



Enabling
Digital
Transformation



Case Studies



Power



Egypt, North Africa & Levant



Smart Metering Project EEHC



Project

EEHC Smart Metering Project

Client

Egyptian Electricity Holding Company

Project Location

Egypt

Project Description

Giza Systems was awarded the EEHC Smart Metering project (RFP1 & RFP2) to implement a centralized smart grid of smart electricity meters across the country.

Benefits to Client

- Reduced operational costs
- Reduced power consumption
- Centralized operating platform; remote control over meter readings and service provision
- Streamlining operations from meter installation to cash collection
- Initial deterrence against fraud and energy theft
- Citizen-centric reporting of unified data per citizen across all distribution companies
- Increased billing accuracy and transparency
- Better protection of machines and appliances against sudden surge of voltage
- Consumption reports and preservation of consumption records

Scope

RFP1 scope included:

- Meter installation
- Data concentrator
- Communication infrastructure
- Head-end system

RFP2 included:

- 7 Data centers infrastructure
- Integration point
- Integration bus as a backbone
- Meter data management
- Billing and customer management
- Device management (remote)
- Workforce management

Alexandria National Command Control Center



Project

Alexandria National Control Center Project

Client

Ministry of Electricity and Renewable Energy

End Client

Alexandria Electricity Distribution Company

Project Location

Egypt

Project Description

General Electric and Giza Systems consortium was awarded the National Control Center project, affiliated with the Alexandria Electricity Distribution Company.

Benefits to Client

- Faster and better responsiveness
- Provision of feeding alternatives to places with malfunction
- Reducing downtime and load change maneuver
- Reduced losses

Scope

The General Electric and Giza Systems consortium is to supply the control, protection, communication devices and electricity equipment.



Kharafi National

Project

Two Distributed Control Systems (DCS) Projects

Client

Kharafi National

Project Location

Egypt

Project Description

Giza Systems was awarded the projects for the delivery of distributed control systems and field cables for Al-Shabab simple cycle power plant (8 x 125 MW) and Damietta simple cycle power plant (4 x 125 MW).

Benefits to Client

- Ensure sustainability
- Ensure an integrated power management
- Improve service standards
- Overcome electricity shortage and blackouts

Scope

The scope entailed injecting 1,500 MW to the Egyptian grid as part of a national initiative to decrease power leakages, especially during summer.

The implementation included:

- Design, supply, engineering, supervision of installation, FAT, training, testing, commissioning, and start-up of DCS systems
- Monitoring and control of the systems and relevant material
- Integration of all the plant subsystems from different vendors like Siemens, Schneider, Hyosung and GE



Kharafi National...Cont'd

Project

Two Distributed Control Systems (DCS) Projects

Client

Kharafi National

Project Location

Egypt

Project Description

Giza Systems was awarded the projects for the delivery of distributed control systems and field cables for Al-Shabab simple cycle power plant (8 x 125 MW) and Damietta simple cycle power plant (4 x 125 MW).

Scope, cont'd

- Field works
- BOP
- MV/LV Switchgear
- Fuel area and interface with subsystems
- Turbine control
- Substation control
- Water treatment systems
- Megawatt meters
- GPS
- UPS
- Fiber network and workstations
- 60 km field cables of different sizes and specifications in Al-Shabab power plant
- 40 km Field cables of different sizes and specifications in Damietta power plant



Abu Quir Power Plant

Project

Integrated Life and Property Safety, Firefighting and Gas Detection Systems

Client

Egyptian Electricity Company

Project Location

Abu Quir, Egypt

Project Description

Giza Systems was awarded the project to implement Life and Property Safety and Threat Detection Systems.

Benefits to Client

- Increase in level of safety and reliability
- Saving time and money

Scope

- Fire alarm system
- Fire suppression system
- Gas detection system



Ain Sokhna Substation

Project

Substation Control System

Client

General Electric (GE)

Project Location

Ain El Sokhna, Egypt

Project Description

Giza Systems was awarded the project for the installation and commissioning of the substation control system for the 500 kV substation at the supercritical thermal power plant project.

Benefits to Client

- Enabling communication between devices
- Logical implementation of GIS automated operations
- Communication of GIS devices with the power station's DCS
- Communication of GIS devices with national energy control center

Scope

Installation and commissioning of the Substation Control System for Ain Al Sokhna 500 kV substation, while interfacing with the substation protection relays, the power plant's DCS and national energy control system. The scope also covered the following:

- Modification of the site engineering
- Loop check
- Input/output list
- Troubleshooting
- Network setup
- Coordination with other subcontractors of the plant



Al Shabab 66 KV GIS Substation

Project

Extension Project of Al Shabab 66 KV GIS Substation

Client

Egyptian Electricity Transmission Company

Project Location

Egypt

Project Description

Giza Systems was awarded the extension project for Extension Project of Al Shabab 66 KV GIS Substation. The adaptation with the existing 66 KV equipment represented a core challenge during the project.

Scope

The scope includes an electrical transmission aspect and a civil works aspect.

The transmission aspect consists of:

- Design, engineering, procurement, installation, testing and commissioning of 66 K.V. GIS extension switchgear
- Installation of six gas insulated switchgear bays, an adaptation bay for the interconnection with existing 66 KV bays, air insulated equipment, control and protection panels, DC system, cables and cable sealing ends, telecommunications, and transducers

Civil works scope involves the building of:

- Extensions
- Roads
- Outdoor lighting
- Ventilation system
- Firefighting systems



Alexandria Regional Control Center

Project

Over Head Transmission Line (OHTL)

Client

Alexandria Regional Control Center

Project Location

Alexandria, Egypt

Project Description

Giza Systems was contracted to install Over Head Transmission Line (OHTL) and All Dielectric Self Supporting (ADSS) telecom network at Borg Al-Arab and Free Zone 220KV Substations.

Benefits to Client

- Provide stations with reliable voice communication and data transmission
- Ensure substation monitoring and control
- Supply live-line installation and wide band service

Scope

Supply and set up of optical fiber transmission to relay both data and voice from Borg Al-Arab and Free Zone 220KV substation to the Alex Regional Control Center, through high quality all dielectric fiber cable, characterized by its high-tech anti-tracking protection layer.

The scope encompassed the following:

- Surveillance of all elements and aspects of the project
- Engineering
- Procurement
- Storage
- Installation
- Testing
- Commissioning

ARCC

Project

ARCC/ADSS/(20/2011/
2012)

Client

MOEE – EETC –
ARCC

Project Location

Egypt

Project Description

Giza Systems was awarded the project to apply Class "B" anti-tracking ADSS network on 220kv OHTL, on turnkey basis.

Benefits to Client

By applying the solution, the client gained several essential added services, on existing infrastructures including covering sites through which the line is passing, voice services within EETC, covering this part of EETC network, and SCADA within EETC.

Scope

Design, engineering, procurement, installation, testing and commissioning of all the required equipment and systems involved.



Five 220 KV Mobile Substations for EETC

Project

5 Mobile Substations
220KV

Client

The Egyptian Electricity
Transmission Company –
EETC

Project Location

Egypt

Project Description

Giza Systems and XD-EGEMAC were chosen by EETC to provide five 220 KV, locally assembled mobile substations and 15 heavy-duty trailers.

Benefits to Client

- Mobility and ease of transportation
- Cost reduction
- Increase in transmission network
- Provision of access to energy with a large capacity to marginalized and remote areas across the country
- Contribution to the overall urban infrastructure for a better and more sustainable life

Scope

- Five 220KV mobile substations, each characterized by:
 - GIS 220KV
 - 60MVA power transformer
 - Control and protection system
 - MV switchgears of 22 KV and 11 KV
 - Auxiliary transformer, cables and all the related accessories
- Fifteen heavy duty trailers specially designed to mobilize the 5 substations

Egyptian Electricity Holding Company

Project

Smart Metering Solution

Client

Egyptian Electricity Holding Company

Project Location

Egypt

Project Description

Giza Systems was awarded the Lot #2 MoE Smart Meters project for the implementation of 7 data centers to serve EEHC smart meters.

Benefits to Client

- Better asset management and maintenance
- Solving issues related to legacy meters and improving the billing process

Scope

Implementation of seven data centers including project management supply, installation, commissioning, operation and startup.

The scope included:

- Main data center
- Grid routers
- MDM
- CRM
- Billing and collection



INVAR

Project

Cairo 500/Sadat
220KV OHTL – INVAR
Thermal Conductor

Client

MOEE - EETC

Project Location

Egypt

Project Description

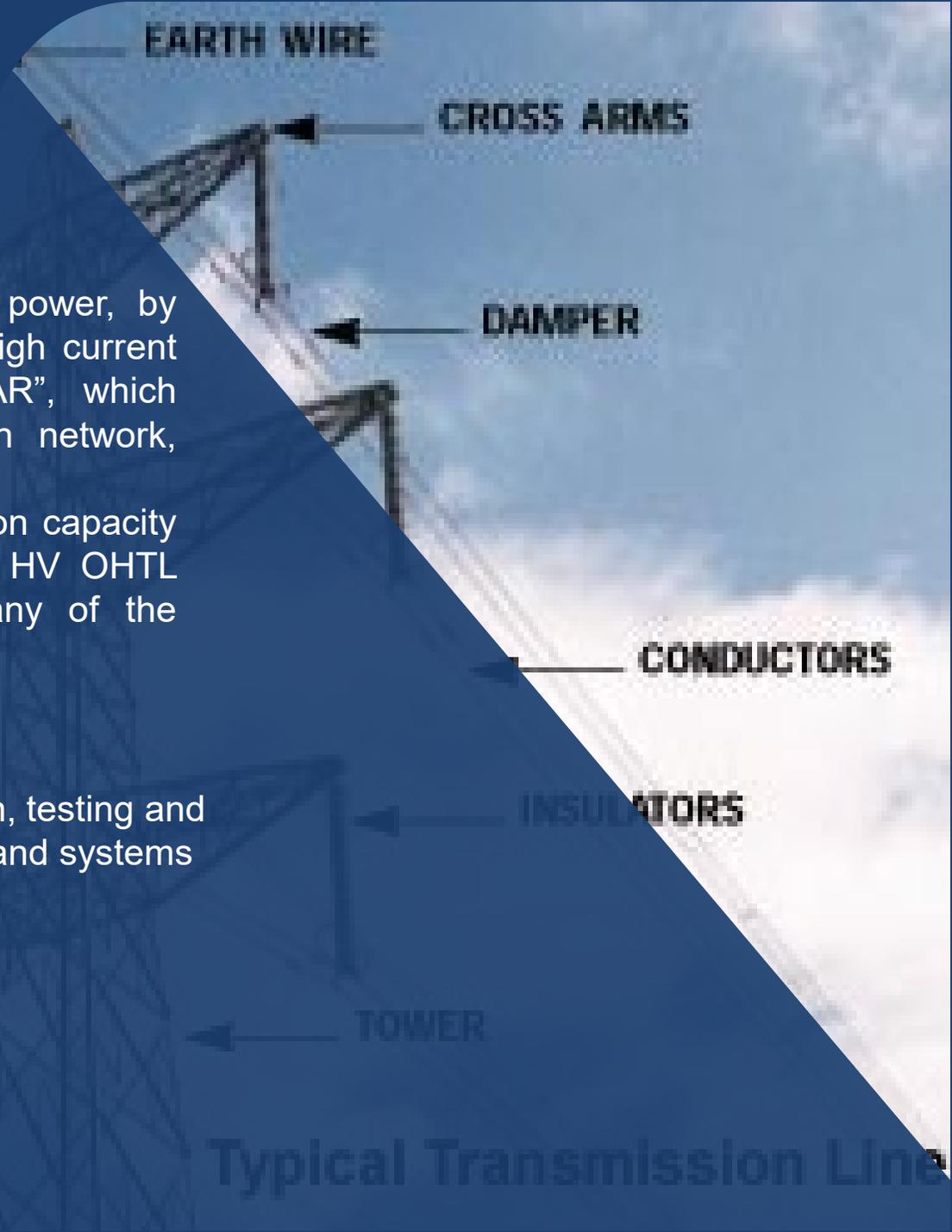
Giza Systems was commissioned to perform Cairo 500/Sadat 220KV OHTL – INVAR Thermal Conductor project on turnkey basis.

Benefits to Client

- Making use of new plants to generate power, by reconductoring existing HV OHTL, with high current carrying capacity conductors like “INVAR”, which enables the widening of the distribution network, reaching high service availability records
- Allowing for doubling of power transmission capacity with high quality, upgrading the existing HV OHTL network capabilities without changing any of the existing network infrastructures

Scope

Design, engineering, procurement, installation, testing and commissioning of all the required equipment and systems involved.



Typical Transmission Line

MOEE - EETC

Project

Energy Control System Upgrading Project in Upper Egypt, Lot 3

Client

MOEE - EETC

Project Location

Egypt

Project Description

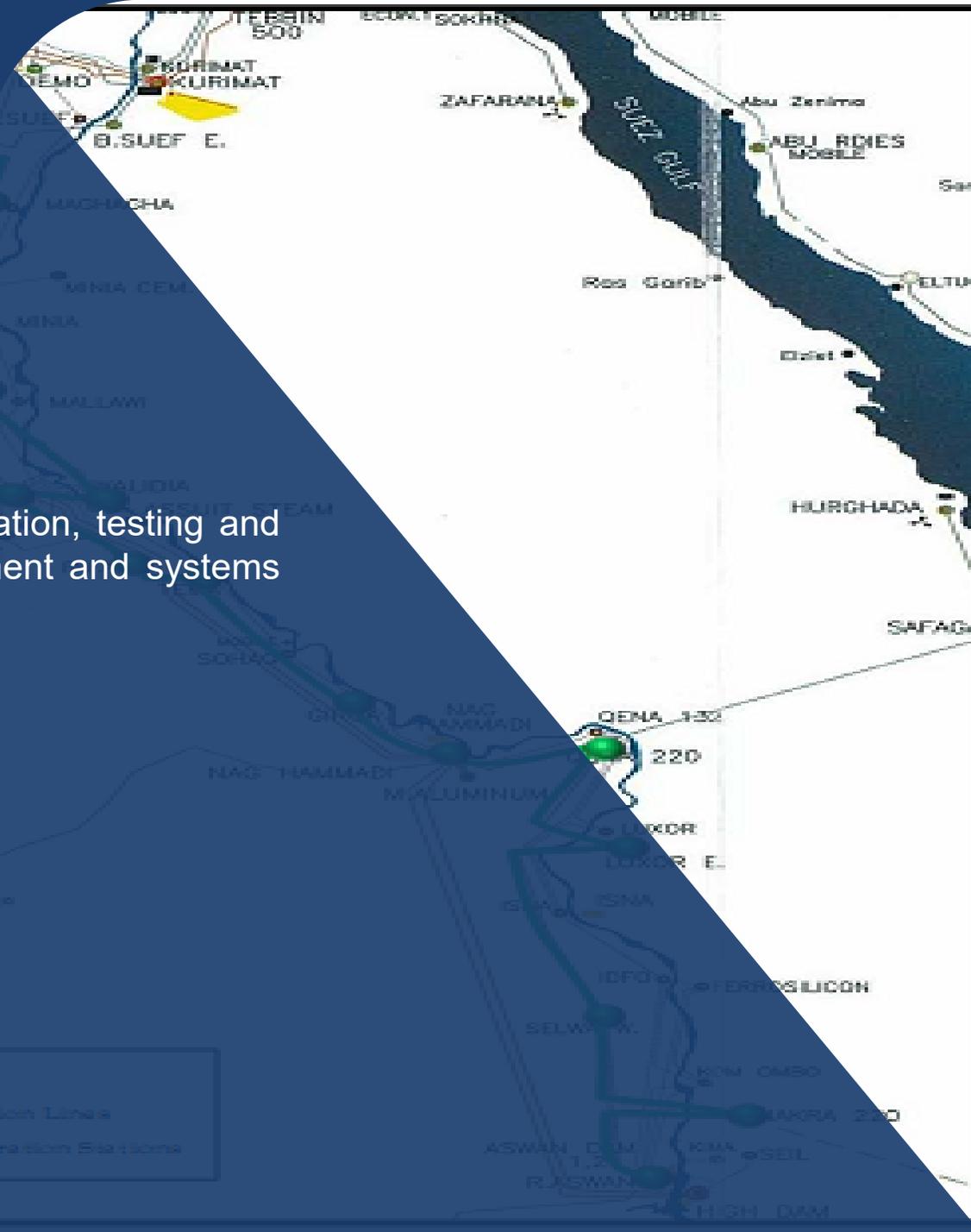
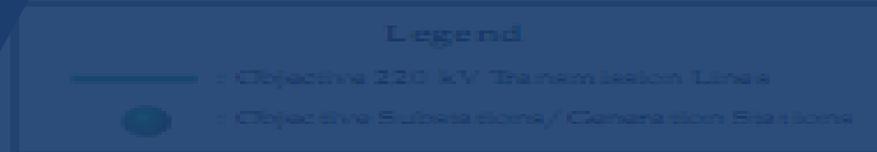
Giza Systems was commissioned to upgrade the Energy Control System in Upper Egypt, Lot 3, with the supply and installation of OPGW on 220kV T/L network in UE and ME zones on turnkey basis.

