

ELSEWEDY ELECTRIC

July - 2012 Issue 5

EGYPT...
High Hopes & Promising
Investments Associated
with the Second Republic...

Market Insight

Oil Filled
VS
Cast Resin



A Publication by

**ELSEWEDY
ELECTRIC**

**THE FUTURE
OF ENERGY**
The Use of Wind
Energy in EGYPT

DIVERSITY
Market
Diversification

**BUSINESS IN
DEPTH**
WHAT IS FTTX
SOLUTIONS...

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ELSEWEDY ELECTRIC *Africa* July 2012 Issue 5

"If you don't have integrity, you have nothing. You can't buy it. You can have all the money in the world, but if you are not a moral and ethical person, you really have nothing."

Henry Kravis

Elsewedy Electric is to be a unique company, a company of people excited about their future. It is a company known by the spirit and honor of its people. We work to serve our customers, to create and innovate and to build strong technology and product positions. We must always know the importance of developing our great reputation through our personal integrity, our shared values and through our honest business performance.

With the new President of Egypt, it's a new era for our country, we are all optimistic about our country's future. We all hope and believe that there will be stability, democracy, economic reforms and rights for all Egyptians. Elsewedy Electric is supporting His Excellency President Mohamed Morsy and we all hope that he will be the one who will make a new Egypt that we all Egyptians dreamed of.

We fully anticipate our continuing efforts that lead to further shared success through more and more development and society contribution.

Designed & Published by
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President & CEO
ELSEWEDY ELECTRIC



The Use of Wind Energy in Egypt

Renewable Energy is energy which comes from natural resources such as sunlight, wind, rain, tides, and geothermal heat, which are naturally replenished.



World's sights are oriented to depend on the renewable energies to overcome many problems that we may meet in the future, if we do not take these problems in our consideration, like running out of the non-renewable energy sources (for example, fossil fuel represented in the major three types: coal, oil and natural gas), also the climate change and the global warming.

Internationally, global energy consumption rebounded in 2010 after an overall downturn in 2009. Renewable energy, which experienced no downturn in 2009, continued to grow strongly in all end-use sectors – power, heat and transport – and supplied an estimated 16% of global final energy consumption (see figure 1). Renewable energy accounted for approximately half of the estimated 194 Giga Watts (GW) of new electric capacity added globally during the year. Renewables delivered close to 20% of global electricity supply in 2010, and by early 2011 they comprised one quarter of global power capacity from all sources. In several countries, renewables represent a rapidly growing share of total energy supply, including heat and transport. For example:

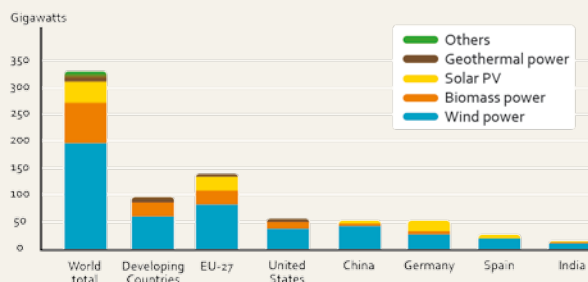
- In the United States, renewable energy accounted for about 10.9% of domestic primary energy production (compared with nuclear's 11.3%), an increase of 5.6% relative to 2009.
- China added an estimated 29 GW of grid-connected renewable capacity, for a total of 263 GW, an increase of 12% compared with 2009. Renewables accounted for about 26% of China's total installed electric capacity, 18% of generation, and more than 9% of final energy consumption in 2010.
- Germany met 11% of its total final energy consumption with renewable sources, which accounted for 16.8% of electricity con-

sumption, 9.8% of heat production (mostly from biomass), and 5.8% of transport fuel consumption. Wind power accounted for nearly 36% of renewable generation, followed by biomass, hydropower, and solar photovoltaic (PV).

• Several countries met higher shares of their electricity demand with wind power in 2010, including Denmark (22%), Portugal (21%), Spain (15.4%), and Ireland (10.1%). Trends reflect strong growth and investment across all market sectors. During the period from the end of 2005 through 2010, total global capacity of many renewable energy technologies – including solar PV, wind power, concentrating solar thermal power (CSP), solar water heating systems, and biofuels – grew at average rates ranging from around 15% to nearly 50% annually. Biomass and geothermal for power and heat also grew strongly. Wind power added the most new capacity, followed by hydropower and solar PV.

Egypt has currently the largest installed wind capacity in Africa and the Middle East. By 2020, the Egyptian energy sector targets to generate 20% of the electricity needs from wind; making the major renewable energy source in the country electricity mix.

So far, the wind capacity installed in Egypt was exclusively developed by the government via the new and renewable energy authority. This capacity took the form of large wind farms that supplies electricity to meet large electric demands namely that of national bulk power stations.

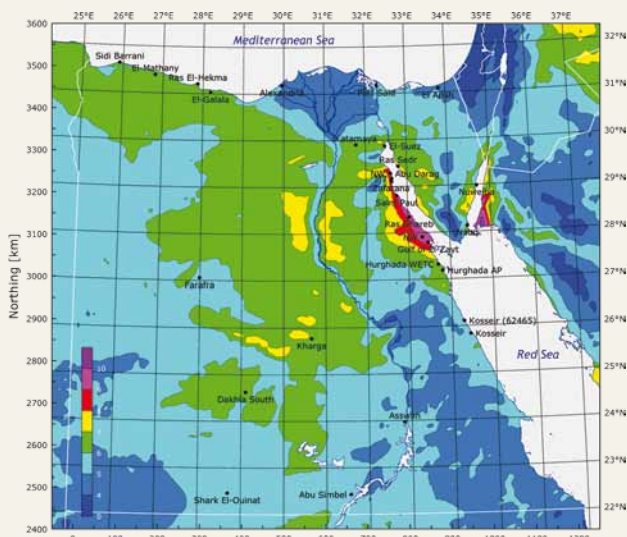


(Figure 1)



Not only Wind Energy is used in Egypt but also the solar energy, but wind energy is considered the main renewable source here in Egypt till now. Many researches recommended that if we make good use of the western desert here in Egypt throughout generating electricity from sunlight, we could cover the needs of whole world and that is why the European countries dedicate their efforts to set up major projects in the field of solar energy.

In December 2005, wind atlas of Egypt was accomplished by the cooperation between Egyptian Meteorological Authority and the Danish Riso labs. The wind atlas shows the expected areas to benefit from them in generating electricity from wind energy. This study also summarized that there are many regions with high wind speeds like the west of Suez Gulf, the banks of the Nile and some regions in Sinai which are appropriate to set up many projects for generating electricity from Wind Energy (see figure 2).



(Figure 2)

So, Wind Energy utilization was promoted to occupy the top of NREA (National New and Renewable Energy Authority) priorities. This fact was a result of the national wind resource assessment program based upon 65 measuring stations, which proved the abundant Wind Energy potential at the western coast of the Gulf of Suez as mentioned before, which reaches 20,000 MW. Moreover the North coast of Egypt, South Sinai enjoys appropriate resources, East Oweinat and Gulf. Ridges enjoy a high potential that can reach 80,000 MW. The Red

Sea Coast at Zafarana was selected for establishment of large scale Wind farms.

The ambitious Egyptian program was set up and includes the establishment of a large scale wind farm in Zafarana of a capacity of 600 MW by year 2005, to be built in successive phases with each phase having 60 MW capacity. NREA planned that 300 MW shall be financed by the state budget, while the private sector, local and foreign investors, are encouraged to finance the other 300 MW based on Build, Own, Operate and Transfer (BOOT) system.

Now, the importance of Wind Energy is very clear internationally and locally. So the definition of wind energy, is the kinetic energy present in wind motion that can be converted to mechanical energy after that converted to drive pumps, mills, and electric power generators.

Wind turbines, wind systems, or wind machines are accepted terms for devices that extract power from the wind and produce mechanical or electrical power. The term wind turbine is often reserved for machines

that use rotors as wind energy collectors. Wind turbines are classified as horizontal-axis (HAWTs) or vertical-axis turbines (VAWTs) nearly all wind turbines manufactured today are horizontal-axis. Vertical-axis machines have been plagued with blade fatigue problems. In addition, the rotors on VAWTs are typically lower than those of HAWTs. The latter positioning presents a disadvantage because the velocity of the wind decreases near the ground.

In October 2008, Elsewedy Electric Group has launched a Wind Energy group to build turbines in Egypt in line with the government's plan to increase renewable energy use. Chief Executive Ahmed El Sewedy said in a statement "we believe that as Egypt's energy need to grow, wind energy will play an increasingly important role"

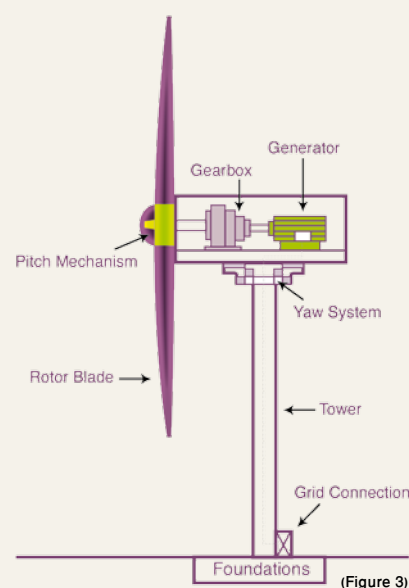
SWEG (Elsewedy for Wind Energy Generation) is a newly born company 100% owned by Elsewedy Electric Group responsible for the fastest growing wind energy activity.

SWEG will manufacture and supply the main wind energy components; wind turbines, wind towers and rotor blades.

SWEG will fully assemble wind turbines in Egypt with the same standards and quality levels of M-Torres facility in Spain. Additionally, SWEG will totally manufacture the towers and blades through its production facility in Egypt.

SWEG presents the most modern technology in the field of Wind Energy; its products have the latest means of technology like the TWT is a multipole synchronous variable-speed wind turbine with direct drive (gearless) and pitch controlled. Also, it has two reversible three-phase electronic power converters and an advanced robust QFT control system that enables it to control active and reactive power, optimizes its aerodynamic efficiency and increases power quality and reliability (see Figure 3). These features will guarantee less maintenance, reliability and durability to satisfy all need of the customers.

Beside of manufacturing wind turbines components and towers, SWEG also offers wind farm development, operation, maintenance and balance of the plant. That is the competitive advantage in this sector that SWEG will provide full solution for wind farms and it will play an important role in Egypt and MENA Region.



(Figure 3)

Elsewedy Electric's Enterprise Collaboration Portal



by **Khaled El Atabani**
Corporate CIO
ELSEWEDY ELECTRIC

The demand for robust collaboration solutions in enterprises has grown exponentially during the past few years. According to Forrester Research, in 2009, nearly one in two businesses will make use of "Enterprise 2.0" software, a term which describes the use of social computing technologies such as blogs, wikis, community workspaces, and content subscription services

in the workplace. Businesses are realizing that collaboration tools that allow people to interact with other people, content, and information support strategic business goals while reducing IT costs.

However, not all organizations are taking a holistic approach to their deployments of collaboration solutions. Either by deliberate strategy or because grassroots demand for consumer applications gets ahead of IT governance, these organizations end up supporting and maintaining multiple platforms and technologies for various departments, functions, and roles. This not only increases risk and complexity, it can also

add to operating costs. The organizations that are seeing the greatest benefits are those that are looking at enterprise-wide deployments of collaboration solutions.

Companies, like Elsewedy Electric, who have implemented a collaboration platform, are bringing social-computing capabilities into the enterprise to increase organizational productivity by giving information workers easy, natural ways to share insights and collaborate. They are supporting content management by allowing employees to upload content to a centralized location and manage it in a compliant way so that it can be used by others.

Finally, they are realizing that empowering employees to collaborate around businesses intelligence means that information critical to the success of the business can be shared and that raw data can be turned into actionable results.

Realizing the business benefits of using Microsoft SharePoint as its platform for enterprise-level collaboration, Elsewedy Electric deployed an on-premise instance of SharePoint 2010 as the core technology to meet the growing demands for internal and external collaboration and meet the fast-changing requirements of the new world of business—knowledge transfer, support for the next-generation workforce, virtual teams, open innovation, collaboration with partners and customers, and more—with a single, extensible, centrally managed enterprise platform.



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- Medium voltage cables up to 36 kV, XLPE insulated
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- Low smoke halogen free (LSHF) cables & wires
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- Flame retardant cables
- Instrumentation cables
- Control cables
- Telephone cables
- Co-axial cables
- Fiber optics



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CABLES**

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Market Diversification

Diversification is a form of corporate strategy for a company; it seeks to increase profitability through greater sales volume obtained from new products and new markets. Diversification can occur either at the business unit level or at the corporate level. At the business unit level, it is most likely to expand into a new segment of an industry that the business is already in. At the corporate level, it is generally very interesting entering a promising business outside of the scope of the existing business unit. Diversification can also be summarized into the following; a risk-reduction strategy that involves adding product, services, location, customers and markets to your company's portfolio.

In our previous issues we discussed Product diversification and geographical diversification, highlighting the fact that diversifying into new products and service lines can provide an effective path to fast growth, as you sell more products to existing customers. Location/Geographical Diversification is the practice of diversifying an investment portfolio across different geographic regions so as to reduce the overall risk and improve returns on the portfolio.

The term also refers to the strategy employed by large companies of locating their operations in different regions or countries in order to reduce business and operational risk.

In this issue we will tackle another interesting aspect of diversification which is market diversification. The market diversification step when the product is modified to meet new market opportunities or when new products are developed to meet existing market demand.

Market diversity is one of the variables that affect the determination of the best organizational structure. The market diversity is great with a large number of markets or customer types.

It is a question of what the market requires from the organization complexity in the form of specialized functions such as market manager or special supply or production conditions.



“ unleashes the talents of all employees to create value and develop innovative solutions for the markets and the communities we serve and create value for our customers ”

The objective of the market diversification is to address changing market conditions. The product is a portfolio of competitive products that insulate the enterprise against economic downturns.

During the market diversification, the following activities must be accomplished; Market environment scanning process, technology transfer, allocation of resources for continued improvement of existing products, allocation of resources for new product development. One of the most important aspects that can determine how successful market diversification will be is collecting valuable Marketing Information. In other words, Implementation of the market diversification usually will result in knowledge of emerging industries, emerging products, emerging technologies, sources of technology, identification of new enterprise opportunities and threats, and resources for technical assistance in technology development and deployment. Marketing departments typically conduct market segment analyses to get insight on how to position the organization's products or services. This question is about the number of different market segments to which the firm addresses its products, product lines, or services.

