



Chemonics Egypt
Consultants

ENGINEERING AND MANAGEMENT CONSULTANTS

CORPORATE PROFILE

2018

Chemonics Egypt Consultants
Engineering and Management Consultants

6 Dokki St., Dokki, 12311,

Giza, Egypt

Tel: +20-2-3336-0559

Fax: +20-2-3749-2472

chemegy@chemonicsegypt.com | www.chemonicsegypt.com

1. Who We Are

Chemonics Egypt Consultants (CE), an Egyptian Engineering and Management Consulting firm based in Cairo, was founded in 1992 as a franchise to Chemonics International, a Washington D.C. based international development consulting firm. In less than 25 years, CE has grown from a small partnership to an independent joint-stock firm capable of simultaneously implementing multiple large-scale projects, providing its advisory services to governments, public sector companies, NGO's, as well as private sector companies in the MENA region.

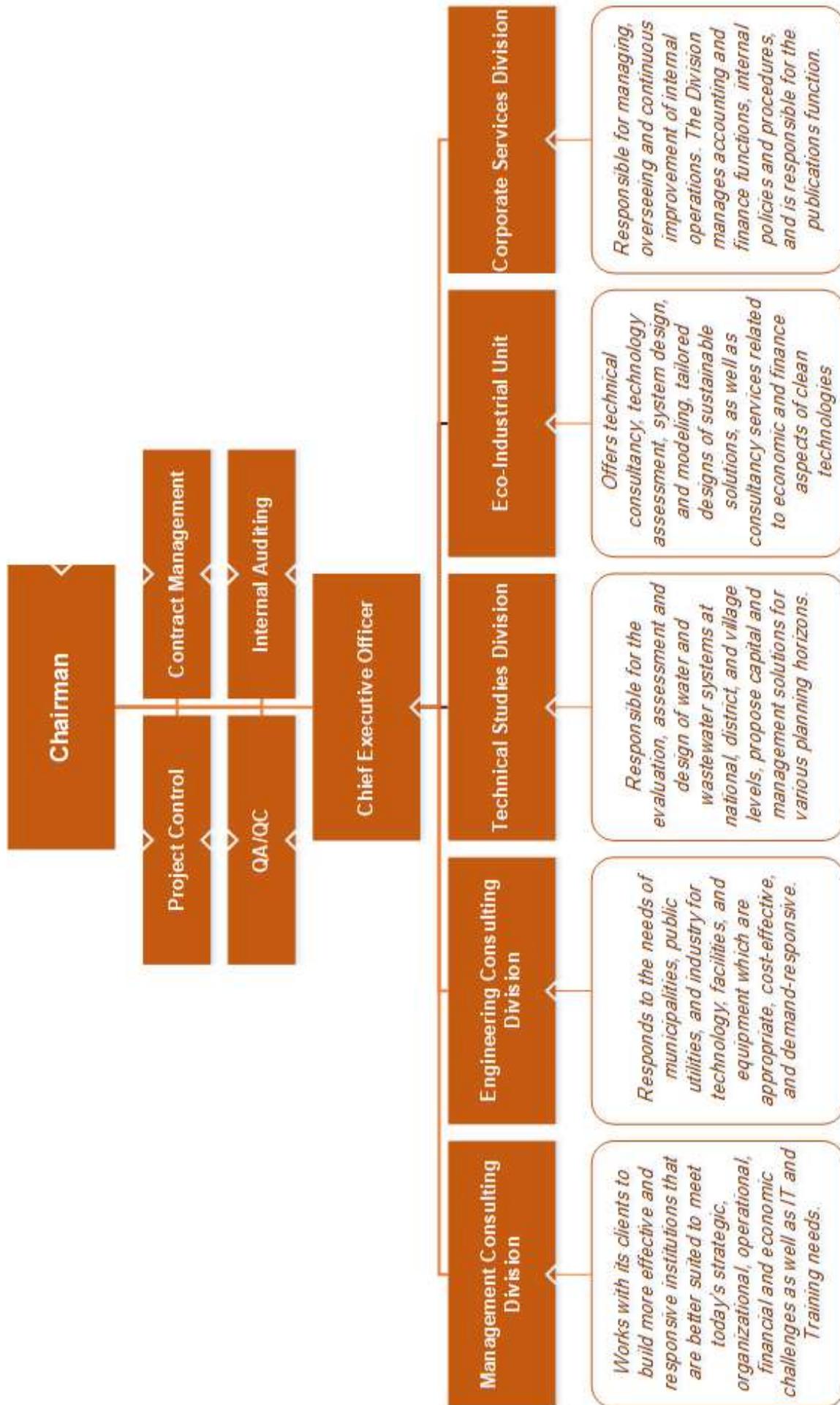
CE combines expertise and integrated solutions in several environmental infrastructure sectors including: water supply and sanitation, water resources management, wastewater & storm water management, municipal solid waste management and industrial waste management. CE has extensive experience in working with international development agencies and donors including World Bank, IFC, USAID, EC, KFW, GIZ, UNDP, UNICEF, UNEP, UNIDO, and DANIDA.

With over 300 projects with budgets up to US\$760 million, CE continues to position itself as one of the leading engineering and management consulting firms in Egypt and the MENA region. CE draws on the expertise of over 100 engineering and management experts covering a wide range of engineering and management disciplines. The firm has implemented projects in Egypt, Libya, Kingdom of Saudi Arabia, Lebanon, Syria, Iraq, Yemen and Oman.

CE has been a continuous participant in the evolving water & sanitation sector reform process in Egypt, beginning with the decentralization program and the corporatization program of the 1990s, to recent moves toward public-private partnerships. CE has accumulated profound experience in all aspects of the water and wastewater sector, including sector strategies and policies, projects formulation, design and tender documents preparation, construction management/construction supervision, operation and maintenance and performance improvement planning.

2. Our Structure

Chemonics Egypt Consultants consists of five main divisions: the Engineering Consultancy Division, the Management Consultancy Division, the Technical Studies Division, the Eco-industrial Division, and Corporate Services Division.