Benefits to Client

Monitoring and controlling the network enhanced its reliability, minimizing any threatening outage.

Scope

Design, engineering, procurement, installation, testing and commissioning of all the required equipment and systems involved.



North Cairo Smart Meters

Project

AMI solution including 50000 Smart Meters utilizing G3-PLC and cellular networks.

Client

Egyptian Electricity Holding Company

Project Location

North Cairo, Egypt

Project Description

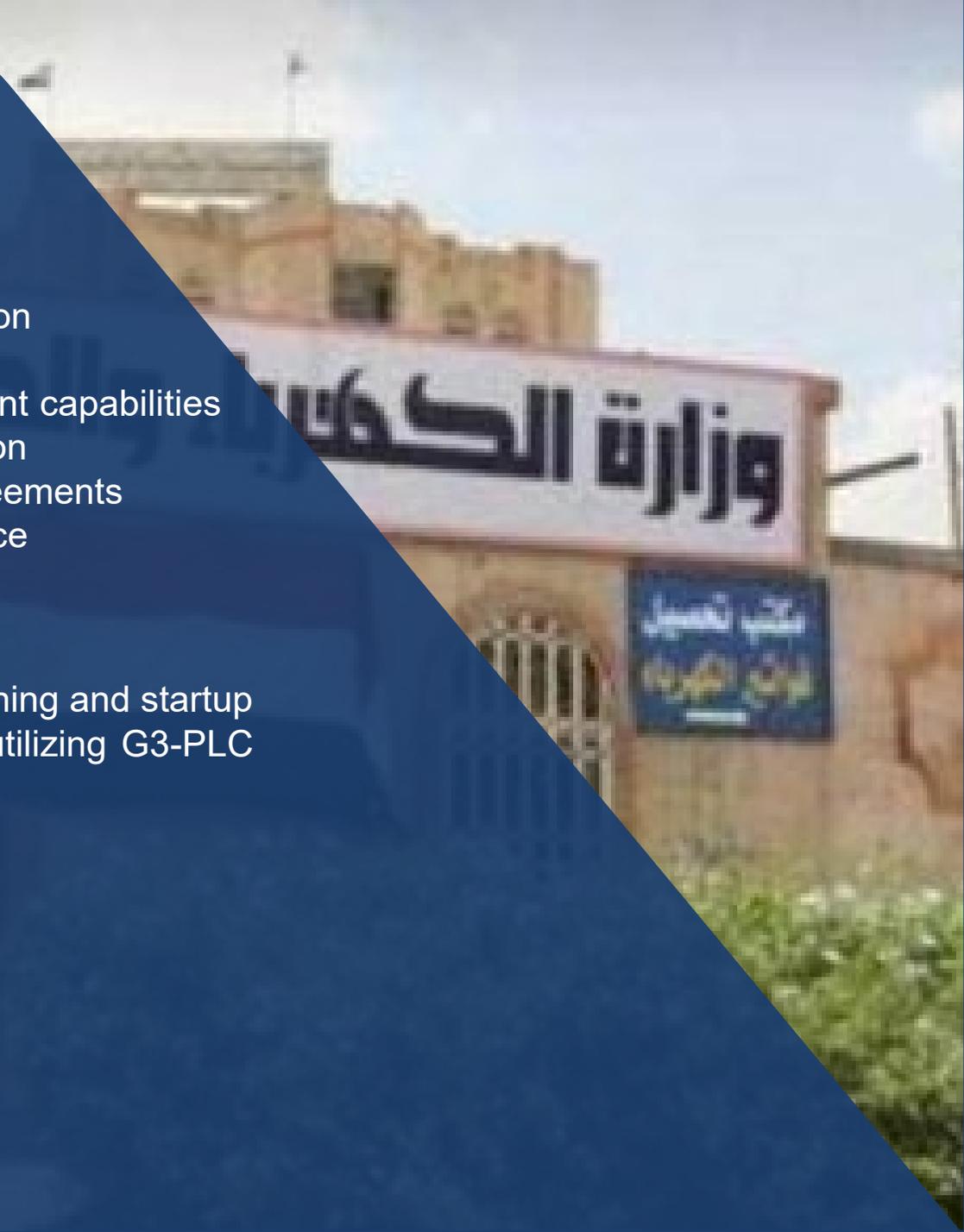
Giza Systems won the project to implement 50,000 electric smart meters in the area of North Cairo.

Benefits to Client

- Payment on real consumption
- Monitoring of individual energy consumption
- Reduction of billing time
- Unification and centralization of prepayment capabilities
- Less power outages and quicker restoration
- Monitoring of KPIs and Service Level Agreements
- Better asset management and maintenance

Scope

Project management, installation, commissioning and startup of AMI solution consisting of smart meters utilizing G3-PLC and cellular networks.



Nubaria Power Plant

Project

Distributed Control System

Client

West Delta Electricity Production Company

Project Location

Nubaria Power Plant, Egypt

Project Description

Giza Systems was awarded the project for the installation of Distributed Control System in Nubaria III 750 MW combined cycle power plant.

Benefits to Client

- Injecting the Egyptian grid with 750 MW
- Centralization of plant operations to provide flexibility and simplicity
- Central control, monitoring and reporting of individual components and processes

Scope

- DCS design, engineering, supply, installation, testing, pre-commissioning, commissioning and startup
- Interface with Turbine Control System
- HRSG and auxiliaries for monitoring and control
- Training
- Site Acceptance Testing



Qoulingeel 66KV GIS Substation

Project

Rehabilitation of
Qoulingeel 66KV GIS
Substation

Client

Egyptian Electricity
Transmission
Company

Project Location

Mansoura, Egypt

Project Description

Giza Systems was
awarded the rehabilitation
project for Qoulingeel
66KV GIS
substation in Mansoura.

Benefits to Client

- Ensure a stable power transmission network to deliver full power capacity to the nation
- Deliver power to regions outside Egypt such
- Improve services to end users and prevent power outages
- Maintain power supplies in the area

Scope

Design, manufacturing, supply, project management, engineering, procurement, installation, testing, commissioning and startup of Qoulingeel's 4*4MVA 66/11 KV gas insulated switchgear substation. The implementation will involve the following:

- ✓ GIS switchgear
- ✓ Medium voltage switchgear
- ✓ High voltage cables
- ✓ Auxiliary transformers
- ✓ DC systems
- ✓ Control and protection systems
- ✓ Telecommunication system
- ✓ Firefighting system
- ✓ Remote end substation integration
- ✓ Civil works

Sedi Kerir Power Plant



Project

Distributed Control System

Client

West Delta Electricity
Production Company

Project Location

Sedi Kerir, Egypt

Project Description

Giza Systems was awarded the project of installation, pre-commissioning, commissioning, Site Acceptance Testing and startup of Distributed Control System in Sedi Kerir 750 MW combined cycle power plant.

Benefits to Client

- Ensure seamless operations and integration on site
- Delivery of superior quality and safety
- Availability of spares, technical support and additional advanced features and options

Scope

- DCS design, engineering, supply, installation and testing
- Interface with Turbine Control System
- HRSG and auxiliaries monitoring and control
- Commissioning and start-up
- Training

Suez Gulf 500 kV GIS Substation

Project

Suez Gulf Telecommunication Systems

Client

Egyptian Electricity Transmission Company

Project Location

Suez, Egypt

Project Description

Giza Systems was awarded the project for the supply and installation of telecommunication systems, including Power Line Carrier systems (PLCs), to serve the Suez Gulf 500 kV GIS substation.

Benefits to Client

- Efficiency enhancement and cost reduction
- Reliability for mission-critical services
- Integration into digital network
- Flexibility of use

Scope

Complete implementation of Digital Power-Line Carrier (DPLC) system on turnkey basis; including engineering, design, procurement, factory testing, site delivery, loading, unloading, training, installation, testing and commissioning.



Talkha 2X210 MW

Project

Upgrade of Burner Management System and Burner Auxiliaries

Client

Middle Delta Electricity Production Company

Project Location

Dakahliya, Egypt

Project Description

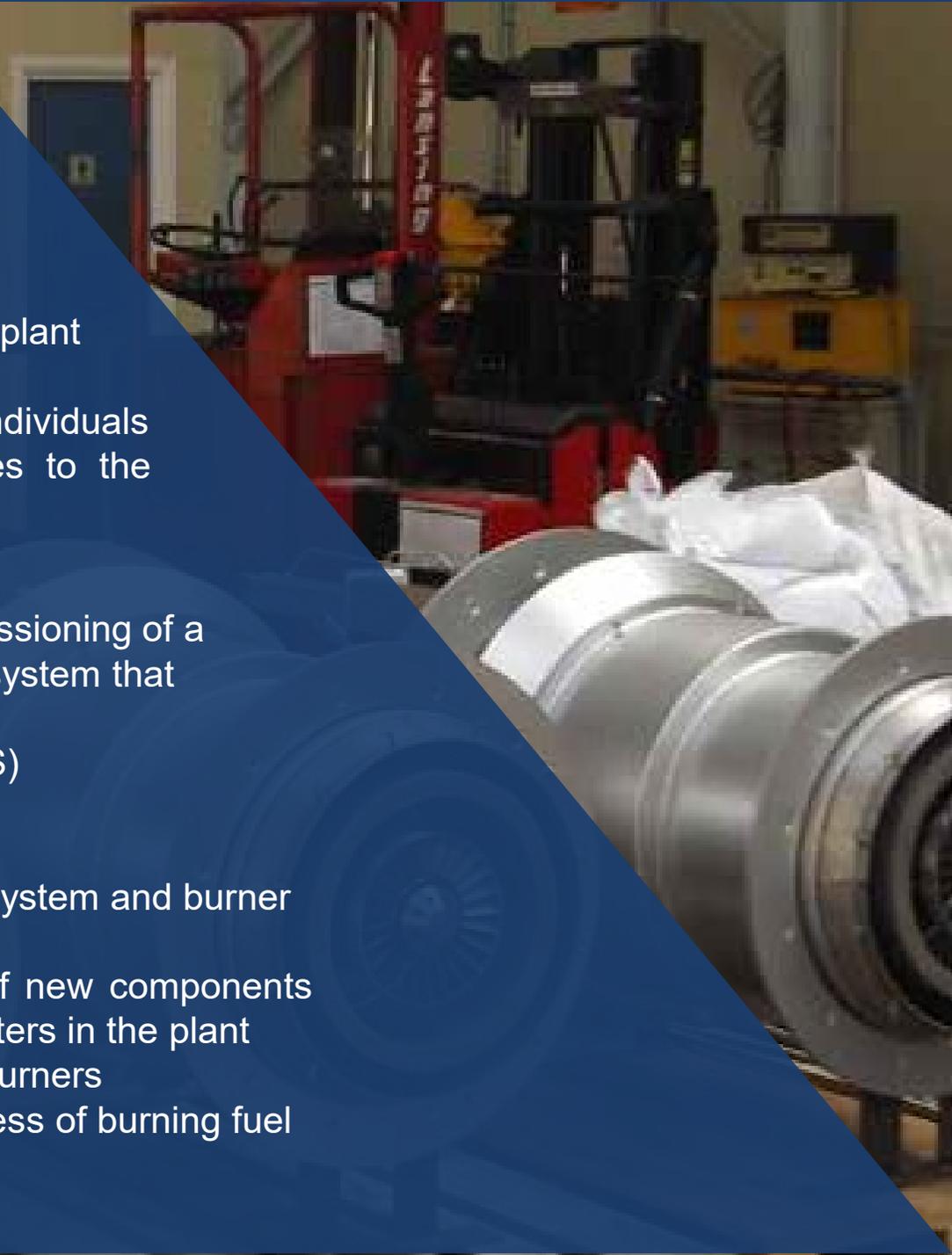
Giza Systems was contracted to upgrade the Burner Management System and burner auxiliaries in Talkha 2X210 MW due to arising issues such as repeated shutdown of units and the unstable operation of handling heavy oil.

Benefits to Client

- Optimization of fuel quantities used
- Ensuring minimum startup time for the plant
- Reducing shutdown times
- Ensuring the safety of the plants and individuals
- Reducing emissions of harmful gases to the surrounding environment.

Scope

- Design, installation, testing and commissioning of a completely automated and integrated system that includes:
 - Distributed Control Systems (DCS)
 - Flame scanners
 - Valves
- Total revamp of Burner Management System and burner auxiliaries including:
 - Installation and commissioning of new components including flame scanners and igniters in the plant
 - Manual and local start-up of the burners
 - Management of combustion process of burning fuel
 - System training



Upper Egypt Electricity Production Co.

Project

Transmission and Distribution Solutions

Client

Upper Egypt Electricity Production Co.

Project Location

Egypt

Project Description

Giza Systems was awarded the project to implement electrical works for the benefit of Upper Egypt Electricity Production Co.

Benefits to Client

- Minimize power cuts
- Enhance power generation features
- Ensure seamless operations and integration on site

Scope

Complete upgrade of Excitation System AC and DC Bus Bar Modification for units 1 and 2.

West Cairo 2X350 MW Thermal Power Plant



Project

Distributed Control System

Client

Egyptian Electricity
Production Company

Project Location

West Cairo Power Plant,
Egypt

Project Description

Giza Systems was awarded the project of installation supervision, pre-commissioning, commissioning, site acceptance testing and startup of distributed control system.

Benefits to Client

- Replacement of DCS for units 7&8 in west Cairo thermal power plant that injects the Egyptian grid with 2x350 MW

Scope

- DCS design, engineering, supply, installation and testing
- Interface with Turbine Control System
- Balance of plant monitoring and control
- Commissioning and start-up
- Training

West Delta Electricity Production Company

Project

Kafr El Dawar Unit 3, 110 MW Thermal Power Plant Rehabilitation Project

Client

West Delta Electricity Production Company

Project Location

Kafr El Dawar, Egypt

Project Description

Rehabilitation of a very old thermal power plant in Kafr El Dawar. Lack of site documentation was a main challenge during the implementation.

Scope

The rehabilitation of the control system in unit 3 necessitated the replacement of the control system with a state-of-the-art DCS to control the following:

- Boiler
- Balance of plant
- Turbine Control Systems
- Instrumentation
- Burner devices
- Valves
- Actuators
- Field cables



Construction of 500 kV OHTLs Hawamdeya Substation



Project

Construction of 500 kV OHTLs – Hawamdeya Substation, Turnkey Basis (Lot-2)

Client

The Egyptian Electricity Transmission Company (EETC)

Project Location

Egypt

Project Description

Giza Systems was awarded the construction of 500 kV Overhead Transmission Lines (OHTLs) on turnkey basis

Benefits to Client

- Increasing power
- Reducing load off existing 220 kV lines
- Fortifying international electrical interconnections with neighboring countries

Scope

In partnership with High Dam Electrical & Industrial Projects Co. (HIDELICO), scope was for the construction of 500 kV Overhead Transmission Lines (OHTLs) on turnkey basis to connect the Hawamdeya Substation to the national electrical grid.



El Kom El Ahmar Substation Expansion Project



Project

El Kom El Ahmar
Substation Expansion
Project

Client

The Egyptian Electricity
Transmission Company
(EETC)

Project Location

Egypt

Project Description

Giza Systems was
chosen in partnership
with Shandong Taiki for
the expansion project of
El Kom El Ahmar
220/66/11 KV
Substation

Benefits to Client

- Better control and monitoring of operations
- Better service reliability
- User-friendly interface
- Safe enclosure of all live parts, safeguarding them against high temperatures, any vandalism or damage
- Reduced maintenance costs

Scope

The Giza Systems and Shandong Taikai Consortium scope for the project includes the supply and installation of an indoor air-insulated substation (AIS) for El Badari town in Assiout governorate, to replace the old conventional transmission systems.