There are many reasons why a company chooses to make a market diversification step, for example, to increase market power or stretching corporate capabilities into markets and products. Responding to market decline and spreading risk are among the reasons for using any diversification strategy, whether it is market, product or location diversification.

Market diversification also has disadvantages that corporations must study thoroughly before take such a step and make sure to avoid them. Market diversification may result in slowing business in other markets, adding management cost and adding bureaucratic complexity necessitated by the need to coordinate existing markets activities with additional new markets.

Elsewedy Electric decided to take the market diversification step after collecting the needed marketing information and awaiting all the benefits against the risks. We successfully modified and developed our products and product lines to meet European, Middle East-

ern, Asian, African and American markets and we are continuing our study to penetrate more markets with our high end diversified products.

We serve Energy and Infrastructure; designing, developing, operating, generating, transmitting and distributing infrastructure. Additionally, the company's production divisions supply external generation, T&D, utilities players and projects. Moving forward, Elsewedy Electric expects to assume equity stakes in power generation and



distribution assets, including wind and traditional generation sources.

- Utilities: Power generation and distribution
- Utilities: Water treatment
- Transportation infrastructure: Airports and Tunnels
- Data centers and telecommunications

Our Solutions:

- Windmill manufacturing, wind farm development and wind energy generation and distribution
- EPC: engineering, procurement, construction – and development of traditional source power plants
- Transmission and Distribution (T&D)
- Supply of complete cabling solutions for power production, transmissions and distributions
- Utilities management: lighting, access control, monitoring and safety
- Electricity pre-payment systems
- Telecommunications networks and infrastructure



We also serve Industrial applications where we supply raw materials, design and build infrastructure and distribute electricity to industrial clients across a range of sectors. The company also develops and manages internal systems and measures and optimizes consumption at production facilities.



- Industrial Parks
- Manufacturing across segments
- Automobile
- Cement, aluminum and steel
- Food and beverage packaging
- Pharmaceuticals
- Chemicals

Our Solutions:

- Complete cabling solutions (including raw materials and installation) for power and special cables (control, instrumentation, fiber optics, winding and data)
- Optimization of process energy performance
- Control and monitoring systems for machines
- Process automation
- Electrical distribution: protection and installation systems
- Electricity metering and supply quality management
- Fire alarm solutions

As for the Commercial application we produce, distribute, install and manage full-service electricity solutions for commercial space development and renovation and ongoing service provisions.



- Offices
- Shopping centers
- Industrial and warehouse complexes
- Hotels
- Hospitals

Our Solutions:

- Complete cabling solutions (including raw materials and installation) for power and special cables (control, instrumentation, fiber

optics, winding and data)

- Power supply and distribution
- Utilities management: lighting, access and control of electricity
- Energy measurement and management
- Multi-site remote management
- Data exchange: voice-data-image, power line carrier technology, radio
- Fire alarm solutions

For the Residential application we produce and distribute a full range of products that bring electricity, energy measurement and communications to regional households.



- New and renovated single family residences
- New and renovated apartment complexes

Our Solutions:

- Complete cabling solutions for power and special cables (control, instrumentation, fiber optics, winding and data)
- Electrical distribution, protection and installation systems
- Home automations and data exchange
- Monitoring and safety
- Electricity metering and supply quality management
- Communication and multimedia networks: voice-data-image and power line carrier networks providing access in all rooms to telephone, TV, internet and other connection via electrical wiring systems

Our vision for diversity is to have a varied workforce in an inclusive workplace that unleashes the talents of all employees to create value and develop innovative solutions for the markets and the communities we serve and create value for our customers.

Elsewedy Electric will help create a better future by helping our employees, clients and communities succeed through diversity.

We believe that successful and sustainable diversity efforts reflect three areas – talent and the workplace, the client marketplace, and our communities:

- Talent & Workplace: To increase the diversity of our workforce globally, with a focus on increasing representation of segments and applications.
- Marketplace: To offer customized and accessible services and products to diverse client markets and support supplier diversity programs.
- Community: To support the economic and social development of our communities through leadership in research, strategic partnerships, donations and sponsorships.



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Subsidiary of ELSEWEDY ELECTRIC



External growth through International Improvement

"Quality is never an accident, it is always the result of an intelligent effort"

Lean / Six Sigma deployment in Elsewedy Cables laboratories



Contrary to popular business belief, there are ways to improve quality and save money at the same time.

Lean / Six Sigma are deployed in Elsewedy Cables on that core philosophy. Here's a hard fact: poor QC practices are wasting money - how to identify, quantify, and eliminate the wasted time, effort, and resources spent on repeated runs, repeated controls, and customer returns or rejects?

One of our questions was: where are the savings in the laboratory?

The fact that there are errors in laboratories or the fact that we don't understand what those errors mean?

Our Quality journey began studying and adopting industrial management standards and approaches. Early applications focused primarily on establishing programs and infrastructure to measure quality and enhancing organizational culture surrounding quality issues.

Elsewedy Cables laboratories has incorporated an integrated management system for

technical and quality management, which results in benefits observed in daily laboratory practices. Technical requirements were updated to include the addition of formal personnel training plans and detailed records, method development and validation procedures, measurement of method uncertainty, and a defined equipment calibration and maintenance program.



In addition, a stronger definition of the sample preparation process was documented to maintain consistency in sampling, and a more rigorous quality control monitoring program was implemented. Management quality improvements focused on document control to maintain consistent analytical processes, improved monitoring of supplier performance, a contract review process for documenting customer requirements, and a system for handling customer comments and complaints, with continuous improvement through corrective and preventive action procedures and audits. Periodical

management review of corrective actions, nonconforming testing, and proficiency testing aid in determining long-term trending. The practical benefits of these technical and management quality improvements are seen on a daily basis in the laboratory. Faster identification and resolution of issues regarding methods, personnel or equipment, improved customer satisfaction, meeting quality requirements of specialized customers, and overall increased laboratory business are all the results of implementing an effective quality system.

Initiatives for Lean & Six Sigma deployment to Elsewedy Cables laboratories

The 2010 performance analysis has identified opportunities for improvements in the business environment, particularly the lengthy timeframe needed for adding daily finished goods stock, the lengthy time frame for raw materials' receiving inspection, testing approaches, and getting effective approaches accepted into business practice for trials of new materials.

Also, the lack of coordination between production, planning, purchasing, Q.C and testing facilities and lack of data sharing & reply and its impact on the work flow was another issue.

Elsewedy Cables Laboratories' vision is clearly aligned with the objectives represented by Lean and Six Sigma approaches. These management strategies for process improvement, quality measurement, and reduction of errors and waste generate the potential for creating a transparent environment for proactively identifying, tracking and resolving quality issues for effective and sustainable compliance with embedded best practices related to laboratory activities.

Specific Quality improvement interventions included:

- The formation of cross-disciplinary teams to examine and improve



work processes.

- Training employees to identify quality improvement opportunities.
- The use and application of statistical methods for process improvement.
- For improving testing efficiency, the lab's manager began to evaluate and make changes to a variety of laboratory practices. For example, selected labs' functions such as testing methods, routine and type tests, test records, housekeeping, and material receiving inspection & testing.
- Applying TQM principles, Elsewedy Cables Labs' management re-structured processes to make processes more customers focused.
- Q.A, established customer-focused quality measurement systems including customer questionnaires and customer complaints analysis, performance appraisals, monitoring reports, and other quality-oriented metrics.
- Lean and Six Sigma emerged from the fertile environment deployed by Quality Improvement department.
- Recent applications of Lean and Six Sigma attempt to improve by making improvement project deliverables more discrete and measurable, retaining a strong customer focus, quantifying results, and attempting to deliver specific quality improvements within a designated time frame.

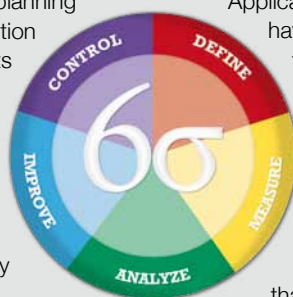
Elsewedy Cables laboratories' applications of Lean and Six Sigma

Since 2010, there have been a variety of improvement projects applying Lean and Six Sigma strategies to quality improvement. Several applications of an integrated Lean Six Sigma approach that led to reducing the WIP, and developing a new work planning system to expedited completion of receiving inspection and testing, routine tests, and scheduled type tests required by our new markets or new products.

Lean and Six Sigma methodologies are well suited for application to laboratory settings because of the inherent need for statistical precision and quality control in laboratory testing and measurement activities, as well as the highly repetitive nature of laboratory work.

Most laboratory applications of Lean and Six Sigma have occurred as a way of tracking on laboratory quality, establishing inter

laboratories comparison, and measuring changes in laboratory performance over time.



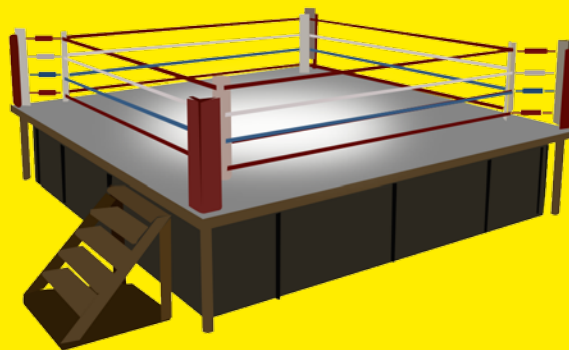
Applications of Lean and Six Sigma in testing laboratories have included efforts to reduce errors in a laboratory information system, assure the repeatability and reproducibility of test results among different laboratories within Elsewedy Cables facilities (MSA), and establish continuous and efficient work flow.

Six Sigma and other quality assurance practices have been coordinated to reduce laboratory errors in testing, traceability, records, and certification. Ensuring that all quality activities are well integrated to create a unified and seamless environment for quality related issues and data, tracks events as the semi-finished products.

Oil Filled VS Cast Resin



Many traditional oil filled transformers are now being replaced by latest generation transformers based on cast resin technology. In the next article, we review cast resin transformers and their performance in the industry.



A transformer is a device that transfers electrical energy from one circuit to another through a shared magnetic field. A key application is to tap off 11,000 volts (11 kV) of electrical power from the national grid and step it down to 415 volts, which is the normal 3-phase electrical power system used in the UK for commercial, institutional or industrial applications. A transformer therefore makes raw electricity usable, as well as allowing it to travel through cables. In fact, most of the world's electrical power has passed through transformers by the time it reaches the consumer. Large, high-power transformers, in particular, need to have a built-in cooling facility to transport heat from the interior. Thus, one of the numerous ways of classifying transformers is according to cooling type. For example, for power transformers rated up to a nominal kVA, natural convective air-cooling, often fan-assisted, is adequate. Traditionally, oil transformers relied on highly refined mineral oil as a cooling medium, while with the latest generation cast resin transformers the transformer core is insulated by a thin coating of inorganic material.



“ Elsewedy Transformers has produced the sustainable, safe and inflammable kind of Transformers, the DRY TYPE CAST RESIN TRANSFORMERS ”

ELSEWEDY
TRANSFORMERS

Fire safety

Over the last decade the remarkable advances in materials technology and manufacturing methods have fostered the popularity of cast resin transformers, particularly in fire-sensitive locations such as high-rise structures, hospitals, and public buildings where the transformer is located indoors and a fire outbreak would be particularly hazardous because of the high density of people.

Safety is high on the list of benefits provided by cast resin transformers manufactured by Elsewedy Transformer. The advanced epoxy mixture used in Cast Resin transformers is a nonhazardous material, which is both fire-resistant and self extinguishing. Even when the material is exposed to arcing, no toxic gases are produced, and the transformer can be safely situated close to the load, saving on cabling, civil works and transmission loss.

Another key benefit is the fact that cast resin transformers require no maintenance during their lifetime.

Non-polluting

Compare all of these benefits with the disadvantages of traditional oil transformers with their relatively low fire point, pollution potential, higher installation costs (due in part to the fire-protection and containment measures often needing to be installed along with the installation), and a high maintenance requirement. Oil-cooled transformers are not, it has to be said, a favorite with insurance companies.

Oil, of course, is a nonrenewable resource, while Cast Resin transformers are insulated in a sustainable material, which has been developed and refined over 15 years to comply fully with European Union and national directives on the protection of the environment. Indeed, they do not pollute the environment where they are installed and are therefore recommended for all ISO locations, a standard that helps organizations minimize the negative effects of their operations on the environment.

Aggressive conditions

As well as protecting the environment, the high quality epoxy resin filled with silica and trihydrate alumina, that have been developed to encapsulate transformers, stops moisture ingress, thus preventing electrical breakdown under load, as well as inward pollution from the environment. This not only makes the transformers ideal for

damp or dirty conditions, but extends the life of the transformer's working parts and eliminates maintenance. EDM transformers are also coated in high-vacuum chambers to reduce air and other gases in the resin that could produce partial earth discharges. In effect, they theoretically seal the transformer's core. As a result, consultants and specifiers looking for standard transformers with power outputs in the range of 100 to 3,500 kVA (and up to 16,000 kVA for specific projects), get complete peace of mind.

Another point to make is that cast resin transformers do not have the noise and vibration problems associated with oil based machines. Cast resin transformers are now available in different specifications to meet the needs of the climate or hazardous and unforgiving environments, exceptionally cold ambient temperatures and environments with high fire risk.

Number one cost-savers

One of the most gratifying outcomes of installing environmentally friendly technology in recent years has been the realization by individuals and companies that saving the environment can also save money. As well as being favorably priced, cast resin transformers are exceptionally energy-efficient, producing a high transformation yield and thus consuming less input energy.

The European Commission has assessed that if equipment such as this were brought into general use, emissions of 11 million tones of carbon dioxide - equivalent to the electrical power used by 5 million homes - would be avoided.

