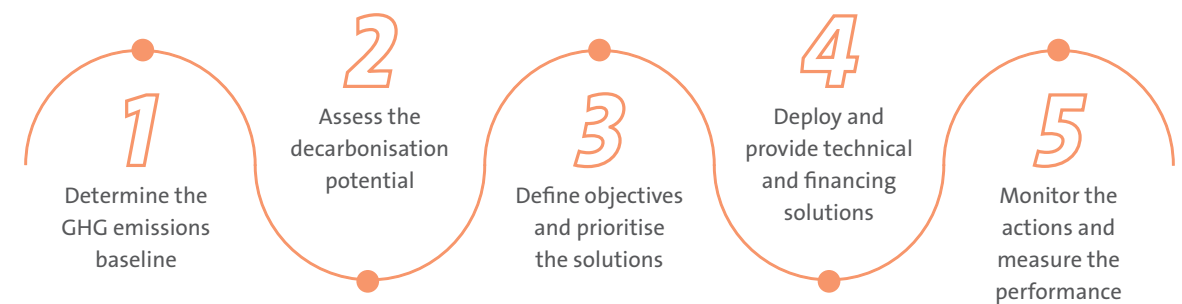
Which solutions are available to decarbonise?

Veolia has designed an integrated offer to help municipalities, industry, and the tertiary sector build and implement their strategies to reduce greenhouse gas (GHG) emissions. This requires a complete transformation of energy systems to alternative low-GHG solutions, such as using renewable energies as a substitute for oil or coal, adopting more energy-efficient processes, and capturing CO2 to neutralise some of its effects. Waste and water management are also important levers for Veolia's contribution to the carbon intensity reduction of its customers.

What does Seureca do?

Seureca is involved in the first phases of this process. Its expertise covers operational audits, combining business and environmental expertise, in particular using Greenpath Digital Platform environmental footprint calculation tools, to provide an optimal roadmap to clients to implement the most relevant solutions to reduce their carbon footprint.

Decarbonisation process



REDUCING THE ENERGY CONSUMPTION OF THERMAL POWER PLANTS IN INDIA

The Bureau of Energy Efficiency (BEE), a government agency under India's Ministry of Electricity, wishes to draw up an energy map of thermal power plants in the country, under the Perform Achieve and Trade (PAT) programme, aimed at reducing energy consumption in Indian energy-intensive industries and marketing excess energy production.

The Bureau of Energy Efficiency selected Seureca to conduct an energy audit on eight thermal power plants to identify energy gaps and diagnose thermal cycle deficiencies.

Seureca's missions include:

- creating an energy map to assess potential savings on each site;
- performance studies and gap analyses on main systems and equipment;

- the development of 'design values' and 'expected values' scenarios taking into account the current 'operating value' scenario;
- recommendations for corrective actions to improve plant performance and efficiency;
- technical support in building employee skills to interpret mapping results.

Key Points

- Identify potential energy savings.
- Prioritised action plan to improve site performance and energy efficiency.
- Develop employee skills.

#Optimise energy consumption

#Decarbonise



ASSESSING THE AVAILABLE BIOMASS AND ITS SUPPLY CHAIN TO BUILD COMPRESSED BIOGAS PRODUCTION PLANTS IN INDIA

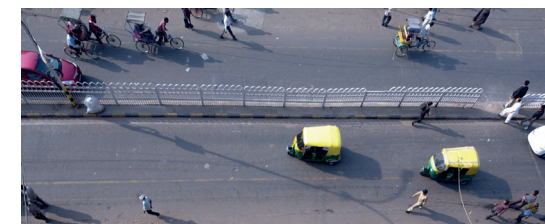
The Indian Ministry of Petroleum and Natural Gas has launched the Sustainable Alternative Towards Affordable Transportation (SATAT) programme to promote the construction of compressed biogas production facilities for use as automotive or industrial fuels.

Linked to this programme, EverEnviro Resource Management Private Ltd., an environmental services company, is building rice straw biogas plants in various regions of the country.

EverEnviro Resource Management Private Ltd chose Seureca to carry out qualitative and quantitative assessments of the available biomass (rice straw and other convertible biodegradable waste) and the competing uses to provide recommendations for the development and management of the supply chain according to site location.

Key Points

- More than 40 locations assessed.
- Significant reduction in crop residue incineration and a positive impact on air quality.
- Provide a list of existing raw material aggregators within the scopes of the sites concerned.
- Create local jobs.



#Decarbonise

#Use renewable energy

IMPROVING THE ENERGY EFFICIENCY OF THE WATER INFRASTRUCTURE OF THE NATIONAL WATER AND ELECTRICITY COMPANY (NAWEC), GAMBIA

The power consumption of NAWEC's water infrastructure in the urban area of Banjul is very high. The associated costs contribute to its financial losses, unreliable service, and the weakening of the company's institutional autonomy. Promoting energy efficiency is a key objective of this project's financing by the World Bank. NAWEC entrusted Seureca with a detailed energy audit of the drinking water supply, distribution, and treatment system in the urban area of Banjul, with the objective of identifying and assessing opportunities to improve energy efficiency, managing hydraulic and electrical loads, implementing renewable energy options (potential energy production in wastewater treatment plants, gravity networks or solar power), and defining specific energy efficiency and water saving measures.



Key Points

- Improve the energy efficiency of facilities.
- Promote renewable energies, including solar energy.
- Optimise load management and the operation of hydraulic networks.
- Energy savings.
- Reduce water loss in the networks.