3. Our Key Strengths



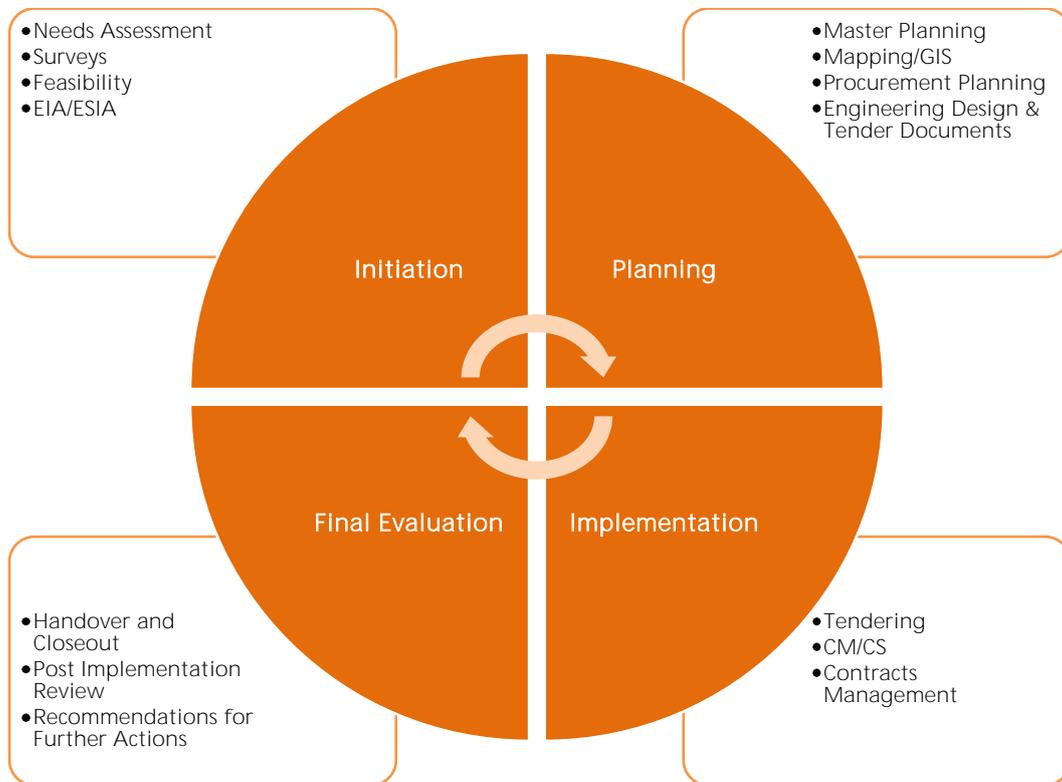
4. Our Sectors and Services

CE responds to the needs of its clients through a wide range of engineering and management consulting services covering all phases of the project lifecycle, from initiation to final evaluation. CE provides its consulting services in the following sectors:

- Water and wastewater systems;
- Urban infrastructure and services (including housing);
- Municipal solid waste management;
- Industrial pollution prevention and control;
- Water resources protection and management;
- Urban and rural development and revitalization;
- Renewable Energy and Energy Efficiency; and
- Support of SMEs and entrepreneurs.

CE's **Engineering Consulting** services provide appropriate, cost-effective and demand responsive solutions to our clients' needs. Our engineering work follows a disciplined project life-cycle approach, in which each stage of the project is conducted with a view to the quality requirements of successive stages in order to assure that the final product achieves design standards and satisfies the end-user.

These services include:



CE's **Management Consulting** division brings a wide and unique range of expertise, critical for bringing about needed change at its clients. Our combination of in-depth expertise in the local market coupled with our strong management consulting capabilities, including strategy and organization reform, performance improvement, IT transformation, training and capacity building and leadership development, set us apart from other consulting firms in Egypt.

In 2012, CE introduced the **Eco-Industrial Division**. This division is a specialized Consultancy and Research unit in the clean technologies field. This includes areas such as energy efficiency, renewable energy, and waste to energy technologies. The division offers technical consultancy, technology assessment, system design, and modeling, as well as tailored designs of sustainable solutions. In addition, EIU provides consultancy services related to economic and finance aspects of clean technologies. EIU provides research based consultancy services on technical and policy aspects of clean technologies.

CE has managed throughout the last 25 years to create a **large pool of professional experts and consultants** with specific expertise **in various engineering, institutional, management, and capacity building disciplines**. Believing there is no globally unique set of solutions capable of achieving sustainable development goals, **CE's solutions and tools are always customized and tailored to meet the needs and challenges of each and every initiative**.

CE always operates by **involving all stakeholders from governmental entities, donors, and development agencies to private sector contractors, operators, and financiers, in any**

development initiative. But most importantly, local communities, whether directly or through their civil societies' agencies, as the main beneficiaries, are considered to be principle contributors to the planning, design, implementation and evaluation processes of such an initiative.

We, at CE, concentrate on making differences. We believe that sustainable development cannot be achieved without a serious and complete understanding and acceptance of crucial development concepts such as real partnership; social, economic, and cultural diversities; as well as social and environmental responsibilities while tackling clients' challenges.

5. Our Experience

Since its establishment in 1992, Chemonics Egypt Consultants successfully implemented over 300 projects and initiatives. In each and every initiative or project we undertake, we commit ourselves to our client and follow our firm belief in client participation as a crucial approach in achieving real and sustainable development. We strive to convey knowledge, functional expertise, and international best practices in every initiative we undertake. This participatory approach has proved to be most effective in addressing and resolving deeply rooted development and change related problems and established CE as a major partner to the public sector and local governments as well as the private sector.

Our track record demonstrates our ability to provide solutions that cross many disciplines; working in complex environments, incorporating diverse voices, and integrating strategies from many sectors are our key strengths.



Water Supply and Sanitation

Since its establishment, CE has been immensely involved in the Water Supply and Sanitation (WSS) sector in Egypt. CE's involvement covers both the institutional and engineering aspects throughout all phases of the project lifecycle, from projects identification, prioritization, evaluation, and feasibility studies to detailed design, tender documents preparation, and assistance during tendering construction supervision as well as post implementation evaluation.

CE managed to develop its own tools, guidelines and resource libraries for the development of detailed engineering designs and tender documents according to Egyptian as well as international codes of practice, best practices and standards.

CE has a long and successful track record with the key stakeholders in the Water Supply and Sanitation sector in several areas of the MENA Region. CE managed to create a fruitful and effective professional relationship with numerous key authorities, including newly established authorities, which resulted in a coherent and adequate understanding of the sector's strategies, mechanisms, challenges, and opportunities.

CE's vast experience in Master Planning and Developing Strategies and Policy Options has been demonstrated in several projects in Egypt and the MENA region.

Back in 1998, CE, as a sub-consultant to Chemonics International, CE participated in the USAID funded Legal, Institutional, and Regulatory Reform (LIRR I&II) projects. Chemonics Egypt advisors played important roles in building nationwide consensus for sector reform, crafting more market-based legal and regulatory frameworks, and developing action plans for national and local level restructuring. CE also participated in preparation and delivery of a nationwide training program on best practices in utility corporatization, private sector participation, and regulation.

