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WE DELIVER POWER TO THE WORLD



WHENEVER YOU NEED POWER, WE ARE ALWAYS WITH YOU... SINCE 1994!

Since 1994, TEKSAN GENERATOR has been delivering high quality tailor-made solutions that are designed accordingly to your requirements with strong after-sales technical support and maintenance services anytime and anywhere you need uninterrupted power supply. When your company is moving further ahead rapidly on the road to success, you always feel our continuous support as your reliable power solutions partner.

Because Teksan is a member of your family...





ACITY Outlet Center Project / Turkey



PROJECT NAME ACITY Outlet Center, Turkey

PROJECT REQUIREMENTS

All energy requirements of ACITY Outlet Center, which was built on a 50.000 square meters area, have been met.

SOLUTION WE DELIVERED

The natural gas trigeneration system, whose total power is 2 MW, has been meeting nearly 95% of the electrical and thermal energy demands of ACITY Shopping Mall in the winter months and approximately 90% of its power and cooling needs in the summer months for a period of more than 2 years. TEKSAN Cogeneration - Trigeneration Systems team realizes the most efficient integrated energy solutions for the projects in Turkey and in more than 60 countries. One of the most important of these is ACITY Outlet Center located in Ankara.

With the commissioning of 4x500 kW natural gas trigeneration system, which was completely designed and produced by TEKSAN engineering teams, all kinds of energy needs of the complex have been met.

The natural gas trigeneration system, whose total power is 2 MW, has been meeting nearly 95% of the electrical and thermal energy demands of ACITY Shopping Mall in the winter months and approximately 90% of its power and cooling needs in the summer months for a period of more than 2 years.

The system used within the scope of the project runs with a total of 89% efficiency (47% thermal and 42% electrical).

The high electrical efficiency is an important factor in the choice of this model in the project. ACITY Shopping Mall, whose electrical demand is being



provided uninterruptedly from the trigeneration system throughout the year, acquires a serious cost advantage thanks to this implemented project. 1600 kW cooling capacity refrigerating unit with absorption chiller which was used in the project operates during the summer months and provides reinforcement to the 7-12°C cooling line of the shopping mall.

Thanks to the cooling unit with absorption running during this period, there is no need for the 2 units of electric coolers of 400 kW in the facility to be put into operation, and savings which are in a total of nearly 800 kW per hour and monthly 50.000 TL are obtained in the summer months due to the electric cooler which is not put into operation. During the winter months, the need for warming is met by TEKSAN's cogeneration module, thus, there is no need to operate 2 boilers of 1200 kW available in the facility. Therefore, considerable savings are obtained from natural gas costs.

In the event that the trigeneration system, which is not operated due to the burden of electricity and heating need is very little in the evenings, is estimated to provide higher savings to the shopping center according to the calculations made if it is operated for 24 hours a day.

Beyond that, the system attracts attention not only with the saving it provides, but also with the eco-friendly solution it delivered for the energy need, thanks to the fact that the exhaust gas from the engine has a low carbon emission.

The project has great importance not only because it is the first trigeneration project that has been put into practice by TEKSAN but also because it is Turkey's first domestically produced trigeneration group.

We are proud to meet the energy requirement of such a large project as TEKSAN.





PROJECT NAME

ING Haagse Poort Investment Management Central Building, Holland

PROJECT REQUIREMENTS

The need for the establishment of a power room to provide auxiliary power in emergency situations, to meet this need in a short time.

SOLUTION WE DELIVERED

Designing not only the generator sets but also the room suitable for the project, high quality products conforming to the country regulations have been supplied to the customer with reasonable prices and short delivery terms. Holland based ING Group is one of the world's leading financial institutions offering products and services in the fields of banking, insurance and asset management for 150 years.

The central building of ING Investment Management is located in Den Haag, the third largest city of Holland after Amsterdam and Rotterdam.

The need for the establishment of a power room that would provide auxiliary power source to the securities exchange unit in emergency situations emerged along with the transfer of the unit from one place to another place within the said building.

The establishment of this room had to be completed within a few weeks in the area allocated in the parking area.

TEKSAN GENERATOR, that specially designed 2x385 kVA generator sets with double-walled chassis and synchronization features to be used in the project, provided a significant advantage to its customer by ensuring the delivery of these products manufactured by them in accordance with the Dutch standards within a short period of time.





The fact that TEKSAN provided an important initial investment advantage to its customer in the project not only by fast product delivery but also by offering quality power solutions at affordable prices ensured, TEKSAN products were selected for the project.







PROJECT NAME

CarrefourSA Maltepe Park Shopping Mall, Turkey

PROJECT REQUIREMENTS

The auxiliary power supply required for an office 15.000 m² in addition to 250 stores, 36 restaurants and cafes, hypermarket, 8 movie theaters.

SOLUTION WE DELIVERED

Synchronized diesel generator sets including 2 sets with a power of 905 kVA and 2 sets with a power of 1130 kVA which have been specially developed for the project and provide auxiliary power. CarrefourSA Maltepe Shopping Mall drawing attention as one of the largest shopping malls in Istanbul Asian side with a retail space of 75.000 m² is home to millions of people every year.

Many leading brands in the world and Turkey are offering service in the mall containing an office building of 15.000 m² in addition to 250 stores, 36 restaurants and cafes, CarrefourSA hypermarket, 8 movie theaters on its 3 storeys.