Cast Resin Transformers Provide:

- More energy output for less input
- Environmental friendly technology
- Easier installation
- Exceptional reliability
- Increased safety
- Non polluting
- Minimal noise and vibration
- No maintenance costs
- No civil works costs



	Oil Immersed Distribution Transformers	Dry Type Cast Resin Transformers
Cooling medium	Oil	Air
Place of Installation	Restricted due to special location and civil construction for safety reasons	Flexible and can be located closer to load
Fire Impact	Considered a potential fire and safety hazard. Have a possibility for explosion	Hardly Inflammable, self extinguishing – Fire behaviour classes according to HD 464 S1: Class F1 : transformer is subject to fire hazard
Stopping the operation for maintenance	Yes	No (dry type is free maintenance)
Environmental consideration	Pollution to environment due to oil and toxic substances	No pollution, No content of any halogen, silicones, nitrogen in the insulation Environmental classes according to HD 464.S1: E2 CLASS
Availability of ratings	Available of any range (up to 200MVA)	Available in certain ratings (from 50 KVA up to 10 MVA)
Loading	80% According to IEC	100% According to IEC
Operation at the Over Load	Up to 33% using ONAF (expensive choice)	Up to 40% with the Fans
Maintenance required	-check the oil level -check the dielectric strength of the oil and filter it if it lower than minimum required strength -Dehydrate the silica gel in the breather -On load tap changer maintenance (moving parts)	Keeping the room dust-free
Accessories	-Oil level indicator -dehydrating breather -oil filter plug -buchholz relay -oil thermometer -winding thermometer -terminal box	-Fans (optional) -Enclosure (optional) IP20 up to IP33 -Temperature control unit (standard) Fan start at 130 °c Over temperature alarm 140 °c Over temperature Trip 150 °c
Class of winding insulation	Class A insulation	Class F insulation (Cast under vacuum coils)
Maximum Permissible winding temperature	Maximum temperature for continuous operation is 105 °c and for oil is 100 °c	Maximum temperature for continuous operation is 155 °c
Moisture Impact	Oil is very restricted to moisture increasing due to changing in chemicals properties in oil	Highly moisture-proof. The transformer can operate under 100% relative humidity and be switched on without pre-drying even after a long period of storage. Climatic classes according to HD 464.S1: CLASS C2 :transport, storage and operation down to -25 °C
Durability for over loads and short circuits	Direct effect on the chemical properties of oil which will impact on life time	Little impact due to casting technology and class F insulation as it is able to handle greater short time overloads than oil filled transformers
Life Time	Moderate	High
Dimension Example 1 MVA	Length 1790 mm Height 2090mm Weight 2900Kg	Length 1590 mm Height 1650 mm Weight 2800kg

Elsewedy Electric is a leading provider of integrated energy solutions and implementer of new technology. Elsewedy Transformers has produced the sustainable, safe and inflammable kind of transformers, the DRY TYPE CAST RESIN TRANSFORMERS.

Before this new technology of Dry Resin Transformers we produced and still producing a wide range of oil immersed power transformers to serve the needs of utilities, infrastructure & heavy industries serving both local & export markets.

All products include all ratings up to 200 MVA, 220 kV, & whether step – up / step – down, 3 phases or auto– transformers dedicated for power plants, transmission & distribution substations, industrial sector & many other applications.

Our products are manufactured in conformity with the latest IEC standards & include two main types:

- Hermetically sealed (without conservator)

- With conservator

But with this new technology Elsewedy Transformers has used resin materials for insulation for Dry Type Transformer (ESCART) instead of oil. Therefore it can be used in locations where safety is of utmost importance like high rise buildings, hospitals, wind farms, airports, commercial complexes etc. The demand of Cast Resin Dry Transformers is increasing day by day.

The human safety, positioning flexibility, reliability, cost awareness, life cycle consideration and many other reasons are behind the increase of the demand of Cast Resin Transformers. Elsewedy Electric manufactures Cast Resin Transformers 10 MVA, up to 36 kV.

The policy of Elsewedy Transformer is to provide product that conform to our customers requirements according to international standards and deliver them on time and at a competitive features.



"The Sole Manufacturer in Egypt Producing 10 MVA Dry Transformers"

Cast Resin Dry Transformers

- Ratings up to 10 MVA, 36 kV
- Optional Enclosures; IP20 up to IP33
- Optional Forced Cooling (Allow up to 40% more ratings)



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KEMA 



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Subsidiary of ELSEWEDY ELECTRIC



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WHAT IS FTTX SOLUTIONS...

METHODES & APPLICATIONS

1. Introduction for Fiber to the x

Fiber to the x (FTTX) is a generic term for any network architecture that uses optical fiber to replace all or part of the usual copper local loop used for telecommunications.

The four technologies, in order of an increasingly longer fiber loop are:

- Fiber to the node (FTTN)
- Fiber to the cabinet (FTTCab)
- Fiber to the curb (FTTC)
- Fibre to the kerb (FTTK)
- Fiber to the building (FTTB)
- Fiber to the home (FTTH)

In the actual deployments, the difference between FTTN and FTTC is quite subtle and is mostly that the latter is nearer to the customer than the former.

2. Fibers

2.1 Fiber to the node

Fiber to the Node (FTTN), also called fiber to the neighborhood or fiber to the cabinet (FTTCab), is a telecommunication architecture based on fiber-optic cables run to a cabinet serving a neighborhood. Customers connect to this cabinet using traditional coaxial cable or twisted pair wiring. The area served by the cabinet is usually less than 1,500 m in radius and can contain several hundred customers. (If the cabinet serves an area of less than 300 m in radius then the architecture is typically called fiber to the curb.)

Fiber to the node allows delivery of broadband services such as

high speed internet. High speed communications protocols such as broadband cable access (typically DOCSIS) or some form of DSL are used between the cabinet and the customers. The data rates vary according to the exact protocol used and according to how close the customer is to the cabinet.

Unlike the competing fiber to the premises (FTTP) technology, fiber to the node can use the existing coaxial or twisted pair infrastructure to provide last mile service. For this reason, fiber to the node costs less to deploy. However, it also has lower bandwidth potential than fiber to the premises.

A perfect example is a DLC/NGDLC (Digital Loop Carrier) which some of us get our phone service from. A direct fiber from the CO (Central Office) is terminated at the DLC/NGDLC and then service is delivered to the customers residence via the copper plant.

2.2 Fiber to the Telecommunications Enclosure

Fiber-to-the-Telecommunications-Enclosure (FTTE) is a standards-compliant structured cabling system architecture that extends the optical fiber backbone network from the equipment room, through the telecom room, and directly to a telecommunications enclosure (TE) installed in a common space to serve a number of users in a work area. Its implementation is based on the TIA/EIA-569-B "Pathways and Spaces" standard, which defines the Telecommunications Enclosure (TE), and TIA/EIA-568-B.1 Addendum 5, which defines the cabling when a TE is used. The FTTE architecture allows for many media choices from the TE to the work area; it may be balanced twisted pair copper, multi-mode optical fiber, or even wireless if an access point is installed in or near the TE.



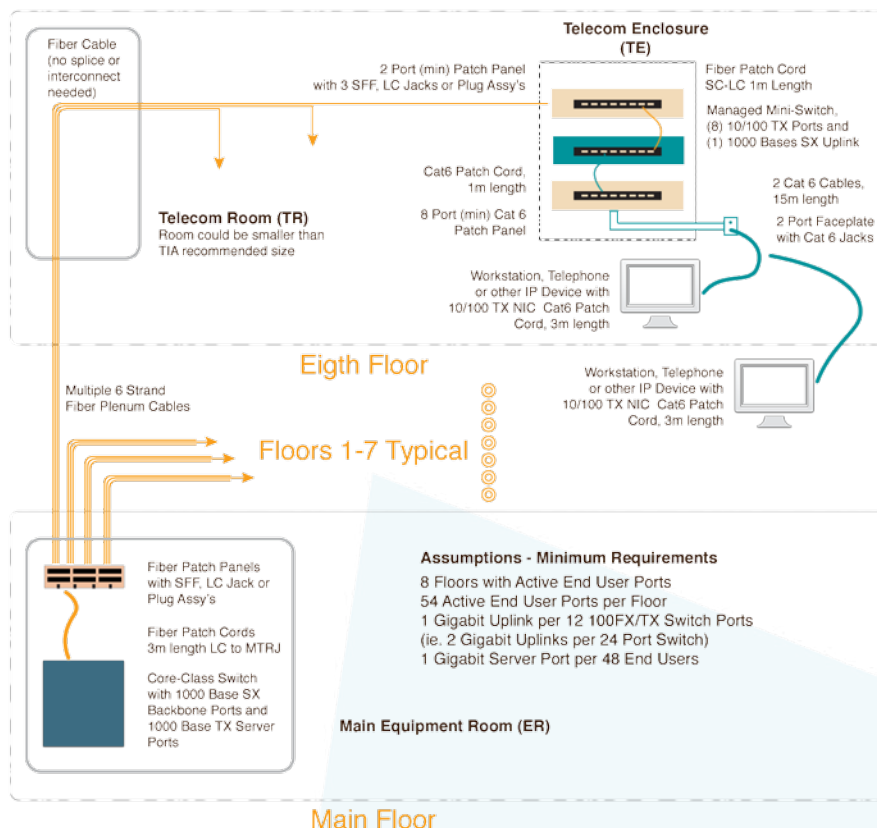


Diagram originally published by the Fiber Optics LAN Section of the Telecommunications Industry Association

Fiber to the Telecommunications Enclosure

high speed internet. High speed communications protocols such as broadband cable access (typically DOCSIS) or some form of DSL are used between the cabinet and the customers. The data rates vary according to the exact protocol used and according to how close the customer is to the cabinet.

FTTC is subtly distinct from FTTN or FTTP (all are versions of Fiber in the Loop). The chief difference is the placement of the cabinet. FTTC will be placed near the "curb" which differs from FTTN which is placed far from the customer and FTTP which is placed right at the serving location.

Unlike the competing fiber to the premises (FTTP) technology, fiber to the curb can use the existing coaxial or twisted pair infrastruc-

ture to provide last mile service.

For this reason, fiber to the curb costs less to deploy. However, it also has lower bandwidth potential than fiber to the premises.

In the United States of America and Canada, the largest deployment of FTTC was carried out by BellSouth Telecommunications. With the acquisition of BellSouth by AT&T, deployment of FTTC will end. Future deployments will be based on either FTTN or FTTP. Existing FTTC plant may be removed and replaced with FTTP.

3. Fiber in the Loop

Fiber In The Loop (FITL) is a system implementing or upgrading portions of the POTS local loop with fiber optic technology from the central office of a telephone carrier to a remote Serving area interface (SAI) located in a neighborhood or to an Optical Network Unit (ONU) located at the customer premises (residential and/or business). Generally, fiber is used in either all or part of the local loop distribution network. FITL includes various architectures, such as fiber to the curb (FTTC), fiber to the home (FTTH) and fiber to the premises (FTTP).

Residential areas already served by balanced pair distribution plant call for a trade-off between cost and capacity. The closer the fiber head, the higher the cost of construction and the higher the channel capacity. In places not served by metallic facilities, little cost is saved by not running fiber to the home.

A similar network called a hybrid fibre-coaxial (HFC) network is used by cable television operators but is usually not synonymous with "fiber in the loop", although similar advanced services are provided by the HFC network.

Depending on the user's needs, FTTE can be deployed in low-density or high-density configurations. A low-density system might use one or two inexpensive 8-port Ethernet mini-switches as an example (these switches have eight 10/100 Mbit/s Ethernet copper ports and one 1 Gbit/s Ethernet fiber uplink). A high-density FTTE design might use commonly available 24-or 48-port switches (these switches are configured with one 1 Gbit/s uplink port per twelve 100BASE-TX user ports). This relatively high work area-to-backbone port ratio provides better performance than is typically provided to enterprise users. Both low and high-density FTTE architectures provide excellent performance in terms of bandwidth delivered to the work area.

Advantages:

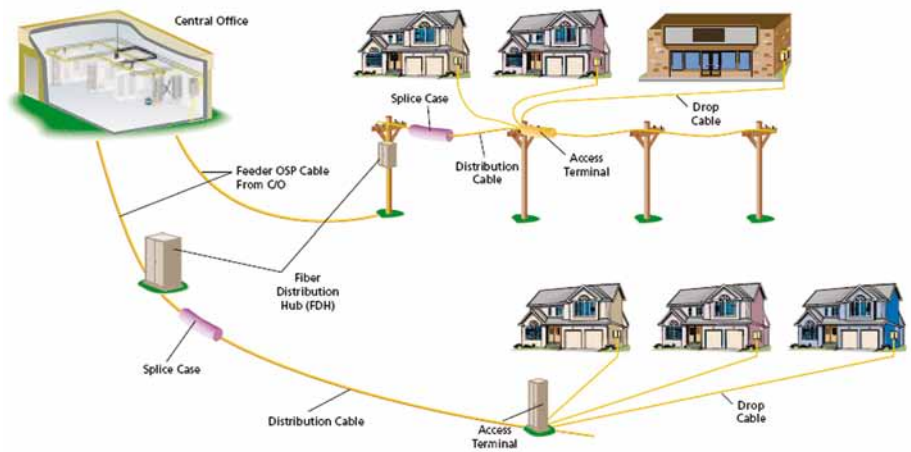
- Low Cost
- Non-blocking or low-blocking performance better supports convergence.
- Extremely flexible to deploy; supports Moves, Adds & Changes
- Enables consolidation of electronics into a centralized Telecommunications Room
- Allows the use of a variety of media from the TE to the user

Disadvantages:

- TE location is near the user and must be secured

2.3 Fiber to the curb

Fiber to the curb (FTTC), also called fiber to the kerb (FTTK), is a telecommunications system based on fiber-optic cables run to a platform that serves several customers. Each of these customers has a connection to this platform via coaxial cable or twisted pair. Fiber to the curb allows delivery of broadband services such as



FDH: Fiber Distribution Hub is the cross connection splice-point for the Central Office Fiber and Distribution Fiber to the FDT's servicing the customers' community. This hub can come in various configurations (Aerial Pole mount / Ground Pedestal), the providers' configuration will typically be the 144 / 216 user count, designed to be a plug and play system for the FDT / Drop Cable connections.

FDT: Fiber Distribution Terminal is the cross connection splice-point between the community serving FDH Distributing Cable, and the Drop Cable to the customers ONT.

DROP CABLE This cable is the final connection to the customers ONT. This cable can be spliced from an aerial / underground FDT. Most providers have moved to a pre-terminated drop cable system, this saves cost and installation time.

ONT: Optical Network Terminal this is the CPE (Customer Premise Equipment endpoint of the ODN.) The ONT is an Optical to Electrical to Optical device that delivers your triple play services. It will replace your existing copper NID (Network Interface Device) , and coax connections. The existing POTS / Coax inside wiring will be cross connected to the SFU (Single-Family Unit) ONT. Since we understand that a PON is completely passive the endpoint must contain an AC voltage connection to perform the Optical to Electrical conversions for your services.