As a sub-consultant to COWI Denmark, Dr. Gaber played the major role in the development of the Rural Sanitation Strategy in 2008.

Furthermore, as part of the USAID financed Water Policy and Regulatory Reform Project (WPRR), CE has participated, in 2013, in the review and development of the Egyptian National Strategy for the Water Supply and Sanitation Services.

In 2009-2010, through UNICEF financing, CE developed the Water Supply and Sanitation Policy for the Kurdistan Region in Iraq.

Preliminary Design, Detailed Design, ESIA, Preparation of Tender Documents, Assistance in Tendering and Construction Supervision for the Rehabilitation of two Large Water Treatment Plants, Sharkiya Governorate

Client: Sharkiya Water and Wastewater Company

Funded by: KfW, EIB, AfD, EU

Duration: 2013 – 2018

This project is part of Phase I: Investment Programme of the IWSP, aiming at improving the water and wastewater infrastructure in Sharkia Governorate. The overall objective of this project is:

- Rehabilitation of Al-Abassa Water Treatment Plant and increasing its capacity from 1,750 l/s to 2,250 l/s, and
- Rehabilitation of Zagazig Water Treatment Plant, design capacity 1,100 l/s.

Key services: Preliminary and Detailed Designs, Tender Documents, Construction Supervision

Preliminary Design, Detailed Design, ESIA, Tender Documents, Construction Supervision for the Rehabilitation of Ras El-Barr Wastewater Treatment Plant, Damietta Governorate

Client: Damietta Water and Wastewater Company

Funded by: KfW, EIB, AfD, EU

Duration: 2015 – 2018

This project as part of Phase I of Investment Programme of the IWSP, aiming to the rehabilitation of Ras El-Barr Wastewater Treatment Plant. Ras El Bar WWTP was constructed in 1993 with an original design capacity of 50,000 m³/day to serve Ras El Bar city, the port area, as well as several surrounding villages. The plant biologically treats collected wastewater using conventional activated sludge technology.

Key services: Preliminary and Detailed Designs, Tender Documents, Construction Supervision

Preliminary Design, Detailed Design, ESIA, Tender Documents and Assistance for Tendering for the Renovation and Extension of 3 Wastewater Treatment Plants in Beheira Governorate, Egypt

Client: Beheira Water and Wastewater Company

Funded by: KfW, EIB, AfD, EU

Duration: 2013 – 2015

This project is part of Phase I: Investment Programme of the IWSP. This project aimed at rehabilitating the following:

- Mansheit El- Horia Wastewater Treatment Plant and increasing its capacity from 12,000 m³/day to 20,000 m³/day;
- Nekla El-Enab Wastewater Treatment Plant and increasing its capacity from 3,000 m³/day to 5,000 m³/day; and
- Waked Wastewater Treatment Plant and increasing its capacity from 3,000 m³/day to 5,000 m³/day.

Key services: Preliminary and Detailed Designs, Tender Documents, Construction Supervision

Feasibility Study: Fayoum Wastewater Expansion Project, Fayoum Governorate, Egypt

Client: EBRD/EIB

Funded by: EBRD/EIB

Duration: 2016 – 2017

The overall objective of the assignment is to prepare a technical and financial feasibility study to determine a priority and long term wastewater investment programmes in Fayoum Governorate. The wastewater investments foreseen by the Egyptian Government seek to enhance the wastewater capacity of Fayoum, including expansion of existing WWTPs and construction of new WWTPs. Investment envisaged will include extension of sewage network, pumping stations and gravity sewers. The allocated budget for these investments is estimated at approximately 458 million EUR.

Key services: Technical Assessment of Wastewater Treatment Plants, Capital Investment Planning, Investment Prioritization; Financial & Economic Assessment, ESIA, Resource Efficiency Assessment

Technical Assistance to the Holding Company for Water and Wastewater for Technical Studies and Strategy Development Project

Client: Holding Company for Water and Wastewater

Funded by: EU

Duration: 2015 – 2017

The project aims at supporting the Government of Egypt to continue the reform program of the water sector in accordance with the objectives of the National Water Resource Plan 2005-2017 (NWRP 2005-2017) and the Water and Wastewater Sector Development Policy (WWSDP). Through this project, Chemonics Egypt Consultants, as a member of international consortium, is developing the National Rural Sanitation Strategy for Egypt.

Key services: Policy and Strategy Development

Development of Water and Sanitation Policy for Kurdistan Regional Government, Iraq

Client: KRG Ministry of Municipalities and Tourism

Funded by: UNICEF

Duration: 2009 – 2010

Chemonics Egypt was appointed as an advisor to facilitate and technically assist the Kurdistan Regional Government (KRG), Ministry of Municipalities and Tourism (MMT), in multi-stakeholder policy analysis and formulation of the water and sanitation sector in the three autonomous Kurdish Region governorates of northern Iraq with a view to poverty reduction, sustainable service delivery, and water security.

Key services: Policy and Strategy Development

Knowledge-Based Wastewater Decision Support System

Client: Holding Company for Water and Wastewater

Funded by: GIZ

Duration: 2013 – 2015

The aim of the project is to develop a decision support system for wastewater companies to effectively to structure, plan and monitor future capital and operational investments, thereby supporting utilities project management, operations and maintenance planning, and financial reform and audit. The WWDSS shall provide different scenarios for scheduling as well as optimizing required investments and impacts of future investments on the financial performance of the subsidiary companies and the HCWW. Furthermore, the WWDSS will provide also different scenarios for reducing O&M costs and increasing revenues. The system is an II-module system covering technical, organizational, economic, and financial tool to enhance the planning, prioritization and implementation of sanitation services.

Key services: Policy and Strategy Development

Development of the National Strategy for Water and Sanitation Sector in Egypt

Client: Egyptian Water Regulatory Authority (EWRA) – Egypt Water Policy and Regulatory Reform Program (WPRR)

Funded by: USAID

Duration: 2013 – 2014

The overall objective of the WPRR Project is supporting the Egyptian Water Regulatory Authority (EWRA) and the Ministry of Housing, Utilities, and Urban Development in addressing water and wastewater quality. The project supported policy and regulatory changes to the water and wastewater systems while also developing implementation mechanisms for the reforms. CE was commissioned by the WPRR project to develop a comprehensive National Water Sector Strategy. CE worked in close collaboration with the WPRR staff, the Ministry, and other key stakeholders to review, revise, and update background studies as well as develop the sector strategy. The strategy provided an in-depth analysis of the current situation of the water sector in Egypt, current challenges and recommendations.