There are 4 synchronized diesel generator sets including 2 sets with a power of 905 kVA and 2 sets with a power of 1130 kVA specially developed for the project in Maltepepark Shopping Mall that has preferred TEKSAN in uninterrupted power solutions since its opening in 2005.

Dostyk Plaza / Kazakhstan





Dostyk Plaza meets its energy requirements with TEKSAN products.



PROJECT NAME Dostyk Plaza, Kazakhstan

PROJECT REQUIREMENTS

4000 kVA standby generator was required for Dostyk Plaza with a total area of 125.000 m².

SOLUTION WE DELIVERED

The requirements of this project were met with 2 units of canopied automatic generator sets with 2025 kVA power output per each. In addition, the generator sets were manufactured at special sound levels.

Dostyk Plaza, one of the largest entertainment centers and shopping malls of Kazakhstan with an investment value of 200 million USD, has preferred TEKSAN for uninterrupted power solutions.

The three-floored complex built over 125.000 m², has 54.000 m² retail area, parking capacity of 1.300 vehicles and offers job opportunities to 2.000 people. Project, which was manufactured and commissioned as standby, has tailor-made functions such as fire extinguishing system, generator sets manufactured at 2025 kVA with special sound level (95dBA@7m), and heating systems developed in accordance with the requirements of Kazakhstan were specially designed by TEKSAN.





PROJECT NAME Istanbul Sapphire, Turkey

PROJECT REQUIREMENTS

In the building with a total construction area of 165.169 m^2 , automatically activated diesel generator set with 2x2100 kVA standby output power for the shopping mall and 2x1425 kVA standby output power for the Residence.

SOLUTION WE DELIVERED

2 sets of 1425 kVA and 2 sets of 2100 kVA standby generator sets were supplied with remote radiator cooling system.

Sapphire, which has frequently appeared on media as the 8^{th} hill of Istanbul, is mostly mentioned as the highest in Turkey and the second highest building in Europe.

Istanbul Sapphire containing many features in itself is Turkey's first ecological skyscraper. The building taking breath by means of the natural ventilation provided by the culverts and technical equipment consumes less energy for air conditioning. This tower of contemporary technology providing opportunity to dine against Bosphorus view while shopping in Levent is one of the city's most spectacular buildings with its elegant and transparent structure beyond having a view of Istanbul.

The generator systems that will be used for the uninterrupted continuation of all the comfort in Istanbul Sapphire was also provided by TEKSAN as well as in all projects in which trust and quality expectations exceed the standards in Turkey and in the World.



As a result of the detailed feasibility studies prepared by our experienced engineer team, 2 sets of 2100 kVA standby for the shopping mall and 2 sets of 1425 kVA standby 4-way synchronized remote generator sets for the residence department were designed in Istanbul Sapphire. The room planned for the generator sets under the project is on the 1st basement floor, and it has been determined that sets are not suitable for operation with standard radiators. The ventilation capacity inside the room has been reduced by transforming the radiator that will provide cooling into a remote radiator system as the working principle of the generators would create a high air flow for this room.

Along with the operation of the remote radiator, 4 generator sets have been ensured to run conveniently in the 1st basement room selected.

The energy need of Sapphire is being met by TEKSAN products developed as a result of this study.

This application of remote radiator at high powers continues to work in a healthy way.

Thus, TEKSAN has been the assurance of comfort, luxury and quality along with its remote monitoring feature.



Varyap Meridian Residence / Turkey



PROJECT NAME

Varyap Meridian Complex, Turkey

PROJECT REQUIREMENTS

The auxiliary power supply solutions of the energy required by more than 1500 houses, workplaces, offices and common living areas, and after-sales services including maintenance, repair and spare parts.

SOLUTION WE DELIVERED

Generator sets that provide synchronous auxiliary energy with each other provide a significant fuel saving by operating to produce the power that the plant needs. Varyap Meridian under TEKSAN assurance not only on product but also on maintenance and spare parts continues to be one of the most beautiful constructions of Istanbul by its continuous glow. Varyap Meridian project located in West Atasehir, Istanbul consists of more than 1500 houses, business centers, commercial and social areas.

Varyap Meridian having many important awards such as International Property Awards "The World's Best Architectural Project" and Cityscape Global "Best Completed Residence Project" preferred TEKSAN as a solution partner for the generators used as auxiliary energy source and maintenance needs.

In this giant project which is one of Turkey's first luxury green housing projects, 16 pieces of generator sets including 8 pieces of 774 kVA and 8 pieces of 660 kVA that provides the synchronous operation of all the auxiliary energy of the whole system in case of power failure.

Each generator set feeds a block in the project by working in parallel with each other, and the system continues to provide auxiliary power to the system



through the other generator set in case any generator set is disabled during this time without losing the power.

This important project that preferred TEKSAN for the product need and also for periodical maintenance, technical service and spare parts solutions since the day it was established is drawing attention as one of the most important examples of the global real estate industry.





HEALTH & EDUCATION





Santa Farma Pharmaceutical Factory preferred TEKSAN on generator.

PROJECT NAME

Santa Farma Pharmaceutical Factory, Turkey

PROJECT REQUIREMENTS

Full-scope protection comprising uninterrupted power solutions providing auxiliary power to avoid the risk that interruptions will cause serious financial losses due to damage, deterioration and contamination of the products under processing, and experienced technical service that will be able to quickly intervene in cases of failure and spare parts solutions.