#Reduce water consumption #Optimise energy consumption #Decarbonise #Use renewable energy

SUSTAIN THE STATE-OF-THE-ART ASSET MANAGEMENT AND ENERGY EFFICIENCY OF PAKISTANI OPERATORS BY STRENGTHENING THE SKILLS OF THE AL-JAZARI WATER ACADEMY, PAKISTAN



Since 2015, the Al-Jazari Water Academy (AJWA), located in Lahore, Pakistan, has provided training for operators of the Water and Sanitation Agency (WASA) in the Punjab province.

In 2021-2022, AgroParisTech, with the financial support of AFD, entrusted the Watura-Seureca consortium with providing technical and educational assistance to AJWA, to develop online professional training courses, provide educational tools, and train AJWA instructors on asset management and energy efficiency in the fields of water and wastewater management.

Seureca helped to:

- create targeted training courses for three audience levels (field operators, middle managers, and operational officers) and design the practical content of the units by developing 160 video clips (equivalent to 30 hours of training) on asset management and energy efficiency;
- develop the skills of AJWA instructors by individually accompanying six of them through a classroom training course and visits to Veolia facilities in France and the United Arab Emirates in order to improve their theoretical knowledge and practical skills on themes related to operational efficiency, with a focus on Asset Management and energy efficiency.

#Use renewable energy

Key Points

- Increased skills of AJWA operators and officers on the issues of asset management and energy efficiency.
- Sustainability of local expertise in two major areas of environmental focus: water and energy.



REDUCING MUSKI'S ENVIRONMENTAL FOOTPRINT, WHILE OPTIMISING ITS OPERATIONAL PERFORMANCE, TURKEY

MUSKI, the Metropolitan Municipality of Mugla's water board in Turkey, is looking to optimise the water and wastewater services in the province it serves.

MUSKI supplies water to a population varying from 1 million in the low season to 6 million in the tourist season over contrasting topography reaching 13,000 km².

The operator is faced with many issues, including:

- water scarcity and salinisation;
- high operational costs (cost of energy to pump water);
- regulatory requirements requiring ambitious improvements in a short time.

In this context, Seureca assisted MUSKI with an overall assessment, an operational audit, and a study of carbon and water footprints in order to define a strategic plan and priority areas for treatment integrating:

- optimised operational performance;
- improved water resource management and energy consumption;

- optimised management of sludge from wastewater treatment plants in the region with a sludge recovery strategy;
- reduced greenhouse gas emissions from its activities.

Key Points

- Water savings of 6,700 m³/day, i.e. 12% current supplies.
- Energy savings of 8.3 million kWh/year or 4.8% of MUSKI's total energy consumption.
- A 2.2% reduction in the operator's carbon footprint.
- Reduction of operating costs by €1.7 million per year.



#Reduce water consumption #Optimise energy consumption #Decarbonise #Use renewable energy



SUPPORTING A MAJOR PHARMACEUTICAL GROUP IN ITS "NET ZERO EMISSIONS" STRATEGY (AUSTRIA, SLOVENIA, SWITZERLAND)

A global healthcare company has launched an ambitious climate strategy to achieve net zero emissions by 2030.

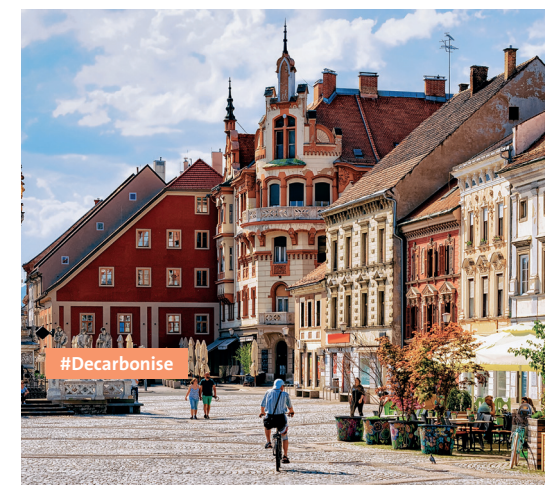
Veolia operates the water and energy services for the company's sites in Austria, Slovenia and Switzerland, and is keen to support its client in its decarbonisation approach. Veolia therefore commissioned Seureca to carry out on-site audits and draw up decarbonisation roadmaps.

Seureca's assignments involved:

- an in-depth collection of operational data to assess the current situation: process diagrams, list of equipment, secondary forms of energy used, estimate of annual energy consumption and emission of greenhouse gases, etc;
- site visits with business experts for an in-depth study;
- study of decarbonisation options, with identification of actions and quantification of the environmental and financial impact of the proposed solutions;
- drawing up operational action plans for each site.

Key Points

- Development of a decarbonisation roadmap for each site operated by Veolia for the industrial company, enabling a reduction in greenhouse gas emissions of up to 80%.



#Decarbonise

GLOBAL ENVIRONMENTAL CYCLE MANAGEMENT BY 360° AUDIT

Seureca accompanies its industrial clients, both in France and abroad to optimise their environmental cycle through a global 360° audit in order to guide them towards technically-feasible and economically-viable solutions that comply with local and sustainability regulations.



REDUCING GHG EMISSIONS AS WELL AS WATER AND FOSSIL ENERGY CONSUMPTION FOR FOUR SITES OF A CONSUMER PRODUCTS MANUFACTURER (ITALY, MOROCCO, AND ECUADOR)

A manufacturer of a wide range of consumer products, from food to personal care products, is committed to a sustainable activity, of which reducing GHG emissions is an integral part.

