SUSTAINABLE SOLUTIONS FOR A CLEANER TOMORROW

SES Sustainable Environmental Solutions

CONTENTS

LEADING THE WAY IN SUSTAINABLE SOLUTIONS

At SES, our mission is to spearhead environmental solutions, driving sustainable development across the Middle East & North Africa. We are committed to leveraging cutting-edge expertise to conserve the natural world. Through innovative strategies and strategic partnerships, we empower governments, communities and businesses to thrive while maintaining ecological harmony.

WE ARE SES

SES is at the forefront of environmental project development in the Middle East & North Africa. Our core focus centers on aggregating investments and harnessing cutting-edge technologies to effectively confront the pressing challenges posed by Environmental & Climate Change.

EXCITING JOURNEY

SES is on a journey that not only showcases its capabilities but also creates a lasting and positive impact on the environment and society as a whole. Inspired by the ‘Action First, Excuses Never’ motto, we are building a future-proof business for a better world.

- Developing revolutionary solutions
- Forging strategic partnerships
- Leading large-scale sustainable projects
- Engaging communities and advocating policies
- Focusing on holistic, resilient approaches
- Inspiring green innovation

VALUES

- Innovation
- Empowerment
- Sustainability
- Diversity
- Excellence
- Leadership
- Collaboration
- Impact
- Integrity
- Adaptability
- Resilience
- Community Engagement

“Our values are grounded in the principles of the SDGs, and aim to amplify our positive influence and make meaningful strides toward a more sustainable and equitable future.”

AIR QUALITY, GHG ABATEMENT & MANAGEMENT

We provide carbon abatement and management services and air quality improvement solutions to mitigate climate change, reducing air pollution, and creating healthier and more sustainable environments for communities and industries.

Carbon Offset Program for Wild Discovery ME

SES´s expertise in developing and implementing the Carbon Offset Program empowered Wild Discovery to be a pioneer in sustainable tourism. By taking responsibility for its carbon emissions and investing in offset projects, Wild Discovery has set an example for the travel industry and contributed to the global efforts to combat climate change.

- **Carbon Footprint Abatement**
- **Identification of Offsets Projects**
- **Offset Cost Calculation**

Carbon Footprint Analysis & Emissions Reduction Strategy for Regional Bank

SES presented a comprehensive plan that provided Bankmed a roadmap to significantly reduce the bank's carbon footprint, demonstrating its commitment to environmental stewardship and responsible banking practices. The collaboration between SES and Bankmed set a positive example for other financial institutions, encouraging them to prioritize sustainability and contribute to a greener future.

Data Collection and Scope Identification - Carbon Footprint Analysis - Emissions Reduction Strategies- Energy Efficiency - Green Building - Green Investment Climate Risk Assessment - Carbon Offsetting

Development and promotion of carbon reduction projects in various sectors in the Middle East and North Africa (MENA) region.

SES in collaboration with EcoSecurities focused on delivering carbon finance and sustainable development, with a focus on providing services related to carbon reduction projects and carbon credit trading. We offer carbon market advisory services, guiding governments, corporations, and organizations in navigating the complexities of carbon trading and understanding the potential benefits and risks.

- **Carbon Project Development**
- **Carbon Credit Trading**
- **Carbon Market Advisory**
- **Carbon Offset Projects**

Advanced Air Quality Monitoring - Quarry Exploitation and Rehabilitation.

The cutting-edge system designed by SES to continuously monitor key air pollutants, ensuring compliance with environmental regulations and safeguarding the health and well-being of surrounding communities and ecosystems.

Cimentrie Nationale, by adopting advanced air quality monitoring practices, proactively identified and addressed potential air pollution issues, minimized environmental impacts, and contributed to sustainable quarry exploitation and rehabilitation practices. This, in turn, fosters greater environmental stewardship and enhances the overall social acceptance and environmental performance of Cimentrie Nationale operations.