SOLUTION WE DELIVERED

TEKSAN products that reduce the initial investment cost of the customer with short delivery times and competitive prices also provide significant savings in operating costs with high performing and efficient products together with strong service and spare parts solutions under TEKSAN assurance. Since 1944, Santa Farma has been one of the leading companies in the industry which has been recognized by its significant achievements in the pharmaceutical industry. Company has produced and sold healthcare products for leading international companies.

It has become a necessity to equip the Santa Farma plants with state-of-the-art production technologies and machinery to continue drug production at the best quality and expand its product range. In addition, a robust auxiliary power system has been required to support the production processes and all functions of the plant in the event of the interruption of the mains electricity.





Facilities that are producing medicines like Santa Farma plant, require uninterrupted power for the protection of non-durable materials with very short storage and life span.

A power discontinuity may lead to serious monetary losses depending on the material damages, deterioration and contamination of the products which are being processed.

Santa Farma has insured itself against these possible risks with 3 diesel generator sets manufaced by TEKSAN. The system is ready to provide energy to the plant during a power outage by 3 diesel generator sets at 2500 kVA power we supplied to Santa Farma. These products meet all energy requirements of the plant including manufacturing processes and safety features. Santa Farma can be sure that the daily production of the medicines will continue without interruption in the Istanbul Plant, thanks to TEKSAN's economic and durable diesel generator sets.



HEALTH & EDUCATION



Edirne Sultan Murat I State Hospital / Turkey



products to meet its need for uninterrupted power.

PROJECT NAME

Edirne Sultan Murat I State Hospital, Turkey

PROJECT REQUIREMENTS

A 860 kW trigeneration system was designed and installed in the facility to meet the need of the hospital for electricity, heating and cooling energy.

SOLUTION WE DELIVERED

The energy requirement of Edirne State Hospital has been met by the trigeneration packages that TEKSAN manufactured.



Hospitals need uninterrupted electricity, heating and cooling energy for 24 hours. Power must be supplied without interruption at critical points of the hospitals. In addition to uninterrupted power, maintaining the ambient temperature at a required level at critical places such as operation rooms is also vital in terms of human health. 860 kW trigeneration system, which was designed and installed by TEKSAN, meets up to 50% of the electricity and about 75% of the heating demand of Edirne Sultan Murat I State Hospital.

In Edirne Sultan Murat I State Hospital 2x430 kW natural gas trigeneration system was installed. New hospital building, whose construction was completed in September 2015, was commissioned in September 28, 2015 and opened with a ceremony held on October 9, 2015. This hospital located at the entrance of Edirne province while coming from Istanbul is the biggest hospital of Edirne.



Absorption chiller that was commissioned to support the 7-12°C cooling line of the hospital in summer time, in-between May and September, and deliver 675 kW extra cooling capacity in addition to the electricity and heating provided for the facility.

2 units of 430 kWe trigeneration system that was used in this project, has thermal efficiency of 48%, electric efficiency of 38% and total efficiency up to 86%. The model with high thermal efficiency has been selected as it is an hospital application where hot water consumption and need is high.

The most important points of this project, is the fact that it is the first hospital trigeneration project which has been designed and commissioned by Turkey's Ministry of Health and it is also the first domestic hospital trigeneration project realized in Turkey.

It has been observed that the trigeneration system has reduced the electricity bills by less than half within its running time. In addition, due to the heat produced by trigeneration system, hospital does not need to use 2 out of 3 units of 2500 kW boilers in the boiler room for heating the facility.

Thus, significant savings were realized in natural gas and electricity. According to the feasibility studied after system started to operate, it has been observed that the trigeneration system has provided monthly average saving of 70.000 TL to the hospital for 5 month-operation.

As it can be seen from the numerical data, implementation of trigeneration systems in hospitals contributes to the energy efficiency of the facilities and significantly reduces energy costs. Using energy in the most efficient way is always valuable and important for the facilities which need continuous energy such as sanitary facilities. On the other hand, to benefit from shorter return on investment periods could only be possible through affordable products with longer life span which have well calculated feasibility and accurate designs.

HEALTH & EDUCATION



Kepez 300-Bed State Hospital / Turkey

Antalya Kepez 300-Bed State Hospital preffered TEKSAN GENERATOR sets.

PROJECT NAME Kepez 300-Bed State Hospital, Turkey

PROJECT REQUIREMENTS

Meeting all energy requirements of this state hospital with 300-bed capacity consisting of main blocks in Antalya Kepez.

SOLUTION WE DELIVERED

We provide 800 kWe trigeneration system consisting of 2 gas generators along with 4x1650 kVA synchronized diesel generator sets to meet the energy needed in this facility. This 300-bed capacity state hospital project comprising of 3 main blocks in Antalya Kepez was constructed as a full-fledged health facility that has 12 operating theatres. The hospital offer service in several categories such as emergency service, polyclinics, operating theatres, intense care and service units, laboratories, diagnosis units and dining hall.

In addition, whole facility along with its auxiliary functions such as conference and meeting rooms and dining hall has been built in European standards.

As TEKSAN, we not only provided initial investment cost advantage for the facility by installing specially manufactured 4 units of synchronized diesel generator sets and a trigeneratipon system with 800 kWe power, which was comprised of 2 gas engines, but also we met the hospital's heating and cooling needs in parallel with electricity generation without requiring additional fuel. Thus, we not only offer a value added solution that provides an enormous operational saving to this hospital project, but also we became the first Turkish manufacturer that implement a trigeneration system in Turkey.

TEKSAN



Each of the 4 synchronously running diesel generator sets in the project has 1650 kVA prime power. The control system ensures the engagement and disengagement of the generator sets according to the hospital's instant electricity needs, thus, system will produce as much electrical energy as required by the facility.