The manufacturer entrusted Seureca with energy and water audits at several of its sites around the world, to help them achieve their environmental objectives:

- reduce greenhouse gas (GHG) emissions in relative terms (CO2 on finished products) by 20%;
- use 100% electrical energy produced from renewable sources;
- reduce water consumption per finished product by 20%.

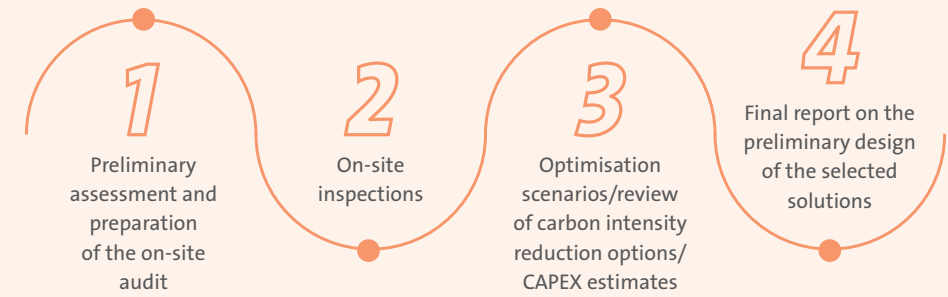
⊕ Key Points

A reduction in GHG emissions and significant savings in energy, water and natural gas consumption at each site thanks to:

- The installation of solar panels on roofs to generate power;
- Installing vacuum pumps on sterilisation chambers to remove air from them;
- Leak detection and repair;
- Recycle cleaning, rinsing, and defrost water.

#Reduce water consumption #Optimise energy consumption #Decarbonise #Use renewable energy

A proven four-step methodology:



REDUCING THE CARBON FOOTPRINT AND IMPROVING ENERGY EFFICIENCY OF A CABLE MANUFACTURER (FRANCE, ITALY, SPAIN)

Seureca supported a company specialising in the production of power and telecommunications cables in its initiative to reduce its carbon footprint and improve its energy efficiency. The objectives of the project are to:

- provide energy efficiency recommendations and solutions;
- propose actions (CAPEX, OPEX, etc.) to reduce CO₂ emissions;

- provide a budget estimate, an implementation schedule, the functional specifications of the recommended equipment, and a list of potential suppliers;
- present a methodology that can be replicated at other company sites;
- support the manufacturer in obtaining a green energy certificate.



⊕ Key Points

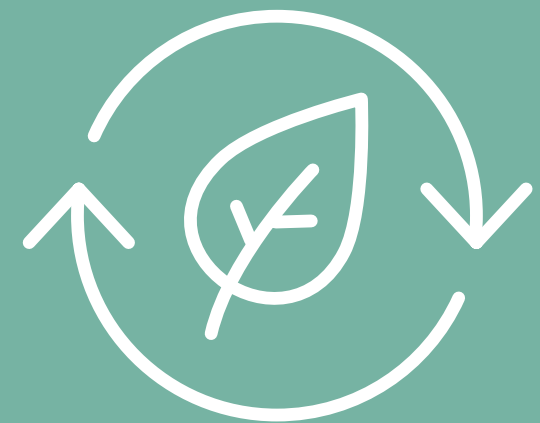
Significant cost reduction, substantial savings in energy and natural gas consumption, and a significant reduction in greenhouse gas emissions through :

- Installing a false ceiling to optimise heating of the premises in winter and a biomass-fired cogeneration system.
- Insulating chilled water pipes and installing a waste heat recovery system in compressors to generate hot water.
- Implement a real-time monitoring system for environmental parameters to improve performance monitoring.
- Carbon offsetting solutions.