Key services: Policy and Strategy Development

Feasibility Study for the Expansion Program of Kafr El Shiekh Sanitation Services

Client: Kafr El-Sheikh Water and Sanitation Company

Funded by: EIB

Duration: 2011 – 2013

This project aimed at significantly reducing the pollution of the Rosetta branch of the Nile, agricultural drains, and Lake Burullus by providing sewerage and wastewater treatment systems to unserved rural communities, thereby improving the community sanitation, environment, quality of life, and health conditions. The project prepared a detailed feasibility study for extending sanitation services to unserved rural areas, including: (i) construction of two new WWTPs; expansion/upgrading of three WWTPs; and (iii) construction of needed networks/pumping stations. The expected impact included the improvement of the sanitation, environment, quality of life, and health of around 430,000 people and also improved utilities project management and operations and maintenance planning. The total investment value of the project is estimated at 170m EUR.

Key services: Projects Identification and Assessment, Design, Cluster Optimization, Feasibility Studies, EIA

Environmental Protection of Nagaa Hamadi Villages

Client: Ministry of Water Resources and Irrigation

Funded by: KFW

Duration: 2002 – 2014

CEC participated in the development of detailed engineering designs and tender documents as well as the construction management and supervision for the implementation of wastewater collection and pumping works to reduce the adverse effects of the rising water table in the area due to the construction of the Nagaa Hammadi Barrage.

During this project, managed the implementation of 20 subprojects.

Key services: Projects Identification, Engineering Design, Tender Documents, Construction and Contracts Management

Construction Supervision for the Old Mahalla Water Treatment Plant, Gharbiya Governorate, Egypt

Client: Gharbiya Water and Wastewater Company

Funded by: KfW, EIB, AfD, EU

Duration: 2015 – 2018

The *Improved Water and Sanitation Services Programme (IWSP)* aims at improving the water and wastewater infrastructure and access to these services in four Delta Governorates (Beheira, Sharkiya, Damietta and Gharbiya). Under the investment component of the IWSP, CE was contracted to prepare the designs for:

- › Rehabilitation and expansion of Old Mahalla Water Treatment Plant and increasing its capacity from 450 l/s to 800 l/s.

Key services: Construction Supervision

Support to Operation Optimization Measures in Affiliated Water and Wastewater Companies

Client: Holding Company for Water and Wastewater

Funded by: GIZ

Duration: 2014 – 2015

The project focused on supporting two key issues in the water and wastewater sector in Egypt, namely, energy efficiency and leakage control, where as much as 30% of the current energy consumption in the sector could be saved.

The project's results included optimization of strategies and processes, (iii) developing a complete action plan, (iv) developing a strategy for promoting small scale integrated PPP projects, and (v) engagement and qualification of 'energy managers' in at least 8 companies.

Key services: Technical Assistance, Energy Efficiency, Leakage Management, Strategy Optimization

Egypt Water and Wastewater Sector Support (WWSS)

Client: Holding Company for Water and Wastewater

Funded by: USAID

Duration: 2008 – 2013

The goal of the WWSS program was to support selected water and wastewater companies in achieving the vision of the 2004 Egyptian Water Sector Reform – becoming efficient and autonomous service providers, accountable to their customers and local boards of directors, and less reliant on central government support. Chemonics Egypt Consultants, as a sub-consultant to Chemonics International, provided technical assistance in operationalizing the newly established companies while improving efficiencies within all participating companies and catalyzing sector-wide shifts in particular areas that need change, including capital investment planning, and management and human resource development (HRD).

Key services: Technical Assistance, Business Planning, HRD, Improving O&M Systems, Capacity Building and Training

Development of the 2007 – 2037 Strategic Master Plan for Water and Sanitation Services in Beheira Governorate

Client: Beheira Water and Drainage Company

Funded by: EU

Duration: 2007 – 2009

CE developed the 2007 – 2037 Water Supply and Sanitation Services Master Plan for Beheira Governorate. CE assessed the existing situation, identified bottlenecks, and planned the water supply and sanitation system to handle the population growth and economic activities till 2037. Further, CE identified the high priority projects to improve the current water supply and sanitation services in the governorate, developed designs and tender documents, supported in tendering and awarding, and supervised the construction of the high priority projects.

Key services: Master Planning, Services Levels, Projects Identification, Design, Tendering, Construction Management and Supervision

Updating and Upgrading the Sewerage and Storm Water Drainage Master Plan for Tripoli City

Client: Tripoli Municipality

Funded by: Tripoli Municipality

Duration: 2003 – 2007

Due to the rapid urban development and population increase in Tripoli City, Libya, the Municipality of Tripoli has initiated a project that aims at upgrading Tripoli sanitary and storm-water systems and updating the existing wastewater master plan. Through the project, CE assessed the existing conditions and planned the system considering urban development plans, discharge of raw wastewater into the sea, and the overflows of storm-water.

Key services: Master Planning, EIA, Projects Identification and Assessment

Fayoum Drinking Water and Sanitation Project - Phase V

Client: Fayoum Water and Drainage Company

Funded by: Royal Netherlands Embassy

Duration: 2007 – 2011

CE, as part of a consortium led by DHV/Royal Haskoning, assisted the Fayoum WSC in Developing wastewater systems start up scenarios, assessing different methods of implementation of new wastewater connections (contractors, technicians, private sector), developing a method that ensures the optimum number of collection chambers and integrity of manholes, developing a new sewer revolving fund to finance new sewer connections to minimize the costs for the customers, identifying the most adequate tools for O&M, and developing a best practices toolkit for wastewater systems O&M.

Key services: Technical Assistance, Improved O&M Systems, Financial and Capital Planning, Business Planning



Solid Waste Management

Over the past 20 years, Chemonics Egypt Consultants has active in the Solid Waste Management (SWM) sector in Egypt and the MENA region. CE worked on numerous projects that covers all aspects of the SWM sector, from policy and strategy to construction supervision and management. Throughout these projects, CE acquired solid knowledge and experience in all phases of the project lifecycle.

CE managed to develop an extensive library which includes international and national guidelines, regulations and legislation, codes of practice and standards. Further, CE developed several tools for planning and assessment of different aspects of the SWM process, i.e. collection, transportation, utilization and disposal.

Over the years, CE has successfully built fruitful working relationships with several key stakeholders and authorities in the SWM sector in several areas of the MENA Region. Further, CE managed to create a team of highly qualified waste management experts and specialists whose expertise covers the key areas of waste management, including municipal, industrial, hazardous and healthcare wastes.