The trigeneration system, which was installed in the hospital by TEKSAN, has 2 units with 400 kW electrical output power. Thanks to the hot water that could be obtained from gas engines, heating saving will also be achieved due to the fact that heating boilers work less in the winter season.

On the other hand, during summer season, hot water as the output of gas engines will be sent to absorption chiller, which is a part of the trigeneration system. Afterwards, cold water obtained from this absorption chiller, thus, due to the decrease in the operation time of hospital's cooling groups, a significant saving in cooling can be delivered. Energy efficiency rates are increased along with the trigeneration systems we installed in cities where the need for cooling is relatively higher due to hot climate, like in Antalya.

Both the diesel generator sets and the trigeneration system, which have been designed and installed by TEKSAN, have an infrastructure of operating synchronously by communicating with each other through the control panels.



HEALTH & EDUCATION



Eregli State Hospital / Turkey

Energy Solutions from TEKSAN for Konya Eregli State Hospital.

PROJECT NAME Eregli State Hospital, Turkey

PROJECT REQUIREMENTS

The facility established by Komel Energy on 37.200 m² area in Konya Eregli district needed power solutions for auxiliary power/electrical purposes.

SOLUTION WE DELIVERED

4 units of synchronized diesel generator sets, with power output of 1130 kVA per each, deliver solution in connection with each other in case of auxiliary power needs. Konya Eregli State Hospital built on an area of 37.200 m² by Komel Energy needed auxiliary power solutions. Komel Energy that has carried out many projects conducts projects such as public housing, private housing, mechanical and electrical installations of industrial establishments, hotels, schools etc.

The system to be used in this project, which is among the most important facilities in Turkey, plays a critical role through 4 units of 1130 kVA synchronized diesel generator sets and deliver prompt solution in case of auxiliary power needs arise.

Generator sets were designed and manufactured with advanced engineering studies to meet the uninterrupted power need of the project. As a result of the feasibility studies performed by the Project Engineering Department, it has been projected that the generator sets connected to each other via a synchronization system will provide greater benefit in terms of fuel consumption for the facility.

Hatay Kirikhan State Hospital / Turkey



TEKSAN provides uninterrupted power for Hatay Kirikhan State Hospital.

PROJECT NAME

Hatay Kirikhan State Hospital / Turkey

PROJECT REQUIREMENTS

Hatay Kirikhan State Hospital with 400-bed capacity is the largest medical facility of the region and its energy requirement is provided by TEKSAN.

SOLUTION WE DELIVERED

6 units of 721 kVA model diesel generator sets were designed and produced for the project in such a way to operate synchronously with each other and also with mains. The hospital with 400-bed capacity built in Kirikhan province of Hatay is noteworthy as being one of the largest medical facilities in the region. The hospital, which is the first investment in the province in the last 50 years, is built by the use of latest technology and equipment to meet health needs for not only Kirikhan but also surrounding provinces. In this project, TEKSAN products have been preferred due to their high quality and reasonable prices along with TEKSAN's important references and solid experience in health sector.

Hospital's project design, room layout, determination of required powers along with the supply of Scada and PLC system are all handled by TEKSAN teams. 6 units of 721 kVA model diesel generator sets were designed and produced in such a way to synchronously run with each other and also with mains are used for the first time in a hospital project.

This successfully implemented project is a proof of our experience and reliance in health sector, where the need for uninterrupted electricity has a vital importance and any power outage arisen due to a problem would lead to tragic consequences.





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TEKSAN, reliable partner of Health Sector in uninterrupted power solutions.

PROJECT NAME Tuzla State Hospital / Turkey

PROJECT REQUIREMENTS

The trigeneration system with optimal efficiency that will meet the electric energy, heating and cooling need required for the critical operations of 400-bed Tuzla State Hospital to continue without interruption.

SOLUTION WE DELIVERED

As a result of the analysis and feasibility studies performed, 2x400 kWe trigeneration system solution that would provide the optimal efficiency for this project has been developed, and the energy costs of the hospital operation have been saved considerably by this solution developed. Tuzla State Hospital with 400-bed capacity, which has recently been built in Tuzla as one of Turkey's major investments in the field of health, is the first trigeneration system project realized by TEKSAN in Istanbul Anatolian Side.

As a result of the analyses and feasibility studies performed by experienced TEKSAN engineering teams, the power requirement of the project has been identified and the system solution, which would provide the essential amount of power with the optimal efficiency for the project, has been designed for this full-fledged health facility where the latest health technologies and devices have been used.

2x400 kWe trigeneration system has been produced and delivered to meet heating and cooling as well as the electrical energy needs of the hospital.

Raiking Hospital / Thailand





PROJECT NAME Raiking Hospital / Thailand

PROJECT REQUIREMENTS

Auxiliary power source for the continuation of critical operations in power failure.

SOLUTION WE DELIVERED

1 unit of 1900 kVA standby automatic diesel generator set to be used as an auxiliary power in case of the interruption of the network.

Thailand, which is the 51st largest country in the world with an area of 513.120 km² and the 20th most populous country with a population of about 67 million, draws attention as a country that has made significant developments not only in tourism but also in industry in recent years.

Raiking Hospital in Nakhon Pathom, one of the most important cities in the country with a population of 1 million, is operating as one of the leading health facilities in the region.