#Optimise energy consumption #Decarbonise



**SUPPORTING
THE CIRCULAR
ECONOMY**

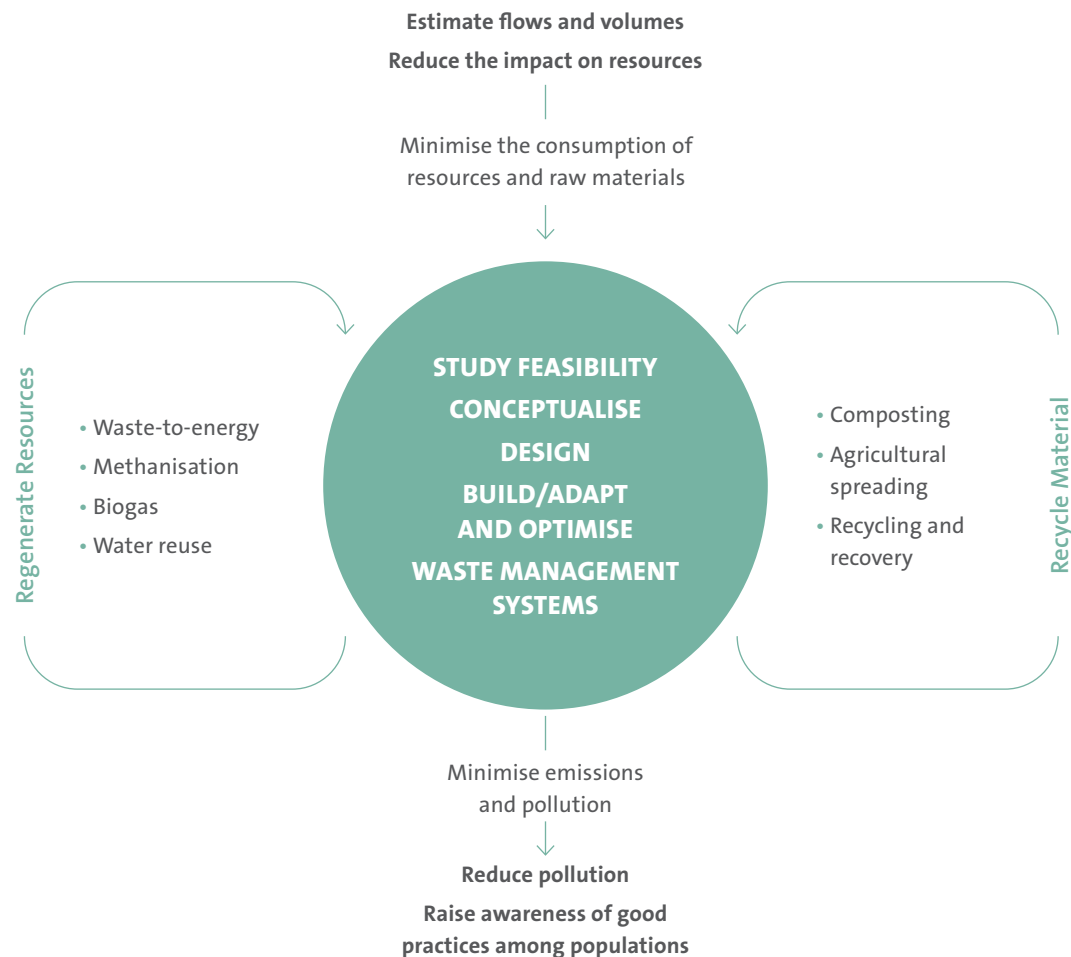


SUPPORTING THE CIRCULAR ECONOMY

In a world where natural resources are increasingly scarce and consumption cannot be sustained, it is necessary to rethink the linear pattern: 'resource withdrawal - production - consumption - disposal', which has reached its limits.

Transitioning to a circular economy is crucial to address environmental challenges and alleviate pressure on natural resources. The goal is to minimise waste, recycle materials at the end of their life cycle, and reuse the resource or material to recreate value.

Our experts are rethinking conventional models to implement operational solutions that foster the development of a circular economy based on the 3R approach: Reduce, Reuse, Recycle. This approach targets water and energy resources and the reduction of household and hazardous waste.



ARE THERE ANY SOLUTIONS FOR PLASTIC POLLUTION?

 3 questions for **Marie Gouttebroze**

Recycling and Recovery Section
Manager at Seureca



What is the extent of plastic pollution and what can we do to reduce it?

Global plastic production has more than doubled in 20 years, standing at 460 million tonnes in February 2022, according to the OECD. This could triple by 2060. Almost two thirds of the plastic products we use have a very short lifespan and quickly become waste. Managing this type of waste is not always efficient; it is estimated that between 5 and 13 million tonnes end up in the oceans each year. Today, plastic pollution is a major issue both for the environment and our health.

The circular economy, with its approach to reducing, reusing, and recycling materials, is the system we must urgently adopt to contain this threat.

What is the role of the informal sector in developing countries and how can it be better involved?

In developing countries, the informal sector is an essential link in the management of plastic waste as it collects a large proportion of plastic waste which is then sent for recycling.

Workers in this sector are exposed to major health risks and poor working conditions. The priority challenges are to improve safety at work, introduce fair social protection standards and improve working conditions.

How does Seureca contribute to reducing plastic pollution?

At Seureca, our holistic approach covers the technical, institutional, and financial aspects of the issue. We assess and quantify plastic pollution to understand its origins and causes, in order to guide the decisions and actions to be implemented. We assist with the development of circular economy projects, with a focus on plastic recycling. Finally, we support our municipal and industrial clients by studying, designing, and implementing efficient waste management systems.

REDUCING LEAD POLLUTION TO KEEP BANGLADESHI HEALTHY

Bangladesh has the fourth highest lead poisoning mortality rate in the world. To address this public health challenge, the Pure Earth NGO, in cooperation with the Clarios Foundation and the Bangladesh Ministry for the Environment, has developed a project to reduce lead pollution around informal recycling sites for used lead acid batteries (ULAB), which are a specific source of exposure for the population. This includes increasing the government's capacity for environmentally sound management of used lead acid batteries and implementing a remediation programme for contaminated sites.

The project, which involves public authorities, NGOs, academics, and industry, aims to structure the battery recycling sector, while informing and raising awareness among the population. Specifically, it aims to reduce lead pollution and cooperate with the Bangladesh government in defining and implementing tools, strategies, and capabilities nationwide.

To successfully complete this initiative, the French Global Environment Fund (GGEF) granted the financing requested by Pure Earth for the project, following the feasibility study and the Project Undertaking conducted by Seureca.

The objective of the services entrusted to Seureca was to assess the technical, financial, and institutional aspects of the project. More specifically, the feasibility study strengthens the project's operational, legal, and partnership framework.

Regular monitoring and assessments will be carried out to promote learning and continuous improvement of the project. This approach can then be replicated in other contexts, with other substances or technologies, in many developing countries to solve a global, environmental and health issue.

Key Points

- Reduce lead pollution in the country
- Awareness-raising actions among populations.
- Contribute to sanitation and the protection of the country's public health.
- Replicable solution to address other pollution contexts.



#Waste-to-energy conversion #Recycle waste



IMPROVING WASTE MANAGEMENT IN SAUDI ARABIA TO MOVE TOWARDS A CIRCULAR ECONOMY

As part of its Vision 2030 national strategy, the Kingdom of Saudi Arabia has set up a solid waste management programme with the objective of achieving a landfill diversion rate of 82% by 2035 through the development of recycling, composting, and incineration with energy recovery.

