POWERING HOPE:

LIGHTING THE WAY TO A BRIGHTER FUTURE

NEWSLETTER

2023-2024

Energy Solutions (Pvt.) Limited

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WELCOME TO ESL NEWSLETTER

COO'S MESSAGE

"Over the past few months we've achieved significant milestones. Let's continue to embrace innovation and collaboration, for the ultimate satisfaction of our customers. Together we ensure ESL Group of Companies remains at the forefront of customer service. Your dedication fuels our success and we extend heartfelt thanks to both our team and valued customers for your continued commitment."

MOHAMMAD NADEEM SADIQ
DIRECTOR TECHNICAL & COO (CO-FOUNDER)

CURRENT AFFAIRS

Powering the Future: The Thrilling Impact of AI in Our Energy Journey

Welcome to a dynamic era where innovation meets energy! In this edition, we embark on an electrifying journey exploring the ground breaking applications of Artificial Intelligence (AI) in our power generation landscape. Prepare yourselves for an interesting exploration into how AI is transforming the very basics of our energy ecosystem.

1. ENERGIZING EFFICIENCY WITH PREDICTIVE MAINTENANCE:

Picture a power plant that whispers its maintenance needs before a hiccup – thanks to AI's predictive ability. By analyzing data from sensors, AI ensures optimal performance, reduces downtime and breathes extended life into our critical energy system.

2. FORECASTING THE UNSEEN:

Ever dreamt of predicting the future? AI is turning that dream into a reality in the energy sector. From precise load forecasting to understanding demand patterns, AI ensures our power grids dance to the perfect rhythm, optimizing every watt for maximum impact.

3. THE SYMPHONY OF SMART GRIDS:

Enter the age of smart grids, where AI orchestrates a symphony of electricity supply and demand in real-time. Transmission losses diminish, reliability rises, and our grids become resilient composers in the energy distribution symphony.

4. HARMONIZING RENEWABLES:

AI takes the lead in weaving the intricate dance of renewable energy into our grids. By managing the unpredictability of solar and wind, AI ensures a seamless integration, bringing us closer to a future powered by clean, sustainable energy.

5. POWER PLANT BALLET:

In the heart of power plants dynamic adjustments in real-time enhance performance, cut fuel consumption, and unveil the economic brilliance of our power genera tion facilities.

6. CYBER SECURITY: THE GUARDIAN OF OUR ENERGY REALM:

AI-powered cyber security has become a shield against cyber threats, detecting anomalies and securing our energy assets safe.

7. FAULT DETECTION MAGIC:

AI, our wizard in the power realm detects anomalies before they cast a spell of downtime. Early detection ensures uninterrupted energy flow, keeping the lights on and the machines humming.

8. BATTERY BALLET:

In the world of energy storage, AI leads a drive towards efficiency. From predicting energy demand to managing charging cycles, AI ensures our batteries perform a flawless dance, enhancing efficiency and longevity.

9. GREENING OUR POWER PLAY:

AI steps onto the stage as an eco-champion, optimizing operations for lower emissions, minimizing waste, and championing the cause of cleaner energy. It's not just about power; it's about powering a sustainable future.

10. RESILIENCE UNLEASHED:

AI becomes our friend in resilience, predicting and meeting challenges like a seasoned warrior. With AI's foresight, our grids stand tall, ensuring a reliable power supply even in the face of adversity.

THIS VOLUME'S POEM

Patience

(By ESL CEO)

Patience is showing determination
In reaction to a sudden, unwanted condition.

Patience is not acceptance of defeat
Nor submission;

Instead it is management of a difficult situation
Or coming to terms with a person of a different opinion

It is avoidance of confrontation,
And choosing peaceful coexistence

Patience is the way nature functions
A stream on lofty mountains, gushes forth, for instance

Instead of confrontation with whatever in its way comes
It flows around obstructions

A rose lives with thorns with patience
Though it is easier said than done

Parents spend their lifetime with patience to bring up their children
Then their hard work comes to fruition

From pillar to post, prophets used to run
Even then, not every person accepted guidance

A person imbued with wisdom, endures with patience,
For the sake of his larger mission

He often chooses a humble position,
Instead of choosing a path of collision

"The believer who mixes with the people and faces opposition
Will have a greater portion than the believer who doesn't." (Hadith)

The bough that bears most, bends most; without question
The world would be different if everyone learnt this lesson

Wars against enemies of nation or religion are, however, an exception
Do not soften until the death overcomes or the battle is won

THIS VOLUME'S STORY

Christopher Columbus- A Lesson for B2B Salespeople

Almost twenty five years ago, it was a cool December morning! Winter had just started in Karachi and the people had gathered after the prayers around the prayer leader. He was delivering his short speech which he had been doing since many years! He recited the following verse:

"Whenever He (God) wills a thing, He just commands it "Be, and it is".
(Surah Yaseen 36:82)

But then he quickly added that: Yet God doesn't do things often in this fashion! He takes time! He created heaven and the earth and all that is within in six days! He revealed 6236 holy verses in twenty three years bit by bit; verse by verse; chapter by chapter; occasion by occasion!