Distributed Control Center Project in East Alexandria

Project

Distributed Control Center Project in East Alexandria

Client

Egyptian Electricity Holding Company

End User

Alexandria Electricity Distribution Company

Partner

General Electric

Project Location

Alexandria, Egypt

Project Description

Giza Systems has successfully implemented the Distributed Control Center (DCC) project in East Alexandria for the Alexandria Electricity Distribution Company.

Benefits to Client

- Optimized efficiency
- Enhanced reliability
- Reduced downtime
- Enhanced power grid control
- Real-time monitoring
- Cost savings

Scope

Contributing to the government's plans to modernize the electrical network nation-wide, Giza Systems implemented a SCADA solution for the Alexandria Electricity Distribution Company



SCADA

Unmanned Substation Operation System for the Egyptian Electricity Transmission Company

Project

Unmanned Substation Operation System for the Egyptian Electricity Transmission Company

Client

Egyptian Electricity Transmission Company – EETC

Project Location

Egypt

Project Description

Giza Systems was selected to implement the Unmanned Substation Operation System for the Egyptian Electricity Transmission Company high voltage substations in the EETC Northern area.

Benefits to Client

- Remote monitoring and analytics
- Centralized control center
- Enhancing asset visibility
- Increasing supply reliability
- Reducing power outages
- Reducing risks
- Cost savings
- Reduced response time to events
- Enhancing maintenance efficiency
- Enabling the digital transformation of the grid

Scope

Solutions

- Analytics, Remote Monitoring & Supervision IIoT Solution for HV Substations Important Alarms
- Main Control Center to Remotely Manage 20 Substations on Monthly Subscription Basis (SaaS)

Services

- Installation
- Configuration
- Commissioning
- Start-up & Training



Abu Ghaleb 220/66/11 kV Transformer Station Expansion

Project

Abu Ghaleb 220/66/11 kV
Transformer Station Expansion

Client

Egyptian Electricity Holding
Company – EEHC

Project Location

Egypt

Project Description

Giza Systems was awarded the
turnkey Abu Ghaleb 220/66/11
kV Transformer Station
Expansion project by EEHC.

Benefits to Client

- Ensuring reliable electricity supply
- Supplying irrigation water for the Abou Ghaleb agricultural farms
- Cost savings

Scope

Solutions

The project entails the extension of the existing Abu Ghaleb substation with two 220 kV bays, connecting the New Delta stations of the national agricultural region to the national electric grid.

Services

Giza Systems is to cover the entire engineering, procurement and construction processes of the project. This includes services of design, procurement, delivery, installation, testing, and commissioning.



Supply & Installation of OPGW for Upper Egypt - Turnkey

Project

Kom Ahmar 220 KV S/S - Turnkey

Client

Egyptian Electricity Holding Company

Project Location

Egypt

Project Description

Award of supply and installation of OPGW for Upper Egypt - Turnkey

Benefits to Client

- Effective utilization of national grid for communication among substations
- Transfer of data across vast distances

Scope

Engineering, procurement, installation, testing & commissioning of 1000 KM of OPGW (live installations).





KSA

Smart Meters Operations Center (SMOC)



Project

Smart Meters Operations Center (SMOC)

Client

Saudi Electricity Company (SEC)

Project Location

KSA

Client

Giza Arabia was awarded the project to implement the Smart Meters Operations Center for the Saudi Electricity Company, in addition to E2E turnkey solutions.

Benefits to Client

- Monitoring and management of smart meters environment for rollout and operations
- Automation of key operations
- Limiting energy loss/ theft
- Optimized performance KPIs
- Maintenance efficiency
- Saving time and money

Scope

- SMOC to monitor and manage the smart meters environment for rollout and operations, it triggers all faults and performance KPIs
- E2E turnkey solution for the supply, implementation, deployment and operations
- Operations and maintenance for 3 years
- Operates up to a scale of 10,000,000 smart meters



Smart Meters Operations Center (SMOC)... Con'td



Project

Smart Meters Operations Center (SMOC)

Client

Saudi Electricity Company (SEC)

Project Location

KSA

Client

Giza Arabia was awarded the project to implement the Smart Meters Operations Center for the Saudi Electricity Company, in addition to E2E turnkey solutions.

SMOC

- A country-wide project that is part of the Kingdom's 2030 Vision
- Enables the automation of the electricity sector, and also enables digital transformation and operational excellence
- Utilities such as electricity will be mass retail markets for IoT apps



Saudi Electricity Company (SEC) Integrated Security Systems

Project

SEC Integrated Security Systems

Client

Saudi Electricity Company (SEC)

Project Locations

Makkah, Madinah and WOA Region, KSA

Project Description

Giza Systems was awarded the project to implement 33 substations (20 in Makkah and Madinah, and 13 in the WOA region) to ensure maximum security in these critical facilities.

Benefits to Client

- Optimized security
- Safeguarding premises from unauthorized access
- Protecting systems and data against cyber attacks

Scope

- Video Surveillance System (CCTV)
- Physical Security Information Management (PSIM)
- Access Control System
- Intercom
- Data Infrastructure – Active
- Cybersecurity
- Integration with existing SEC control center
- Upgrade of storage system in regional control center

Al Madina Power Plant

Project

Control for GE GT units 8 and 9 at Madinah Power Plant #2

Client

Saudi Electricity Company

Project Location

Al Madinah, KSA

Project Description

Upgrade to the latest technology provided by GE which guarantees the availability of .spares, technical support, and extra advanced features and options.

Benefits to Client

- Minimize power cuts
- Enhance power generation features

Scope

Survey, design, supply, installation/replacement, commissioning, testing and startup of the upgrade of the existing General Electric's Gas Turbine Control System in units 8 and 9 type MS7001EA (Mark V redundant).



Al Wajh Power Plant



Project

Al Wajh Power Plant
Project

Client

Saudi Electricity
Company

Project Location

KSA

Project Description

Giza Arabia partnered with GE to upgrade the Control, Excitation and Protection Systems for units 1, 2, 3 at Al Wajh power plant.

Benefits to Client

- Ensure seamless operations and integration on site
- Delivery of superior quality and safety
- Availability of spares and technical support
- Enhance overall turbine performance as the upgrade will improve the response time of the turbine control system, the black start process, and the generator protection scheme

Scope

Design, supply, engineering, installation, commissioning, start-up and upgrade of the system. The implementation included the following:

- Gas Turbine Control System Mark V TMR Window Based for two units GT-1 and 2 to GE Mark VIe TMR Window Based Control System
- Upgrade of Gas Turbine Control System From (MARK II) to (MARK VIe SIMPLEX) for GT-3

Al Wajh Power Plant...Cont'd

Project

Al Wajh Power Plant
Project

Client

Saudi Electricity
Company

Project Location

KSA

Project Description

Giza Arabia partnered with GE to upgrade the Control, Excitation and Protection Systems for units 1, 2, 3 at Al Wajh power plant.

Scope cont'd

- Upgrade from Mark V TMR to Mark Vie Migration TMR for GT4, GT5 & GT6
- Upgrade of existing generator and auxiliary protection relays for GT units (1 – 3)
- Replace existing Basler AVR's on units 1 and 2 with GE EX2100e Brushless Voltage Regulator Excitation System
- Replace existing GE SCT-PPT Excitation System on unit 3 with GE EX2100e Static Excitation System along with new excitation transformer (PPT)
- Supply of two remote operating in CCR
- Supply of three Operating Stations (OS) one in each local unit control room
- Factory Acceptance Test in Dubai and USA
- Site Acceptance Test in KSA



Al-Qassim Power Plant

Project

Field Solutions

Client

Saudi Electricity
Company

Project Location

KSA

Project Description

Giza Systems was awarded the installation of vanadium inhibitor flow meters in Al Qassim power plant to enable the counting of actual volume needed of fuel additives.

Benefits to Client

- Accurate measurement for the vanadium inhibitor additives
- Measurement of difficult handling fluids

Scope

Engineering, supply, installation, testing and commissioning of Coriolis Flowmeters before each unit to count the amount of vanadium inhibitor.



Central KSA OPGW

Project

Installation of OPGW Cables

Client

Saudi Electricity Company

Project Location

Central area of KSA

Project Description

Installation of OPGW cables to facilitate and enable the transfer of data between various substations. The challenge faced was the very short outage time for installation.

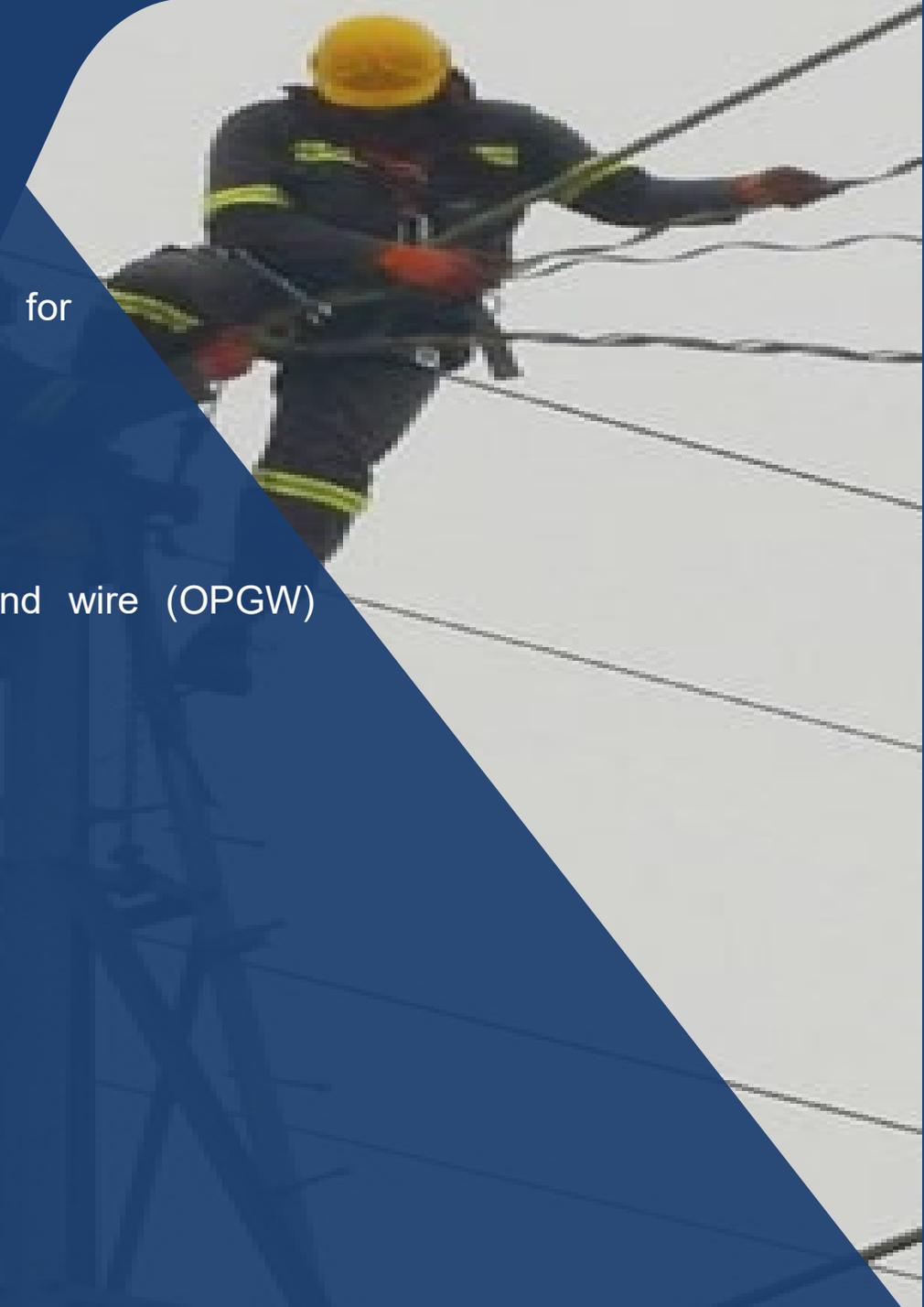
Benefits to Client

- Effective utilization of national grid for communication among substations
- Transfer of data across vast distances

Scope

Installation of 250 kilometers of optical ground wire (OPGW) including:

- OPGW cables
- 11 kilometers of underground cables
- Fittings with five links (132 KV)



DCS Upgrade at Shoaiba PP – Stage I

Project

Distributed Control Systems (DCS) Upgrade At Shoaiba Power Plant – Stage I

Client

Saudi Electricity Company (SEC) / Shoaiba Power Plant

Project Location

KSA

Project Description

Giza Arabia was awarded the project to upgrade the Distributed Control System (DCS) of Shoaiba Power Plant over 5 stages.

Benefits to Client

- Enhanced power generation features and efficiency
- Better support for operations of the Saudi Electricity Company (SEC)
- Reduced power cuts resulting from upgrading obsolete equipment
- Higher availability and reliability of plant safety
- Environmental compliance

Scope

Survey, design, supply, replacement and installation of the existing control and data acquisition systems in 5 units, commissioning, testing and startup for the project.



Duba Power Plant - BMS

Project

Integrated Smart Building Solutions

Client

Saudi Electricity Company

Project Location

KSA

Project Description

Giza Systems was awarded the Duba Power Plant Fire Alarm project to implement life safety and security systems.

Benefits to Client

- Increase in the level of reliability
- Saving time and money
- Ensuring the safety of assets and individuals

Scope

Design, supply, installation, testing and commissioning of Integrated Life Safety Systems including the following:

- Fire alarm system
- Fire suppression system



Sulaihi 33/13.8 KV GIS Substation

Project

Sulaihi 33/13.8 KV GIS Substation

Client

Saudi Electricity Company

Project Location

KSA

Project Description

Giza Systems was awarded the Sulaihi 33/13.8KV GIS Substation project.

Benefits to Client

- Optimize operational efficiencies
- Support the efficiency of the network's electrical substations

Scope

Engineering, procurement, installation, testing & commissioning of 33 /13.8 KV GIS, 3X30 MVA Transformers, SAS & Protection, AC/DC and Communication.



Duba Power Plant - Upgrade

Project

Distributed Control System

Client

Saudi Electricity Company

Project Location

KSA

Project Description

Giza Arabia partnered with GE for the replacement of obsolete Mark V and Mark II control to GE's most advanced, modern and powerful Mark VIe Control at Duba power plant.

Benefits to Client

- Ensure seamless operations and integration on site
- Delivery of superior quality and safety
- Availability of spares, technical support and additional advanced features and options
- Enhance overall turbine performance as the upgrade will improve the response time of the turbine control system, the black start process, and the generator protection scheme

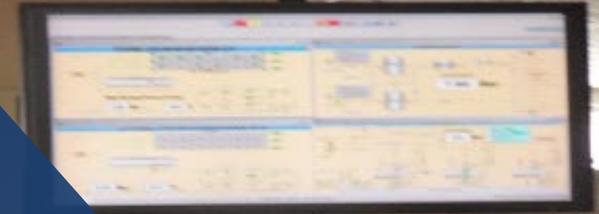
Scope

Upgrade of six units during off-peak times at the grid. The scope encompassed the following:

- Complete system design, supply, engineering, installation and documentation for the project

Replacement of existing Mark V and Mark II control system with new Mark VIe control system

- Supply of two remote operating stations (OS) in CCR
- Supply of six operating stations (OS) one in each local unit control room
- Factory Acceptance Test in Dubai
- Site Acceptance Test in KSA
- Commissioning and start-up



Hail Power Plant



Project

Field Instrumentation

Client

Saudi Electricity
Company

Project Location

KSA

Project Description

Giza Systems was awarded the project to provide a grounding protection system for the client's trucks unloading system.