Through the recently created Centre for Privatisation, MOMRAH (Ministry of Municipalities, Rural Affairs and Housing) strives to improve the technical, financial, and environmental performance of municipal waste treatment, in accordance with international best practice.

In order to help achieve its objectives, MOMRAH entered into a two-year technical assistance contract, with a team of experienced international experts provided from Veolia and Seureca, covering all technical aspects (operations, technologies) as well as investment and privatisation aspects (financing means, contracts) and institutional aspects (regulations, organisation strategies) supported by a team of Saudi nationals.

Under this project, Seureca was commissioned to:

- draw up a roadmap and action plan: establish a baseline, set objectives and development initiatives;
- provide technical assistance in implementing these initiatives;
- improve operations: review contract templates, make recommendations on contracts and performance, define and monitor operational and contractual performance indicators, and develop performance-based contracts;
- improve monitoring and control;
- facilitate investments in solid waste management: private sector involvement, develop business plans and public-private partnerships;
- increase local capabilities.

Key Points

- A roadmap integrating priorities in terms of operational solutions and deployment.
- Operational and institutional optimisation.
- Skills transfer and increased local capacities.

#Recycle waste #Recover materials

REDUCING MARINE PLASTIC POLLUTION IN THE EASTERN CARIBBEAN

The Caribbean Sea receives 92% of the waste originating on land (compared with 80% on average worldwide). Measurements of plastic concentration in marine areas have shown that nearly 200,000 pieces of plastic per km² can be observed in the northeastern Caribbean Sea, affecting biodiversity, the climate, and human health.

The Delegation of the European Union to Barbados, via the French Development Agency, has granted funds to the Organisation of Eastern Caribbean States (OECS) Commission, a major regional player, for the implementation of an effective and sustainable plastic waste management project, to mitigate marine pollution.

The OECS Commission asked Seureca, in partnership with Unite Caribbean Ltd., to assess the efficiency of existing recycling initiatives and develop a financially autonomous plastic recycling model, adapted to the local context. The project benefits the following OECS countries: Antigua and Barbuda, Dominica, Granada, Saint Kitts and Nevis, Saint-Lucia, Saint Vincent, and the Grenadines.

Under this project, Seureca's teams provided the following services:



- assessment of past and ongoing initiatives to collect and recycle plastic packaging waste in the OECS area;
- develop an economically viable model for the 'plastics' channel, adapted to the regional context and replicable with other types of recyclable waste;
- identify two regions among the eligible OECS countries, excluding Saint Lucia, to develop and implement a demonstration of the model;
- develop, implement, and monitor pilot initiatives in the two selected countries over a period of eighteen months, including the structuring of the collection, export, and recycling of plastic packaging waste;
- support for Saint-Lucia: implement and monitor an action plan for the development of plastic recycling activities on the island, particularly around institutional and financial components;
- in parallel, develop and implement prevention campaigns and awareness-raising actions among stakeholders.

⊕ Key Points

- Reduce marine pollution with a positive environmental impact on the protection of biodiversity, the quality of seawater, and the health of coastal populations.
- Develop a model for the plastic recycling channel in the form of a 'turnkey' toolkit, which can be replicated in other contexts or with other types of recyclable waste.
- Identify good collection and recycling practices in the region.
- Awareness-raising actions among stakeholders.

#Waste-to-energy conversion

#Recycle waste



REDUCING A PHARMACEUTICAL MANUFACTURER'S ENVIRONMENTAL FOOTPRINT THROUGH EFFICIENT WASTE MANAGEMENT

Every year, over 100,000 tonnes of pharmaceuticals are consumed worldwide, 24% of which are in Europe. Throughout their life cycle, from production to disposal, chemical components are released into the environment, polluting the water, air and soil.

To improve its environmental impact, a global pharmaceuticals company has set waste management targets for its sites. It aims to reduce its waste by 30% and recycle all its waste by 2030. The manufacturer engaged Seureca for a Kaizen audit to identify realistic improvements to achieve its waste reduction and recycling objectives.

In this context, Seureca is:

- collecting and analysing waste data: monthly and annual quantities of hazardous and non-hazardous waste, types of waste (regular, sorted, contaminated, recyclable, reducible, etc.), types of treatment, source, final destination, as well as the associated costs;

- conducting site visits to understand the production processes and waste stream management, assess upstream and downstream stakeholders, and identify opportunities for improvement in waste management;
- prioritising waste streams to recommend changes;
- preparing a comprehensive report and recommendations for improvements to achieve the objectives.

⊕ Key Points

- Four sites audited in Spain, Germany, and Italy: over 7,000 t/year of waste in total, of which 44% on average was recycled with a lowest recycling rate of 4% for one of the sites.
- Recommendations to improve the management of waste streams identified as a priority in the circular hierarchy (Reduce, Reuse, Recycle, Recover, Dispose), while analysing the associated costs and benefits.
- Recommendations that can be standardised and replicated on multiple sites.

#Decarbonise #Recycle waste

REDUCING DEPENDENCY ON ELECTRICITY IMPORTS AND BELIZE'S CARBON FOOTPRINT THROUGH WASTE-TO-ENERGY CONVERSION

With 78 million tonnes of food waste generated each year, Latin America and the Caribbean have the highest carbon footprint of any developing region as regards food waste. However, this organic waste can be converted into energy.