4. Technologies

The two main technologies used for these architectures are VDSL2 (used in FTTN, FTTC and in some FTTB deployments) and PON (the one used in FTTH and in some FTTB deployments).

5. Fiber to the premises

Fiber to the premises (FTTP) is a form of fiber-optic communication delivery in which an optical fiber is run directly onto the custom-

ers' premises. This contrasts with other fiber-optic communication delivery strategies such as fiber to the node (FTTN), fiber to the curb (FTTC), or hybrid fiber-coaxial (HFC), all of which depend upon more traditional methods such as copper wires or coaxial cable for "last mile" delivery.

Fiber to the premises can be further categorized according to where the optical fiber ends:

- **FTTH** (fiber to the home) is a form of fiber optic communication delivery in which the optical signal reaches the end user's living or office space.
- **FTTB** (fiber to the building) is a form of fiber optic communication delivery in which the optical signal reaches the private property enclosing the home or business of the subscriber or set of subscribers, but where the optical fiber terminates before reaching the home living space or business office space, with the path extended from that point up to the user's space over a physical medium other than optical fiber (for example copper loops).

5.1 Optical portion

Optical distribution networks have several competing technologies.

5.1.1 Direct fiber

The simplest optical distribution network can be called direct fiber. In this architecture, each fiber leaving the central office goes to exactly one customer. Such networks can provide excellent bandwidth since each customer gets their own dedicated fiber extending all the way to the central office. However, this approach is about 10% more costly due to the amount of fiber and central office machinery required. The approach is generally favored by new entrants and competitive operators.

A benefit of this approach is that it doesn't exclude any layer to networking technologies, by Passive Optical Network, Active Optical Network, etc. From a regulatory point of view it leads to least implications as any form of regulatory remedy is still possible using this topology.

5.1.2 Shared fiber

More commonly each fiber leaving the central office is actually shared by many customers. It is not until such a fiber gets relatively close to the customers that it is split into individual customer-specific fibers. There are two competing optical distribution network architectures which achieve this split: active optical networks (AONs) and passive optical networks (PONs).

OLT: Optical Line Terminal is the networks control card. This card resides in the local CO (Central Office) cross connected to the video and data networks that will be delivered to your home, it consists of a special DFB (Distributed Feedback) calibrated laser that



is always on. This control card acts as a traffic signal to the remote ONT's for complete data/video throughput upstream and downstream.
(Tellabs) OLT.



ODN: Optical Distribution Network is part of the OSP architecture components. The actual fiber-optic cabling, passive splitters, FDH, attenuators and couplers.

5.1.2.1 Active optical network

Comparison showing how a typical active optical network handles downstream traffic differently than a typical passive optical network. The type of active optical network shown is a star network capable of multicasting. The type of passive optical network shown is a star network having multiple splitters housed in the same cabinet.

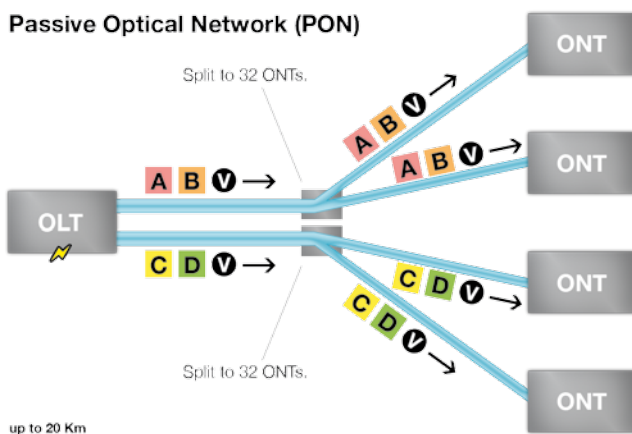
Active optical networks rely on some sort of electrically powered equipment to distribute the signal, such as a switch, router, or multiplexer. Each signal leaving the central office is directed only to the customer for whom it is intended. Incoming signals from the customers avoid colliding at the intersection because the powered equipment there provides buffering.

As of 2007, the most common type of active optical networks are called active ethernet, a type of ethernet in the first mile (EFM). Active ethernet uses optical ethernet switches to distribute the signal, thus incorporating the customers' premises and the central office into one giant switched ethernet network. Such networks are identical to the ethernet computer networks used in businesses and academic institutions, except that their purpose is to connect homes and buildings to a central office rather than to connect computers and printers within a campus. Each switching cabinet can handle up to 1,000 customers, although 400-500 is more typical. This neighborhood equipment performs layer 2/layer 3 switching and routing, offloading full layer 3 routing to the carrier's central office. The IEEE 802.3ah standard enables service providers to deliver up to 100 Mbit/s full-duplex over one single-mode optical fiber to the premises depending on the provider. Speeds of 1Gbit/s are becoming commercially available.

5.1.2.2 Passive optical network

Passive optical network (PON) is a point-to-multipoint, fiber to the premises network architecture in which unpowered optical splitters are used to enable a single optical fiber to serve multiple premises,

Passive Optical Network (PON)

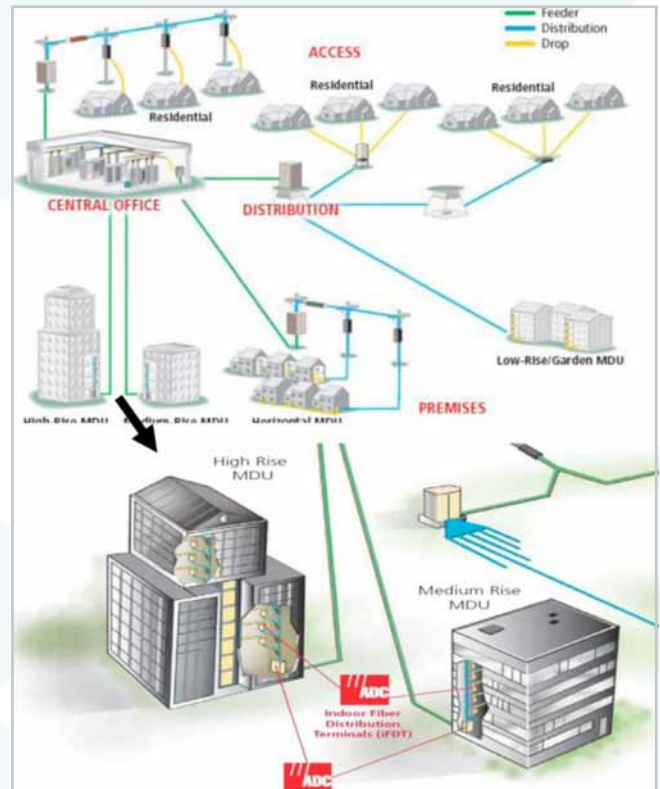


typically 32-128. A PON configuration reduces the amount of fiber and central office equipment required compared with point to point architectures.

Downstream signal coming from the central office is broadcast to each customer premises sharing a fiber. Encryption is used to prevent eavesdropping.

Upstream signals are combined using a multiple access protocol, invariably time division multiple access (TDMA). The OLTs "range" the ONUs in order to provide time slot assignments for upstream communication.

FTTP Structure



iFDH: Indoor Fiber Distribution Hub, same as FDH, just an indoor unit.

iFDT: Indoor Fiber Distribution Terminal, same as FDT, just an indoor unit.

Drop Cable: This cable will enter the customers' apartments from the FDT that's usually located in a closet, or stairwell in a high-rise building. In a small garden-style MDU deployment your drop cable may come from an FDT located on the outside of your building, and routed through the roof breezeway into your apartments designated closet.

ONU: Optical Network Unit, this is similar to the SFU-ONT but for a MDU / MTU, or small business. It contains 12 - 24 POTS Lines, multiple "Ethernet" or "VDSL" connections, and one/two high-powered RG video outputs. These ONT's come in two forms, a wall mountable or rack-mountable unit, they are typically installed in a stairwell area, or basement next to the existing SAI for that floor.

FTTX in brief: is not a new technology, it has been around for some time within the RBOC's (Bell South was one of the first to experiment with FTTL and implement this service back in the late 80's) but as years have passed the technology has advanced along with the reduction cost of fiber, creating what is the broadband craze of today. With this sudden craze and endless possibility of bandwidth, you should keep in mind a few several things. Fiber has the ability of offering a huge bandwidth, but within a PON there are several formats with limitations. These formats are APON (ATM-PON), EPON (Ethernet-PON), and GPON (Gigabit-PON) each has a unique set of features and transport process. At this time there is still a huge debate as to which format is the best and what should be the standard, but at this time most deployments are currently BPON, future deployments by the first of next year will generally be GPON if within the providers' budget.

BPON - PON FSAN / ITU-T G.983

- Fiber Cable Span no more than 20Km (12Miles) of Single-mode fiber
- Asymmetrical 622 (OC-12) / 155 (OC-3) Mbs bandwidth per OLT path of 32 ONT's
- OLT - WDM (Wave Division Multiplexing)
- 1550nm (1480-1580) for downstream
- 1310nm (1260-1360) for upstream
- TDM (Time Division Multiplexing) of ATM packets
- 1:32 Passive Splitter OSP Topology

GPON - PON FSAN / ITU-T G.984

- ** Same as BPON standard except with the following differences
- Asymmetrical 1.2 Gbps or 2.4 Gbps / 155 or 622 Mbs bandwidth per OLT path of 32 ONT's.

5.2 Electrical portion

Once on private property, the signal typically travels the final distance to the end user's equipment using an electrical format.

A device called an optical network terminal (ONT), also called an optical network unit (ONU), and converts the optical signal into an electrical signal. (ONT is an ITU-T term, whereas ONU is an IEEE term, but the two terms mean exactly the same thing.) Optical network terminals require electrical power for their operation, so some providers connect them to back-up batteries in case of power outages. Optical network units use thin film filter technology to convert between optical and electrical signals.

For fiber to the home and for some forms of fiber to the building, it is common for the building's existing phone systems, local area networks, and cable TV systems to connect directly to the ONT.

If all three systems cannot directly reach the ONT, it is possible to combine signals and transport them over a common medium. Once closer to the end-user, equipment such as a router, modem, and/or network interface module can separate the signals and convert them into the appropriate protocol. For example, one solution for apartment buildings uses VDSL to combine data (and/or video) with voice. With this approach, the combined signal travels through the building over the existing telephone wiring until it reaches the end-user's living space. Once there, a VDSL modem copies the data and video signals and converts them into ethernet protocol. These are then sent over the end user's category 5 cables. A network interface module can then separate out the video signal and convert it into an RF signal that is sent over the end-user's coaxial cable. The voice signal continues to travel over the phone wiring

and is sent through DSL filters to remove the video and data signals. An alternative strategy allows data and/or voice to be transmitted over coaxial cable.

In yet another strategy, some office buildings dispense with the telephone wiring altogether, instead using voice over Internet Protocol phones that can plug directly into the local area network.

Why FTTH?

- Extreme information carrying capacity.
- Easily upgradeable.
- Ease of installation.
- Reduced operations and maintenance costs.

Benefits of Optical Fiber :

- Very long distances coverage.
- Strong, flexible, and reliable.
- Allows small diameter and light weight cables.
- Secure (no radiation).
- Immune to electromagnetic interference (EMI).

How do Optical Fibers Work?

- Core
 - Carries the light signals.
 - Silica and a dopant.
- Cladding
 - Keeps the light in the core.
 - Pure Silica.
- Coating
 - Protects the glass.
 - Acrylate (plastic).
- Optical Fibers work on the principle of Total Internal Reflection
- Light waves (modes) are reflected and guided down the length of an Optical Fiber.

Why FTTH? - More capacity

Why FTTH? - Longer distances

Why FTTH? - Fiber versus copper

- A Single Copper pair is capable of carrying 6 phone calls.
- A Single Fiber pair is capable of carrying over 2.5 million simultaneous phone calls (64 channels at 2.5 Gb/s).
- A Fiber Optic cable with the same information-carrying capacity (bandwidth) as a comparable copper cable is less than 1% of both the size and weight.

Glass

- Uses light
- Transparent
- Dielectric material-nonconductive
 - EMI immune
- Low thermal expansion
- Brittle, rigid material
- Chemically stable

Copper

- Uses electricity
- Opaque
- Electrically conductive material
 - Susceptible to EMI
- High thermal expansion
- Ductile material
- Subject to corrosion and galvanic reactions
- Fortunately, its recyclable



Sahl Hasheesh

Operating Partners



Phase I Infrastructure Supervisor



Strategic Assets Development
Consultant



Electrical Networks Design
Consultant



Fiber Optic Network
Contractor



Sewerage Treatment Plant Operator



Desalination Plant Contractor and
Operator



Video-On-Demand Provider



Satellite Data Service Provider

Elsewedy Electric first **FTTX** projects

Customized Solutions to Fit Your Needs...



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Market Insight



EBRD bank approves 1.0 Billion Euro investment for Arab regions

The European Bank for Reconstruction and Development (EBRD) announced that it had approved an investment of 1.0 Billion Euros (\$1.28 billion) for expansion in North Africa and Middle East. After years of investing in mainly private-sector enterprises across ex-communist nations in Europe and central Asia, the EBRD has set its sights on Egypt, Morocco, Tunisia and Jordan following the Arab Spring uprisings.

2.8 Billion SR transport projects underway

There are several transport projects, costing a total of SR 2.8 billion, under various phases of implementation in Madinah and Najran provinces. In Madinah, a number of projects had been implemented while several other projects were under implementation. These projects are estimated to cost a total of about SR1 billion. The projects cover roads, bridges, flyovers, intersections and lighting. The budgetary allocations were made for a number of projects during the current year. Contracts were awarded to many Saudi companies and establishments to implement these projects, such as intersections on Yanbu-Madinah-Qassim expressway, doubling of Khaibar-Al-Hayet road, and completion of doubling of Madinah-Tabuk road.

The department of roads and transportation in Najran was implementing several

road projects costing a total of SR1.8 billion. These included construction of single roads and doubling of roads with a total length of 3,537 km. The road projects, which are under implementation, included intersections at King Abdullah road and Al-Hussein road, Al-Areesa road and Al-Sharfa road, agricultural roads, completion of doubling of Al-Hozam south road and King Abdullah road, and implementation of doubling of Najran-Sharoura-Wadeea-Al-Khodra road.