Benefits to Client

- Prevent dangerous accidents due to electric discharge between the trucks and the plant
- Ensure safety of individuals and assets

Scope

Complete Modification of Unloading Skid at Hail power plant. The scope includes the engineering, supply, installation, testing and commissioning of the following:

- Truck unloading grounding system
- Interlocking of system's output with fuel unloading pumps

Jeddah Power Plant



Project

Upgrade of GE HMI System for Units 28 – 35 at Jeddah Power Plant #3

Client

Saudi Electricity Company

Project Location

Jeddah, KSA

Project Description

Upgrade of HMI operator interface and of Gas Turbine Control System to the latest versions.

Benefits to Client

- The completion of the upgrade effectively improves the response time of the turbine control system, the black start process, and the generator protection scheme, enhancing the overall turbine performance.

Scope

Survey, design, supply, installation, commissioning, testing and startup of the systems. The implementation included the following:

- Replacing 17 HMI operator interface PC's at Jeddah PP3 site with the latest HMI versions in the same locations
- Engineering and maintenance of HMI workstation
- Upgrade of gas turbine control system from Mark II to Mark Vie Simplex for GT-3

Kadi Trading & Contracting Co.

Project

Transmission and Distribution Solutions

Client

Kadi Trading & Contracting Co.

Project Location

KSA

Project Description

Giza Arabia won the project for the installation of OPGW cables.

Benefits to Client

- Generate revenue
 - ✓B-GA-INVP-001066, 778,502.00 SR
 - ✓B-GA-INVP-001212, 2,982,900.18 SR
- Improve operational efficiency
- Optimize operational costs
- Efficiently utilize Riyadh's resources and increase profitably

Scope

The scope of work includes the design, supply, installation, retrofitting and testing on turnkey basis of OPGW along transmission line between YSWCC & YEAST for 2 links TL 201/202 & TL 209/210 on 110 KV Lines.



Power Plant #5

Project

Field Instrumentation

Client

Saudi Electricity
Company

Project Location

KSA

Project Description

Giza Systems was awarded the installation of Field Instruments in power plant #5.

Benefits to Client

- Prevent dangerous accidents due to any electric discharge between the trucks and the plant.
- Ensure safety of individuals and assets.

Scope

Complete modification of unloading skid at SEC's power plant 5. The scope included the engineering, supply, installation, testing and commissioning of the following:

- Truck unloading grounding system
- Interlocking of system's output with fuel unloading pumps



Power Plant #7



Project

Turbine Control Systems

Client

Saudi Electricity Company

Project Location

Riyadh, KSA

Project Description

Replacement of turbine control systems for units 23 and 24 at power plant #7. Project was deployed within a very short shutdown period.

Benefits to Client

- Lower lifecycle costs with an excellent return on investment
- Facilitate monitoring and reporting
- Reduce maintenance efforts
- Minimize downtime of plant
- Secure electricity generation

Scope

Total revamp of Turbine Control Systems at power plant #7. The project included the engineering, installation, dismantling, commissioning, and startup of systems.

RPP Demi Plant

Project

SCADA Systems

Client

Saudi Electricity
Company

Project Location

KSA

Project Description

Giza Systems won the project for the renewal of client's water treatment system in the power generation turbines at SEC's RPP Demi Plant.

Benefits to Client

- Improve operational efficiency
- Optimize operational costs
- Efficiently utilize resources and profitably

Scope

The scope of work includes the supply, installation, supervision, testing and commissioning of Programmable Logic Controller System. This implementation included:

- Two HSPY PLCs
- SCADA system
- HMI



Tabuk Power Plant

Project

Integrated Smart Building Solutions

Client

Saudi Electricity Company

Project Location

Tabuk, KSA

Project Description

Giza Systems was awarded the project to upgrade control and protection systems for units #1-6 at the Tabuk power plant #2 in the Kingdom of Saudi Arabia.

Benefits to Client

- Minimize power cuts
- Enhance power generation features
- Ensure seamless operations and integration on site

Scope

Design, engineering, supply, installation, commissioning, testing and startup of project. The implementation included the following:

- Upgrade from Mark-II to Mark VIe dual control for GT1 & GT2
- Upgrade from EGATROL to Mark VIe dual control for GT3
- Upgrade from Mark V TMR to Mark VIe Migration TMR for GT4, 5 & GT6
- Upgrade of excitation controls on units 1, 2, 3, 4, 5, & 6 from the existing (Analog Bus Fed for units 1 & 2), BBC AVR for unit 3, SVR for units 4 & 5, and EX2000 AVR on unit 6 to GE's EX2100e Excitation System



Tabuk Power Plant...Cont'd

Project

Integrated Smart Building Solutions

Client

Saudi Electricity Company

Project Location

Tabuk, KSA

Project Description

Giza Systems was awarded the project to upgrade control and protection systems for units #1-6 at the Tabuk power plant #2 in the Kingdom of Saudi Arabia.

Scope Cont'd

- Supply of SFC for unit #3
- Upgrade of ABB SFC for unit #3
- Upgrade of generator and auxiliary protection relays on GTs (1, 2, 3, 4, 5, 6)
- Supply of two remote operating stations in CCR
- Supply of turbine control system
- Supply of six operating stations one in each local unit control room
- Factory Acceptance Test in Dubai and USA
- Site Acceptance Test in KSA
- Commissioning and start-up



Award of 20 Control System Units - PP9

Project

Replacement of 20 Control System Units MarkV at Power Plant 9 (PP-9)

Client

Saudi Electricity Company (SEC)

Project Location

KSA

Project Description

Giza Arabia, in partnership with Baker Hughes, was awarded the project to replace 20 control system units MarkV at Power Plant 9 (PP-9).

Largest Power Plant in Riyadh generating 5,980 MW covering about 36% of the central area demand

Benefits to Client

- Higher and more stable power generation
- Increased operational productivity
- Improved flexibility and maintenance
- Cyber security compatible and compliance with standards

Scope

Solutions:

- Turbine Control System Upgrade from MarkV to MarkVie
- Excitation System Upgrade from EX 2000 to EX2100e
- Bentley Nevada Vibration System Upgrade from Type 3300 to the Latest Vibration Measurement System 3500

Services:

Survey, design, engineering, supply, installation, commissioning, testing and startup



Rehabilitation of Turbine Inlet Air Cooling (TIAC) System Project



Project

Rehabilitation of Turbine Inlet Air Cooling (TIAC) System Project

Client

Raissy Trading and Contracting Co. Ltd

End Client

Saudi Electricity Company (SEC)

Project Location

KSA

Project Description

Awarded the project by Raissy Trading and Contracting Co. Ltd., for the rehabilitation of Turbine Inlet Air Cooling (TIAC) Systems of Block F – PP9

Benefits to Client

- Enhanced turbine efficiency
- Enhanced reliability during high-demand seasons
- Unified control location for all TIAC systems
- Increased security with approved new cybersecurity hardware

Scope

Awarded the project by Raissy Trading and Contracting Co. Ltd., Giza Arabia was assigned the rehabilitation of Turbine Inlet Air Cooling (TIAC) Systems of Block F – PP9 for the Saudi Electricity Company (SEC).



Arar Power Plant System Migration



Project

Arar Power Plant System Migration

Client

Saudi Electricity Company (SEC)

Partner(s)

Baker Hughes

Project Location

Arar Power Plants, KSA

Project Description

Saudi Electricity Company (SEC) has chosen Giza Arabia to implement the migration of the control system at the Arar power plant serving the northern region

Benefits to Client

- Latest technology solution
- Increased operational productivity and system reliability
- Maintenance efficiency improvements
- Compatibility with cybersecurity solutions and compliance with standards
- Programming flexibility
- Eliminated obsolescence issues with fifteen-year availability of spare parts and after-sales services

Scope

Solutions:

Turbine Control system Mark VI to VIe Migration

Services:

- Survey
- Design
- Engineering
- Supply
- Installation
- Commissioning
- Start-up
- Testing & Start-up

Tank Overfill Prevention System for 6 Saudi Electricity Company (SEC) Power Plants



الشركة السعودية للكهرباء
Saudi Electricity Company

Project

Tank Overfill Prevention System for 6 Saudi Electricity Company (SEC) Power Plants

Client

Saudi Electricity Company (SEC)

Partner(s)

Emerson

Project Location

KSA

Project Description

Giza Arabia was awarded implementation project for the Tank Overfill Prevention System for 6 of the Saudi Electricity Company (SEC) power plants covering all the central region demand: PP8, PP9, PP10, PP12, Qassim Central PP and Juba PP

Benefits to Client

- A fully automated safety system
- Continuous and reliable tank level monitoring and valve control to prevent overfill of hazardous liquids risks
- A reliable safety solution against health and environmental consequences

Scope

Implementation of the Tank Overfill Prevention System for 6 of the Saudi Electricity Company (SEC) power plants covering all the central region demand: PP8, PP9, PP10, PP12, Qassim Central PP and Juba PP

Solutions:

Tank Overfill Prevention System

Services:

Survey, design, engineering, supply, installation, commissioning, testing and start-up



Emergency Diesel Generator System Upgrade at Shuaiba Power Plant

Project

Emergency Diesel Generator System Upgrade at Shuaiba Power Plant

Client

Saudi Electricity Company – SEC

Project Location

KSA

Project Description

Giza Arabia has successfully upgraded the Emergency Diesel Generator System at Shuaiba Power Plant (Stage 1) for the Saudi Electricity Company (SEC).

Benefits to Client

- Monitor and control the Emergency Diesel Generators (EDGs) efficiently
- Generate reports
- Ensure uninterrupted plant operation

Scope

- SCADA Upgrade (AVEVA System Platform)
- PLC Upgrade M580
- Protection Relays
- Differential Relays
- Power Monitoring Module
- Annunciator





West, East & Central Africa

Supply and Supervision of 4 Complete Mobile Substations for EETC

Project

Supply and Supervision of 4 Complete Mobile Substations for EETC

Client

Egyptian Electricity Transmission Company (EETC)

Project Location

Uganda

Project Description

Giza Systems won the project to supply and supervise the erection of 4 complete mobile substations

Benefits to Client

- Increased power generation and improved service reliability
- Reduced power outages with increased loads during peak demand
- Accessibility to clean energy, with a large capacity, to marginalized areas
- The possibility of substation relocation

Scope

Supply 4 complete mobile substations: two 60 MVA, 220/22/22KV mobile substations, and two 40 MVA, 66/22KV mobile substations



Rehabilitation of 33/11KV Ubungo Substation - Tanzania

Project

Rehabilitation of 33/11KV
Ubungo Substation -
Tanzania

Client

Tanzania Electric Supply
Company

Project Location

Tanzania

Project Description

Award of the rehabilitation
of 33/11 KV Ubungo
Substation

Benefits to Client

The project upgrades the
Ubungo Substation capacity to
ensure reliable power supply
at a higher capacity.

Scope

Supply, installation, testing &
commissioning of 33 /11 KV GIS, 15
MVA 33/11 power transformer, SAS &
Protection, AC/DC and Communication



Busia 4MW Solar Power Plant in Uganda

Project

Busia 4MW Solar Power Plant

Client

The Arab Organization of Industrialization (AOI)

Project Location

Uganda

Project Description

As a donation from the Egyptian government to Uganda, Giza Systems was chosen to complete this 4MW solar plant and was able to successfully complete it in only 5 months

Benefits to Client

- Enhance the country's ability to use renewable sources for clean energy
- Reduce dependence on oil and fossil fuels

Scope

The project scope includes implementation and support of the monitoring services, covering the data center, cooling, UPS systems and more.



Derm Electrics Fire Alarm Systems

Project

Derm Electrics Fire Alarm Installation

Client

Derm Electrics (T) Ltd.

Project Location

Tanzania

Project Description

Giza Systems was awarded the project to install fire alarm systems for three Derm Electrics (T) Ltd. properties: Mlimani Plaza, Beachvilla and Sky Tower.

Benefits to Client

- Maximization of safety and security of people and assets
- Optimization of operations
- Reduction of costs

Scope

The scope comprised the supply, testing, commissioning and startup of the fire alarm systems for Mlimani Plaza, Beachvilla and Sky Tower



Kenya Power & Lighting Company

Project

Fiber Network
Communications Project

Client

Kenya Power and Lighting
Company

Project Location

Kenya

Project Description

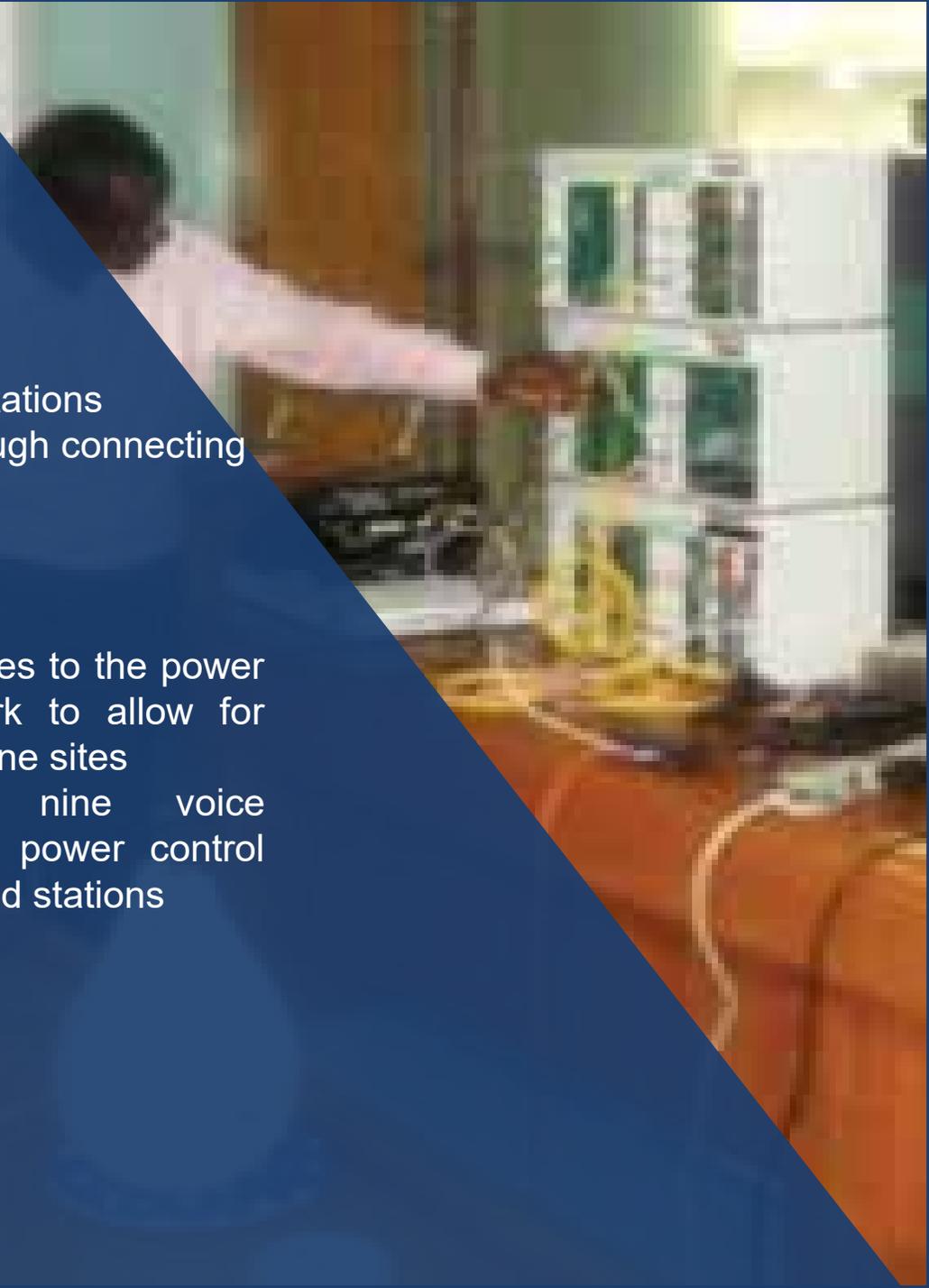
Giza Systems was awarded the project covering the entire fiber network traversing the whole country along the national grid, which represents the backbone for the Supervisory Control and Data Acquisition (SCADA) system.

Benefits to Client

- Meet emerging and rising power needs
- Efficient monitoring and control of substations
- Provide means for communication through connecting power stations via fiber network

Scope

- Linking nine power stations with 19 nodes to the power control center through a fiber network to allow for efficient monitoring and control of said nine sites
- Ensuring the establishment of nine voice communication channels between the power control center and maintenance engineers in said stations



Kiambere Power Station - KenGen

Project

Supply of Unit Control Boards, Quantum PLC & Accessories for Kiambere Power Station

Client

Kenya Electricity Generating Company (KenGen)

Project Location

Kenya

Project Description

Giza Systems Kenya was awarded the project to supply unit control boards, Quantum PLC cards and accessories for Kiambere power station.