National Solid Waste Management Programme Implementation in Kafr El Sheik and Gharbiya (Lot B)

Client: Waste Management regulatory Agency – Ministry of State for Environmental Affairs

Funded by: KFW

Duration: 2016-2019

This consultancy assignment is to support the authorities in two governorates (Kafr El-Sheikh and Gharbiya) on Governorate and local levels through the preparation and implementation of SWM investments under the framework of the 'National Solid Waste Management Programme' (NSWMP) and the establishment and functioning of the SWMUs in these Governorates. Work will be undertaken in close collaboration with the national and local level administrations, ensuring that their capacity to undertake necessary tasks is strengthened in the process.

Key services: Master Planning, Institutional Development, ESIA, Preliminary and Detailed Design, Construction Supervision

Integrated Waste Management Project in the UAE Northern Emirates – Phase 1 RDF Facility in UAQ

Client: Ministry of Climate Change and Environment, United Arab Emirates (UAE)

Funded by: UAE Government

Duration: 2016-2018

The main scope of work is to follow up with the project management of MSW treatment, waste to energy, and waste disposal projects, during the stages of design, planning, construction and commissioning of the project.

The project involves the construction of one 1000 to 1500 ton/day MCR (MRF, Composting, and RDF) plant, and a sanitary landfill in the emirate of UAQ as part of phase-1 of the project. The RDF will be produced to meet the requirement of specific industries. Phase-2 of the project is planned for the construction of one WTE (Waste to Energy) incineration plant for the generation of electricity.

Key services: Concept Design, Tender Documents Preparation, Tenders Evaluation

The Cement Industry Energy Dilemma: Full Cost of Policy Options for the Cement Industry in Egypt

Client: Ministry of State for Environment

Funded by: Egyptian Government

Duration: 2013

The Cement industry is an important component of the Egyptian Economy. In fact, the Cement Industry accounts for approx. 3.7% of the GDP and consumes approx. 51% of the total primary energy for energy-intensive industries. The GOE has been revising its energy subsidies; accordingly, alternative fuels are becoming more important for the Cement Industry. CE conducted a study to frame the problem and to present a draft set of policies and recommendations. The study considered two main alternatives, Coal and locally produced solid alternative fuels (biomass and RDF). Moreover, The study compared seven (7) Policy Intervention Scenarios

Key services: Policy and Strategy Development

Operational Plan for Solid Waste Collection and Transfer in South Cairo District

Client: The Arab Contractors

Funded by: The Arab Contractors

Duration: 2011

Design the collection systems and develop detailed operational and financial plans for SW collection and transportation services in South Cairo District. The plans included: organization structures, capacity building and training plan, preventive maintenance plan, SW collection from households plan, SW street collection plan, Street sweeping and cleansing plan, SW transfer and routing plan, Crisis management plan, HSE plan and relevant operational and financial forms and templates

Key services: Planning, Capacity Building, Investment Planning, HSE

Development of the Integrated Solid Waste Management Master Plans for Two Governorates in Iraq

Client: Ministry of Municipalities and Public Works

Funded by: UNICEF

Duration: 2008 – 2009 / 2010 – 2011

The projects overall goal was to develop Integrated Solid Waste Management Master Plans (ISWMMP) for the two governorates, which aim at instilling the principles of environmentally sound solid waste management system; improve public and environmental health in each governorate. The ISWMMP will also provide guidance and implementation plans to address the needs of the different aspects of SWM system over the short- (0–5 years), medium- (5–10 years), long-term (10–20 years). The ISWMMP covered, in addition to technical aspects, institutional development of local municipalities, social aspects and integration of scavengers, management information systems, plans for closure of dumpsites, healthcare waste management guidelines and investment planning.

Key services: Master Planning, Needs Assessment, Services Levels, Projects Identification, Private Sector Participation, Institutional Development, Social Integration, Waste MIS

Studies and Engineering Services for Establishing Three Sanitary Landfills in Tikrit, Nassiriya and Karbala, Iraq

Client: Ministry of Municipalities and Public Works

Funded by: Iraqi Government

Duration: 2013 – 2014

The Iraqi Ministry of Municipalities and Public Works (MMPW) planned to establish sanitary landfills in several Iraqi Governorates in order to dispose of municipal solid wastes in a safe and environmentally sound manner. The MMPW invited several international consultants to prepare a complete technical and financial feasibility studies and detailed engineering designs of the landfills. CE was awarded three contracts to provide its consultancy services for the establishment of three landfills in Tikrit, Narririyah and Karbala.

Key services: Landfill Master Planning, Engineering Design, Feasibility Studies, EIA, Tender Documents

Development of the Integrated Solid Waste Management Master Plan for Two Governorates in Kurdistan, Iraq

Client: KRG Ministry of Municipalities and Tourism

Funded by: UNICEF

Duration: 2009 – 2011 / 2010 – 2011

The projects overall goal was to develop Integrated Solid Waste Management Master Plans (ISWMMP) for the two governorates, which aim at instilling the principles of environmentally sound solid waste management system; improve public and environmental health in each governorate. The ISWMMP will also provide guidance and implementation plans to address the needs of the different aspects of SWM system over the short- (0 –5 years), medium- (5–10 years), long-term (10–20 years). The ISWMMP covered, in addition to technical aspects, institutional development of local municipalities, social aspects and integration of scavengers, management information systems, plans for closure of dumpsites, healthcare waste management guidelines and investment planning.

Key services: Master Planning, Needs Assessment, Projects Identification, Private Sector Participation, Institutional Development, Social Integration, Waste MIS

Detailed Engineering Services for Centralized Solid Waste Management System for Riyadh Techno Valley

Client: King Saud University

Funded by: Client

Duration: 2013 – 2014

Development of detailed engineering designs for a centralized waste management system for Riyadh Techno Valley (RTV), 1.7 million m², as a part of the Complete Infrastructure and Utilities for the Valley.

Key services: Waste Management, Engineering Design



Eco-Industrial Projects

In 2012 and in response to global, regional and local changes in the environmental sector, CE established its Eco-Industrial Unit (EIU) as a research and consultancy center. The EIU provides a wide range of services in the areas of energy efficiency, renewable energy, clean technologies, resources efficiency and waste utilization.