- **Meteorological Integration**
- **Data Management and Analysis**
- **Automated Alerts and Reporting**
- **Remote Access and Transparency**
- **Modeling and Impact Assessment**

CLEAN ENERGY SOLUTIONS

SES provides an extensive portfolio of clean energy solutions designed to cater to the diverse energy requirements of communities, businesses, and industries alike. Our expertise lies in identifying, developing, and implementing renewable energy projects, encompassing solar, wind, hydro, biomass, and geothermal installations.

Pico PV lightening Kit – Decentralized Power

In partnership with several donors including the Government of the Netherlands, Germany and the Kingdom of Saudi Arabia through the UNHCR, SES implemented several projects that directly assist host communities by providing residents with access to sustainable energy sources for heating and lighting. Small photovoltaic lighting kits (PICO-PV) that provide electricity to power three rooms and a mobile phone charger per household have been distributed in remote villages. Around 1700 households, or the equivalent of 8,500 individuals, have benefited from this technology.

32,000L solar water heater system at the Roumieh prison

The solar water heater system's capacity to heat 32,000 liters of water is substantial and can meet a significant portion of the prison's hot water demand. By harnessing the power of the sun to heat water, the prison can reduce its reliance on diesel boilers, which are typically less energy-efficient and contribute to greenhouse gas emissions.

The reported savings of $27,000 on fuel costs and 125 tons of CO2 per year demonstrate the positive impact of the solar water heater system. The financial savings not only benefit the prison administration but can also be allocated to other important projects or improvements within the correctional facility.

Furthermore, the reduction of 125 tons of CO2 emissions annually is an essential contribution to mitigating climate change and aligns with international efforts to promote sustainable practices and reduce greenhouse gas emissions.

1.08 MW Ground Source Heat Pump at Medrar Medical Center

SES successfully installed a state-of-the-art Ground Source Heat Pump (GSHP) system with a capacity of 1.08 MW Medrar Medical Center (MMC). This innovative system comprises 180 boreholes, each reaching a depth of 100 meters, to efficiently provide cooling, heating, and hot water services to selected areas. The GSHP system encompasses boreholes, distribution pipes, GSHPs, heat and cool buffer tanks, a control and monitoring system, and auxiliary equipment.

The renewable resource utilized in the GSHP system is readily available and offers exceptional energy efficiency, resulting in substantial reductions in CO2 emissions compared to conventional fossil fuel-based energy sources used for domestic hot water and HVAC needs. This ingenious GSHP system exemplifies SES's commitment to sustainable solutions, as it harnesses the earth's renewable heat resources to provide cost-effective and eco-friendly heating and cooling options for MMC's complexes, significantly contributing to carbon footprint reduction and advancing energy efficiency initiatives.

- **Emission Reduction**

ENVIRONMENTAL INVESTING

SES offers a comprehensive range of services to support environmentally sustainable initiatives and investments.

We identify and evaluate environmentally sustainable projects, conduct thorough feasibility studies and due diligence, and perform comprehensive Environmental Impact Assessments (EIA) to ensure compliance with regulations and minimize adverse effects.

SES also assists in financial structuring and securing investment for sustainable projects, leveraging carbon credits and environmental markets to enhance financial viability. With a strong focus on stakeholder engagement and social responsibility, SES emphasizes transparent communication to foster acceptance and social inclusion.

LightBox – Providing Access to clean and reliable energy to underserved communities

LightBox Africa provides decentralized access to energy via solar home system solutions on a pay as you go basis with the ambition of addressing energy poverty in Sub-Saharan Africa, and fighting climate change. LightBox Africa´s solar home system solutions bring sustainable electricity directly to households, schools, and small businesses, opening up new opportunities for growth and prosperity.

LightBox Africa´s vision of decentralized access to energy aligns with the United Nations Sustainable Development Goals, particularly Goal 7 (Affordable and Clean Energy) and Goal 13 (Climate Action).

Sustainable Akkar 88.3 MW Wind Farm - Clean, Affordable, & Reliable Energy

Sustainable Akkar is an 88.3 MW wind farm development company in Lebanon. A landmark project that offers a strategic footprint in shaping the country´s energy future. It is the first utility-scale renewable energy project and the first Independent Power Producer (IPP) project in the country.