He follows this because He loves to PLAN and then DOES according to the PLAN! He is the BEST PLANNER!

One of the wisest Muslim rulers said "For your worldly affairs, construct your plans based on the assumption that you will live forever, and as for the life after death, create your programs based on the belief that you will die tomorrow."

It is thus inappropriate to do a haphazard job and assume that God will straighten out the mess because "He is kind," and you are a "good man." No, the plan of every successful man demonstrates the extent of physical work, talent, leadership, and vision that they exercise in all their undertakings.

Salesmen are the movers and shakers of the world! They discover needs and then they translate them into realities! Planning for them is of utmost importance!

Many salespeople are like Christopher Columbus! When Columbus left seeking a route to India, he didn't know where he was going; when he reached America, he didn't know where he had reached and when he returned to Spain, he didn't know where he had been!

Similarly many salespeople set off in the morning with only a vague idea of where they are going. When they arrive at the customer's place, they don't know what exactly has brought them there. And when they arrive back at the office, they are not sure where they have been or what they have accomplished. Columbus was very lucky; most salespeople are not quite so.

Top salespeople are different. They think through their sales calls in advance. They go over what they are going to say mentally before they get face-to-face with the prospect. They practice "mental rehearsal," a peak-performance technique used by all top athletes. A professional athlete always warms up before going onto the field. By the same token, professional salespeople warm up as well by mentally rehearsing so that they can perform at their very best when they get face-to-face with their customer.

To learn why CHRISTOPHER COLUMBUS succeeded even without a plan read our next publication.

EMPOWERING HEALTHCARE

A 7.2MW LIFELINE AT SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL & RESEARCH CENTRE KARACHI

ESL is proud to power hope by delivering four robust 2250 kVA Aksa Diesel Generators at Shaukat Khanum Memorial Cancer Hospital and Research Centre, lighting up 7.2MW of lifesaving energy! 4 x 2250 kVA Aksa Diesel Generators equipped with Cummins QSK60G4 Engines and Stamford P1734G Alternators are in place to ensure uninterrupted power supply at this mission critical site.

Earlier ESL supplied, installed, commissioned and synchronized 2 x 550 kVA Aksa Generators at Shaukat Khanam Research Centre, Karachi.

ESL has also installed 1 x 1370 kW Cummins Gas Generator and 1 x 1600 kW Caterpillar Gas generator at Shaukat Khanum Hospital, Lahore. In addition to that ESL supplied, installed and commissioned 1 x 1410 kVA Aksa Diesel Generator to the Hospital. ESL has also been successfully shouldering the responsibility of providing synchronizing systems for all 3 x 1410 kVA Diesel Generators, 1 x 1370 kW Cummins Gas Generator and 1 x 1600 kW Caterpillar generator.

Moreover, SKMCH also chose ESL for the upgradation of LT distributions and Medium voltage substation. This project was completed by ESL in record time of six weeks without any shutdown to the main hospital building.

SKMCH continues to uphold its trust and dependence on ESL products and services as their ever-growing fleet of ESL supplies now exceeds 15MW across both their Lahore and Karachi facilities.

CUSTOMER ENDORSEMENT

A CONVERSATION WITH DIRECTOR ENGINEERING – ALKARAM TEXTILES

I am Wajeeh-uddin Agha, I am a mechanical engineer having more than 25 years of diversified experience. I am working as Director Engineering at Alkaram Textiles for 5 years and looking after facilities management as well.

How has adding green energy to your energy mix helped you achieve your company's sustainability/Corporate Social Responsibility goals?

I believe embracing solar solution is not only a practical choice but it is a sustainable commitment to the environment; as industry heads we are accountable for saving the environment. Keeping this in mind, we have initiated the more reliable and renewable energy in shape of solar energy. We have Alhamdulillah installed more than 5MW here at Alkaram textiles successfully. Being accountable for financial viability, I believe solar solutions is one of the best choices, and if I couple solar solution with ESL, it is the sandwich of the choice.

What made you choose Energy Solutions for the execution of your solar power plant?

From the initial phase, we found the team at ESL very practical and detail oriented. We worked as a team from the scratch and we didn't come across any ambiguities in the course of our discussions and finalization of the specifications.