EIU vision is that well designed innovative clean technology systems are essential for competitiveness and sustainability of industrial activities and are integral aspects of its success. The integration of clean technologies and sustainable design methods in Egypt is both a market opportunity and necessity for development of the industry and economy at large. EIU offers technical consultancy, technology assessment, system design, and modeling, as well as tailored designs of sustainable solutions. In addition, EIU provides consultancy services related to economic and finance aspects of clean technologies. EIU provides research based consultancy services on technical and policy aspects of clean technologies. Since its establishment, the EIU has worked on projects involving technology assessment and transfer, energy efficiency, renewable energy, waste management, and waste to energy disciplines. These projects covered aspects related to technology assessment and development, economic feasibility with strong integration between engineering design aspects and financial aspects, system and process development as well as strategies and action plans development.

Energy Efficiency in Egyptian Plastic Industry Co.

Client: Egyptian Plastic Industry Company (EPI)
Duration: 2015 – 2016

A project, which involves the development of energy saving solutions for Egyptian Plastic Industries (A plastic manufacturer in Egypt). The project involves energy benchmarking as well as the design and implementation of energy saving measures.

Key services: Energy Efficiency

Assessment of Material Efficiency in the Japanese Tobacco Industry

Client: IRSC Egypt (Integrated Renewable & Sustainable Communities)
Duration: 2015 – 2016

IRSC Egypt subcontracted CE to assess material efficiency in the Japanese tobacco industry (JTI) and design a waste management and recycling station at JTI facility including supervision of equipment acquisition, installation and training.

Key services: Resource Efficiency

Waste to Energy Project in Egypt

Client: International Finance Corporation (IFC)
Duration: 2012

The project aimed at assisting the IFC and the PPP Central Unit of the Ministry of Finance in reviewing the feasibility of a Waste to Energy (WtE) project, including pilot facilities at predetermined locations in Cairo, Alexandria, Matrouh and Dakahliya. The facilities would comprise transfer station(s), sorting services, a WtE plant and related infrastructure capable of handling around 1000-2000 tons/day of waste.

Key services: Feasibility Assessment, Technology Assessment, Tariff Setting

Waste Converter Plant

Client: GIZ Water Management Reform Programme
Duration: 2014 – 2015

This study aimed at conducting a feasibility study for a “waste converter plant” as a possible solution for managing solid and organic waste in irrigation canals part of the Integrated Water Management District of Mahmoudiya. This is a promising and efficient solution to waste problems as well as an innovative approach to achieving development objectives in Egypt. The study provided technology transferability and assessment, feasibility assessment, and development of a project implementation plan.

Key services: Technology Assessment, Feasibility Analysis

Sustainable Start-ups Working on the Energy Sector

Client: GIZ

Duration: 2015 – 2016

The project aims at developing a sector based capacity-building program for energy startups and Micro- and Small Enterprises (MSEs) in Egypt that addresses their weaknesses and assist them to grow and become competitive. The program focuses on providing and understanding of the Egyptian energy market and its needs as well as skills and tools to build and grow a company in the energy sector in Egypt. The program also includes a Training of Trainers component and implementation of the training program. The training program provides skills related to impact assessment, market analysis, financial management, marketing, and stakeholder analysis

Key services: MSEs Development, Capacity Building

Market Assessment and Identification of Clients for Nanomaterials

Client: Nanotech Inc.

Duration: 2016

Nanotech Inc. is an Egyptian firm specializing in developing nanomaterials for industrial purposes. This consultancy assignment aims at identification of 2 to 4 Egyptian clients that could utilize the following materials on an industrial scale: (1) Metallization Nanoactivators and (2) Anticorrosion Metal Oxide Nanofillers. The scope of CE includes assessment of each material against competing solutions, both technically and economically; developing a list of potential applications for each material; and identification of market opportunities and a shortlist of highest potential clients.

Key services: Technology Assessment, Market Assessment

Industrial Waste Mapping and Design of Waste Exchange System in 10th of Ramadan

Client: AFDB

Duration: 2015 – 2016

The project aims at mapping of industrial waste in 10th of Ramadan industrial zone as well as design and implementation of waste exchange system. The project involves surveying 400 factories coupled with analysis to determine the types, amounts and value of waste generated in the 10th of Ramadan complex and the potential of exchanging this waste among the factories and third parties. An online system and on ground activities will be designed to set and launch the first waste exchange system in Egypt. The project includes providing 400 factories with a green package which helps them compare their material, water and energy intensity with international averages and best practices.

Key services: Resource Efficiency

Youth Employment for Socio-economic Stability in Upper Egypt"

Client: UNIDO

Duration: 2016

The project aims at developing Luxor as an entrepreneurial hub and a center of high value added MSEs center. The objective is to develop a one year action plan to guide UNIDO activities in supporting startups and MSMEs working within natural clusters and value chains, as well as building the capacity of local support institutions and cluster elements. It also aims at laying the seed of new potential clusters. CE team identified naturally existing clusters and value chains in Luxor. A small network of local investors has been developed. Mapping and analysis of administrative procedure and regulation related to business startup and operation were done to assess their impact on MSEs.

Key services: MSEs Development, Capacity Building

Integrated Water Resources Management

Chemonics Egypt Consultants (CE) has been continuously active in water resources protection and management in Egypt. CE has worked at local, regional (watershed), and national levels of the sector and in each of the main types of water resource groundwater, surface water, inland lakes, and coastal waters.

Technical Assistance to the Enhanced Water Resources Management Project (EWRMP)

Client: Ministry of Water Resources and Irrigation

Funded by: the World Bank

Duration: 2014 – 2016

The Enhanced Water Resources Management Project (EWRMP) is an important step forward that was identified by both MWRI and the WB towards the improvement of water management practices in selected pilot areas. The EWRMP aims to promote the adoption of IWRM practices with emphasis on enhancement of water users' participation and decentralization through involvement of stakeholders at the lowest possible level. The global objective of EWRMP is to establish the basis for scaling up investments through the GOE's IWRM plan and contribute more significantly to pollution control and improved ecosystem health of the Mediterranean Sea and its biodiversity resources. Successful operationalization of the IWRM approach and principles in pilot schemes will demonstrate the benefits of synergy of the ongoing investment projects. Replicating the EWRMP results will assist in increasing water use efficiency, availability of water for reuse, and improved water quality and livelihood of the poor. Eventually, the EWRMP would have a great impact on reducing the pollution load flowing into the Mediterranean Sea.

Key services: Integrated Water Resources Management, Solid Waste Management, ESIA, Technical Assistance, Capacity Building, GIS, Stakeholders Mapping and Analysis

Water Quality Management Strategy for Iraq

Client: Government of Iraq

Funded by: UNICEF

Duration: 2014 – 2015

CE is a part of international consortium working on Developing a Decision Support System for Wastewater and Sanitation Services in Egypt. The GIZ financed project aims at developing an 11-module technical, organizational, economic, and financial tool to enhance the planning, prioritization and implementation of sanitation services.