Benefits to Client

- Centralized remote monitoring and control platform for six power stations
- Refurbishment of KenGen systems
- Expansion of the monitoring parameters of SCADA system

Scope

Supply of unit control boards, I/O Schneider Electric Quantum PLC cards and accessories for Kiambere power station



Master Power Systems Limited

Project

Echelon's Smart Metering Solution

Client

Master Power Systems Limited

Project Location

Kenya

Project Description

Giza Systems was awarded its first installation of Echelon's Smart Metering solution, serving a shopping mall with over 100 retail outlets.

Benefits to Client

- Optimize the already existing infrastructure
- Reduce cost and energy consumption
- Increase reliability
- Enable optimal efficacy in power management
- Increase accurate billing and cash collection
- Optimize networks
- Reduce non-technical losses
- Allow for tracking and detection of power theft and tampering
- Track and monitor energy consumption in real-time

Scope

Planning and deployment of Smart Metering technology to address energy consumption and ageing infrastructure.

TANESCO

Project

Implementation of
Containerized
Switchgears

Client

Tanzania Electricity
Supply Company
(TANESCO)

Project Location

Tanzania

Project Description

Giza Systems awarded
the project for the supply
of containerized 11kv
switchgears and 33kv
skid mounted switchgears
for MVA transformers.

Benefits to Client

- Optimize operational efficiencies
- Support the efficiency of the network's electrical substations

Scope

Scope of work includes the supply, design, engineering, procurement, installation, training, testing, commissioning and start-up of containerized 11kv switchgears and 33kv skid mounted switchgears for MVA transformers.

Turkwel Hydro Power Station

Project

Rehabilitation of Turkwel Hydro Power Station

Client

Kenya Electricity Generating Company (KenGen)

Project Location

Northwestern Kenya

Project Description

Giza Systems was contracted to design, supply, install, test and commission 415 Vac switchboard panels and associated relay panels serving Turkwel hydro power station.

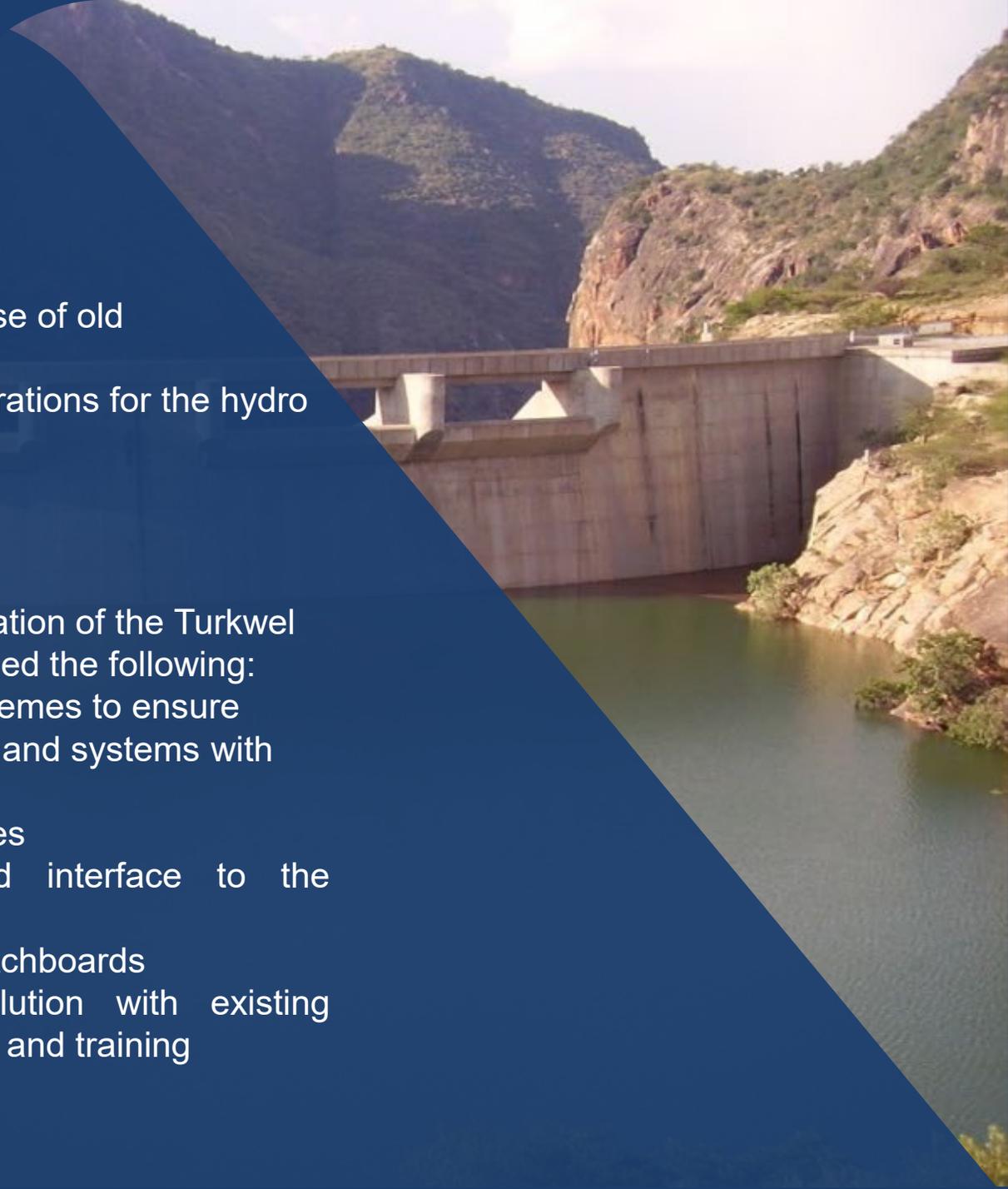
Benefits to Client

- Optimize operational efficiencies
- Eliminate issues arising from the use of old switchboards
- Ensure proper and continuous operations for the hydro power plant

Scope

The scope encompassed the rehabilitation of the Turkwel hydro power station. The project entailed the following:

- Careful analysis of the existing schemes to ensure integration of the new components and systems with existing controls
- Monitoring and supervision schemes
- Re-design of the controls and interface to the automation PLC and SCADA
- Process instrumentation of the switchboards
- Ensuring integration of the solution with existing infrastructure, stabilization, testing, and training



Kakiri Substation for UMEME



Project

Manufacture, supply, installation, testing and commissioning of Kakiri Substation

Client

UMEME Limited, the main electricity distribution company in Uganda

Project Location

Uganda

Project Description

Award of Kakiri Substation

Benefits to Client

As part of the substations on the national grid expansion plan, the project will upgrade capacity of substation to ensure reliable power supply at a higher capacity.

Scope

Partnering with Partnering with Schneider Electric Germany and Schneider Electric Egypt, project scope includes: design, manufacturing, supply, FAT (virtual), sea transportation, clearance, road transportation, installation and commissioning of:

- 11 KV and 33 KV Indoor switchgears bays
- Auxiliary Transformer
- Substation communication & SCADA system
- AC & DC Systems
- Construction of a plant house
- M&E services and associated civil works



Mzakwe Substation Award by TANESCO

Project

33/11 KV Mzakwe Substation

Client

Tanzania Electric Supply Company Limited (TANESCO)

Project Location

Tanzania

Project Description

Award of the 33/11 KV Mzakwe Substation

Benefits to Client

The project upgrades the Mzakwe Substation capacity to ensure reliable power supply at a higher capacity without overloading existing equipment.

Scope

Solutions:

- 1x15/20 MVA, 33/11 KV Transformer
- 2x33 KV Bay outdoor, 6x11 KV AIS indoor switchgears with bus section
- New electrical equipment room to accommodate 11 KV and 33 KV switchgears

Services:

Scope of services includes design, supply, installation, commissioning, FAT, sea and road transportation and port clearance



Nakasamba Substation Project



Project

Nakasamba Substation Project

Client

Umeme Limited

Project Location

Uganda

Project Description

Giza Systems was awarded the project to manufacture, supply, install, test and commission the Nakasamba Substation for Umeme Limited, Uganda

Benefits to Client

- Ensuring a reliable power supply
- Better control and monitoring of operations
- Better service reliability
- User-friendly interface
- Safe enclosure of all live parts
- Reduced maintenance costs

Scope

Solutions:

- 15/20MVA 33/11KV Transformer
- 3x33KV GIS Panels
- 3x11KV GIS Panels with Bus Section
- New building to accommodate 11KV and 33KV switchgears
- AC/DC Rooms
- Guard house according to approved design

Services:

Manufacturing, supply, installation, conducting FAT tests, commissioning services, transportation services and clearance



Water



Egypt, North Africa & Levant



Negreeg Wastewater Treatment Plant

Project

Negreeg Wastewater Treatment Plant Project

Client

Gharbia Water and Sanitation Company

Partner

Osman Group

Project Location

Gharbia, Egypt

Project Description

In partnership with Osman Group, Giza Systems Electromechanical was assigned to design & build Negreeg and Geng wastewater treatment plant.

Benefits to Client

- Preventing waterborne pollution
- Safeguarding public health and safety
- Cost-efficiency

Scope

Giza Systems Electromechanical was assigned to design, supply, install, test and commission a wastewater treatment plant to serve Negreeg and Geng villages using Sequencing Batch Reactor (SBR) technology.



Nasreya Wastewater Treatment Plant

Project

Nasreya Wastewater Treatment Plant Project

Client

Drinking Water and Sanitation Company in Damietta

Partner

Osman Group

Project Location

Damietta, Egypt

Project Description

In partnership with Osman Group, Giza Systems Electromechanical was selected to implement Nasreya Wastewater Treatment Plant

Benefits to Client

- Achieving the governmental plan to solve the sewage waste treatment problem in Damietta
- Preserving the natural environment against pollution
- Providing a healthier environment for citizens

Scope

Giza Systems Electromechanical was awarded the design, supply, installation, testing and commissioning of a wastewater treatment plant of 7000 m³/D capacity, to serve Nasreya village in Damietta.



Abu Al-Matamir WWTP

Project

Electromechanical Works at Abu Al-Matamir WWTP

Client

Beheira Water and Drainage Company

Project Location

Beheira, Egypt

Project Description

Giza Systems Electromechanical Company was awarded the project of supply and erection of all electrical and mechanical works in the WWTP.

Benefits to Client

- Addressing the sewage problem in the city as a step forward in achieving the governmental plan to solve the waste treatment problems
- Providing a healthier environment to citizens
- Increasing the WWTP capacity to 18,000 m³/day instead of 9,000 m³/day

Scope

Mechanical Works

- Screens
- Primary settling tank with bridge carrying scrapers
- Final sedimentation tank including bridge carrying scraper
- High rate trickling filters
- Pumps, valves, piping and special tools

Electrical Works

- Low and Medium Voltage switchgear (MV-SG)
- Transformers
- Generators
- Lighting
- SCADA system
- Laboratory equipment
- Cables



Greater Cairo Water Management System

Project

Greater Cairo Water Management System

Client

Construction Authority of Potable Water & Wastewater (CAPWW)

Project Location

Egypt

Project Description

Giza Systems was commissioned to design, supply, engineer, train, and start-up the Water Management System with central control room at Rod El Farag water treatment plant.

Benefits to Client

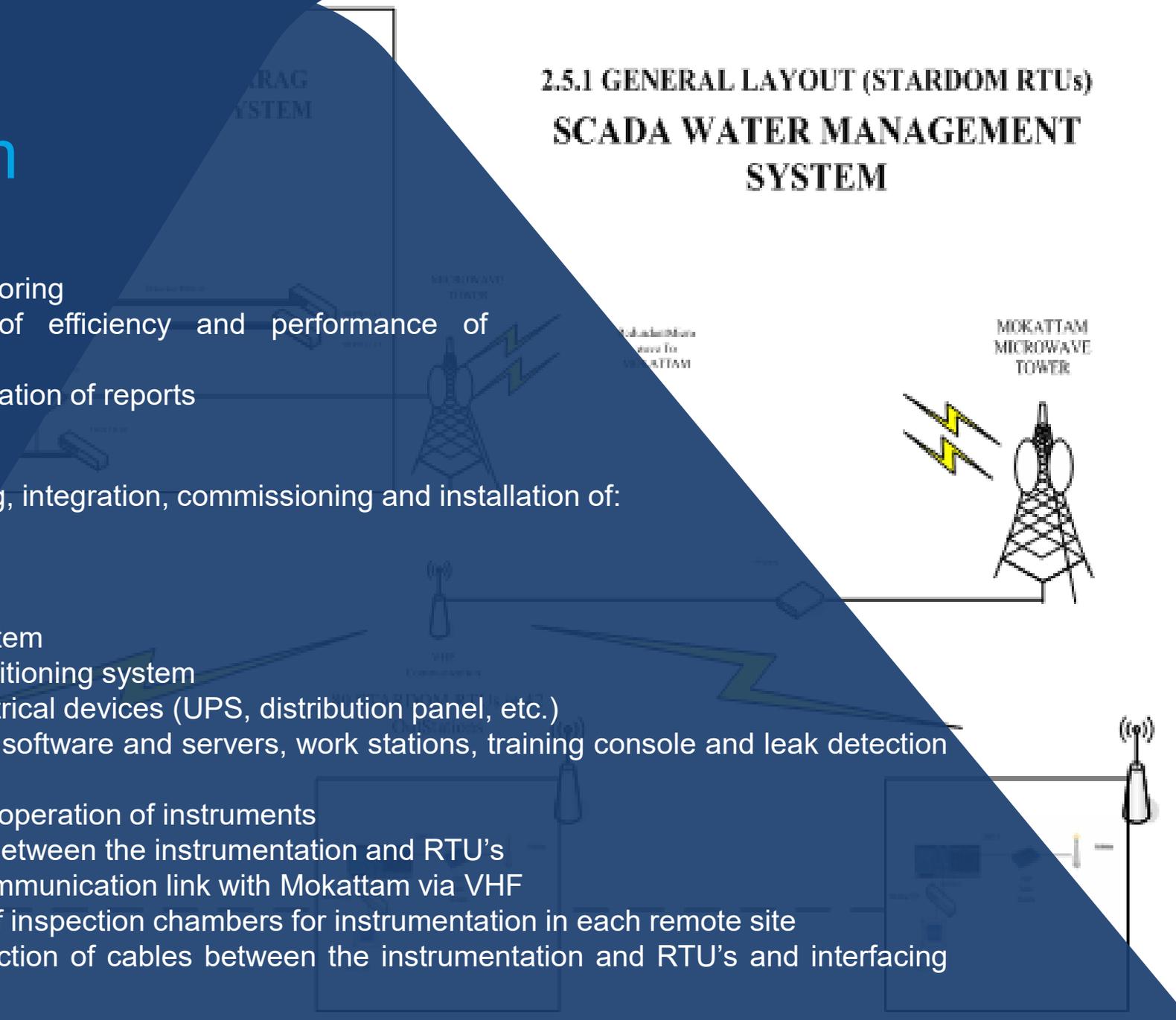
- Real-time monitoring
- Enhancement of efficiency and performance of maintenance
- Improved generation of reports

Scope

Supply, engineering, integration, commissioning and installation of:

- Junction boxes
- Conduits
- Cable trays
- Firefighting System
- Central air conditioning system
- Necessary electrical devices (UPS, distribution panel, etc.)
- SCADA system software and servers, work stations, training console and leak detection software
- Installation and operation of instruments
- Cabling works between the instrumentation and RTU's
- Establishing communication link with Mokattam via VHF
- Rehabilitation of inspection chambers for instrumentation in each remote site
- Supply and erection of cables between the instrumentation and RTU's and interfacing with MCCs

2.5.1 GENERAL LAYOUT (STARDOM RTU's) SCADA WATER MANAGEMENT SYSTEM



Greater Cairo Water Management System...Cont'd

Project

Greater Cairo Water Management System

Client

Construction Authority of Potable Water & Wastewater (CAPWW)