Describe your overall experience with Energy Solutions – elaborate in-terms of professionalism, timely execution, cooperation of staff, quality of work, etc.

We started with the analysis of our load patterns from the scratch and laid down the plan as to what will be the requirement of our Alkaram Solar Plant. As a team, we considered all of the load patterns as well; the type of loads, like torque loads, peak loads, etc.

ESL is fueled with expertise and experience of their vibrant team. They executed our project in a professional manner. All the products used were tier 1 branded. They have a pain to complete the project and to make it successful on timely basis as time is one of the major characters and attributes of project completion. I believe that ESL choice was the best choice.

Since we are also planning more installations in solar energy as a renewable resource, we believe that we will run togeth er with ESL, In Sha Allah.

In your opinion, what is the future outlook of Green Energy in Pakistan?

As far as the power crisis is concerned in Pakistan, certainly it requires critical reforms. These concrete reforms will certainly flow through the renewable energy along with revamping of the old projects of Pakistan. So I believe that all the industries are looking after this inherent green energy and they will install it.

Would you recommend Energy Solutions as solar power partner in your peers?

Definitely, the successful installation at Alkaram is a good reference of ESL. This will make a big reference for other industries as well.

YEAR IN REVIEW

ESL 2023 HIGHLIGHTS

Cummins Inc., Daventry, 30 MW IPP Power House!

Cummins Inc. Daventry, Factory Fly In

Inauguration of 2.2 MW Solar Power Plant at Alkaram Textiles

Participation in IEEEP, 2023

Aksa Visit to Pakistan, 2023

YEAR IN REVIEW

ESL 2023 HIGHLIGHTS

› Factory Fly In to Aksa, Turkey

› Cummins Inc. Independent Distributor Conference 2023!

› Cummins Africa Middle East ABO Team's Visit to Pakistan

› In-House Seminar "How to be a Professional" by Rehan Ali Khan

› Middle East Energy Exhibition, 2023

CUSTOMERS AND CONTRACTS

Medical Sector:

- Aga khan university Hospital procured a 400 kVA DG set.
- SKMH continued its reliance on ESL, procuring several units, including 4x2250 kVA and 1x1400 kVA Aksa DG sets.
- Medical Superintendent Cath Lab Cardiac Surgery Hospital, Muzaffarabad procured a 220kVA Aksa DG set.
- CMH Lahore acquired a 220 kVA EPD set.
- Civil hospital Karachi was supplied AC413 Aksa DG set.
- Pro Health Fauji Foundation secured multiple units, including 3x538 kVA and 1x330 kVA Aksa DG sets.

Banking Sector:

- Askari Bank has acquired several 30 kVA sets, bringing the total number of sets to over 86 and the supplied power to 5 MW.
- Bank AL Habib secured several units up to 360 kVA Aksa DG sets.
  UBL received numerous sets up to 220 kVA increasing the overall number of procured sets to 158.
- ESL also supplied almost 200 locally assembled sets to ABL with lifetime warranty. This is in addition to more than 1500 Aksa DG sets supplied to them earlier.

Food and Beverages Sector:

- Coca Cola received 2x 2250 kVA Aksa DG sets, bringing the total number of sets supplied to 37 with 52 MW of power delivered.
- PepsiCo was supplied 2 sets of 1410 kVA. The total number of sets now exceeds 15 with power supplied up to 10 MW.

Telecom Sector:

- Cybernet was supplied 9 sets up to 275 kVA rating. The total power now reaches 5 MW with a total set count of 60.
- China Mobile Pakistan (CMPAK), Kot Lakhpat placed an order of 2x2250 kVA and 1x1400 kVA Aksa sets.

Miscellaneous:

- PESSI were supplied 413 kVA EPD set.
- Murad Engineering Services were supplied 2x 110 kVA EPD sets.
- Gas and Oil Pakistan were supplied scores of 66 kVA sets.
- A classified customer ordered 2x3000 kVA Aksa DG sets.
- AB Mauri Pakistan were supplied 525 EPD sets.
- Pakland Builders received a 355 kVA EPD set.
- Muller & Phipps Pakistan Private Limited were provided yet another set of 110 kVA.