Project will be providing clean, affordable, and reliable energy that is less than a third of the current average price paid by Lebanese for electricity. The project will mark a new era for Lebanon´s troubled electricity sector, where the private sector delivers renewable energy solutions to meet the needs of the Lebanese people.

INTEGRATED ENVIRONMENTAL SOLUTIONS

SES works with businesses, governments, institutions, and communities to provide tailored environmental solutions that align with their specific needs and objectives. By integrating various aspects of environmental management and sustainability, SES aims to create a comprehensive approach to address the challenges posed by climate change and environmental degradation.

- Environmental Impact Assessments (EIAs)
- Energy Efficiency and Conservation
- Waste Management
- Renewable Energy
- Green Building and Design
- Water Management
- Sustainable Transport
- Climate Change Mitigation and Adaptation
- Environmental Compliance
- Environmental Education and Awareness

THE WORLD BANK

Comparative analysis of national frameworks versus the World Bank's new Environmental and Social Framework (ESF) standards (ESS1, ESS2, and ESS3) – Afghanistan

This assessment is conducted to understand how projects align with environmental and social management standards, regulations, and best practices. The goal is to identify strengths, weaknesses, and areas for improvement to ensure sustainable and responsible practices are followed. Project involved a detailed comparison of how the environmental and social aspects of projects are regulated and managed at the national level and how they align with the World Bank's updated standards (ESS1, ESS2, and ESS3).

The goal of such a comparative analysis is to promote best practices and ensure that projects funded by the World Bank or undertaken nationally are conducted with due consideration for environmental and social impacts, leading to more sustainable and responsible development.

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Governance and Knowledge Generation Socio-economic Evaluation of Maritime Activities in the Mediterranean Region

The central objective of the project was to undertake a comprehensive socio-economic evaluation of maritime activities prevalent in the Mediterranean basin. The evaluation sought to provide a deeper understanding of the economic implications and potential environmental costs associated with key maritime sectors.

A key aspect of the project was the investigation of the socio-economic importance of seven priority maritime and coastal sectors. These sectors comprised:

- Fishing and marine aquaculture
- Maritime transport
- Cruising and pleasure boating
- Coastal tourism
- Energy production
- Extraction of marine aggregates (including aggregates, salt, fresh water via desalination, etc.)
- Offshore oil and gas industry, sub-marine telecommunication, and electric cables.

Booz | Allen | Hamilton®

Comparative analysis of national Indicator-Based Environmental Assessment of Cooling Technologies for the Kingdom of Saudi Arabia

The primary aim of this assessment was to identify the most suitable cooling technology for application in the specific context of Saudi Arabia. The study incorporated an environmental valuation component to evaluate the environmental impacts associated with each cooling option.

The assessment utilized a rigorous methodology centered around environmental indicators. These indicators provided quantitative metrics to assess the environmental performance of each cooling technology under consideration. Key parameters evaluated included energy consumption, greenhouse gas emissions, water usage, and other pertinent environmental factors associated with the cooling methods.

Environmental Compliance Guidelines for the Meat Processing Industry, Cattle Farms, Dairy Industries, and Slaughterhouses – Republic of Lebanon

SES contributed to the formulation of rigorous environmental compliance guidelines tailored specifically for the meat processing industry, cattle farms, dairy industries, and slaughterhouses.

The primary focus of the project was on assessing and mitigating the environmental impacts associated with these sectors. The comprehensive guidelines encompassed both quantitative and qualitative assessments, as well as the development of Environmental Management Plans (EMPs) and the identification of Best Available Technologies (BAT) for each industry.

WASTE MANAGEMENT

Waste management is a dynamic process that requires continuous evaluation, improvement, and adaptation to meet the changing waste generation patterns and environmental challenges. It requires collaboration between government authorities, local municipalities, private waste management companies, industries, and citizens to achieve efficient and sustainable waste management practices for the benefit of society and the environment.