Project Location

Egypt

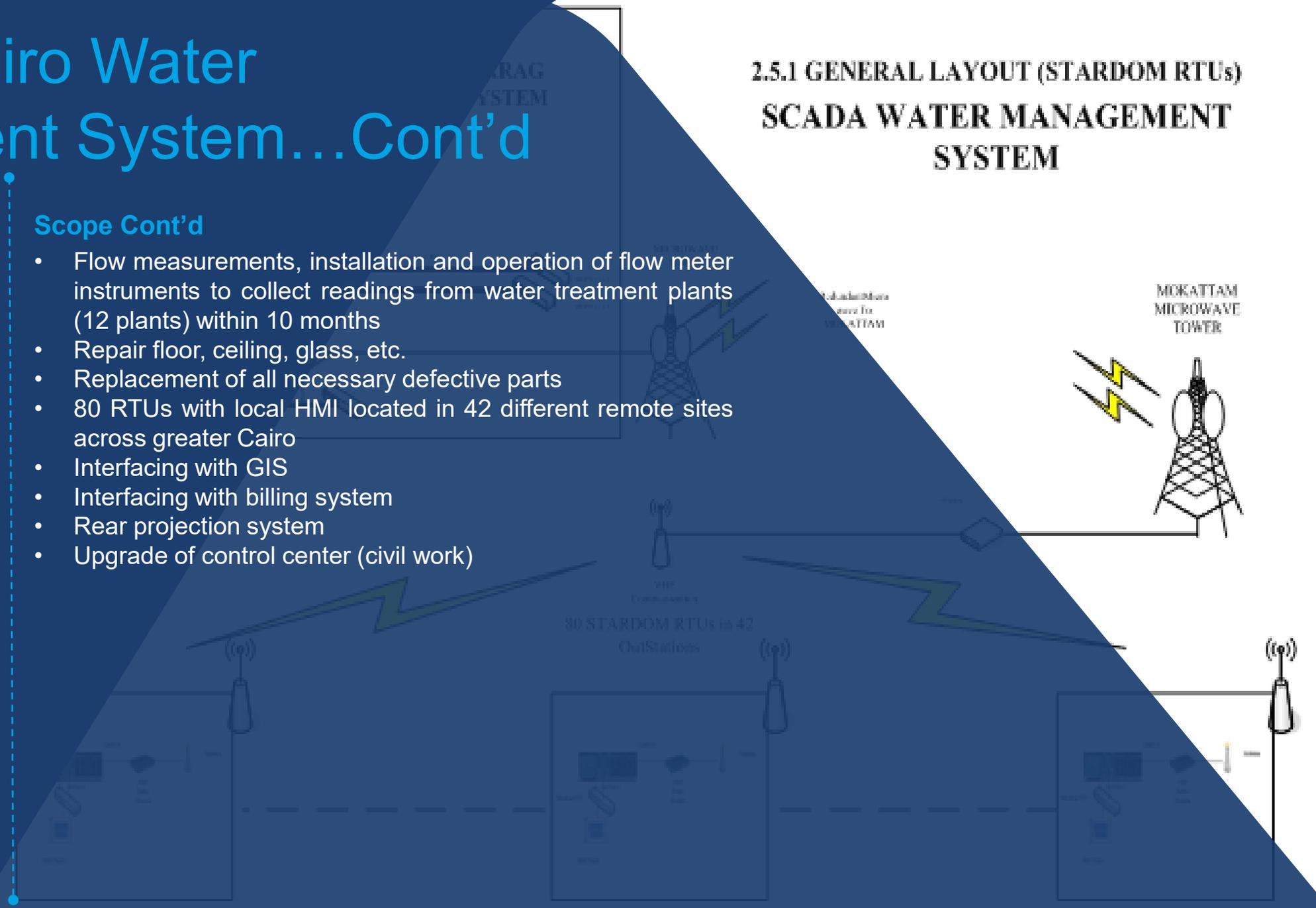
Project Description

Giza Systems was commissioned to design, supply, engineer, train, and start-up the Water Management System with central control room at Rod El Farag water treatment plant.

Scope Cont'd

- Flow measurements, installation and operation of flow meter instruments to collect readings from water treatment plants (12 plants) within 10 months
- Repair floor, ceiling, glass, etc.
- Replacement of all necessary defective parts
- 80 RTUs with local HMI located in 42 different remote sites across greater Cairo
- Interfacing with GIS
- Interfacing with billing system
- Rear projection system
- Upgrade of control center (civil work)

2.5.1 GENERAL LAYOUT (STARDOM RTUs) SCADA WATER MANAGEMENT SYSTEM



Mahalla IWWTP

Project

Industrial Wastewater Treatment Plant

Client

El-Nasr Building & Construction Co. (EGYCO)

Project Location

Mahalla, Egypt

Project Description

Giza Systems was awarded the project of supply and erection of all electrical and mechanical works at the IWWTP with capacity of 40,000 m³/D.

Benefits to Client

- The plant processes 65% of the city's highly acidic industrial waste, and serves all textiles and dyeing factories
- Enhancing the quality of the sewage network
- Output is directed to the wastewater treatment plant for biological treatment for irrigation purposes
- Solving the industrial waste treatment problem in Mahalla governorate, which causes real damage to the sewage network in the city due to the high proportion of industrial acid drainage

Scope

Mechanical Works

- Mechanical screens and aerated grit removal tank equipment
- Equalization tank equipment
- Clariflocculator
- Gravity thickener
- Sludge pumping station
- Sludge mechanical dewatering
- Biological drying beds
- Air blowers
- All valves and pipes
- Site drainage pumping station
- Thickened sludge pumping station



Mahalla IWWTP...Cont'd

Project

Industrial Wastewater Treatment Plant

Client

El-Nasr Building & Construction Co. (EGYCO)

Project Location

Mahalla, Egypt

Project Description

Giza Systems was awarded the project of supply and erection of all electrical and mechanical works at the IWWTP with capacity of 40,000 m³/D.

Scope Cont'd

Electrical Works

- Low and medium Voltage Switchgear (MV-SG)
- Generators
- Transformers
- Lighting
- SCADA System
- Laboratory equipment
- Cables



Qalzam WWTP

Project

Design and construction of Qalzam SBR WWTP

Client

El-Nasr Building & Construction Company (EGYCO)
(End User: CAPWW)

Project Location

Qalioubeya, Egypt

Project Description

Giza Systems was awarded the project for the design, supply and erection of all electrical and mechanical works at the WWTP with capacity of 20,000 m³/D.

Benefits to Client

- Optimum design using the SBR technology
- Optimum use of tight plant area with big treatment capacity
- Providing a healthier environment to the citizens
- Addressing the sewage problem in the city and a step forward in achieving the governmental plan to solve the waste treatment problems

Scope

Mechanical Works

- Screens
- Pen stocks
- Grit removal scarper bridge
- Sand classifiers
- Floating decanters
- Air diffusers
- Aeration system
- Air blowers
- Sludge thickeners
- Drying beds
- Pumps, valves and piping



Qalzam WWTP...Cont'd

Project

Design and construction of Qalzam SBR WWTP

Client

El-Nasr Building & Construction Company (EGYCO)
(End User: CAPWW)

Project Location

Qalioubeya, Egypt

Project Description

Giza Systems was awarded the project for the design, supply and erection of all electrical and mechanical works at the WWTP with capacity of 20,000 m³/D.

Scope Cont'd

Electrical Works

- Low and Medium Voltage Switchgear (MV-SG)
- Transformers
- Generators
- Lighting
- SCADA system
- Laboratory equipment
- Cables



Qantair and Ghazali Pumping Stations

Project

Full Electromechanical Works

Client

El-Nasr Building and Construction

Project Location

Egypt

Project Description

Giza Systems was contracted for the full electromechanical works in Qantair and Ghazali pumping stations.

Benefits to Client

- Solving a number of industrial issues
- Guaranteeing the smooth continuity of plant operations
- Providing the ideal solution that met the governmental plan aiming to provide the entire country with accessible waste water transfer works

Scope

Supply and complete set up for all the electromechanical works for the pump stations, including the following:

- 3 pumps 170L/S
- Electrical medium and low current networks
- Generator
- Screens



Shanshour Pumping Station

Project

Shanshour Water Pumping Station

Client

El Nasr Building and Construction Company (EGYCO) / The National Authority of Potable Water and Sewage (NOPWASD)

Project Location

Al Monufia, Egypt

Project Description

GSEC was awarded the project to implement a complete pumping station of 360 L/s capacity to serve the citizens of Shanshour village with wastewater services, as part of the wastewater transportation network from/ to the wastewater treatment plant.

Benefits to Client

- Streamlining of sanitation services operations
- Providing a healthier environment to citizens
- Addressing the sewage problem in the village as a step forward in achieving the governmental plan to solve the waste treatment problems in governorates

Scope

GSEC scope of work entailed:

- Design review of electromechanical equipment
- Supply and installation of all electrical and mechanical equipment including:
 - Pumps
 - Basket screens
 - Piping systems
 - Valves
 - Cranes
 - Water hammer systems
 - Generators
 - Electrical panels
 - Control system and instrumentation
 - Earthing
 - External lighting
- Testing and handover of the plant according to standard specifications



Sharkia Potable Water & Sanitation

Project

Supervisory Control and Data Acquisition Solutions (SCADA)

Client

Sharkia Potable Water & Sanitation Co.

Project Location

Zagazig, Egypt

Project Description

Giza Systems was awarded the venture for the supply of Telemetry System and the integration of client's old SCADA Yokogawa with new Schneider system.

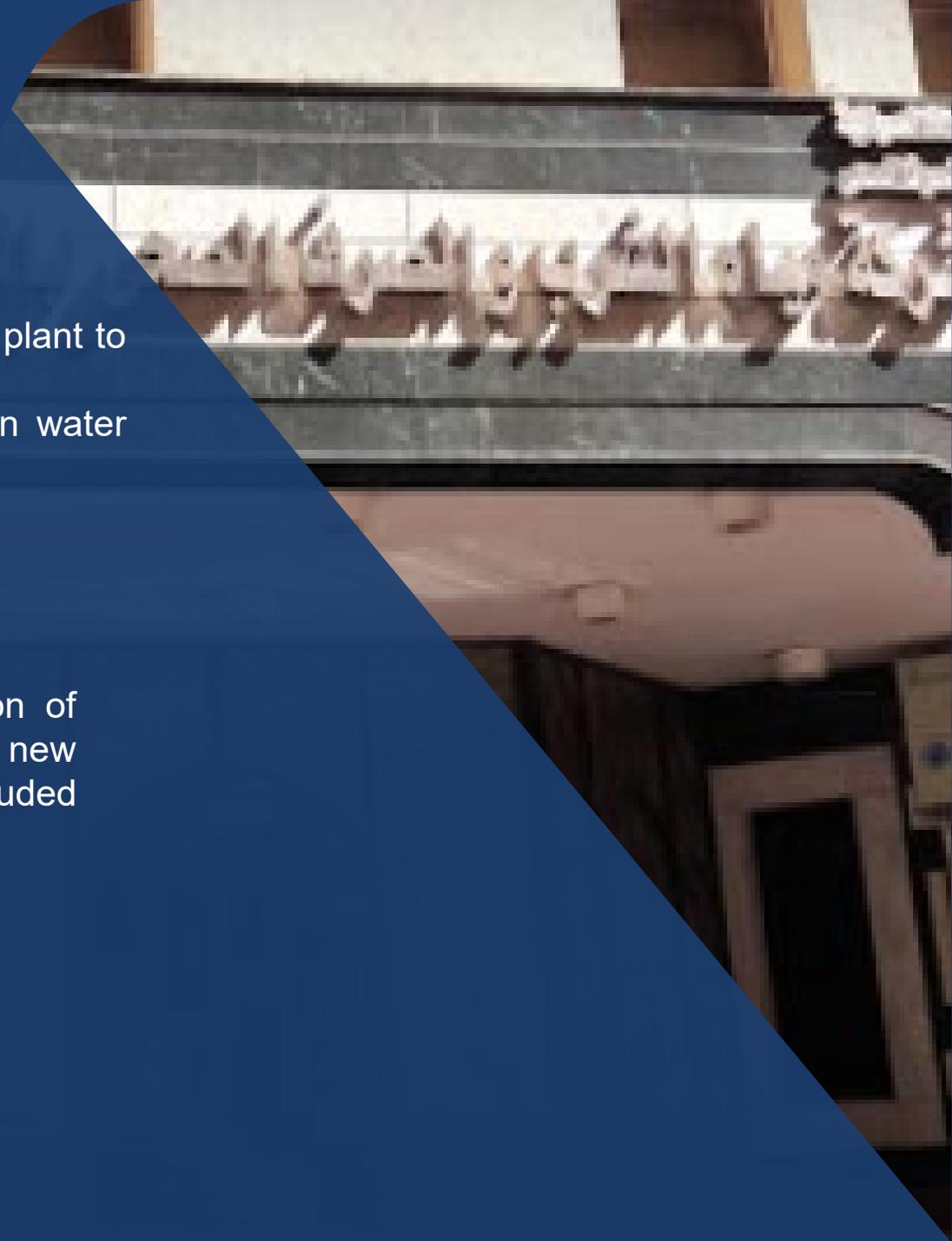
Benefits to Client

- View important data from water treatment plant to ensure water quantities and quality
- Decrease time of detecting pipe issues in water network by 40%
- Enhance operational efficiencies
- Reduce costs
- Secure stability

Scope

Supply of Telemetry System and integration of client's old SCADA Yokogawa with new Schneider system. The implementation included the following:

- Supply
- Installation
- Testing
- Commissioning
- Supervision



Toukh WTP

Project

Toukh WTP

Client

Misr Cement
Development Co.
(MCDC)

Project Location

Qalyubia, Egypt

Project Description

GSEC was awarded the project for the supply, erection, testing, installation and startup for all electromechanical works for Toukh WTP with capacity of 70,000m³/day.

Benefits to Client

- Project served 80 villages that were facing shortage in treated potable water in Toukh city
- Part of the governmental plan that aims to provide the entire country with accessible potable water works

Scope

Mechanical Works

- Intake equipment
- Raw water pumps
- Distribution chamber
- Clarifiers
- Filters
- Treated water pumps
- Disinfection
- Sludge pumps
- Workshop tools
- Interconnecting piping
- Coagulant dosing system



Toukh WTP...Cont'd

Project

Toukh WTP

Client

Misr Cement
Development Co.
(MCDC)

Project Location

Qalyubia, Egypt

Project Description

GSEC was awarded the project for the supply, erection, testing, installation and startup for all electromechanical works for Toukh WTP with capacity of 70,000m³/day.

Scope Cont'd

Electrical Works

- Low and Medium Voltage Switch Gears (MV-SG)
- Transformers
- Generators
- Lighting
- SCADA System
- Laboratory equipment

Operation and Maintenance

- Operation and maintenance works of station for a period of 12 months starting from achieving the final effluent according to the standard specification.