306 million SR for water and sewage projects inked

Minister of Water and Electricity Abdullah Al-Hussayen has signed a series of contracts on several water and sewage projects in various parts of the Kingdom worth more than SR 306 million. The contracts include implementation of sewage networks in Jazan, Tabuk and Eastern Region with a total cost of SR 107.5 million, SR 79.7 million and SR 13.4 million respectively. The contracts also include supply and operation of water meters and remotely-controlled devices in Qatif and nearby towns present in the Eastern Region, at a cost of SR 13 million, sewage line transfer project in Madinah (SR 12 million), water project in Mahd town (SR 10.4 million), and another water project in Wajh area at the cost of SR 10 million. The contracts cover other projects related to setting up of dams and improvement of water and sewage networks in different parts of the Kingdom.

Algeria begins work on mega mosque

Workers in Algiers started laying foundations for what should become the world's third-largest mosque, a one-billion-euro project that will include a dizzyingly tall minaret. The huge building in the capital Algiers will be built by the China State Construction Engineering Corporation and is expected to create 17,000 jobs most of them for Algerians. Construction is due to be completed in 2015. The construction of this building represents a new landmark in Sino-Algerian relations. The mosque complex will include Africa's tallest minaret, culminating almost as high as the Eiffel Tower at 270 meters (880 feet). It will have 25 levels and eight elevators to whisk observers to the top to view the bay of Algiers. It will also comprise a prayer room for 120,000 worshippers, a 2,000-seat library, an art museum and a research centre.

South Africa's renewable energy bidding programme attracts R70 billion in FDI

The country's renewable energy independent power producer bidding program has lived up to expectations. It has done so by attracting foreign direct investment into South Africa worth about R70 billion over 12 months. The South Africa's department of energy (DoE) announced 28 successful bidders from window 1 of the program at CoP 17 in Durban in November last year.





In May 2012 it has announced a further 19 preferred bidders from the second window under this program. Investment is expected to be introduced into the South

African economy through wind and solar projects in the Northern Cape, Western Cape, Eastern Cape and Free State.

The DoE is set to initiate a fresh bidding round for other technologies, such as co-generation from biomass (including sugar and paper), biogas, landfill gas, and small hydro. Relative to the first window under the bidding process, the DoE says it has seen significant improvement in commitments towards local content and job creation, simultaneously as the selling price of the power has been declining. It will also be introducing the small power (of less than 5.0 MW capacity) bidding round in the next few weeks.

This will be followed by the renewable co-generation bidding round, to harness the sugar and paper opportunity that promises to create new job opportunities. Over and above the renewable energy IPP programme, the DoE has also issued a request for information inquiring about projects that are available from other technologies. It is keen to assess gas, imported hydro, co-generation and coal technologies.

Qatar can't host Olympics until World Cup proof

The IOC board of executives voted unanimously to place Tokyo, Japan and Istanbul, Turkey on its shortlist of application cities. While the votes are not disclosed to the public, an unnamed official told the Associated Press that Doha accrued three votes out of 12, while competing Baku had no votes in favor of its bid. Doha missed out at a similar stage for the 2016 Olympics Games which was eventually awarded to Brazil. IOC board member and finance commission chairman Richard Carrion commented that winning the right to host the 2022 FIFA World Cup was not enough to convince his fellow members that Doha was ready to hold the games. IOC officials were reportedly still concerned that the temperature would be too high for the competition, despite agreeing to let the city move the games to October.

They were also worried that moving the games to later in the year would place it in conflict with television and other sports events held at that time of year. Winning the right to host the Olympics in tandem with the World Cup would have generated a great deal construction work in Qatar. The cost of hosting the World Cup alone is currently estimated to be in the region of \$120 billion.

Dubai Metro amongst the safest in the world, RTA chief says

The Dubai Metro has a fault rate of one sin-

gle fault per four million kilometers and one fault in one metro car every 800,000km, placing it amongst the highest safety standards for modern trains in the world. The Dubai Metro's safety record was excellent when measured by the standards of modern trains' faults worldwide. The decision to provide the highest safety and security levels in the Metro was part of the RTA's vision of providing safe and smooth transport for all commuters. The Dubai Metro has three depots for maintaining and cleaning the trains; two for the Red Line at Al Rashidiya and Jebel Ali and one for the Green Line at Al Qusais. It also has two Metro Operation Control Centres; one at Jebel Ali (as contingency control centre) and the other is the Main Control Centre at Al Rashidiya; which acts as a watchdog for the movement of trains throughout the day to ensure the safety of consumers. Spanning an area of 110,000m², the depot has the capacity to house 40 trains and has a workshop that carries out the internal cleaning of 20 trains and the body washing of eight trains a day. This workshop is also fitted out with gantry cranes and sophisticated electronic systems that enable maintenance work to be carried out on more than one train at a time.

KenGen planning on 485 MW LNG fired power plant

Kenyan electricity generating company KenGen plans to raise funds from private investors for a US\$686 million gas-fired power plant to run on imported liquefied natural gas (LNG). The power company, which relies largely on hydroelectric power, would use the plant to help meet growing demand for electricity and help prevent frequent blackouts in East Africa's biggest economy. The company plans to raise the money for the project by appealing to private investors, and also expects the government to contribute capital. The company is exploring ways to finance the project. They have not raised any funds yet, but are working closely with the private public partnership (PPP) unit on how we can structure the project to be implemented as a PPP project. Because the government lacks funds, PPPs have become a popular method for financing infrastructure projects in recent years. Under similar agreements, private entities and government both con-

tribute capital for projects. However, unlike other arrangements, PPPs usually end up with the government as the owner of the asset. To be based at the port city of Mombasa, the plant will be fuelled by LNG processed at a facility located nearby and will reduce overreliance on the more costly heavy fuel oil KenGen has resorted to during dry spells. Construction is expected to take up to five years.

KenGen generates 1,414 MW from a mix of thermal, renewable energy and existing hydropower dams, while Kenya's electricity consumption stands at 1,200 MW and is rising rapidly as the country strives to industrialize. It is expected that the plant to provide 485 MW to the country and to have an economic life of 20 years. Once in production, the plant may be aided by several large natural gas finds off the coast of Tanzania and Mozambique. Njoroge says that gas will play a major role in fulfilling the region's power needs in the coming years.

Saudi Arabia to invest SR500 billion in water, power projects

The power and water sectors are experiencing a massive boom in Saudi Arabia. The Kingdom is set to invest SR500 billion in these vital utility sectors in the next 10 years. The government had plans to implement a number of water projects by 2022 at a total cost of SR200 billion. Power projects in the coming 10 years will be worth SR300 billion. It is estimated the annual increase in demand for water at seven to eight percent. It is one of the highest rates in world.

Making the case for 1,000 MW hybrid solar power project

The head of one of Oman's largest electricity distribution companies has mooted the idea of a large-scale solar thermal hybrid project based on a mix of renewable, conventional and non-conventional fuel sources, to help meet rapidly escalating domestic energy demand. What proposed is 1,000 megawatts (MW) of hybrid power comprising a solar thermal power plant in combination with other fuels, such as condensate and waste gas from the oil industry, domestic waste as biomass, and refined sweet coal.

Eastern Europe Cable Industry

The Eastern European cable industry is expected to be one of the fastest growing markets globally through 2020. Some speculate that growth rates in the next decade may eclipse China and India. Despite the global financial crisis, Eastern Europe remains a rapidly growing and important production hub. Cable output reached US\$6.8 billion in 2011.

Eastern European Cable Market to hit US\$6.5 Billion in 2012

The Eastern Europe cable industry saw impressive growth rates through 2000-2008, before being hit hard by the global financial crisis. Since then the cable industry has bounced back to become one of the fastest growing markets globally. According to Integer Research's latest study, cable output in the region will top US\$7 billion in 2012, and demand will reach US\$6.5 billion.

IFC to Invest \$1B in Africa's Private Infrastructure

The World Bank's financial lending arm, the International Finance Corp. (IFC), said it anticipates investing \$1 billion into Africa's private infrastructure in 2012. It will focus on transportation, telecommunications, and the power industry including renewable energy. The IFC announced that Africa's continued reform programs and IFC's strategy are coming together at an unprecedented scale in 2012, when IFC will for the first time invest and mobilize more than \$1 billion in private infrastructure in Africa.

The potential for renewable energy in Africa

In Africa, South Africa is investing in wind farms, and along the highways of the Western Cape, one sees a number of solar panels gracing the roofs of government subsidized houses in townships. The national electricity supplier, Eskom, has offered incentive and rebate schemes to households and businesses that invest in solar geysers. In 2011 the World Bank agreed to finance US\$250 million wind (in Vredendal on the West Coast) and solar power (Upington, Northern Cape) projects.

African Infrastructure Investments Improve Water Management

Scaling up regional infrastructure projects will facilitate intra- and inter-regional trade, create integrated energy markets through regional power pools, support water resources management, and spur economic growth. A growing emphasis on opening infrastructure investment to the private sector will both catalyze African economic growth and attract substantial foreign direct investment, said Ahmed Heikal, Chairman and Founder of Citadel Capital. It is a continent of 1 billion consumers, with the right demographics and abundant natural resources. Governance in Africa has been the catalyst of the positive change in investor interest." He added, "Scaling private investment in regional infrastructure projects will help facilitate trade and transport across national boundaries, create integrated energy markets, particularly power pools, support regional water resources management and spark national economic growth."

Kenya to host sub-Saharan Africa's largest wind farm

The Lake Turkana Wind Power project aims to provide reliable, low-cost wind power to the Kenya national grid, allowing the country to reduce its dependency on hydroelectric power. The ambitious project, which is backed by the African Development Bank, marks the largest single private investment in Kenya's history, and should allow the country to diversify from hydroelectric power, which provides around 60% of its electricity needs but is prone to drought and irregular rainfall, leading to blackouts and shortages that dampen economic growth. The wind farm will cover 40,000 acres in Loiyangalani district in north-eastern Kenya, stretching from 450m at the shore of Lake Turkana to 2,300m above sea level at the top of Mount Kulal. Because of the daily temperature fluctuations, there are strong, predictable winds between the lake and the desert, with LTWP estimating average speeds of 11m per second. A total of 365 wind turbines will be erected once 204km of roads have been built or improved to allow access for trucks, which will need to make around 12,000 trips to bring materials to the area.



**ELSEWEDY
CABLES**


Elsewedy Friends Club

Elsewedy Friends Club is a social club, one of its main targets is to support technical electricians by making training courses and scientific seminars to encourage this category to deal with Elsewedy original products through the approved distribution networks, to support them from technical side and raise their efficiency from other side.



Elsewedy friends Club started in 2010 in Egypt and it has a good echo at the local and international levels. Elsewedy friends club trained over a thousand members from all the provinces in Egypt, starting from Alexandria to Upper Egypt. The club members are electrical engineers, contractors, traders, technicians, teachers of technical education and governmental agencies workers.

One of our main targets is to open new markets for our products with the existence of many competitors. Elsewedy Electric have to reach electricians and give them training courses in order to know our products & how to use it in addition to providing the right technical solutions suiting their requirements through electrical installations in residences, how to design and calculate electricity networks, and how to implement the warning system and fire extinguishing.

Elsewedy friends club communicate with members via SMS to tell them about marketing offers, new products, seminars, reactivate the market, increase sales and congratulate them in the holidays.

Through this club, Elsewedy Electric has safety & security rules training courses for them to protect individuals, buildings & equipments from these electrical products that are not complying with the specifications or the counterfeited products.



ELSEWEDY Friends Club Card

The membership of Elsewedy Friends Club is characterized by having these seminars and training courses for free, being a member in the club allows them to have outstanding deals with Elsewedy distribution networks, having special offers and the possibility for them to visit Elsewedy factories to see the products and quality control lines. They can also get closely acquainted with cables and accessories industries and to know our products such as transformers and electrical meters.

The club also provides the electricians with complete awareness to differentiate between Elsewedy original products and counterfeited products which are not complying with the international standards specifications. Elsewedy Friends Club membership allows them to visit all Elsewedy factories in Egypt through winning awards and making competitions among its members. This membership was launched in Egypt, Sudan, and Ethiopia. We are looking forward to extend the membership in other countries such as Algeria, Qatar, Saudi Arabia, Yemen, Syria and Libya.

Ethiopia

Elsewedy Friends club made visits to the Ethiopian factories for the electricians, distributors, traders, teachers, and industrial education students. Elsewedy team made three seminars to give them training courses and by the end of the course the trainee receives a certificate which proves that they passed this course, as well as a membership card in Elsewedy Electricians' Club which allows them to be aware all the time of all the new changes either in Elsewedy's products or in its policies; and allows them to participate in the promoting campaigns of the company. This club has created trust between the electricians and the company.



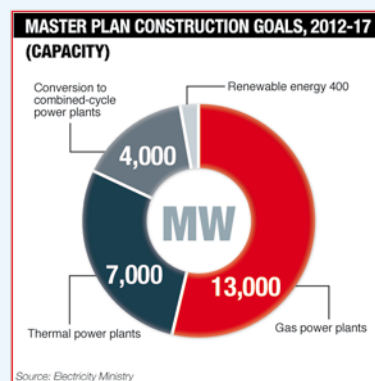
ELSEWEDY POWER Submit Bids for Two EPC Gas Turbine Power Projects in IRAQ

- Iraqi Ministry of Electricity prequalify and invite ELSEWEDY to submit bids in the international tenders for Iraq Power Program
- ELSEWEDY in two EPC bids in joint-venture with "The Arab Contractors" (EGYPT) for Al-Samawa 500MW and Al-Diwaniya 500MW
- Iraq Power Program aims to triple the national power output by 2014

The General Directorate for Gas Power Plant Projects in the Iraqi Ministry of Electricity has prequalified and invited Elsewedy Electric to bid for the international tenders of the Iraqi Power Program. Elsewedy Electric participated, in joint-venture with The Arab Contractors (EGYPT), in two tenders, namely:

- Al-Samawa Gas Turbine Power Project (4 x 125MW); and
- Al-Diwaniya Gas Turbine Power Project (4 x 125MW).

The scope of both tenders is for the EPC (Engineering, Procurement and Construction) of nos. 4 GE Frame 9E gas turbines in each. The gas turbines have been already purchased by the government of Iraq from GE in a mega-deal consists of 56 gas turbines. Split of scope between Elsewedy Power and The Arab Contractors is leveraging on the qualities, experience and capabilities of Elsewedy Electric in the electro-mechanical works as well as of The Arab Contractors in the civil works.



Iraq, holder of the world's fifth-largest oil reserves, is struggling to raise power supplies, which are currently at about 6,000 megawatts, or half of its domestic demand of about 12,000 megawatts. Demand is due to increase by at least eight percent in 2012 per annum.