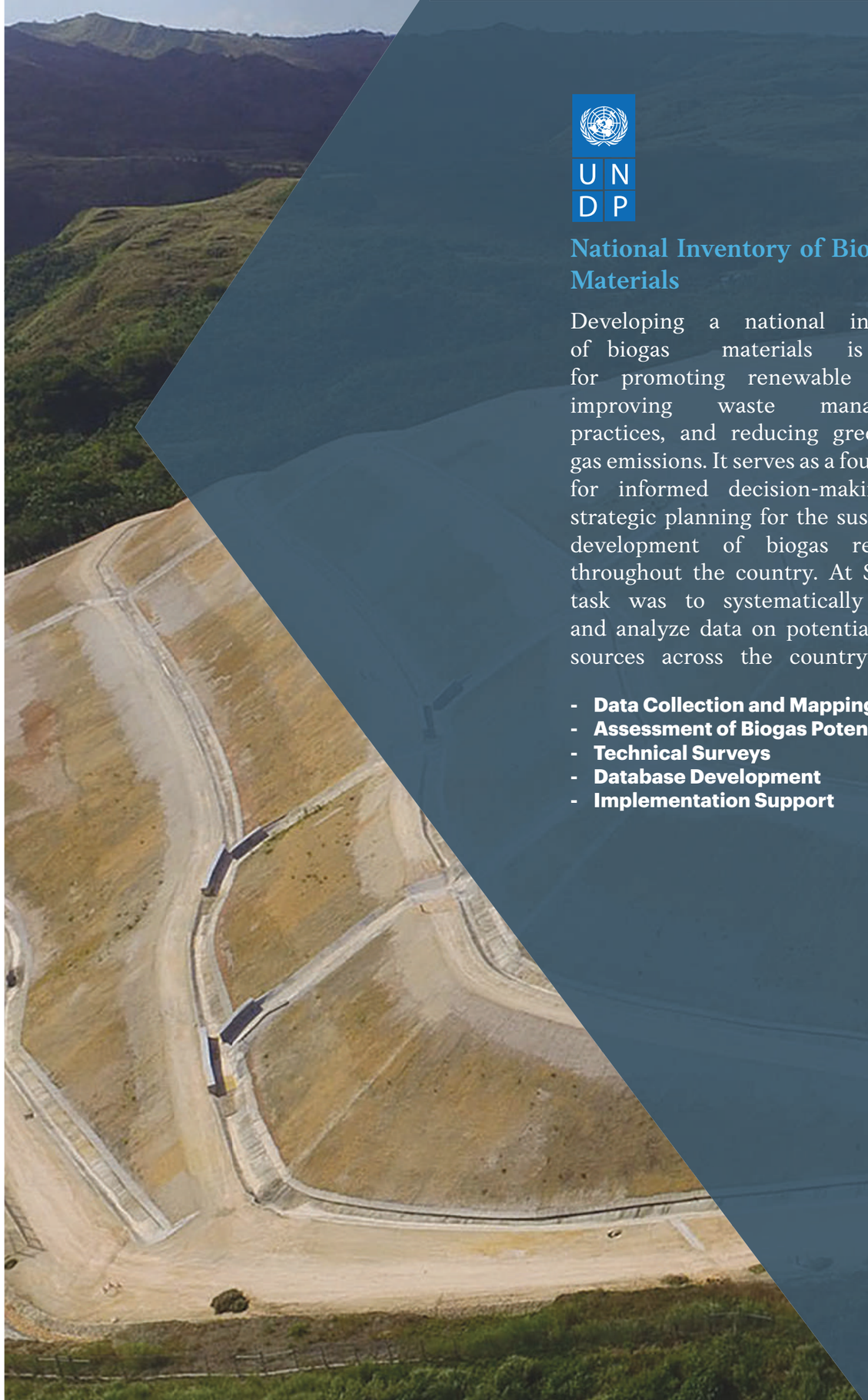
At SES we provide a comprehensive approach that encompasses various waste management practices and strategies to minimize the environmental impact of waste while maximizing resource recovery.