Raiking Hospital preferred TEKSAN as a solution partner for the auxiliary power source to the network due to its inclusive services like spare parts, installation, service and maintenance as well as the reference projects that have been successfully realized especially in the healthcare industry in Thailand.

As a result of the analyses and feasibility studies performed, the power required for the uninterrupted operation of the plant's critical operations has been identified, and the product that would ideally meet its needs has been designed and delivered to hospital management with the advantage of reasonable price and fast delivery.

A.S.K.I. / Turkey



Europe's largest treatment plant preferred TEKSAN in biogas cogeneration.

PROJECT NAME

A.S.K.I. Ankara Wastewater Treatment Plant Biogas Cogeneration Project, Turkey

PROJECT REQUIREMENTS

Making the biogas produced during waste water treatment harmless to the environment, and the provision of the energy required by the plant by burning this gas in gas engines that feed.

SOLUTION WE DELIVERED

With the electric energy obtained from biogas, as a result of biological (anaerobic) treatment of wastewater, the energy that plant needs is provided by 3x1 MW cogeneration system and heating by cogeneration system that can generate 1,1 MW of thermal energy. Along with the implementation of this project, Ankara Metropolitan Municipality General Directorate of Water and Sewerage Administration's (ASKI) water treatment facility, which is the largest plant in Turkey and Europe, started to purify the wastewater by means of the biological (anaerobic) treatment in the plants with the deployed system, and makes the wastes harmless to the nature.

Using cogeneration system in treatment plants, ASKI also set an example for the other treatment plants.

TEKSAN has installed the biogas-based cogeneration system, which was specially designed and produced for this plant, includes 3 cogeneration packs that work on biogas and can provide 1 MW electric energy with 1,1 MW thermal energy. Along with this system, the biogas that emerges during the treatment process of wastewater is burned by gas engines and protects the environment by making wastes harmless to the nature.



Almost all of the electricity demand of the treatment facility is being provided by the system we installed.

This project which was completely designed, produced and installed by our engineers, helped us to become one of the leading companies for the fields of cogeneration systems and biogas applications, and to further improve our brand position as being one of the most important biogas cogeneration example that implemented successfully.



PUBLIC & INFRASTRUCTURE 🏄



PROJECT NAME

New Ashgabat International Airport, Turkmenistan

PROJECT REQUIREMENTS

Meeting all energy needs of New Ashgabat International Airport to be built on a 350.000 m² area.

SOLUTION WE DELIVERED

As TEKSAN, we meet the energy need of this project along with 36 units of generator sets with a power ranging from 145 kVA to 1900 kVA.

Emergency generator sets to be used in New Ashgabat International Airport project, which will serve in Ashgabat, the capital of Turkmenistan, have been provided by TEKSAN.

New Ashgabat International Airport has been built by Polimeks Construction Company.

Within the scope of this project, the airport has a closed area of approximately 350.000 m² along with VIP terminal, air traffic control tower, open and closed passenger car parks with a total capacity of 3.000 vehicles, cargo terminal with a capacity of 200.000 tons per year, aircraft maintenance building with 3-aircraft capacity, catering buildings, refueling facilities, fire stations, warehouses, maintenance and repair yards, civil aviation school, flight and canopy training simulator building, hospital, dormitory building, indoor sports hall and other administrative and technical auxiliary facilities.



As TEKSAN, we have provided 36 units of standby automatic and synchronized generator sets with powers ranging from 145 kVA to 1900 kVA with auxiliary equipment for this project.

The auxiliary equipment can be listed as output switch and synchronization panels, critical type exhaust silencers, main fuel tanks at different capacities for each generator, automatic fuel filling system, heaters and remote monitoring system.

The details were clarified during the meetings convened with Polimeks and the project authorities before the generator sets were manufactured. The layouts in the generator room where the generator sets would be located were made. All of the above listed auxiliary elements are included in the layout. With respect to the layout to be made, the performance to be shown in the field has been simulated by performing the cooling air flow analysis of the generator rooms by using Solidworks Flow Simulation 2014 program. Along with our generator sets manufactured as a result of the performed studies, service continuity is ensured by meeting the power need of the New Ashgabat International Airport in the absence of the mains.

As TEKSAN, we are proud to meet the energy requirement of such an important project.



Anadolu Glass Factory / Turkey

Anadolu Glass factories have been using TEKSAN GENERATOR sets for the uninterrupted energy.

PROJECT NAME Anadolu Glass Factory, Turkey

PROJECT REQUIREMENTS

Possible interruptions during risky glass production can cause the furnaces to cool down and the cessation of production, but more importantly the glasses that remain inside can cause hundreds of thousands of dollars of furnaces to become unusable. The operation of furnaces should never stop in such a critical production process. On the other hand, this measure that can only be taken with uninterrupted power supply brings along significant cost burdens as well. The basic need of the customer is the products that can be used as an uninterrupted power supply in a cost-effective manner thanks to their efficiency.

SOLUTION WE DELIVERED

Products that provide significant savings to the business with their high efficiency provide maximum protection from the power failure of the plant by being designed to be synchronized with themselves and with the network. Along with a special panel production, a significant contribution has also been made to the business under TEKSAN guarantee with service and spare parts solutions. Anadolu Glass Factory started its activity as the first glass production facility of Turkey in 1935. Anadolu Glass is the glass container-production enterprise of Sisecam Group connected to Packaging business line. They produce packages in various volumes and colors for the sectors of food, water, mineral water, soft drinks, fruit juice, milk, beer, wine and other highalcohol drinks and the pharmaceutical and cosmetics sectors. It is one of the leading glass packaging manufacturers in Europe.