By converting its waste into energy, Belize, a Central American country, wants to reduce its dependency on imported electricity. The Belizean government entrusted Seureca with a study to assess the feasibility of this project by using cogeneration technologies or organic by-product biomethanization.

Seureca's mission was to:

- assess the possibility of cogeneration from locally available organic waste;
- identify potential sites to build a cogeneration plant;

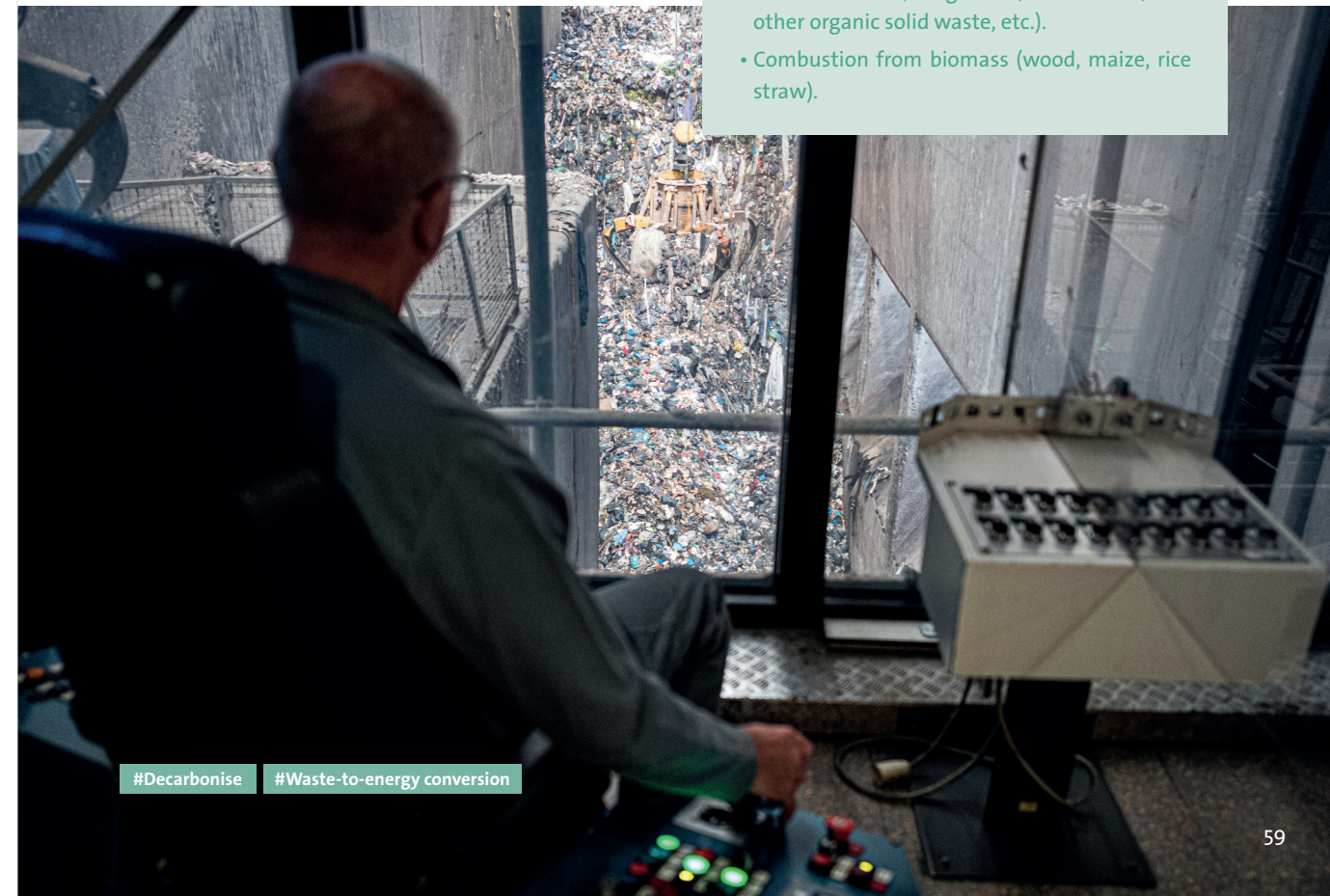


- assess the technical feasibility of the project according to the operational environment, configuration of the system and chosen technologies, the siting study, the regulatory, legal, political, and institutional frameworks, and the environmental and social impacts.

The pre-feasibility report and executive summary were presented and discussed with stakeholders at three workshops.

⊕ Key Points

- Reduce the country's carbon footprint and dependency on imported electricity through waste-to-energy conversion.
- Identify two sites with respective power generation capacities of 4.6 MW and 2.2 MW.
- Biomethanisation from organic residues (manure, sugar press sludge, vinasse, slaughterhouse waste, sargassum, food waste, and other organic solid waste, etc.).
- Combustion from biomass (wood, maize, rice straw).



#Decarbonise #Waste-to-energy conversion

MODERNISING WASTE MANAGEMENT INFRASTRUCTURE IN SAMARKAND, UZBEKISTAN

Samarkand, Uzbekistan, is home to a population of approximately 600,000 and generates nearly 600 tonnes of solid waste per day. However, the current solid waste management equipment only meets approximately 14% of overall needs. To modernise its infrastructure, the state-owned Moroqand Obod received financing from the French Development Agency and a subsidy from the European Union. A Project Implementation Unit (PIU) has been created for day-to-day coordination and project follow-up.