COUNCIL FOR DEVELOPMENT & RECONSTRUCTION

Supervision of Costa-Brava 1000 tons of MSW/day Sanitary landfill

SES's role in ensuring that the Costa Brava sanitary landfill is designed, constructed, and operated in an environmentally responsible manner and in compliance with all relevant regulations. Key tasks and responsibilities include:

- **Feasibility Assessment**
- **Environmental Impact Assessment (EIA)**
- **Design and Engineering Supervision**
- **Construction Oversight**
- **Permitting and Regulatory Compliance**
- **Operational Planning**
- **Monitoring and Reporting**



U N D P

National Inventory of Biogas Materials

Developing a national inventory of biogas materials is crucial for promoting renewable energy, improving waste management practices, and reducing greenhouse gas emissions. It serves as a foundation for informed decision-making and strategic planning for the sustainable development of biogas resources throughout the country. At SES our task was to systematically collect and analyze data on potential biogas sources across the country.

- **Data Collection and Mapping**
- **Assessment of Biogas Potential**
- **Technical Surveys**
- **Database Development**
- **Implementation Support**

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Feasibility study for the biogas plant for one of the biggest cattle farms in the MENA Region

SES presented a valuable tool for the cattle farm and its stakeholders to make informed decisions regarding the development of the biogas plant. It allows them to understand the potential benefits, risks, and environmental impacts associated with each scenario, enabling them to choose the most viable and sustainable option for their operations.

Area of focus: Finding practical methods to treat both solid and liquid digestate from the biogas plant:

Solid Digestate Treatment - Composting: SES worked on developing a practical method to treat solid digestate, which is the residue left after the anaerobic digestion process. Instead of disposing of the solid digestate, we focused on converting it into compost.

Liquid Digestate Treatment - Drinkable Water for Cattle: SES's efforts to transform liquid digestate into drinkable water for cattle address a critical aspect of sustainable farming practices.

- **Resource Assessment**
- **Technical Assessment**
- **Economic Assessment**
- **Environmental Assessment**
- **Whey (Lactoserum) Addition Assessment**
- **Scenario Comparison and Recommendations**

Municipality of Nabatieh

100 tons/day Waste to Energy facility: holistic solutions to resolve waste management challenges in a sustainable and responsible fashion.

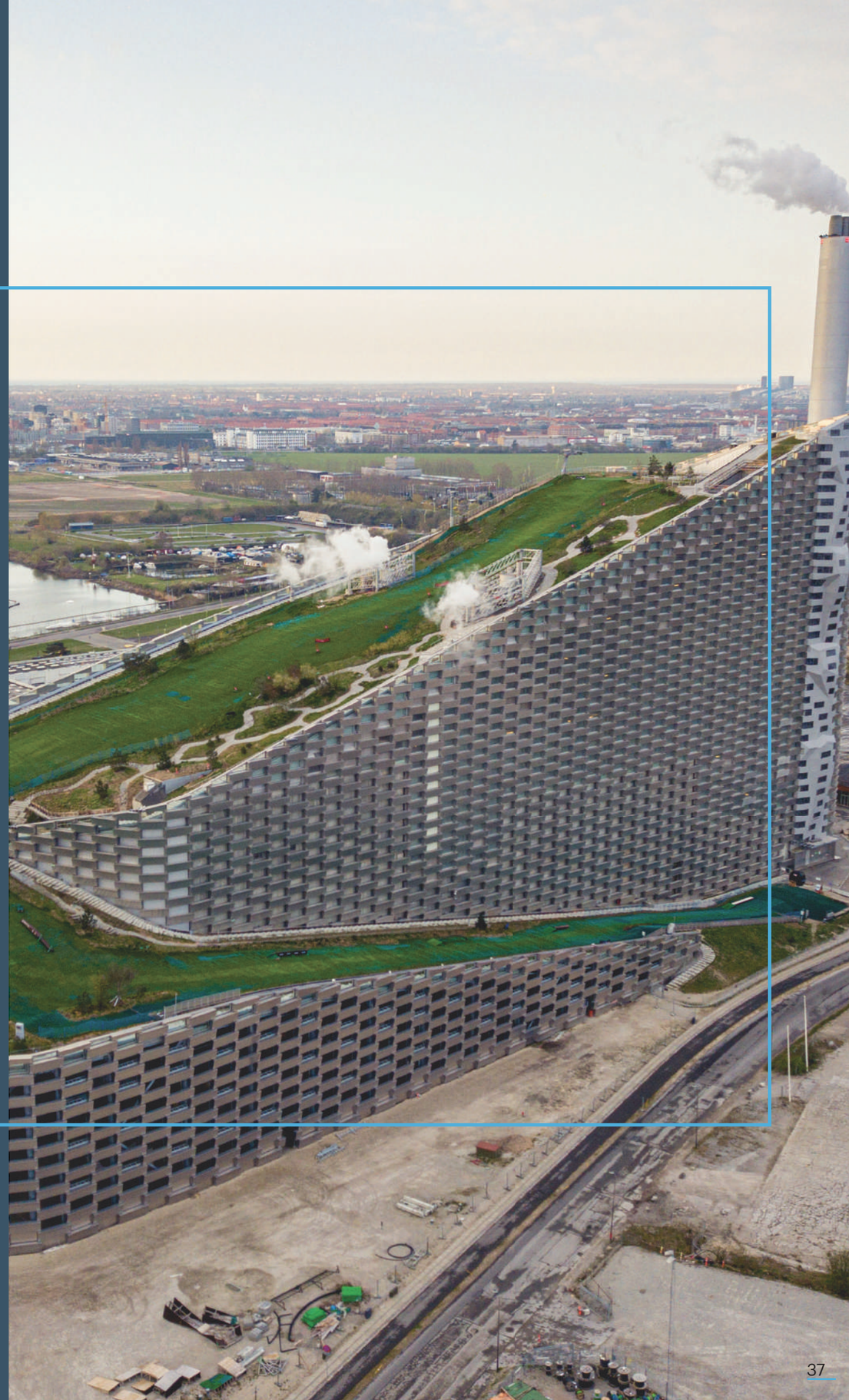
Our scope included the following Head of Terms:

Legal Head of Terms:
SES focused on establishing the legal framework for the waste-to-energy plant project. This involved meticulously structuring the legal agreements, validating the municipality's commitments and contracts, and determining financial aspects such as gate fees and revenue from electricity sales.

Technical Head of Terms:
SES conducted an in-depth study of the municipal solid waste to gain a comprehensive understanding of its characteristics and potential for energy conversion. By optimizing energy production, SES designed and engineered a state-of-the-art facility that maximized the conversion of waste into clean and renewable energy. They also developed detailed operational and maintenance plans to ensure efficient and sustainable plant operation.

Financial Head of Terms:
To assess the project's economic feasibility, SES conducted a full financial feasibility study. This encompassed a thorough analysis of the initial capital costs, operating expenses, revenue projections, and return on investment. SES further optimized costs and facilitated negotiations for lending facilities with banks, providing essential financial support to the municipality.

Environmental & Social Head of Terms:
Recognizing the importance of environmental and social responsibility, SES undertook comprehensive environmental and social impact assessments.



WATER MANAGEMENT

We are committed to helping our clients effectively manage their water resources while promoting sustainable water use practices. Our expertise in water resource management empowers clients to take proactive steps in conserving water, managing stormwater runoff, and adopting sustainable water use practices.

SES provides water and wastewater treatment services at the national and industrial level ensuring access to safe and clean water, protecting public health, and preserving the environment. These services are essential for both the nation´s overall well-being and the sustainable growth of industries. We offer end-to-end solutions, encompassing design, manufacturing, supply, and operation of water treatment facilities.

By providing tailored solutions, innovative technologies, and ongoing support, we enable our clients to achieve their environmental goals while contributing to a more sustainable and resilient future.

“Every Drop Matters” - Lebanon

This initiative was specifically designed to address water conservation challenges in diverse locations across Lebanon, emphasizing the significance of responsible water management practices. The project featured three pivotal outputs, showcasing the comprehensive approach taken to raise awareness and drive positive change:

- Creation of water community reference centers around Lebanon and provide awareness activities and education tools to increase awareness of the local population on water issues.
- Integration of the water theme in the scholar curriculum of private & public schools in collaboration with the Lebanese Center for Water Management and Conservation.
- Promotion of New water technologies that allow water consumption reduction through demonstration pilot projects that included installing rainwater harvesting systems.