The glass industry in Turkey experiencing disadvantages in competing with the producers in rival countries has begun to take productivity-increasing and cost decreasing measures. For this sector where electricity energy is heavily used, the savings to be made in this regard lead to big differences in operating costs.

For this situation, TEKSAN has met the demands and requirements of its customer with 2x2280 kVA diesel generator sets specially designed for Anadolu Glass Factory. Our experienced engineers providing the most appropriate solutions for projects have created an automation system by designing the system controlled by PLC and operator panel. In this way, the mains



power, the status of the current generator sets and the position of the cutter in the plant are monitored, and the automation system is operated according to a certain scenario.

Thanks to the generator system installed in production facilities, the opportunity of working in parallel with both the network and the existing generator sets, and uninterrupted energy transfer have been ensured.

At the end of the project, a significant contribution has been provided by TEKSAN to Anadolu Glass Industrial Corporation, which is one of the leading industrial enterprise in Turkey, such as ensuring production continuity, delivering savings on labor and operational expenses.

As TEKSAN, we are proud of contributing to this project and exceeding the expectations of our customer.



Kale Kilit / Turkey



PROJECT NAME Kale Kilit Cerkezkoy Factory, Turkey

PROJECT REQUIREMENTS

Meeting all emergency energy needs of the New Production Area to be built on 100.000 m² area.

SOLUTION WE DELIVERED

TEKSAN meets the energy need of this project with 7 units of 1650 kVA generator sets.



Kale Kilit, which is the biggest integrated lock manufacturing facility in Europe as of 2016, meets its need for power with TEKSAN products.

Kale kilit is a key player not only in Turkey but also in global lock production. The company regularly exports its products to 70 countries every year. Being the leading lock brand of Turkey for many years, Kale Kilit has the highest brand awareness among consumers. Besides, the fact that the company has been successfully taking place in ISTANBUL CHAMBER OF INDUSTRY (ISO) Turkey's Top 500 Industrial Enterprises ranking, has made Kale Kilit the most reliable brand in its field in Turkey.

It is anticipated that Kale Kilit, which strengthened its fast and steady growth trend with investments, will use the latest and modern technologies in this plant. The factory, located in Cerkezkoy Organized Industrial Zone, has been built on a closed area of approximately 100.000 m².

Kale Kilit will double its production capacity by opening this facility and will be able to manufacture 170 thousand locks and 75.000 cylinders per day thanks to the advanced technology used in production lines.



For the emergency power needed by the latest technologies used in the infrastructure and production lines of this modern plant, Kale Kilit preferred TEKSAN due to our reliable solution partner image which is the very essence of our corporate culture.

TEKSAN produced 7 automatic synchronized generator sets with 1650 kVA standby power along with the other supporting auxiliary equipment for this project. The ring line of the plant is fed by 7x1650 kVA standby power generator sets, which were provided by Teksan, are synchronized at 31,5 kV level.

OPTIONS

TEKSAN has played an active role from the very beginning of the project. As a result of the meetings held with TEKSAN project engineering team, the system has been allowed to operate perfectly by providing technical support to Kale Kilit regarding the design and placement of the energy center where generator sets, transformers and cells would be placed.

The design of the energy center has been prepared by considering the air inlet-outlet details that will affect the operation of the products, wiring and piping details of the generator sets and the intervention details in case of the failure of generator sets.

Specific solutions that will minimize the risks of the system have been designed and implemented after the meetings held with fire advisors of Kale Kilit and simulating the possible fire scenarios. Teksan, which has a solid experience in high voltage projects that have been working on the site for many years, provides significant contribution to the project and has gained the trust of the customer on issues such as the design of the cells, determination of working scenarios and the selection of transformers for synchronization at 31,5 kV energy level.

The reliability of the system has been confirmed with the acceptance tests conducted on the field after the system has commissioned.

2500 It fuel tanks, fuel level indicators and type test-certified output switch panels have been produced and delivered together with the generator sets.

A secure system, which will avoid all possible errors, was designed and all operating modes have been implemented in a planned manner.

With respect to the layouts prepared, the performance to be shown in the field has been simulated by performing the cooling air flow analysis of the generator rooms with Solidworks Flow Simulation 2014 program.

In this meticulously designed project, the service continuity will be provided by meeting the energy need of the integrated plant by our generator sets when theere is no mains. Along with its experience in special power solutions, corporate governance, manufacturing approach without compromising quality, dynamic and strong structure, and service provided to Kale Kilit, TEKSAN has proven itself as reliable power solutions partner not only in the national but also in the global sense.



TEKSAN's signature in clean energy used by Eskisehir T.I.G.E.M. farms.

PROJECT NAME

T.I.G.E.M. Eskisehir Farms Biogas Cogeneration Project, Turkey

PROJECT REQUIREMENTS

To reduce production costs by meeting the energy needs, and to obtain pure organic fertilizer by providing waste recycling.

SOLUTION WE DELIVERED

In the project in which the desulphurization system was designed by TEKSAN, 250 kW of electricity and about 300 kWh of heat energy are produced by cleaning the biogas consisting of the wastes of animals fed on farms, thus the damage of business to nature has been minimized and a renewable energy solution that offers significant cost advantages has been offered. General Directorate of Agricultural Enterprises (aka T.I.G.E.M.) preferred TEKSAN cogeneration systems for its renewable energy project where electricity production from animal manure takes place for meeting the major part of energy demand in the farms.