Seureca was mandated to provide technical assistance to the PIU, with the following missions:

- help monitor and implement the investment project, including the construction of collection points, a new sanitary landfill and ancillary facilities, as well as the collection and treatment of leachate and biogas, the material recovery facility and the closure of the old landfill;

- increase the capacities of Moroqand Obod employees with a mirroring of work performed by Seureca experts and the employees of the state-owned company;
- development of a regional municipal waste management strategy and implementation plan;
- user education and awareness campaigns with measures to include the informal recycling sector.

Key Points

- Local technical support (over 150 meetings organised with the customer and stakeholders).
- Raise user awareness of waste management.
- Include the informal recycling sector.
- Skills development: 11 workshops in Samarkand, Bukhara, and Tashkent, covering general management and administration of services, governance and waste management, and environmental and social management.



#Waste-to-energy conversion #Recycle waste

RECYCLING PVC AND REDUCING PLASTIC WASTE IN EUROPE

To reduce the amount of plastic waste in Europe, the recycling of polyvinyl chloride (PVC), commonly used in the construction and public works sector, is a promising solution, with over 800,000 tonnes of PVC waste recycled in Europe in 2021.

To explore the feasibility of a new technology to recycle PVC, a manufacturer commissioned Seureca to identify the potential PVC waste raw materials that could be collected for this project in France and Benelux.

As such, Seureca has:

- inventoried the material collection systems;
- assessed the quantities of PVC waste collected, recycled, incinerated or landfilled according to its origin, and the waste exported;
- identified challenges and opportunities related to PVC waste collection;
- introduced the main players in the PVC recycling sector.



#Recycle waste

Key Points

- Assessment of waste availability in Europe: 2.7 million tonnes per annum with a recycling rate of 27.5%.
- An integrated approach to the European waste value chain.



An aerial photograph of five people walking on a green field. Their long shadows are cast on the grass, suggesting a low sun position. The scene is framed by a purple border on the right and top. The text 'ENVIRONMENT, HUMAN RESOURCES, SOCIETY: AN INDIVISIBLE WHOLE' is overlaid on the right side in white, bold, italicized capital letters.

***ENVIRONMENT,
HUMAN
RESOURCES,
SOCIETY:
AN INDIVISIBLE
WHOLE***



COMMITTED TO THE ENVIRONMENT

Through its CSR policy and the signing of the Syntec-Ingenierie climate charter in 2020, Seureca undertook to act in an environmentally sustainable manner and to contribute to reducing greenhouse gas emissions to limit global warming to 1.5°C, as provided for in the Paris Agreement.

Seureca's internal carbon footprint

Seureca undertakes annual monitoring of its internal carbon footprint to measure and assess the greenhouse gas emissions generated by its activities. In 2021, total emissions related to internal operations and business travel were 431 tonnes of CO₂eq, which is equivalent to an average of 4 tCO₂eq per employee.

This assessment enables Seureca to identify its main sources of emissions and implement an appropriate action plan to achieve the objectives set:

- reduce the impact of business travel;
- increase IT hardware service life;
- raise employee awareness of energy efficiency.

Taking concrete climate action through our projects

By working on ecological transformation in three business areas: water, waste, and energy, Seureca supports its customers in their transformation towards a more sober economy with a positive footprint.

Seureca employs a system to calculate and track a project's contribution to reducing its customers' carbon emissions. This allows us to systematically evaluate and quantify the environmental impact of our solutions.



Deployment of the ecological transformation fresco

To improve employee awareness of the challenges of climate change and to guide the concrete actions to be implemented to protect the environment, Seureca is deploying the ecological transformation fresco.

This fun collaborative workshop, based on the proven concept of the 'climate fresco', provides a

holistic approach and assimilation of the environmental and social challenges inherent to ecological transformation. This workshop deeply anchors employees in Veolia Group's corporate purpose and gives meaning to their work and occupation, the necessary change in mindset and the urgency to act.

35+
employees
trained



Deployment
objective
100 %



Eco-friendly actions in the office

For the European Sustainable Development Week, Seureca organised an interactive webinar on responsible use of digital technology and conducted an awareness campaign to remind users of the importance of switching off IT equipment after use, extending lifetime of devices and reducing streaming.

These actions have highlighted the ecological impact of digital technology and the eco-friendly practices to be adopted for tools and data management.

COMMITTED TO OUR EMPLOYEES

DIVERSITY: A PERFORMANCE DRIVER

The variety of points of view and the diversity within our company are sources of inspiration, creativity, and progress that contribute to the solutions we jointly imagine for our customers.

Out of over 300 employees

39 %

are women

49 %

are professionals

Strong commitment to gender equality in engineering

At the end of 2021, Seureca committed to gender balance by signing the Syntec-Ingénierie trade federation's Engineering Charter for Gender Equality.

The engineering profession currently comprises only 31% of women, while it is at the forefront of environmental, technological, and social development. The aim of the gender equality charter is to engage engineering stakeholders in three goals: attract women to engineering, retain female talents, and enable them to develop their careers.

To achieve these objectives, Seureca has taken concrete actions in two areas:

Area 1: promote engineering occupations to young people

- Participate in trade fairs promoting engineering occupations;
- Introduction to engineering occupations in-house: podcasts on jobs, theme days, discovery courses, etc. (see pages 68 and 69).

Area 2: foster a work-life balance for all

- Flexibility at work: concerning time management, teleworking, and part-time work;
- Raise awareness among employees about paternity leave;
- Support employees in returning to work after parental leave.



SKILLS DEVELOPMENT AND TRAINING A TRUE ASSET

For Seureca, the variety of skills and their recognition are a real strength, enabling the company to anticipate changes and maintain its flexibility and responsiveness.