- **Public Awareness & Education**
- **Research & Innovation**
- **Legislation & Policy**

Water & Wastewater Treatment Solutions

Our services encompass a range of activities related to designing, manufacturing, supplying, and operating systems and processes to treat water and wastewater for various purposes, including drinking water supply, industrial use, agricultural needs, and environmental protection. These services are critical for ensuring clean and safe water supply and protecting the environment from pollution.

Our activities involved in water and wastewater treatment services include:

Design: We design water and wastewater treatment systems tailored to meet the specific needs and requirements of the project, considering factors like water quality, flow rates, contaminant levels, and regulations.

Manufacturing and Supply: manufacture and supply water treatment equipment, such as filtration systems, reverse osmosis units, UV disinfection systems, chemical dosing systems, and pumping stations.

Installation and Construction: install and construct water and wastewater treatment infrastructure based on the approved designs.

Operation and Maintenance: We operate and maintain the treatment systems regularly to ensure optimal performance and compliance with regulatory standards.

Monitoring and Analysis: our services include regular monitoring and analysis of water quality to assess the effectiveness of the treatment process and ensure that treated water meets the required standards.

SOS CHILDREN'S VILLAGES INTERNATIONAL

SOS Children Association water conservation project.

The project aims to conserve water resources, promote sustainable water management practices, and create a more vibrant and environmentally friendly living environment for the SOS children and the community.
The water conservation activities carried out focused on four main tasks:

1- Reducing water consumption: This was achieved by installing water-saving fixtures, including kitchen and bathroom faucet aerators and showerheads.

2- Enhancing rainwater harvesting system: The existing rainwater harvesting system in the village was improved through the replacement of pumps and leaking valves.

3- Installing a new wastewater treatment plant: A new wastewater treatment plant was designed and installed to replace the existing septic tank system. The plant produces treated water that can be reused for irrigating the surrounding landscape.

4- Landscaping of surrounding areas: The surrounding areas were beautified through the planting of colorful plants and trees. Additionally, a water feature was created to utilize the treated water, enhancing the aesthetic appeal of the village.

Monitoring of Environmental and Social Management Framework Compliance for the Irrigation Restoration and Development Project (IRDP) in Afghanistan.

IRDP project funded by the Ministry of Energy and Water through the World Bank, encompasses four key components:

- Rehabilitation of Irrigation Infrastructure,
- Small Dam Development,
- Establishment of Hydro-Meteorological Facilities and Services,
- Support for Project Management, Construction Supervision, Monitoring and Evaluation, and Institutional Strengthening.

Monitoring and Reporting: SES was tasked with the critical role of monitoring and reporting findings related to the implementation of the Environmental and Social Management Plan (ESMP) and the overall compliance of the project with the Environmental and Social Management Framework (ESMF). This monitoring process aimed to assess the project's environmental and social impacts and identify any areas of concern or non-compliance.

Social Audit of Land Acquisition and Resettlement Action Plan (LARAP): SES conducted a comprehensive social audit of any land acquisition and resettlement action plan (LARAP) implementation. This audit served to ensure that the process of land acquisition and resettlement adhered to social safeguards, and the rights and welfare of affected communities were protected.

Assessment of Compensation and Resettlement Entitlements: One of SES›s key responsibilities was to assess the extent of delivery of appropriate compensation and resettlement entitlements to affected people (AP). This assessment ensured that those impacted by the project were adequately compensated and supported during the resettlement process.
Effectiveness of Impact Mitigation and Livelihood Re-establishment Monitoring: SES evaluated the effectiveness of monitoring efforts in tracking impact mitigation and livelihood re-establishment. This assessment helped identify areas where additional measures were needed to mitigate environmental and social impacts and support affected communities.

- **Sustainable Irrigation**
- **Environmental and Social Management Plan (ESMP)**
- **Environmental and Social Management Framework (ESMF)**
- **Capacity Building TOT**

SES Sustainable Environmental Solutions

SES Canada | Toronto - Canada

SES Iraq | Baghdad - Iraq

SES s.a.l | Beirut - Lebanon

www.ses-lb.com | info@ses-lb.com