Key services: Policy and Strategy Development

Setting of Best Practices Environmental Principles for the Alexandria Free Zone, Alexandria, Egypt

Client: General Authority for Free Zones and Investment

Duration: 2010 – 2012

This project aimed at developing and implementing an environmental compliance action plan that transforms the largest industrial free zone in Egypt into a prominent example of sustainable, environmentally sound development policy.

The project addressed two key challenges: (i) industrial wastewater management, and (ii) remediation and restoration of a 130 acres polluted water body.

The Alexandria Free Zone (AFZ) hosts a wide range of industries, including metals, food processing, chemicals, oil, software, textile, leather products, and tanneries. The wide variety of industries poses a challenge in terms of wastewater management as a result of the wide changes and types of loads. Accordingly, an integrated approach was adopted in developing the wastewater management system for the zone, i.e. from source to final disposal.

The second challenge/component of the project was the remediation and restoration of approx. 130 acres submerged under up to 5 meters of polluted industrial wastewater. The water body was formed as a result of discharging untreated industrial wastewater from several facilities into a depression for several years. Several alternatives were explored for treatment and disposal of polluted water, land remediation and restoration, and developing a master plan for the area after restoration, including land use and types of industries to be hosted.

Key services: Water Resources Management, Environmental Pollution, Industrial Emissions, Industrial Wastewater Management, Remediation

Assessment of Sources and Impacts of Drain Pollution in the Watersheds of the Northeastern Delta and the Fayoum

Client: Ministry of Water Resources and Irrigation

Funded by: Multiple

Duration: 1994 – 1997

In a series of projects over the years from 1994 to 1997, CE conducted comprehensive literature reviews and field studies to assess the sources and impacts of drain pollution in the watersheds of the northeastern Delta and the Fayoum, and prepare pollution mitigation measures and engineering interventions to protect wetlands and fisheries and enhance the suitability of drainage water for intermediate reuse in agriculture.

Key services: Material Efficiency



Environment and Pollution Control

Chemonics Egypt Consultant (CE) industrial waste services assist industries to comply with Egyptian environmental law by reducing the quantity and toxicity of their discharges to the environment, often also increasing their efficiency in the process, and assist municipalities in the environmental regulation of industry. CE combines a profound (and in some cases formative) understanding of Egyptian and international environmental regulation with expertise in sampling and testing, chemical engineering, industrial environmental auditing, and technical and economic analysis of waste minimization and pollution control projects in a wide range of industry sectors. CE facility compliance audits address occupational safety and health as well as environmental impacts.

Facility for Financing Environmental Protection in the Public Sector Industry

Client: Holding Companies for Food, Chemical, Engineering and Pharmaceutical Industries

Funded by: KFW

Duration: 1997 – 2007

This assignment aimed at supporting the implementation of the Egyptian-German Environmental Facility. Throughout the assignment, CE worked with approx. 150 factories to develop proposals for pollution prevention projects, development and verification of technical, economic and financial feasibility of the proposed projects, and obtaining financing for the eligible projects, as well as tendering, awarding and supervising the implementation of the proposed projects.

Key services: Wastewater Management, Industrial Emissions, Pollution Control

Cairo Air Improvement Project

Client: Greater Cairo Governorates

Funded by: USAID

Duration: 1997 – 2004

Air pollution has been identified as a major threat to public health in Cairo. This \$50 million, five-year project is a pioneering effort to introduce pilot activities and new, clean technologies to prevent and mitigate air emissions while addressing the institutional, technical, financial, and policy constraints. The project has five specific objectives:

- › Vehicle emissions testing.
- › Expansion of the use of compressed natural gas as fuel for fleets and public transport.
- › Reduction of lead pollution.
- › Air quality monitoring to establish benchmarks and measure improvement.
- › Public awareness campaign to increase public understanding of Cairo's air quality problems and build support for project activities.

Key services: Emissions, Pollution Control, Air Quality

Lead Pollution Clean-Up in Qalyubeya

Client: Qalyubeya Governorate

Funded by: USAID

Duration: 2004 – 2008

The Lead Pollution Clean-Up in Qalyubeya was a project funded by the USAID under the Livelihood and Income from the Environment Program (LIFE). The project included the remediation of five lead smelters and one school in Shoubra El-Kheima area of the Governorate of Qalyubeya. The area was highly industrialized and lead contamination had a significant impact on the human health and environment of the area. The project consisted of two primary activities:

- › Site remediation activities.
- › Community awareness and communications support.

Key services: Industrial Emissions, Pollution Control

Canal Cities Water and Wastewater Improvement Project: Suez Special Services

Client: Suez City

Funded by: USAID

Duration: 1993 – 1995

Certain substances in industrial wastewater can damage the fabric of public sewers and/or undermine wastewater treatment processes. Under contract to the ABB Susa/Dillingham JV, CE conducted a survey of industrial user in Suez City as a prelude to an Industrial Wastewater Monitoring Program. The survey aimed at identifying all potential categorical and significant industrial/commercial users within the wastewater treatment plant catchment by assessing their likelihood of discharging any of 126 priority pollutants as defined by the US Environmental Protection Agency (EPA).

Key services: Industrial Emissions, Pollution Control, Wastewater Management

Urban and Rural Development

Chemonics Egypt Consultant (CE) capabilities in urban and rural development assistance extend beyond its water and sanitation engineering and management services to governance, project packaging and financing, project management, resources mobilization, municipal revenue improvement, and economic development.

Sohag Rural Development Project

Client: Sohag Governorate

Funded by: International Development Association

Duration: 2002 – 2008

CE assisted Sohag's local councils to expand access to local public services (water, sewer, canals, roads, public buildings) through decentralized and participatory project planning and capacity building for project life-cycle management by municipalities and community groups. The project consisted of three main components:

- **Component A: Institutional Support**, activate the role of existing institutions to achieve better levels of integration between governmental authorities and local communities represented in the private sector and non-governmental organizations;
- **Component B: Rural Infrastructure**, enhance village infrastructure in fields that accelerate economic and social development rates; and
- **Component C: Small Loans** develop a mechanism for financing small economic projects through credit programs.

Key services: Rural Development, Access to Public Services, Institutional Support, Access to Finance

Ismailia Sustainable Cities Program

Client: Ismailia Governorate

Funded by: UN-HABITAT

Duration: 1993 – 1995

CE facilitated governorate-wide strategic planning by local government and civil society, provided detailed project development, and assisted stakeholders to obtain funding for nine multi-year projects supporting urban and agricultural development, improving the urban environment, and preserving Lake Timsah. CE is also using participatory methods to develop governorate-wide environmental action plans in Qena and Damietta. CE consulting practice in these projects improves the quality of governance at the local level.