Elsewedy Electric well-established in the Iraqi market as a holder of very sizable market shares in the cables and transformers supply.

Elsewedy Electric first office in Iraq was opened in 2006 in Erbil and afterwards more subsidiaries of Elsewedy Electric were established in Iraq.

Telecommunication Fiber Optic Backbone System in NIGER between Konni to Zinder, Konni to Tahoua and Konni to the Border of Nigeria

- Elsewedy Electric shall finance, engineer, supply, install and commission the USD 26 Million project in one year
- The project is the first phase of the national telecom backbone

On June 29th, 2012 in Niamey, the Managing Director of SONITEL «Société Nigérienne des Télécommunications», Mr. Abdou MANI, signed with Elsewedy Electric the financing convention for the engi-



neering, supply, installation and commissioning of a Fiber Optic Cable system.

The project amounting USD 26 Million is intended to form the Telecom National backbone between Konni to Zinder, Konni to Tahoua and Konni to the border of Nigeria as first phase of the national plan to connect the entire country with voice & data backbone integrated with the neighbors' backbone of Nigeria and Chad.

Esewedy Electric shall complete the project in 12 months where the Fiber Optic Cables will be supplied from Esewedy Fiber Optic factory in Egypt which is the largest Fiber Optic production facility in Middle East and Africa.

Esewedy Fiber Optic factory has a production capacity of 24,000 km per annum with products ranging from single-core up to 432-cores with triple-sheathing and double-armored structure. It is the only factory in Middle-East and Africa that can produce hybrid-composite cables that contains conductors and Fiber Optic in the same cable.

Many international companies competed for this project but the unique high quality of Esewedy Electric products and its wide

experience in network projects in addition to its attractive project financing terms, etc. All those factors positioned Esewedy Electric as the selected partner by SONITEL.



Mr. Brigi Rafini-The Prime Minister of Niger, Mr. Hazem Haddad-Vice President Esewedy Electric

The Convention was realized after several rounds of evaluation and negotiations with all involved parties including: H.E. Mr. AMADOU BOUBACAR CISSE - Minister of Planning, Spatial Planning and Community Development; and H.E. Mr. SALIFOU LABO BOUCHER - Minister of Communication and New Information Technologies; followed by positive project presentations to H.E. Mr. BRIGI RAFINI - the Prime Minister and finally H.E. Honorable MAHAMADOU ISSOUFOU, the President of the Republic of Niger.

Supplying of three 10 MVA Dry Transformers



Esewedy Transformers is the sole manufacture in Egypt able to produce 10 MVA dry transformers.

A contract was signed by Esewedy Transformers to supply three dry 10 MVA transformers to Al Futtain's Cairo Festival City, the consultant for this project is Shaker and the contractor is Gas Shell.

The first installation of IDIS smart meters taking place in Dubai

Iskraemeco has taken the next step in the interoperability process. The IDIS certified Mx381 smart meter series persuaded the advanced technological company in the United Arab Emirates – DEWA. The smart metering concept, including Iskraemeco meters will come to life in the next few months and will be a technological stepping stone for the Middle East region.

Dubai Electricity and Water Authority (DEWA), constantly strives to accomplish its entrenched philosophy – to meet the growing demands of its customers. DEWA has thus embraced the awareness that a smart grid has become a “must have” for maintaining prosperous customer relationships. The implementation of the smart grid concept is a very realistic opportunity for DEWA, whose intention is to cover the whole territory of Dubai with interoperable smart meters in the coming years.

As a technology enthusiast, DEWA began with the pilot phases of smart grid implementation in the early 2009. The first IDIS pilot installation was entrusted to Iskraemeco because of established business relations between the two companies and Iskraemeco's founding role in the IDIS association. The first IDIS pilot installation



should be completed in the following months and followed by a larger amount of Iskraemeco IDIS meters later this year. True interoperability in this case was considered a high priority for the purpose of avoiding the dependence on a single meter supplier.

For now, this is the first installation of truly interoperable IDIS meters. The multi apartment skyscrapers in Dubai will feature a complete smart system: Iskraemeco Mx381 smart meters and concentrators, water meters and existing MDM software. The system will run on a new dimension of DLC communication, enabling much faster communication rates. The installation of Iskraemeco smart meters in the Middle East region is not just a great opportunity for Iskraemeco but also for the IDIS association and further implementation of the interoperability concept.



ENPI CBC Mediterranean Sea Basin Programme Pre-Selects ELSEWEDY ELECTRIC as Partner for The Project Small Scale Thermal Solar District Units for Mediterranean Communities (STS-MED)



- The process is managed by the Privatization Inter-ministerial Committee
- European Neighborhood and Partnership Instrument for Cross-Border Cooperation (ENPI CBC) have pre-selected Elsewedy Electric as partner for its small scale thermal solar district units for Mediter-

anean communities (STS-MED) project.

The project is 90% funded by the European Union, through its Europe Aid Development and Cooperation, to build small scale thermal solar district units in Cyprus, Jordan and Egypt.



Though the project value is relatively low, approximately five million Euros, it brings a to Elsewedy Electric new and unique know-how and reflects the trust of the international organizations in its qualities and capabilities.

The consortium of Elsewedy Electric in this project includes also ARCA Consortium which is the applied research arm of University of Palermo and others.

Elsewedy bids for the privatization of electricity distribution and supply business in KOSOVO

- KEDS serves 400,000 customers and operates Kosovo's entire distribution network
- Government of Kosovo appointed the IFC as Lead Advisor for the privatization and sale with support from US-AID, European Commission and the World Bank
- Kosovo, with a population of 1.7 million, has an estimated 15 billion tonnes of lignite reserves for the coal-fired plants that produce almost all its energy

On May 21st, 2012 Elsewedy Electric has submitted its bid to buy Kosovo's state-run Electricity Distribution and Supply business (KEDS) as part of the government's effort to liberalize the energy market and reduce losses.

The bid is for a 100 percent stake in KEDS, a unit of Kosovo Energy Corporation (KEK). KEDS serves 400,000 customers and operates Kosovo's entire distribution network, which has faced years of financial losses due to technical problems and poor collection of bills. Under the privatization plan the network's new owner will be responsible for collecting debts totaling 400 million Euros accumulated over 13 years. In return, the winning bidder will receive 20 percent from each collected bill.

By acquiring KEDS, ELSEWEDY plans to derive substantial economic benefits from O&M improvement through: (a) the reduction of technical losses; (b) the reduction of the huge commercial losses and increase of collections; and (c) modern management to reduce of operation costs.

Considering that Kosovo is strongly interconnected with all the four bordering countries 400 kV neighbor-grids, which already forms part of the EU integrated energy market, Elsewedy Electric leverages on the first-mover advantage especially Kosovo enjoys a customs-free access to EU, US market and Central European Free Trade Area. Kosovo has one of the world's largest proven reserves of the coal in the world, with more than 15 billion tons of lignite, worth more than 350 billion dollars in today's market.



ZAMBIA

Mr. President Micheal Chilufya Sata had ruled Zambia late 2011 and his main goals and targets were to:-

- 1- Build a modern country of Zambia
- 2- Increase both local and foreign investment in the country
- 3- Improve the infrastructure in Zambia roads, bridges, water, electricity, etc.
- 4- Improve living conditions of all the citizens through allocating new jobs and make developments mainly in strategic and critical areas.

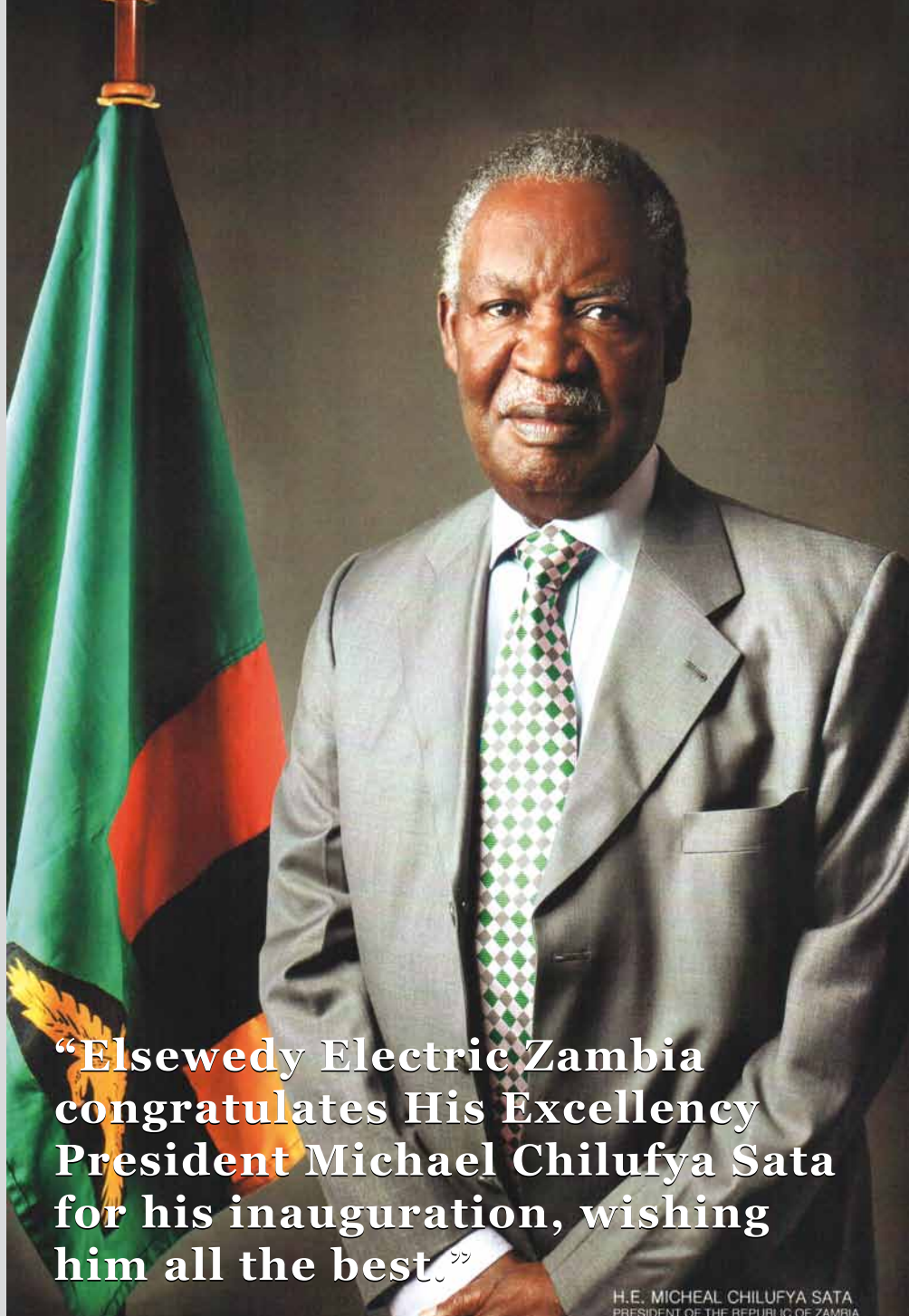
His Excellency's means to reach these goals are in adopting new procedures and policies that would create best working environment in Finance, Trade, IT, innovation, develop and improve local industries, encourage exporting Zambia products specially with countries where there are trade agreements like Comesa and Sadc.

To achieve Mr. President's goals, Elsewedy Electric Group through the cooperation with Zesco, established a local Zambian company (Elsewedy Electric Zambia Ltd.) which is supporting and developing the Zambia Infrastructure in electricity through electric Transformers industry.

Furthermore, Elsewedy Electric Transmission and Distribution, is also co-operating with Zesco to develop and modernize and establish new power distribution and transmission stations in both Zambia rural and urban areas. This will make us achieve the goal of providing electricity to these areas.

Elsewedy Electric through its activities in Zambia market seeks to achieve several goals, mainly:-

- Support, develop and strengthen the Zambia Infrastructure through providing power transformers industry and transferring electricity throughout Zambia specially the rural areas.
- Providing an industrial product that had been totally manufactured in Zambia (marketing and exporting a local product made in Zambia by Zambian workers).



- Providing new jobs for Zambia workers, training them on the latest technology for manufacturing transformers.
- Signing agreements with Zambia contracting companies that assist the company in achieving its work in Zambia.
- Open new markets with the neighboring countries promoting the Zambian transformers through both Comesa and Sadc trade agreement.

Moreover, beside Elsewedy Electric current achievements in serving the Zambian

citizens, the company is still attempting to extend its service and presence in Zambia, trying to provide more services and support to the promising Zambian economy through several means where the company is a leader in power cables and electric meters.

As for energy projects, the company planned in the near future to exploit the natural energy resources, like Solar Energy.



STRATEGIC MILESTONES

EGYPT



Elsowedy Transformers signed a contract with EETC for the supply of 12 power transformers around Egypt

Elsowedy transformers signed a contract with (EETC) to deliver, supervise, test, commission & install a Fire Fighting System for 12 power transformers 125 MVA, 220/66/11 KV after a fierce competition with international suppliers Siemens (Germany), ABB (India), Hyundai (Bulgaria), Iljin (Korea), Getra (Italy), Weg (Brazil), Dachi & LEEEC (China). The contract worth 15 million dollars and the execution period is 12 months. This tender was issued on April 2011 and the contract was signed on 7 May 2012.

Banha 750 MW Combined Cycle Power Station- 2012

Owner: Middle Delta Electricity Production Company

Project Description: Contract Package for Electrical Equipment/ Instrument Installation, CP-117

Scope of work: complete engineering, procurement, panel fabrication, supervision and testing & commissioning services for all Electrical Balance of plant.

Giza North 1500 MW Combined Cycle Power Plant- 2012

Owner: Cairo Electricity Production Co.

Project Description: Contract Package for Electrical Equipment/ Instrument Installation, CP-117

Scope of work: electrical & mechanical installation, supply of steel structure and accessories and Hydro testing of pipes within the aforementioned package

EZZ Steel Factory- 2012



Owner: Ezz El Dekhila Steel Co.

Project Description: Ezz El Dekhila Steel Company 220KV Substation Extension

Scope of work: PSP as the main EPC Contractor is in charge of the installation of 33kV GIS and Control Panels, 125/150 MVA, 220/33kV Transformer, Dismantling of 80/110MVA, 220/33kV Transformer, 33kV Metal Clad Switchgear Modification Works and Cables, Supply of Cable Ladder & Accessories.

6th October Simple Cycle Power Project 600 MW- 2011



Owner: Cairo Electricity Production Co.