Mahalla WWTP

Project

Wastewater Treatment Plant
(Cell 5&6)

Client

Egyptian Contracting Company
(Mokhtar Ibrahim)

Project Location

Mahalla, Egypt

Project Start – End Date

May 2022 – January 2023

Project Description

Giza Systems was awarded the project of supply and erection of all electrical and mechanical works at the WWTP with capacity of 80,000 m³/D

Benefits to Client

- Addressing the sewage problem in Mahalla city
- A step forward in achieving the governmental plan to solve the waste treatment problem in Mahalla governorate
- Providing a healthier environment for the citizens of Al-Mahalla El Kobra city that would lead to people's satisfaction and well-being

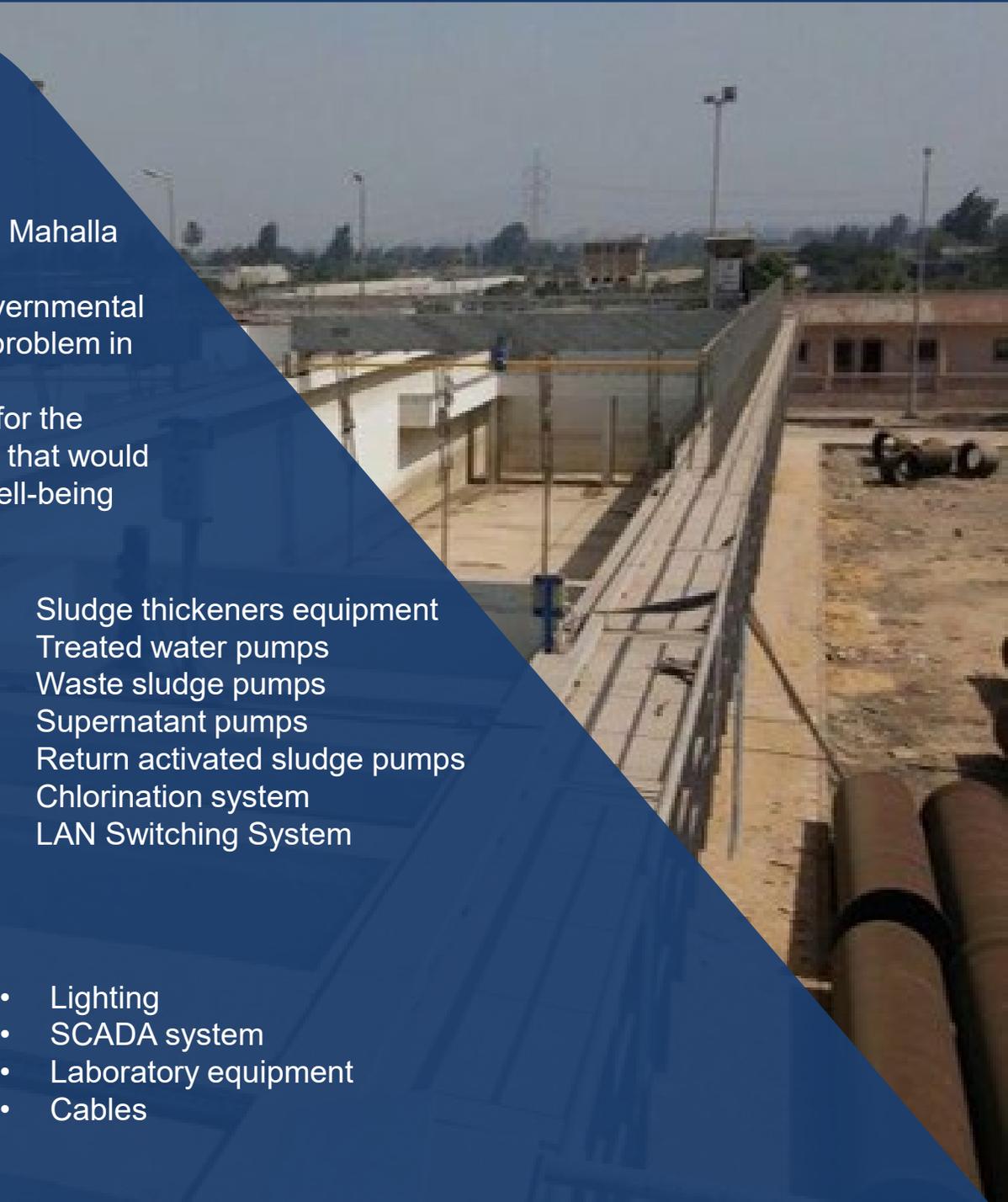
Scope

Mechanical Works

- Mechanical screens and grit removal equipment
- Surface aerators
- Primary and final sedimentation tank equipment
- Air blowers
- Valves, gates and pipe works
- Filtration belt press system
- Sludge thickeners equipment
- Treated water pumps
- Waste sludge pumps
- Supernatant pumps
- Return activated sludge pumps
- Chlorination system
- LAN Switching System

Electrical Works

- Low and medium Voltage Switchgear (MV-SG)
- Transformers
- Generators
- Lighting
- SCADA system
- Laboratory equipment
- Cables



Rawd El Farag Water Plant SCADA System and Control Center

Project

Rawd El Farag Water Plant SCADA System and Control Center

Client

Greater Cairo Water Company (GCWC)

Project Location

Egypt

Project Description

Giza Systems implemented the latest in SCADA systems for the Rawd El Farag water plant, to be the first large-scale deployment of a fully Egypt-developed SCADA solution in the country, and revamped a control center for GCWC.

Benefits to Client

- Enhanced Efficiency and Agility
- Remote monitoring and control of the water plant
- Enhanced communication capabilities
- Reduced data loss risk
- Contributed to Egypt's Vision 2030

Scope

- New latest technology SCADA System
- Remote work stations for monitoring and control
- 4G Communication protocol to communicate the RTU with SCADA system to have redundant different communication links and protocols (4G & VHF)
- Mobile applications to enable operators and leaders to remotely monitor important data from the offices through 4G

KSA

Smart Water Meters Project

Project

The Major Smart Water Meters Project

Client

The Saudi Arabian Ministry of Environment Water & Agriculture/ National Water Company (NWC)/ The Civil Works Company

Project Location

Northern and West-Northern KSA

Project Description

Giza Arabia was awarded the major Smart Water Meters project to supply, install, and replace the existing meters in the Northern and West-Northern regions in Saudi Arabia in cooperation with one of Al-Rashed Group's companies.

Benefits to Client

- Automation of the city water systems
- Reduced operational costs
- Optimizing the use of data systems
- Enabling efficient management of water resources and real-time monitoring of consumption and leaks
- Constant monitoring of real-estate feed networks to ensure the delivery of water to customers during scheduled pumping periods
- Reduced water losses and wastewater
- Generation of automated and accurate water bills on a regular basis
- Improved collection rates
- Provision of measurements, alerts and reports

Scope

- The supply and installation of 120,000 smart water meters in the Northern and West Northern regions of the country
- Operations and maintenance of the meters
- Installation of the Automatic Meter Reading (AMR) fixed network for 200,000 smart water meters, and integrating it with NWC's Meter Data Management (MDM) and billing systems
- Data collection, and the design, supply, and installation of QR plates for 200,000 subscribers



HQ Central SCADA Systems Upgrade - NWC

Project

HQ Central SCADA Systems Upgrade – NWC

Client

National Water Company (NWC)

Project Location

NWC HQ, KSA

Project Description

Giza Systems was awarded the project to upgrade the central SCADA system for the NWC's headquarters.

Benefits to Client

- Unlocking greater functionality and features
- Improved system security
- Scalability and future proofing
- Increased efficiency and operational excellence

Scope

The project scope of work covers the upgrading of the HQ central SCADA system, including central alarm management and alarm rationalization modules.



Aseer Operation and Maintenance of Smart Water Metering System

Project

Aseer Operation and Maintenance of Smart water Metering System

Client

Ministry of Environment, Water and Agriculture – Aseer

Consultant

National Water Company

Project Location

KSA

Project Description

Giza Arabia won the operation and maintenance of the smart water metering system

Benefits to Client

- Aligns with the Kingdom's 2030 Vision
- Achieves smart operation solutions
- Increases operational efficiencies
- Reduces OPEX
- Enhances operational excellence

Scope

The project scope of work covers the operation and maintenance of smart water meters in Abha.

Sensus smart meters

Sensus and IoT sens RDCs

Arar Operation and Maintenance of Smart Water Metering System

Project

Arar Operation and Maintenance of Smart water Metering System

Client

Ministry of Environment, Water and Agriculture - Northern Borders

Consultant

National Water Company

Project Location

KSA

Project Description

Giza Arabia Landed the Arar O&M for the smart metering system.

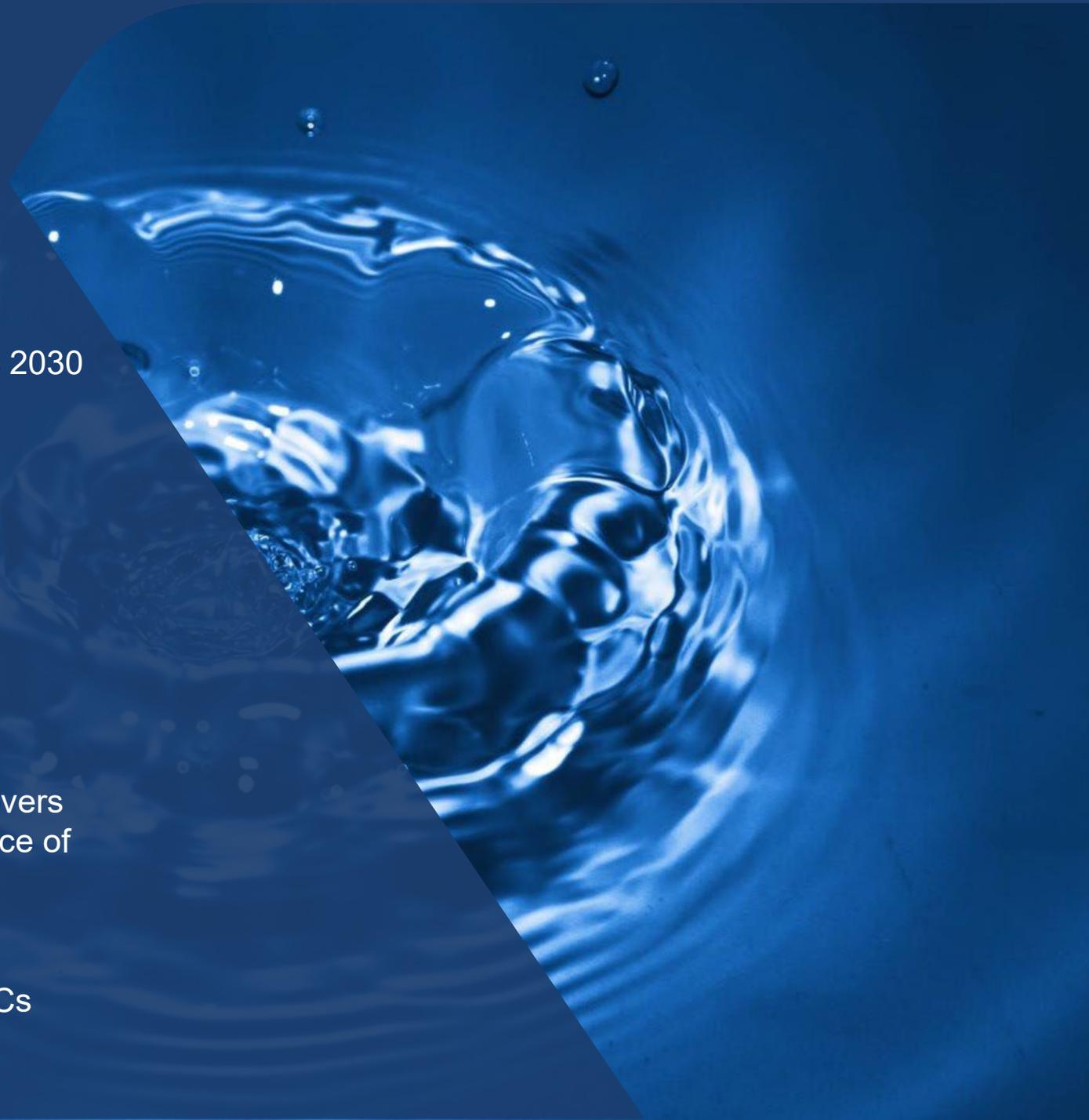
Benefits to Client

- Aligns with the Kingdom's 2030 Vision
- Achieves smart operation solutions
- Increases operational efficiencies
- Reduces OPEX
- Enhances operational excellence

Scope

The project scope of work covers the operation and maintenance of smart water meters in Abha.

- Sensus smart meters
- Sensus and IoT sens RDCs



Mashaer Operation and Maintenance of SCADA System and Water Distribution

Project

Mashaer Operation and Maintenance of SCADA System and Water Distribution Network including the Leak Detection System and Pressure Management

Client

National Water Company

Project Location

KSA

Project Description

Giza Arabia was awarded the SCADA and water distribution network systems.

Benefits to Client

- Aligns with the Kingdom's 2030 Vision
- Achieves smart operation solutions
- Increases efficiencies
- Reduces OPEX
- Enhances operational excellence

Scope

The project scope of work covers the operation and maintenance of water and wastewater facilities: water treatment stations, lifting stations, water wells, and main control.

This includes SCADA systems, remote terminal units, PLCs, M2M communication, UHF communication, smart flowmeters and smart pressure loggers.

- Wonderware SCADA system platform
- Schneider remote terminal units
- Trio UHF Schneider communication system

Eastern Region O&M of SCADA System and Water Distribution Network

Project

Eastern Region O&M of SCADA System and Water Distribution Network including Leak Detection System and Pressure Management

Client

Direct Client
CWC

Main Client

Ministry of Environment, Water and Agriculture

Consultant

National Water Company

Project Location

KSA

Project Description

Giza Arabia was awarded the Eastern Region O&M for SCADA system and water distribution network.

Benefits to Client

- Aligns with the Kingdom's 2030 Vision
- Achieves smart operation solutions
- Increases efficiencies
- Reduces OPEX
- Enhances operational excellence

Scope

The project scope of work covers the operation and maintenance of water and wastewater facilities (water treatment stations, lifting stations, water wells, main control centers, regional control center, pressure loggers and pressure management system, DMA, and DMZ) in the Eastern region covering 8 governorates.

Solutions include: SCADA systems, remote terminal units, PLCs, M2M communication, UHF communication, smart flowmeters and smart pressure loggers.

- TOPKAPI SCADA
- Remote terminal units supplied by Motorola, Schneider, Siemens, Mitsubishi, and Rockwell
- Motorola UHF communication system

Al Hassa Smart Agriculture

المؤسسة العامة للري
Saudi Irrigation Organization
المملكة العربية السعودية



Project

Al Hassa Smart Irrigation and Fertilization Pilot Project

Client

Saudi Irrigation Organization (Formerly known as HIDA, Ministry of Agriculture)

Project Location

Al Hassa, KSA

Project Description

Giza Arabia was awarded the pilot project to implement a smart agriculture system for Al Nakhil farms in Al Hassa

Benefits to Client

- Cost and energy savings
- Reduced water and fertilizer consumption
- Increased crops quantity/quality
- Collection of data for prediction/early warnings
- Proper temperature management
- Efficient water supply

Scope

The project scope entailed the implementation of a smart agricultural system that includes an enhanced fertilization solution for Al Nakhil farms; and the replacement of the irrigation system with a smart solution that integrates IoT (which uses sensors and the weather forecast) with SCADA to monitor the soil moisture and advise best irrigation conditions.



Ministry of Environment, Water and Agriculture

Project

AMI solution and Smart Meters

Client

Ministry of Environment, Water and Agriculture

Project Location

KSA

Project Description

Giza Systems won the implementation of AMR solutions to be interfaced with client's installed water smart meters.

Benefits to Client

- Save more than 100,000 SAR monthly by providing billing tools for water usage
- Provide database for all customers and all installed meters
- Enjoy better asset management and maintenance

Scope

Implementation of meter and remote reading system (AMR) in Darb, Al-Shakeed and its cities in Jazan region. The scope encompassed the following:

- Supply
- Installation
- Engineering and operation



Najran City Wastewater Station

Project

Wastewater Pumping Stations

Client

Saudi Ministry of Water and Electricity

Project Location

Najran, KSA

Project Description

Giza Systems

Electromechanical was awarded the construction of wastewater pumping stations for treated wastewater in Najran city, second stage.

Benefits to Client

- Maximize output generated from the triple treatment of wastewater
- Reduce cost of water
- Efficient utilization of resources
- Solving the industrial wastewater treatment problem in Najran

Scope

The supply and complete set up of electromechanical works of the wastewater pumping stations and civil pipelines. The implementation showcased in-depth know-how, high quality services, technical compliance, optimum design, and sourcing capabilities.



Central SCADA System MASA CPO Project



Project

Central SCADA System MaSa CPO Project

Client

Power & Water Utility Company for Jubail & Yanbu (Marafiq) / MaSa

Main Consultant

Saur

Project Location

Al Jubail, KSA

Project Description

Giza Arabia was awarded the project, in partnership with Schneider, on turn-key basis to connect the 9 water, wastewater and sea cooling plants and remote rooms' RTUs and data loggers in Jubail industrial city to the new SCADA redundant servers.