Within the scope of the project, both biogas is obtained from the wastes of the animals bred in farms so preventing these wastes from harming the environment and significant savings are being provided by transforming the gas coming out into electric and thermal energy. The ultimate objective of these facilities is to reduce production cost by meeting energy demand and to obtain organic pure fertilizer by ensuring waste recycling.

This cogeneration system, which can produce 250 kW of electricity and approximately 300 kWh of thermal energy, is cleaning the biogas emerging in the facility.

In addition, desulfurization system was designed by TEKSAN and was given to the use of T.I.G.E.M.



The biogas produced in facilities is converted into electricity and useful thermal energy by means of TEKSAN cogeneration system, thus, electricity and heat required by the plant are met by these transformation processes.

Although there are facilities producing energy from animal wastes in the world, the system, which TEKSAN specially designed and produced for T.I.G.E.M., is a rare application in Turkey.

It seems that the global energy need will possibly become more affordable in itself along with the increase of investments in similar facilities in the world and as well as in Turkey in the coming years.



TOO ShymkenT KUS Project / Kazakhstan



South Kazakhstan's largest egg factory preferred TEKSAN for uninterrupted power.

PROJECT NAME

TOO Shymkent KUS Egg Production Facility, Kazakhstan

PROJECT REQUIREMENTS

Meeting all the energy needs of the factory built on 100 acres of land where there are 600.000 chickens

SOLUTION WE DELIVERED

The energy needs of the entire plant are met at optimal costs with specially designed and produced 1 MW gas generator.

The emergency generators of TOO Shymkent KUS company, the central office of which is located in Shymkent, the capital of South Kazakhstan region, have been provided by TEKSAN.

The system has been activated as a profitable investment that provides significant energy savings along with the successful commissioning of specially designed and produced 1 MW gas generator set by TEKSAN project engineers.

T00 Shymkent KUS, one of the largest egg factories in South Kazakhstan, has 35% of the total egg market of the country. Approximately 400 people are working in a factory built on a land of 100 acres where there are 600.000 chickens. TEKSAN project engineers prepared the feasibility by comparing the mains power costs and gas prices in the region and concluded that a gas generator set to be installed would provide significant savings for the company and would amortize the investment cost within 2 years.

The system produced by TEKSAN operates around 10 hours a day and meets all electric energy needed by silo engines and egg lines in the factory.

During the customer and field visits, system and its operation were observed and checked. Furthermore, in addition to the gas generator set, a cogeneration upgrade was requested by the customer.

As a result of the studies performed and thanks to the generator set produced, service continuity will be ensured by meeting the energy needs of TOO Shymkent KUS plant when there is no grid available, and also all heating and hot water needs of the plant could be converted into a system to be established by transforming the current solution into cogeneration with the add-ons to be made in the near future.

The emergency generator sets of TOO Shymkent KUS company, whose head office is located in Shymkent, the capital of South Kazakhstan region, have been provided by TEKSAN.

Andjik-III Drinking Water Production Plant Project / Holland



TEKSAN supports Holland's strategic projects.

PROJECT NAME

Andijk III - Drinking Water Production Plant, Holland

PROJECT REQUIREMENTS

The auxiliary power source required for the plant which produces 120.000 m³ high quality drinking water per day to continue its activities.

SOLUTION WE DELIVERED

4 units of 2200 kVA generator set have been produced and the system has been set up to run synchronously.

Andijk III - Drinking Water Plant in Holland which was realized with an investment of around EUR 50 million by the end of 2013 meets the water needs of the people in North Holland with a high quality drinking water production capacity of 5.000 m³ per hour and 120.000 m³ per day.

Within the scope of the project, 4x2200 kVA generator sets convenient to work in a closed area have been produced for Andijk III Drinking Water Production Plant, and the system has been set up to run synchronously.

In this project produced within the scope of private business, the uninterrupted power solution required by the facility, which is critical for the people in the region, to maintain its operations, has been provided with fast delivery and competitive price advantage.



Savola Desert Irrigation project has relied on TEKSAN.

PROJECT NAME

Savole Desert Irrigation Project, Egypt

PROJECT REQUIREMENTS

Production and delivery of uninterrupted power solutions capable of working without overheating in a temperature above 50°C and resistant to high temperature differences in the shortest possible time.

SOLUTION WE DELIVERED

77 units of 330 kVA diesel generator sets capable of running with high performance under challenging conditions specific to the desert climate such as high temperature and significant temperature differences which were specially developed for the project have been produced and commissioned in a short time. This climate which features temperatures over 50 degrees in the daytime and sand storms as well as being extreme cold at nights brings a lot of difficulties not only for people's living but also for machines' running.

Desert land is reclaimed by special irrigation systems within the scope of ongoing "Desert Irrigation Project" in Savola Region of Egypt and then sugar beet is grown on these reclaimed agricultural regions. For a successful sustainability of this big project directly and indirectly providing employment opportunities to about 10.000 people and spread over 100.000 acres of land, it is obligatory that irrigation is maintained as it was planned and therefore it is necessary that uninterrupted power solutions used in the region without mains electricity must run free of problems and continuously even in the desert climate.




In this significant project in which challenging conditions exist, TEKSAN products are preferred thanks to TEKSAN's 22 years of experience and its engineering infrastructure.

We have made a great deal of contribution to irrigation project powering up agricultural systems with the help of 330 kVA power generators specifically designed for this project by taking climate and site conditions into consideration.