Project Description: Electrical Works within Civil Package

Scope of work: PSP was selected to be the EPC Contractor to install, start-up testing & commissioning of all electrical works including but not limited to main generator accessories, main and Auxiliary transformers, Isolated bus ducts, Generator circuit breaker, MV and LV switchgear, batteries, chargers, instrumentation, cables and cable trays.

Loreal Factory- 2011



Owner: L'oreal

Project Description: Electrical Services within Civil Package

Scope of work: PSP was selected to be the main EPC Contractor to design, supply, install, start-up testing & commissioning of all electrical works including but not limited to M.V switchgear, Main Transformers, L.V switchgear, Diesel Generator, Communication system, lighting system, fire alarm, UPS system, Telephone System, Intrusion Alarm, Video Surveillance, Access Control, Video Conference, Cables and Cable Trays.

El Ain El Sokhna 2x650 MW Supercritical Thermal Power Plant- 2011



Owner: East Delta Electricity Production Company

Project Description: Contract Package for Electrical Equipment/ Instrument Installation, CP-117

Scope of work: Design, fabricate, furnish, deliver to site, store, supervise, train, perform the Testing, Commissioning, Start up place into successful operation and maintain until taking over and acceptance certificate protection system for main set up transformer and auxiliary transformer, cables raceways, test equipment, DC system and instrumentation, through the consortium of Electrotharwat & EGYTECH (Elsewedy).

Damietta 4x125 MW Gas Turbine Power Plant- 2011



Owner: East Delta Electricity Production Company

Project Description: Power Evacuation Package/ Protection Systems

Scope of work: Designing, engineering, fabricating, furnishing, delivering, receiving, storing, installing, testing, commissioning and start-up of four (4) Generator Circuit Breakers, four (4) Isolated Phase Bus (IPB) with all associated steel structure and platform for four (4) 125 MW Gas Turbine Units.

El Shabab 8x125 MW Simple Cycle Gas Turbine Unit- 2011



Owner: East Delta Electricity Production Company

Project Description: Power Evacuation Package/ Protection Systems

Scope of work: Furnishing, delivering, receiving, storing, installing, testing, commissioning, start-up, maintain until issuance TOAC and put into successful operation permanent yard lighting, paging central system, electrical works for buildings and installing cable pulling.

Katameya Air Base



Owner: Egyptian Air Force

Project Description: All Electrical Works within the Airbase

Scope of work:

PSP was selected by the JV (CCC/ Hassan Allam) to be the EPC Contractor responsible to perform all the electrical works within the airbase

Emaar Project

Project Description:

Emaar Misr awarded Iskraemeco the project of supply and installation of Advanced Metering Management System (AMMs) smart meters in both Marassi (North Coast) and Up Town Cairo in the heart of Mokattam, projects include supply, installation and commissioning of:

- 1,600 Energy smart meters in "Marassi" as a startup phase up to 2,000
- 400 Energy Smart Meters in "Up Town" as a startup phase up to 5,000
- Metering Data Management system (MDMs)
- Billing System
- Integration and support for remote reading and automated system control

1 million meters record for the Egyptian Utility in one year time

Iskraemeco Egypt scored 1 million meters supply one month ago for the Egyptian utility (9 distribution companies) in 14 months starting March 2011, it's the highest supply ever in Egypt, Iskraemeco is now the leader in the Egyptian Utility market with a market share of 65% that is expected to be 75% by end of Y2012, worth mentioning that the 1 million meters are all single phase of type: SPARK ME152-1

ERC Sahl Hasheesh

Project Description: 40 Million sqms Touristic project

Scope of work:

Consultant and main contractor for the fiber network (FTTX project). In collaboration with:

- BECHTEL-Phase 1 Infrastructure Supervisor
- SABBOUR ASSOCIATES – Strategic Assets Development Consultant
- SHAKER- Electrical Networks Design Consultant
- BT- Satellite Data Service Provider

UAE



33/11kV Substation and associated cabling works in Khalifa port & Industrial Zone, Area A, Taweelah (1001-272)

Client: Abu Dhabi Ports Corporation (ADPC)

Contractor: Larsen and Toubro Ltd.

Scope: Supply of 300 KM of 3X300Sq.mm 33KV Power Cable

Supply of Earthing Materials for DEWA CE/0152A/2011

Client: Dubai Electricity and Water Authority (DEWA)

Scope: Supply of 1X95Sq.mm Bare Copper Conductor

Extension of Hamriya Phase II Sub Station

Contractor: GECO Mechanical and Electrical Ltd.

Scope: Supply of 1X630Sq.mm 33KV lead sheathed Power Cable

ADCO Bab Thamama- G Habshan -2 1.8 MMBOPD Phase 1 Development Project

- Instrumentation cables: 600 km
- LV cables: 780 km
- 33 and 6/10 kV : 30 km
- contractor : NPCC

ADCO Quswira Full Field Development 1.8 MMBOPD Project

- Instrumentation Cables: 400 km
- 33 and 6/10 kV: 80 km
- Contractor: NPCC



Development of Shamkha South Infrastructure Lot 1 & Lot 2

Client: Musanada

Consultant: Mott MacDonald - Decon International

Contractor: Ghantoot Transport & General Contracting Est.

Scope of work: - Supply of 400 Km of 3X300Sq.mm 22KV Power Cable
- Supply of 890 Km of LV Cables

JORDAN



Market leaders in Jordan

Iskraemeco has a 100% Market share of energy meter in the Jordanian Market with an annual average supply of 120,000 meters in JEPCO, EDCO and IDECO, as claimed last March 2012. All types of electronic non-prepayment meters mainly single phase ME172 and 3-phase MT173, in addition to the Industrial/Grid meters MT831 class 0.5s and MT860 class 0.2s

IRAQ



Diala's contract in Iraq

Iskraemeco won the tender of the first production line for Complete knock Down (CKD) Electronic Meters of types SPARK ME152-1 and SPARK MT153 in Iraq as partnership with Diala manufacturing Co., with an estimated annual production quantity of 300,000 meters. Diala Co. is the main supplier of energy meters in Iraq, used to have a line for Electromechanical meters that is now turning into the Electronic ones using Iskraemeco technology.

Various awarded contracts in Iraq

- First time in Iraq, Iskraemeco signed a contract to provide Electrical Authority of Upper Euphrates region with 350 High precision Multifunction Electronic meter MT860 Class 0.2s
- First time in Iraq, Iskraemeco provided 2000 STS Prepaid system meters for 3 Different private compounds in Iraq through KARDU Group



RWANDA

**21K STS meters in Rwanda**

Iskraemeco supplied SIAME, the Tunisian metering manufacturer, with 21,000 STS Prepaid system meters (semi-finished) as an OEM for STEG International project in Rwanda with RECO (Utility in Rwanda)

KENYA

**A contract with 12 million USD between Elsewedy Electric & Kenya Power Co. KP**

Elsewedy Electric signed a contract with Kenya Power Co. KP to supply low voltage cables with around 12 million USD. Contract was signed by Eng. John Ombui, KP Chief Manager, Supplies, Stores & Transport and Eng. Ali Tammam from El Sewedy Electric. Elsewedy Electric already supplied the 1st & 2nd shipment, and our goal is to complete the supply of the order before end of 2012.

EQUATORIAL GUINEEA

**Demodulation, Modernization and Adaptation of (DJIPLOHO) System Structure the Electric Network of the Continental Region of Evinayong City**

Teodoro Obiang Nguema Mbasogo-President of Equatorial Guinea

Project Description:

Ministry of Mining, Industry and Energy - Republic of Equatorial Guinea desires to improve, secure supply of electric energy, facilities of Electric network of Evinayong City Whereas the Contractor EL-Sewedy Electric T&D is one of the largest companies in supply and install the electric materials in Republic of Equatorial of Guinea, as the offer to supply and install electric materials, equipment and accessories to Evinayong City.

The scope of work shall involve the provision of services including: supply, install electric equipment, accessories and electric materials to the electrification of Rural Evinayong, work load includes the following:

- Thermal plant
- Medium voltage network : length of medium voltage shall not be less than 20 KM
- Low voltage network : includes Network of low-Voltage Distribution with 400V Capacity & housing connections
- Public lightening networks
- Capacity
- Observation
- Dismantling of the Old Network

BRAZIL

**Galvao Wind Farm**

Supply of medium voltage cables 20/35 kV to ABB Brazil for a wind farm project "Galvao" in Brazil with a value of one million USD.

TURKEY

**Selex (Ansaldo)**

Project Description: Turkish Railway

Scope of work: Supplying of 500 Km of 48 F cable

KUWAIT

**ABB**

Project Description: Mina Abdallah Kuwait

Scope of work: Supplying of 24 Km of 24 F cable

University of Kuwait Campus 1 & Campus 2

Project Description: New campus for Kuwait University students

Main Contractor: Kharafi National

Contract Value: 1.5 million USD

Scope of work: Design, supply, installation supervision, testing and commissioning of Medium Voltage Dry Transformers 4 MVA -11/33 kV, supplied quantity: 20 transformers.

Ministry of Electricity and Water

1-Project Description: Sabah Al Ahmed (Phase 1)

Contract Value: 41,500,000 USD

Scope of work: MEW 4388/2011/2012. Supply and installation of 132 KV cables and accessories on turnkey basis.

2-Project Description: Abu Fataira

Contract Value: 55,400,000 USD

Scope of work: MEW 4387 /2011/2012. Supply and installation of 132 KV cables and accessories on turnkey basis

RIZZANI DE ECCHER / OHL joint ventur

Project Description: Jamal Abdul Nasser road

Main Contractor: Kharafi National



Contract Value: 34,600,000 USD

Scope of work: Supply, Installation and relocation of (HT/MT) 33KV and 132 KV cables

GHANA



Supply Improvement to the Western Region Project



Ahmed El Sewedy-CEO of Elsewedy Electric, Yaw Darkwa-Elsewedy Electric Partner in Ghana, Ahmed Azouz-Country Manager of Elsewedy Electric Ghana & Charles A. Darku-CEO of GRID Co

Client: Ghana Grid Company Limited (GRIDCo), which is in charge for the transmission networks in Ghana.

Contractor: Elsewedy Electric T&D

Contract value: USD 65 million

Scope of work:

- Turn-key on EPC basis for the following works:
- Expansion works at Asawinso 161kV Substation.
- Turn-key construction of new 161kV Substation at Juabeso.
- Turn-key construction of new 170km, 161kV twin bundle Transmission Line between Asawinso and Mim through Juabeso.

Project duration is 18 months

NIGERIA



Supply of 100,000 units of prepaid water meter with smart card

Client: ENUGU State government – Ministry of Water resources

Project contract value: \$ 11,878,527.6

Project Description: Supply 100,000 units of intelligent water prepaid meter with the vending system and 40 POS (points of sales) to cover all the state. This includes the full training course for the staff who will work on the system to run, operate and maintain the system with the meters.



ZAMBIA



ZESCO 274MVA Transformers substations

Project Description: Elsewedy Electric T&D awarded by ZESCO, Zambia the construction of 10 new Transformers substations with a total capacity of 274MVA, the update of existing substation and the Construction of almost 150km of Medium Voltage Overhead Transmission Lines in both Lusaka & Copper Belt regions. Scope includes all associated Civil, Surveying and all Electro-Mechanical works needed.

Scope of work: Construction, commissioning and handing over the following:

- Seven new 33/11KV,20/26MVA substations
- Update of seven power transformer complete with transformer bays [one 132/88/33KV 52MVA, one 33/11KV 30/40MVA and five 33/11KV 20/26MVA]
- One 66/11KV,20/26MVA substations
- One 66/11KV,30/40MVA substations
- One 66/33KV,20/26MVA substations
- 20KM of 11KV OHTL single circuit.
- 10KM of 33KV OHTL Double circuit.
- 26KM of 33KV OHTL single circuit.
- 90KM of 66KV OHTL single circuit.

LIBYA



Overhead transmission lines in Libya



Project Description: A rehabilitation project in Benghazi, to construct a 220kV Double-Circuit Overhead line on Steel Towers for 40KM with OPGW.

GECOL contract with Elsewedy Transformers

Elsewedy Transformers signed a contract with General Electric Company of Libya (GECOL) to supply and supervise 50 Power Transformers 20MVA, 66/11 kV with around 11 million USD.

ALGERIA



Production of High Voltage cable underground 66 kV for the first time in Algeria by Elsewedy Cables



Mr. Bouterfa Sonelgas CEO, Mr. Kinane Djilali Sonelgas General Manager of Industrial development & National Integration, Mr. Ahmed El Sewedy CEO of Elsewedy Electric, Mr. Adly Kafaty General Manager, Mrs. Hakima Aroudj Business Development Manager, Mr. Riad Fellouh Factory Manager

Scope of work: Supply of Underground Cable, 60 Kv-630 mm² for CAMEG

Contractor: Larsen and Toubro Ltd.

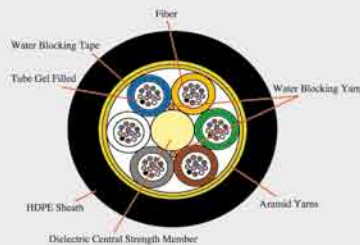
Contract value: 21 million USD



Best Quality.. Highest Efficiency



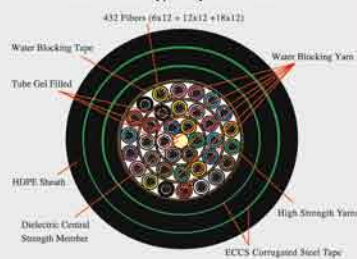
Aerial (ADSS) All Dielectric Self Supporting Loose Tube Type Dry Core Cable



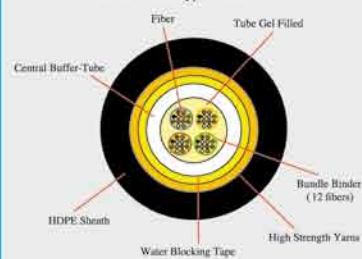
Aerial (Figure 8) Self Supporting Loose Tube Type Dry Core Cable



Triple Sheath Direct Buried Rodent Protected, Loose Tube Type Dry Core Cable



Duct Uni-Tube (Non-Metallic) Central Buffer Tube Type Cable



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uic-fiber@elsewedy.com
19159 www.elsewedy.com

**ELSEWEDY
TELECOM**

Subsidiary of ELSEWEDY ELECTRIC



INVESTORS' Updates

STOCK INFORMATION

- **INCORPORATION:** Egypt
- **SECTOR:** Industrial Manufacturing
- **INDEX:** EGX 30
- **FULL LISTING:** The Egyptian Exchange (SWDY.CA)
- **ISSUED SHARES:** 223,418,000 shares at September 12th 2011
- **FREE FLOAT:** 25%
- **SHARE PRICE:** (22nd July, 2012) 23.00 LE.
- **MARKET CAPITALIZATION:** 5.139 Billion EGP



Elsewedy Electric posts flat growth in Gross Profit, with 11% decline in EBITDA versus Q1 2011, whilst QoQ witnessed a strong recovery with Gross Profit increasing by 21% and EBITDA increasing 43%. Net Income after Minority stood at EGP 98 million.