By bringing together the different areas of expertise, Seureca's teams are able to offer their customers innovative and sustainable solutions adapted to their needs.

96 %
of employees
have followed
training

2.5 days
average training
days per annum
per trained
employee



EMPLOYEE HEALTH AND SAFETY OCCUPATIONAL SAFETY IS NON-NEGOTIABLE

Occupational health and safety does not only stem from compliance with laws, standards, training, and protective equipment. Seureca can count on the commitment of its employees at all levels of the company to instil health and safety in its corporate culture.

0
Accident
severity rate¹

8,77
Accident
frequency rate²

Promoting well-being and safety

A week long event to promote Quality of Life and Working Conditions (QLWC)

Organised in June, the QLWC week aims to promote quality of life at work and encourage employees to take care of their physical and mental well-being.

Weekly workshops aim to share different techniques and methods that help manage stress and maintain a healthy work-life balance.

On the 2022 agenda:

- stress management workshop;
- introduction to reflexology;
- introduction to green organising to better organise working from home;
- email campaign about quality of life at work to disseminate practical information and create collective awareness within the company.

Annual focus on occupational safety

A worldwide Veolia initiative, the Health and Safety week has been held every year in mid-September for almost eight years now. The idea is to raise awareness in a fun way (escape games, quizzes, exchanges of good practices, workshops to establish the right habits (observation, prevention, actions, etc.) that we are all responsible for our health and safety through our daily actions, both for ourselves and those around us.



1. Severity rate: number of days of lost time due to an occupational accident per thousand hours worked.
2. Frequency rate: number of lost time accidents per million hours worked.

COMMITTED TO SOCIETY

Through our activities to promote access to essential services and our international footprint, our teams strive to improve quality of life and contribute to respecting human rights and the economic and social development in Seureca's countries of operation.

In 2022, this mobilisation was achieved in particular by:

Implementing the *Resourcers for Communities* programme

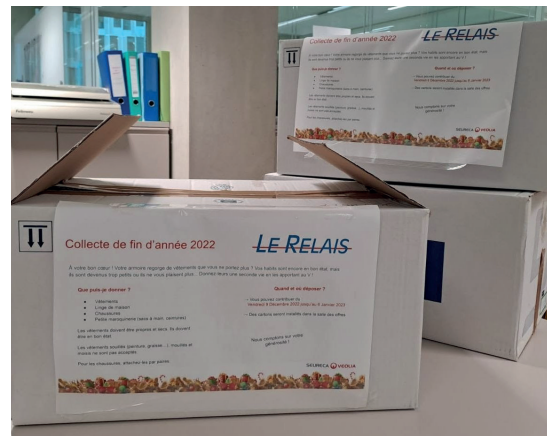
This programme, launched by Veolia, aims to encourage employee engagement by allowing them to volunteer for an associative mission of their choice one day a year. *Resourcers for Communities* relies on a platform for sharing initiatives from local associations, which employees can join, either alone or with colleagues, depending on their affinities.

Promoting engineering occupations to young people, with several actions taken to introduce engineering and environmental occupations:

- **roll-out of the 'My Green City' project** aimed at introducing secondary school students to environmental occupations at Lycée Charles Péguy of Bobigny, for the first year (to find out more about this day, read the 'Review of the "My Green City" project' focus on page 69);
- **observation work placements for students** offering the opportunity to exchange ideas and contribute to the company's activities alongside Seureca's employees for one week;
- **implementation of the Tech myJob programme**, a gender equality initiative of the Group, with the aim of raising female student awareness of the technical and IT occupations and encouraging them to work in the technical and scientific sectors.

Fundraising for local associations to improve the daily lives of people with disabilities or difficulties:

- **organisation of the 'Bouchons d'amour' operation:** collection of plastic caps and lids, which are then sold on to recycling companies to finance equipment for people with disabilities;
- **as part of 'Pink October',** a month dedicated to raising awareness of breast cancer, Seureca's employees rallied to collect tee-shirts for the 'Mon Bonnet Rose' association, which reuses the raw material to manufacture chemotherapy caps distributed free of charge in specialised centres and hospitals;
- **solidarity fund raising for the Red Cross and 'Le Relais' association** with the aim of sorting, packaging, and reselling clothes and accessories to people in need.



Review of the 'My Green City' project

'My Green City' is a programme launched by Veolia which aims to introduce young people to environmental occupations by offering them a day full of activities, such as site visits, presentations, and quizzes on the Group's business lines.

Seureca welcomed secondary school students from the Lycée Charles Péguy, Bobigny, for one day. These young girls, most of whom are eco-delegates and are already aware of sustainable development, discovered the various engineering

occupations and visited the head office's facilities: *Hubgrade*, the building's performance management centre and the boiler room. They also participated in a creative and collaborative workshop to come up with solutions to make their city more attractive in the face of environmental challenges, and to imagine their 'Green City'.

This activity, where they showed dedication and enthusiasm, helped them realise their role in the fight against climate change.

MANY THANKS TO THE SEURECA TEAM!

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Veolia photo library: Bobby, Martin Colombet, Christophe Daguët, Getty Images, Olivier Guerrin, Stéphane Lavoué, Christophe Majani d'Inguibert, François Moura, Chistel Sasso,

Jérôme Sevrette, Shutterstock.

Design and production: IziAsys

Printer: L'Encrier-Advence.

This document is produced by an Imprim'Vert® printer on PEFC® certified paper. The PEFC® certification ensures forest renewal, while also preserving the water, soil, fauna and flora of the natural environment.



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