ESL Renewables:

- Alkaram Textiles were supplied with a 2200 KW EPC solar solution. This was in addition to the 2000 KW commissioning job done earlier at Alkaram.
- Riaz Textile Mills chose ESL Renewables for the supply of a 3024 KW grid tied solar power plant. Impressed with the performance of ESL Renewables, RTM also awarded a contract for an additional 5000 KW plant.
- Ghani Dairies were yet another addition to ESL Renewables customer list with the installation of 300KW solar project after the successful completion of 2500 KW project done a year ago at Ghani Ceramics, another company of the Ghani Group.
- PepsiCo International Hattar plant were supplied with a 200 KW solar power plant.
- HA Fibres Private Limited were supplied with a 1000 KW solar power plant.
- Global Feeds also partnered with ESL Renewables for the supply of a 120 KW solar plant.
- MS Dye Tex-Yarn Dyeing were supplied a 240 KW solar power plant.

ESL POWER PULSES

Good vs Bad Generators

Once upon a time in Pakistan, there lived a business tycoon named Mian Sahab. He was known for his vast empire of factories. These factories pertained to various industries such as textile, cement, pharmaceutical, automotive, construction, food & beverages, fertilizer and information technology.

Mian Sahab was a highly educated individual who believed in following good manufacturing practices in all his factories. He was a firm believer in root cause analysis and did not rely on hunches or hearsay. His factories were a shining example of six sigma processes, TQM, poka yoke methodology, 5-S techniques, KAIZEN, DOEs, and FMEAs.

However, there was one aspect that Mian Sahab had overlooked. His cost accountants had discovered that the generators were contributing significantly to the expenses. Determined to address this issue, Mian Sahab decided to hire the services of Electrogen, an electrical consulting firm, to conduct a root cause analysis and achieve a substantial reduction in the cost of electricity generated by the generators.

Electrogen approached the task with a comprehensive methodology that focused on various parameters such as equipment selection, design and location, installation, and operation and maintenance practices. They conducted an in-depth study, analyzing factors like the brand of the engine, alternators, controllers, sound attenuation enclosures, and whether the generators were assembled by OEMs or Assemblers. They also considered the country of origin, application, sizing, and selection of generators.

In their study, Electrogen found that engines from brands like Caterpillar, Cummins, MTU, and Perkins were all equally good, with no clear distinction between them. They also debunked the myth that diesel generators were a specialty product, stating that successful marketing strategies by brands like Cummins and Perkins had turned them into commodities. These brands supplied their engines to multiple assemblers and packagers worldwide, creating competition based on dealership networks, lower costs, high quality, and prompt response during and beyond the warranty period.

Electrogen's study also revealed that it didn't matter whether the generator was assembled by an OEM or an Assembler, or whether it was sourced from the UK, USA, China, or Turkey. Generator assembly was a fool-proof, fail-safe process that could even be performed by good, technically sound mechanics. In fact, the study showed that a major overhaul was more technically challenging than assembling a generator with alternators.

The study also highlighted the fact that most Assemblers, such as Aksa from Turkey, China and USA, followed stringent quality processes and had vertically integrated factories larger than most OEMs.

Electrogen, in a lighter vein, mentioned that it was a national dilemma in Pakistan to trust Chinese equipment for large-scale projects like nuclear power plants and CPEC, but hesitate when it came to buying generators of Chinese origin.

When it came to alternators, Electrogen found that brands like Stamford and Leroy Somer were highly reputed and had good support in Pakistan.

They emphasized that both customer-friendly controllers and proprietary ones are almost equally good though the former are more cost-effective and have slightly more features.

The study also highlighted the need for suitable sound attenuation enclosures, as locally-built ones sometimes fall short of requirements in hot, harsh, sandy, and sultry conditions in Pakistan.

Electrogen's study also provided insights into the application and sizing of generators. They recommended unlimited prime application for diesel generators or base load for gas generators, as standby rating was not suitable for Pakistan due to frequent power outages.

The study also stressed the importance of load management and demand management panels to cut off non-essential loads and redundant generators. Power factor correction was addressed, cautioning against excessive use on generators.

The study also highlighted the benefits of paralleling several smaller sets instead of using one or two larger sets, as it saved fuel costs and facilitated maintenance scheduling.

Proper installation and commissioning were discussed, along with the need for regular maintenance and adherence to quality standards.

However, the most fascinating part of Electrogen's case study was their analysis of generator operation and maintenance practices. They observed that even the finest machines could suffer if not properly maintained. The study revealed that root cause of difference between good and bad practices lies in operation and maintenance. Neglecting daily maintenance, compromising cleanliness, and poor logbook maintenance were some of the most basic issues identified. Rapid hiring and firing of employees; inadequate salaries; insufficient training, etc., were the underlying reasons for poor O&M! This was the RED X!

The study also uncovered compromised cooling systems, bypassed safeties, inadequate load management, and neglected opportunities for optimization. The case study serves as a reminder that even the most advanced equipment requires proper operation and maintenance to achieve optimal performance.

More than this, it requires a well-paid, well-trained, well-motivated workforce!