Key services: Emissions, Pollution Control, Air Quality

Public Works Projects in Six Governorates

Client: Social Fund for Development

Duration: 1993 – 1998 / 2004 – 2006

CE worked with the Egyptian Social Fund for Development on a series of projects aiming at carrying out technical, economic, social and environmental studies for public works projects proposed by the local councils in six (6) governorates.

Subsequently, CE worked with the Social Fund for Development on developing an integrated system for the operation and maintenance of public works projects funded by the Social Fund for Development. The public works included water supply, wastewater, irrigation, and roads projects.

Key services: Rural Development, Access to Public Services, O&M

Strengthening the Municipal Revenue Collection System in Saudi Arabia

Client: Ministry of Municipalities

Duration: 2004 – 2006

In Saudi Arabia, CE assisted in building the capacity of municipal administration to recover the costs of urban and environmental services and to facilitate sustainable economic development. CE computerized local revenue billing and collection, and also developed a nationwide system for municipal-level registration, licensing, and health/safety inspection of all establishments engaged in post-harvest handling, processing, and sale of food products and services.

Key services: Rural Development, Municipal Capacity Building, MIS

6. Eco-Industrial Unit (EIU) - Industrial Resource Efficiency



Why Resource Efficiency

Rising costs of resources: the world's natural resources are increasingly under stress. Communities are facing challenges in developing a sustainable lifestyle, and sustaining growth while conserving natural resources. This is reflected as an increase in the overall costs of producing energy, providing water, and extraction of material.

For industry in particular, this translates into a continuous increase in production costs. Couple that with a tough economic climate, it leads to diminished profit margins and decreased market competitiveness. This is why the concept of industrial resource efficiency has increasingly become a favorable practice.

Higher profits, increased sustainability: industrial resource efficiency refers to production methods and technologies that decrease the use of energy, water, and material while maintaining production quality and capacity. It leads to more sustainable business practices, increased profits and a more competitive market positioning. The challenge lies in determining the most cost effective combination of technical interventions carefully selected from a wide variety of options.

21st Century Industry: since the early 1980s, industries in developed countries addressed the improved management of energy, material, and water independently for almost two decades, before a shift towards a more holistic approach, addressing all three elements together, started to happen in the late 1990s. Consequently, resource efficiency was recognized as a major element of industrial development in the World Summit on Sustainability Development in 2002 and was integrated as a major element in the Europe 2020 Strategy for Development. Now, industrial resource efficiency is a requisite of best industrial practices in most developed countries.

Challenges

Equally Addressing Energy, Material, and Water: technical interventions in energy, material and water present a wide and diverse spectrum of options for potential solutions. Financial return is a function of the costs of energy, material and water, and these costs vary as a percentage of total production cost according to industrial sector. Interventions are often interconnected. For instance, saving in water consumption can sometimes be reflected in automatic savings in energy usage.

Thus, identifying the best opportunity for the factory, requires addressing all aspects equally and needs a deep and diverse knowledge in renewable energy, energy efficiency (thermal and electrical), water and waste water, and material and waste management.

Client uniqueness

While some interventions are standard practices, most interventions will be highly dependent on the client's technology, the product mix, and their strategic objectives.

Furthermore, even for standard practices (such as those related to utility equipment, for instance, boilers, chillers, or compressors) the best solution remains reliant on the factory's operating conditions.

Thus identifying the best saving opportunities, requires neutrality to all available technologies, solutions, or manufacturers, and the selection should only and ultimately be based on the factory's best interests.

Value Proposition and Services

In terms of Energy Efficiency, CE's value proposition comprises four elements, which we adheres to throughout all our service offerings:

- › Design and implement of solutions customized to each factory in order to save on energy, water, and/or material consumption;
- › Address all aspects, whether energy, water or material, from an equal and competent standpoint;
- › Develop the best combination of solutions for the client from a diverse set of technology providers and manufacturers, with no biases towards any; and
- › Arrive at the best possible financial return for the client given all potential interventions.

Our Energy Efficiency solutions cover thermal and electrical energy savings, waste reduction, waste management solutions for valuable bi-products, and water use efficiency. In this regards, CE provides five distinct services that can be offered both independently or in packages; these are:

- › Auditing and Benchmarking;
- › Development of Potential Solutions;
- › Implementation of Proposed Solutions;
- › Capacity Building; and
- › Assistance in ISO50001 Certification.

CE's energy efficiency services are characterized by the following main features:

- › Industry cross-cutting solutions such as boiler efficiency or compressor optimization package as well as sector-specific interventions;
- › Integrated approach to energy, water and material, through strong competent team and wide industry experience;
- › Reliance on state of the art measurement equipment;
- › Integration of international best practices; and
- › Client-centered approach by working closely with client team and thoroughly understanding priorities and market positioning.

CE's methodology in implementing Energy Efficiency Projects is the result of a mixture of years of experience in the Egyptian industry in areas of energy, water, and material, with international best practices, which include:

- › Material Cost Flow Accounting Concept (developed in Germany and standardized in ISO norms in 2011 – covering material and water);
- › TEST Methodology developed by UNIDO/UNEP and outlined in ISO 14051 (covering energy, material, and water);
- › Canadian energy audit manuals (Canadian Industry Program for Energy Conservation – focusing on energy); and
- › BREF practices developed by IFC.

7. Our Clients



Ministry of Housing, Utilities and Urban Development



Ministry of Water Resources and Irrigation



Ministry of Agriculture and Land Reclamation



Ministry of State for Environment



Holding Company for Water and Waste Water



Egyptian Water Regulatory Authority



National Organization for Potable Water and Sanitary Drainage



Egyptian Environmental Affairs Agency



General Authority for Free Zones and Investment



Greater Cairo Cleaning and Beautification Organization



Ministry of Municipalities and Rural Affairs - KSA



Sultanate of Oman



Ministry of Municipalities and Public Works - Iraq



Ministry of Municipalities and Tourism - KRG



Ministry of Housing and Construction - Syria



Housing and Infrastructure Board - Libya



Palestinian Water Authority - Palestine



Ministry of Energy and Water - Lebanon



United Nations
Development
Program



United Nations
Childrens Fund



United Nations
Environmental
Programme



UN-HABITAT



The World Bank



European Union



Kreditanstalt für
Wiederaufbau
(KFW)



US Agency for
International
Development



Japa International
Cooperation
Agency