Q1 2012 versus Q1 2011

- Consolidated Revenues in Q1 2012 decreased by 3% to reach EGP 3.5 billion versus EGP 3.6 billion in Q1 2011, whilst Gross Profit remained flat to reach EGP 442 million in Q1 2012.
- EBITDA in Q1 2012 decreased by 11% to reach EGP 297 million versus EGP 336 million in Q1 2011.
- Net Profit after Minority reached EGP 98 million during Q1 2012 versus EGP 171 million during Q1 2011.

Q1 2012 versus Q4 2011

- Consolidated Revenues decreased by 9% to reach EGP 3,457 million for Q1 2012, versus EGP 3,799 million in Q4 2011.
- Gross Profit increased by 21% to reach EGP 442 million during Q1 2012, versus EGP 366 million in Q4 2011.
- EBITDA increased by 43% to reach EGP 297 million in Q1 2012, versus EGP 207 million in Q4 2011.
- Net Profit after Minority Interest reached EGP 98 million in Q1 2012 versus negative EGP 19 million for Q4 2011.

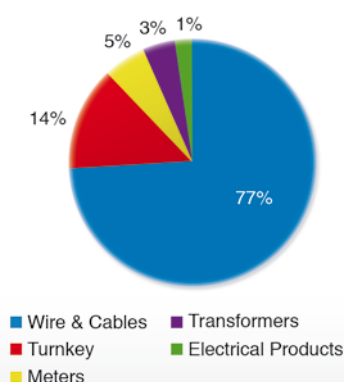


REVENUE BY SEGMENT

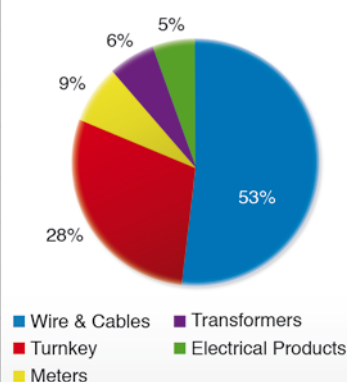
EGP (000)'s

Segment	Q1-2012	Q1-2011	%	Q1-2012	Q4-2011	%
Wire & Cables	2,677,633	2,719,021	-2%	2,677,633	2,852,030	-6%
Turn Key Projects	445,072	525,015	-15%	445,072	650,470	-32%
Meters	162,982	152,347	7%	162,982	194,409	-16%
Transformers	107,772	117,877	-9%	107,772	56,387	91%
Other electrical products	63,381	39,107	62%	63,381	46,153	37%
Total	3,456,840	3,553,367	-3%	3,456,840	3,799,450	-9%

Q1-2012 Revenue By Segment



Q1-2012 Gross Profit by Segment



“

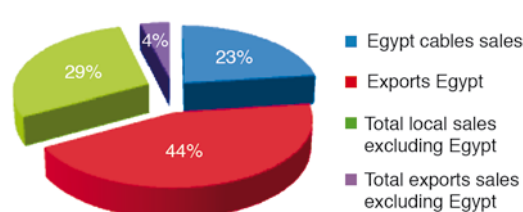
The environment that we operate in continues to be challenging, however we were able to improve the performance of the group versus the previous quarter. In Egypt the electricity authority is still going ahead however there is slight pressure given longer payment terms. We expect similar revenue levels in 2012 in Egypt compared to 2011, however we expect a marked improvement in Egypt in 2013 once the presidential elections are behind us with political stability restored and the focus back again on infrastructure spending. Our Egyptian operations saw a drop in local sales, however on the export side volumes continued to increase as compared to Q1 2011. On the export side, Libya looks positive with a pickup being seen this quarter in all the products including cables, transformers, meters and turnkey. As for the wind turbines destined for Libya, the LC has been opened and we are currently in the shipping stage. From the indications we are receiving we are quite optimistic that the remaining balance of the contract will be shipped during 2012 and first half of 2013. As for our cables op-

eration in Syria, approximately 20% of sales were for the local market and the balance for the export markets most notably Iraq and the GCC. We continue to be optimistic on our operations in Qatar and are very positive on Algeria where we have added HV cables to our portfolio of products.

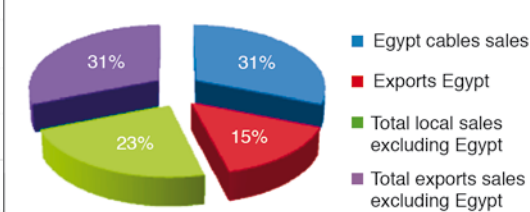
As for the other segments, we continue to be optimistic on the turnkey with a continued focus on projects in Africa. In addition we have a substantial number of HV cable projects in Qatar, Kuwait, Egypt and Arbil. Regarding the transformers Egypt and Zambia are performing well and we expect Syria and Nigeria to pick-up during the third quarter. In Egypt, we recently got KEMA certification for our dry transformer with a rating of 10MVA, which is a significant milestone for the factory as it is the first factory in Egypt and the Middle East to be certified in this rating. As for the meters we are expecting a good year with a continued improvement in the profitability.

Ahmed Elsewedy
President & CEO
ELSEWEDY ELECTRIC

Cables Sales



Electrical Products Sales



Elsewedy Electric Consolidated Financial Statement (Income Statement)

EGP (000)'s

000's L.E.	Year end 2010	Year end 2011	Q1-2012	Q4-2011
Sales				
Wires & Cables	9,828,544	11,306,128	2,677,633,419	2,852,029,947
Electrical Products	1,383,377	1,338,459	334,135,035	296,949,559
Turnkey Projects	1,690,100	2,524,617	445,071,677	650,470,333
Total Sales	12,902,020	15,169,204	3,456,840,131	3,799,449,840
COGS	(10,914,190)	(13,257,512)	(3,014,507,779)	(3,433,063,329)
Gross Profit	1,987,830	1,911,691	442,332,352	366,386,511
Gross Profit Margin	15.4%	12.6%	12.8%	9.6%
SG & A	(851,159)	(900,599)	(230,854,012)	(260,640,861)
Other Operating Income	139,444	85,711	22,619,315	28,406,745
Other Operating Expenses	(188,883)	(42,642)	(20,609,413)	(14,896,323)
EBITDA	1,366,317	1,384,828	297,211,444	207,323,849
EBITDA Margin	10.6%	9.1%	8.6%	5.5%
Depreciation	(279,086)	(330,666)	(83,723,202)	(88,067,776)
Fx Gain	(12,717)	(110,733)	9,604,813	(32,983,695)
Provisions	(3,257)	731	(6,319)	(8,156,411)
EBIT	1,071,257	944,160	223,086,736	78,115,966
Interest Expense	(220,798)	(371,671)	(103,061,709)	(112,283,936)
Interest Income	57,320	61,193	17,018,173	23,247,648
EBT	907,779	633,682	137,043,199	(10,920,322)
Tax	(91,142)	(97,134)	(34,320,738)	(11,981,714)
Net Income	816,637	536,548	102,722,461	(22,902,036)
Minority Interest	(21,108)	(27,429)	(4,382,088)	3,701,670
Net Income After Minority Interest	795,529	509,119	98,340,373	(19,200,366)

By March 31st, 2012 our cables backlog reached 85,000 tons geographically diversified in the Gulf, Egypt, Europe, Africa and the Middle East.

World electricity generation is projected to grow 87% over the next two and half decades, from 18.8 trillion kWh in 2007 to 25 trillion kWh by 2020 and 35.4 trillion by 2035.

In more concrete terms, the world needs the equivalent of 25,000 additional 500 MW coal-fired power plants by 2030.



Reaching You in Several Applications..



Energy & Infrastructure

Your Applications...

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- Water & waste water treatment
- Transportation infrastructure: airports tunnels
- Data centers & telecommunication
- Production & injection well control systems



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Your Applications...

- Cable manufacturing
- Automobile
- Cement, aluminum and steel
- Food & beverage packaging
- Pharmaceuticals & chemicals



Buildings

Your Applications...

- Office buildings
- Shopping centers
- Industrial buildings
- Hotels & hospitals
- Water lagoons
- Warehouses
- New compounds



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Your Applications...

- Single family homes
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19159

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ELSEWEDY
ELECTRIC

Around The Globe



ELECRAMA 2012

Mumbai, India (18 - 22 January)

ELECRAMA 2012 is the exclusive forum for the Electrical and Electronics industry in India. It is the essential showcase for trade and users of the Electrical and Electronics industry as well as related products, services and technologies.

It is one of the largest electrical T&D exhibition held every two years in Mumbai, India since 1990. ELECRAMA is now the world's largest one-stop-shop for electrical and industrial electronics.

In its ninth edition ELECRAMA-2010 hosted 1,243 exhibitors from 23 countries including India and attracted 1,05,209 footfalls into the exhibition including visitors from 120 countries.

Serving the needs of international customers with high standards in safety, efficiency and quality is a key concern of Elsewedy Electric that is why we have decided to participate this year in ELECRAMA2012 international hall as one of the foreign exhibitors representing Egypt.

This exhibition was really successful as we have met with a lot of industry experts (technical, marketing and finance people) from varied sectors which enabled us to develop our knowledge base and provide our clients with the best services.

Middle East Electricity 2012

United Arab Emirates- Dubai (7-9 February)

This year's show was opened by H.E. Dr. Rashid Ahmed Bin Fahad, Minister for Environment and Water and witnessed a large number of exhibitors, exceeding last year's record to encompass 1043 exhibitor from 56 countries.

The leading energy event showcased products and services in the power, lighting, new and renewable energy, nuclear and water sectors. Middle East Electricity 2012 attracted more than 45,000 visitors from 118 countries around the world.

Knowing to exist in one of the region's most competitive markets, the Elsewedy Electric was among the strongly present exhibitors, and has managed to successfully show the group's 8 sectors through its diversified products and services portfolio, which has gained popularity among local and regional clients. The dedicated sales teams from the UAE, Qatar, Kuwait and Saudi Arabia held several meetings during the show with their wide customer base including contractors, traders, project developers and owners as well as government authorities, where potential opportunities and possible cooperation ideas were discussed, benefiting from the unique location in Dubai, the hub for Middle East business, and from the cross selling of different customized products and services that can suit all kinds of requirements in each of our sectors.



Power Gen Middle East 2012

Qatar- Doha (6-8 February)

The 10th annual Power-Gen Middle East conference and exhibition held at the Qatar National Convention Center from Monday, Feb. 6, 2012 until Wednesday, Feb. 8, 2012 was supported and endorsed by leading industry related organizations in Qatar and the Middle East, including the Qatar Ministry of Energy and Industry and KAHARAMAA. The event also benefited from the additional support of local manufacturers who produce national products and are committed to support the objectives of Qatar National Vision 2030, particularly the economic development.



WETEX 2012

United Arab of Emirates- Dubai (13-15 March)

Water, Energy Technology and Environment Exhibition(WETEX) is always focusing on the advanced technologies in the areas of energy such as fossil fuel, nuclear, renewable, power generation, smart grids, efficiency, and conservation.

Elsowedy Electric and EFECO have participated as platinum sponsors for WETEX after Iskraemeco has taken the next step in the interoperability process. The IDIS certified Mx381 smart meter series persuaded the advanced technological company in the United Arab Emirates – DEWA. The smart metering concept, including Iskraemeco meters will come to life in the next few months and will be a technological stepping stone for the Middle East region.



Nigeria Infrastructure & Construction NIC 2012

Nigeria- Lagos (17-18 April)



NIC is the largest power, construction and infrastructure event in Nigeria. Exhibiting at NIC allow us to meet with contractors, suppliers and service providers to showcase our latest projects, products and services to all potential clients and key decision-makers from around the world. NIC is the place for buyers and suppliers to make deals and develop relationships with new clients.

The exhibition offers direct business development opportunities and a chance to meet new contacts, develop existing relationships, learn about the latest Nigerian mega infrastructure projects, and enjoy an extensive social program of highly enjoyable networking functions.

The 4th Nigerian Infrastructure & Construction Exhibition officially opened by Olusola Senapon Oworu, Honourable Commissioner for Commerce & Industry, Lagos State Government had more than 2,000 visitors and enabled us to communicate with key industry companies such as ABB Nigeria, Lafarge Cement Wapco Nigeria, DAEWOO, Jubaili Bros, Comairsoll and many others.

Hannover Messe 2012

Germany- Hannover (23-27 April)

The Hannover Messe is the world's biggest industrial fair. It is held on the Hannover fairground in Hannover, Germany. Typically, there are about 6,000 exhibitors and 200,000 visitors. The Hannover Messe started in 1947 in an undamaged factory building in Laatzen, south of Hannover, by an arrangement of the British Military government in order to boost the economic advancement of post-war Germany. It proved a huge success and was hence repeated on yearly basis, contributing largely to the success of the Hannover fairground in replacing the East German city of Leipzig as the new major fair city for West Germany. In the 1980s, the growing information and telecommunication industry forced the organizer Deutsche Messe AG to split the fair.

This year Elswedy Electric was located in the hall with all the global players in the world of cables, wires and energy. We targeted around 30 to 40 visitors per day, according to the data analysis done by Elswedy Electric Europe GmbH, we have been ahead of target.

Hannover Messe is always capable of generating opportunities on an international level, more than 80% of the solid opportunities are emerging out of the European market, where some corners are considered to be the most stable markets in the world.



African Utility Week 2012

Johannesburg, South Africa (21-24 May)



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how to reach us..

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- Production Facilities
- Regional Offices
- Main Export Countries

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Exporting to 110 Countries Worldwide.

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Ghana

Nigeria

Cameroon

Equatorial Guinea

Congo DRC

Angola

Uganda

Rwanda

Brazil

South Africa

Uruguay

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WIND ENERGY GENERATION

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 Fax: (+2062) 920 4255
 Email: info@set-egypt.com

SOLAR ENERGY SOLUTIONS

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