Benefits to Client

- Centralized monitoring and management for dispersed assets
- Unified SCADA graphics for all plants in the city
- Enhanced remote asset management, reporting and analysis of field events
- Enhanced security management, alarms and cybersecurity system
- Improved operational and financial KPIs

Scope

Solutions:

Unifying the central SCADA graphics for all water, wastewater and sea-cooling water plants in Jubail Industrial City:

- Connecting the 9 water, wastewater, and sea-cooling water plants in Jubail Industrial City to the new central SCADA redundant servers



Central SCADA System MASA CPO Project...cont'd

Project

Central SCADA System MaSa CPO Project

Client

Power & Water Utility Company for Jubail & Yanbu (Marafiq) / MaSa

Main Consultant

Saur

Project Location

Al Jubail, KSA

Project Description

Giza Arabia was awarded the project, in partnership with Schneider, on turn-key basis to connect the 9 water, wastewater and sea cooling plants and remote rooms' RTUs and data loggers in Jubail industrial city to the new SCADA redundant servers.

Scope cont'd

- Connecting all water and wastewater remote rooms' RTUs and data loggers to the new central SCADA redundant servers
- Integrate SCADA alarms and events with existing SAP System through the most powerful cybersecurity techniques using state-of-art Data Diode and FortiNet firewalls

Services:

Turn-key project:

- Design
- Supply
- Installation
- Integration
- Commissioning
- Start-up
- Training
- Continuous Operation Support

مرفوق
MARAFIQ



Jeddah City Business Unit

Project

Jeddah City Business Unit (JCBU) Project

Client

National Water Company

Project Location

Jeddah, KSA

Project Description

Giza Arabia was awarded the Jeddah City Business Unit (JCBU) project located in Jeddah City Business Unit at Al-Andalus District.

Benefits to Client

- Improve work measurements
- Increase operational efficiency
- Expand services provided and enhance water quality
- Improve financial performance and minimize costs

Scope

Supply, design, engineering, procurement, installation, training, testing, commissioning and startup for:

- Remote Terminal Units (RTUs)
- Supervisory Control and Data Acquisition System (SCADA)
- UHF Wireless Communications System used to provide and relay control and monitoring information to control centers
- Fiber optic cables
- Factory Acceptance Test (FAT)



Al Wasia Wells

Project

Control Network Testing

Client

Saudi National Water Company

Project Location

Riyadh, KSA

Project Description

Giza Arabia was awarded the project to support strategic water resources and test the installed SCADA systems at Al Wasia water wells.

Benefits to Client

- Reinforce regional infrastructure
- Ensure seamless operations and integration on site

Scope

- The scope included system control and monitoring of performance for the entire site, covering the following:
- 80 groundwater wells
- Line well water transfer station (15 km)
- Control system at the station
- Transmission line for strategic tanks in Riyadh region (70 km)



Al-Hassa Irrigation

Project

Al-Hassa Irrigation
Control Project, Zone 6

Client

Al-Hassa Irrigation and
Drainage Authority
(Ministry Of Agriculture)

Project Location

Al-Hassa, KSA

Project Description

Giza Systems was
commissioned to
implement the
conversion of irrigation
canals to closed pipes
for 3090 farmer outlets in
zone 6.

Benefits to Client

- Optimized operation, monitoring, and control of 3090 farmer outlets in Al-Hassa

Scope

Supply, design, engineering, procurement, training, commissioning, and start-up for:

- Design input preparation
- Valves
- Hydrometers
- RTUs
- Supply of SCADA
- Field Instruments
- Procurement
- Engineering
- FAT
- Training
- Supervision on installation
- Testing and commissioning



Al-Hassa Zones 9 & 10

Project

Al Hassa Irrigation
Project Zones 9 & 10

Client

Al Hassa Irrigation and
Drainage Authority

Project Location

Al-Hassa, KSA

Project Description

Giza Arabia was awarded the contract for the rehabilitation and improvement of operation and maintenance for automated control systems at Al Hassa zones 9 and 10.

Benefits to Client

- Regulate the use of irrigation water and enhance the irrigation schedule
- Guarantee optimization of water management and distribution
- Raise agricultural productivity, efficiency, and sustainability

Scope

The operation and maintenance of a wide range of solutions, including:

- SCADA
- Remote Terminal Units
- PLCs
- Communication systems



Al-Thumama RO Plant

Project

Al-Thumama RO Plant

Client

Ibn Omeara
(End User: Ministry of
Water & Electricity)

Project Location

Al-Thumama, KSA

Project Description

Giza Systems
Electromechanical
Company was awarded
the project of design,
supply, erection, testing
and operation of a
major water treatment
plant at, Riyadh. The
plant capacity is 5,000
m³/day.

Benefits to Client

- Compliance with the governmental plan that aims to provide the entire country with accessible potable water works

Scope

Civil Works:

- Pipelines between the water well fields and the raw water tank at WTP
- All tanks (raw water, cooled water, rejected backwash, treated water)
- All buildings (RO building, control building, laboratory building, etc.)

Mechanical Works:

- Mechanical screens
- Air blowers
- All pumps
- Valves, gates, pipe works, etc.



Al-Thumama RO Plant...Cont'd

Project

Al-Thumama RO Plant

Client

Ibn Omeara
(End User: Ministry of
Water & Electricity)

Project Location

Al-Thumama, KSA

Project Description

Giza Systems
Electromechanical
Company was awarded
the project of design,
supply, erection, testing
and operation of a
major water treatment
plant at, Riyadh. The
plant capacity is 5,000
m³/day.

Scope Cont'd

Electrical Works:

- Low and Medium Voltage Switch Gear(MV-SG)
- Transformers
- Generators
- Lighting
- SCADA system
- Laboratory equipment
- Cables

Operations & Maintenance:

Operation and maintenance works of station for a period of 12 months starting from achieving the final effluent according to the standard specification pipe works, etc.



North Jeddah STP

Project

North Jeddah Sewage Treatment Project

Client

National Water Company (NWC)

Project Location

Jeddah, KSA

Project Description

Giza Arabia was awarded the project to solve the escalating sewage problems in the city.

Benefits to Client

- Achieve increased performance and optimization for the water and wastewater plant
- Ensure operational efficiency within the plant

Scope

Supply, design, engineering, procurement, supervision on installation, training, testing, commissioning and startup for a number of solutions and systems. The solutions included:

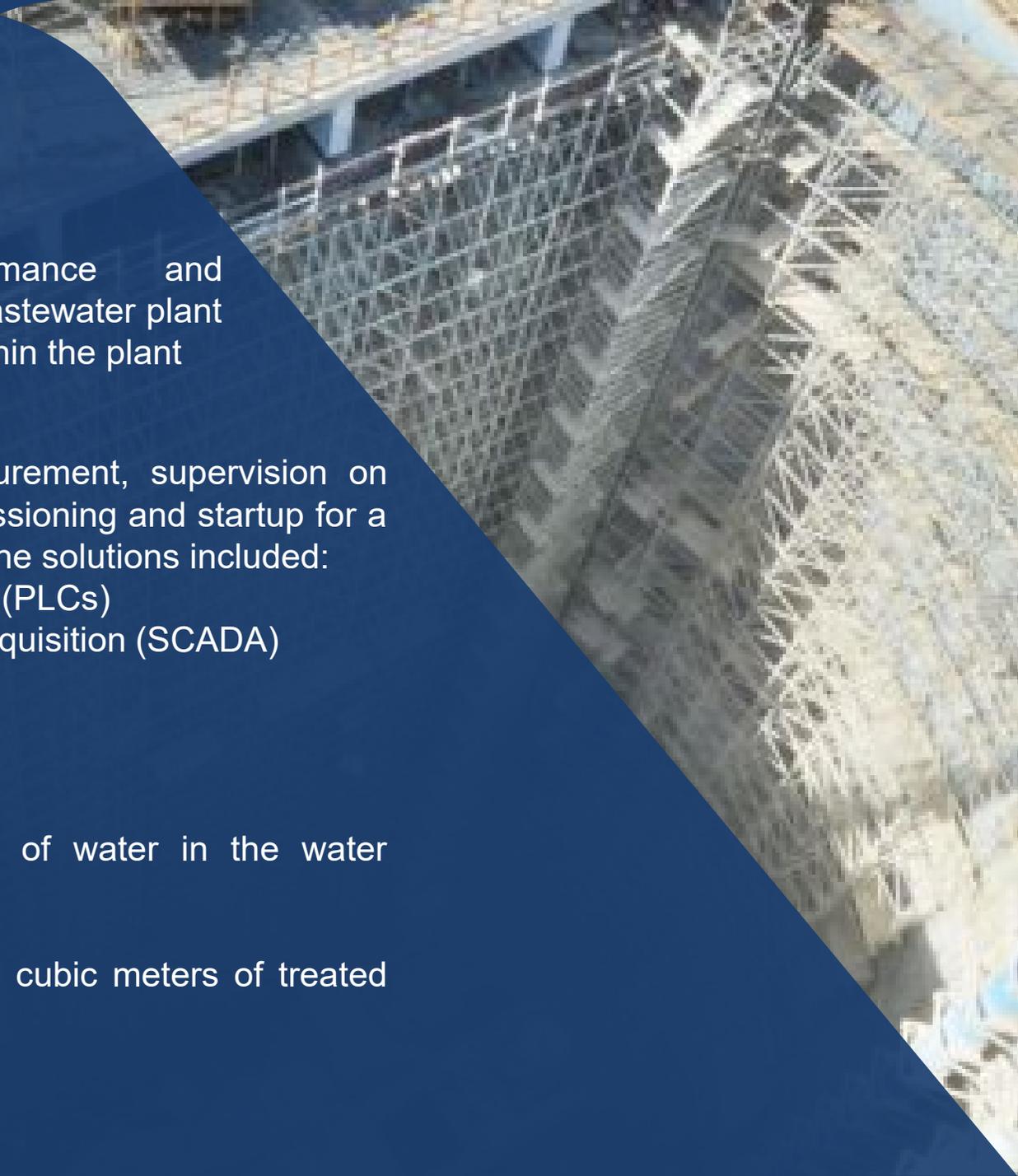
- Programmable Logic Controllers (PLCs)
- Supervisory Control and Data Acquisition (SCADA)
- Fiber optic cables
- Factory Acceptance Test (FAT)

First Phase:

- Treating 250,000 cubic meters of water in the water treatment plant.

Final Phase:

- Reaching a capacity of 500,000 cubic meters of treated water.



Saudi National Water Co.

Project

Programmable Logic
Controller Systems

Client

Saudi National Water
Co.

Project Location

Kingdom of Saudi
Arabia

Project Description

Giza Arabia won the
project for maintenance
of Programmable Logic
Controller Systems
(PLCs) for the Saudi
National Water
Company.

Benefits to Client

- Improved operational efficiency
- Optimized operational costs
- Efficient utilization of Riyadh's resources and profitability

Scope

The scope of work included the operation and maintenance of:

- RTUs
- PLCs
- SCADA
- Communication systems

شركة المياه الوطنية
National Water Company



Upgrade & Replacement of Remote Control System – Al Shuqaiq PP

Project

Upgrade & Replacement of Remote Control Systems & Connecting them with Al Shuqaiq Power Plant Main DCS

Client

Saline Water Conversion Corporation – SWCC

Project Location

Al Shuqaiq, KSA

Project Description

Giza Arabia was awarded the project to upgrade and replace remote control systems and connect them to the main Shuqaiq PP DCS

Benefits to Client

- Integrated DCS with high technology and cyber security compliance
- Improved operations, information management, documentation and troubleshooting

Scope

Full replacement of the PLC systems with the latest Emerson Ovation DCS to operate from main control room and remote local control rooms

Solutions:

- Product Water Treatment — Trains — 1&2 Control system
- Demin Plants — 1,2&3 Control System
- Chlorination Plants — Trains — 1,2&3 Control System
- Desalination Plants — 1 to 4 Ball leaning Control System



Upgrade & Replacement of Remote Control System – Al Shuqaiq PP... cont'd

Project

Upgrade & Replacement of Remote Control Systems & Connecting them with Al Shuqaiq Power Plant Main DCS

Client

Saline Water Conversion Corporation – SWCC

Project Location

Al Shuqaiq, KSA

Project Description

Giza Arabia was awarded the project to upgrade and replace remote control systems and connect them to the main Shuqaiq PP DCS

Scope

- CO2 Plant — Trains — 1&2 Control System
- CO2 Plant — Train — 3 Control System
- ESP 1,2 & Common, Ash Collector Control System

Services:

- Survey and Design
- Engineering
- Supply
- Installation
- Commissioning
- Testing and Startup



Riyadh Strategic Water Reservoir Tanks

Project

SCADA and Control System Integration

Client

Aziz Company for Contracting & Industrial Investment

Project Location

Riyadh, KSA

Project Description

Giza Arabia was awarded the implementation of the SCADA and control system at the reservoir, with a capacity of 1 million m³.

Benefits to Client

- Ensure the sustainability of water supply levels
- Control a considerable amount of Riyadh water supply
- Support the considerable plans underway for the Riyadh Strategic Reservoir
- Increase the country's responsiveness to any emergency water supply shortages

Scope

The project consisted of the installation of SCADA and control systems for the reservoir to include the following:

- Redundant main PLC with four units local PLCs
- HMI
- SCADA Wonderware





West, East & Central Africa

Addis Ababa Water & Sanitation Authority

Project

Distributed Control System (DCS)

Client

Addis Ababa Water and Sanitation Authority (AAWSA)

Project Location

Addis Ababa, Ethiopia

Project Description

Giza Systems was awarded the installation of Billing and GIS for Addis Ababa Water and Sanitation Authority

Benefits to Client

- Efficiently orchestrate the production of 400,000 consumer bills
- Monitor the distribution network
- Enable AAWSA to deploy an automated flow-through customer management, service order management, as well as billing and collections
- Offer enterprise-class scalability
- Facilitate the process of registration for new meters
- Provide easy access for consumers to view their consumption history
- Decrease maintenance time of distribution network

Scope

Installation, implementation, configuration, customization, commissioning and support of a proven integrated billing solution.

The implementation included:

- Customer Information System (CIS)
- Meter work orders management
- Charging, billing and payments
- Collection Management System (CMS)
- Spot billing machines
- Integration between billing systems, GIS, ERP and SBMs



Nairobi City Water and Sewerage Company

Project

Billing and Customer Management Systems

Client

Nairobi City Water and Sewerage Company

Project Location

Kenya

Project Description

Giza Systems was commissioned to implement billing and customer management systems for Nairobi City Water and Sewerage Company.

Benefits to Client

- Enhanced operations
- Reduced issues arising from the use of outdated resources and processes
- Guaranteed proper and continuous supply

Scope

Implementation of billing and customer management systems, while ensuring integration of the solution with the existing infrastructure.





Gulf

Doha South & Muaither RPS SCADA

Project
SCADA Integration

Client
Alwaha Contracting and
Trading

Project Location
Doha, Qatar

Project Description
Giza Systems Gulf was
awarded the project for
Doha South and
Muaither RPS SCADA
integration with
National Water Control
Center.

Benefits to Client

- Enhance operational efficiencies
- Improve water network performance
- Minimize troubleshooting and maintenance time
- Secure stability of water network

Scope

Supply, design, engineering, procurement, installation, training, testing, commissioning, and start-up of the following:

- Schneider Electric's PLC
- SCADA systems
- Integration of the new RPS with the existing system



Ras Abu Fontas A3 Reverse Osmosis

Project
SCADA Integration

Client
Toyo-Thai Public
Corporation (TTCL)

Project Location
Qatar

Project Description
Giza Systems was awarded the venture for the benefit of Ras Abu Fontas A3 Reverse Osmosis project.

Benefits to Client

- Enhance operational efficiencies
- Improve water network performance
- Minimize troubleshooting and maintenance time
- Secure stability

Scope

Supply, supervision, commissioning and engineering of the integrated monitoring system, including redundant PLC with fiber interfacing and Modbus RTU communication.



Thank You!

Giza Systems, a leading digital transformation enabler and systems integrator in the MEA region, designs and deploys industry-specific technology solutions for asset-intensive industries such as the Telecoms, Utilities, Oil & Gas, Smart Mobility and other market sectors. Giza Systems helps its clients streamline their operations and businesses through their portfolio of solutions, managed services, and consultancy practice. Giza Systems' team of 2400+ professionals are spread throughout the region with anchor offices in Cairo, Riyadh, Dubai, Doha, Nairobi, Dar es Salaam, Kampala and New Jersey, allowing the Company to service an ever-increasing client base in over 40 countries. For more information, please visit <http://www.gizasystems.com>.