Since it was one of the largest projects in Egypt, TEKSAN has proven its engineering expertise and product quality one more time by including such an important reference for many countries-particularly for African, Asian and Arabian countries-into its portfolio and has brought acceleration to its activities in this region.



Qarmat Ali water treatment plant meets its energy needs with **TEKSAN products**.

PROJECT NAME

Qarmat Ali Water Treatment Plant, Iraq

PROJECT REQUIREMENTS

Diesel generator sets with 4 MW prime power that can be operated at an ambient temperature of 55° C.

SOLUTION WE DELIVERED

4 units of diesel generator set with 1 MW prime power have been projected to increase the total run time and to reduce the operational costs. In Qarmat Ali Su Water Treatment Plant that meets 55% of the water requirement in Basra city of Iraq, the water pumped from the river is firstly transferred to treatment tanks for treatment, then to storage tanks and finally to the city through the water supply center. The water pumping capacity is 20.000 m³ per hour in the facility with 2 pieces of downstream water supply center.

The energy required during this pumping operation in Qarmat Ali Water Treatment Plant is provided by TEKSAN diesel generator sets. The water need of Basra city is met by means of 4 pieces of 1425 kVA synchronized diesel generator sets.

By involving in this project, which was awarded by the US Army Corps of Engineers (USACE), TEKSAN has added a new reference into its worldwide projects.

Ingenio Aguai Sugar Factory / Bolivia





Ingenio Aguai Sugar Factory meets its energy need with TEKSAN products.

PROJECT NAME

Ingenio Aguai Sugar Factory, Bolivia

PROJECT REQUIREMENTS

The auxiliary power source required for Ingenio Aguai Sugar Factory to maintain its activities.

SOLUTION WE DELIVERED

3 units of 1400 kVA synchronized diesel generator sets were produced with remote control panel feature so that it could be controlled remotely from 60 meters. Ingenio Aguai S.A. Company is one of the leading companies in the sugar industry of Bolivia that has been operating for 42 years. The industrial sugar factory established on 13 hectare area, 2 hours away from Santa Cruz and drawing attention with an investment of 150 million USD was commissioned by the company in 2013.

The factory, which has been designed according to the latest technology, also contributes to the technological development of the country.

Ingenio Aguai Sugar Factory needed generator sets in order to meet the electricity needs when the factory is maintained and to meet the energy generated by the turbine when in case of the failure of the steam turbines in the factory.

TEKSAN has met this plant's energy needs with 3 units of 1400 kVA synchronized diesel generator sets. This project also stands out not only for TEKSAN but as one of the most important projects in the region thanks to its technologies such as the remote control panel that can be remotely controlled from 60 meters.

Vialand / Turkey



PROJECT NAME

Vialand, Turkey

PROJECT REQUIREMENTS

The auxiliary power source for amusement center to maintain its operations without interruption.

SOLUTION WE DELIVERED

17 units of 1130 kVA synchronized generator sets in the form of standby operation have been produced in accordance with the project specifications and delivered.



Vialand, Turkey's first international mega theme park with a different concept offering the exhibition and shopping center together, furnishes services in Eyup, the heart of Istanbul.

Vialand, the largest retail investment in Turkey's history with an investment value of 1,15 billion TL, is covering an area of 600.000 m². Vialand, whose size is close to 100 football pitches, also has indoor and outdoor parking lots with a capacity of 8.000 cars. The exhibition centre with a size of 100.000 m² contains concert area for 15.000 people, large green fields and many activity zones that will appeal to large-scale masses.

TEKSAN ensures the continuation of entertainment in Vialand without interruption with 17 units of 1130 kVA synchronized diesel generator sets designed for this magnificent and prestigious project.

The preference of TEKSAN products in such a big project is a proof of TEKSAN experience and expertise as well as the trust in it.



SPORTS & TOURISM



Veliefendi Race Course / Turkey



Veliefendi Race Course preferred TEKSAN on generator.

PROJECT NAME Veliefendi Race Course, Turkey

PROJECT REQUIREMENTS

Generator sets to be used as main power sources to provide uninterrupted lighting throughout the races.

SOLUTION WE DELIVERED

2 units of 2120 kVA and 2 units of 1915 kVA diesel prime generator sets have been specifically designed and installed for the project to meet the main power supply needs and the initial investment costs of the project have been minimized. Istanbul Veliefendi Race Course is one of the important sports facilities of Turkey which has been built on 596 acres of land and has grass race course which is 2.020 meters long and 27-36 meters wide, sand (synthetic) race course which is 1.870 meters long and 17.5-19 meters wide, and sand training course which is 1.720 meters long and 14-16 meters wide. Turkey Jockey Club started night races in Istanbul Veliefendi Race Course in 2008. Approximately 8 MVA power was needed to illuminate these races. A generator system that would run at prime power was needed as the mains voltage was not suitable to feed the lighting system established for the lighting of an area of 115.000 m². The most important issue for the company was to continue on its way with a reliable supplier that would provide solutions rather than a product.

As a result of long-continued technical discussions and researches, it was decided to use TEKSAN synchronization systems in terms of responding the flexible power needs of the system to be installed in Veliefendi Race Course, meeting the needs on reliable





infrastructure and sound insulation, and its superior specifications in other detailed technical issues.

TEKSAN, which is shown among the most important companies of the sector on providing uninterruptible power systems, has designed an economical, reliable and flexible system for illuminating the Veliefendi Race Course. The operator can manage the power requirement of the system via computer in the system in which different operating states are determined according to different power requirements. The predetermined power requirements such as Training module, Night Run module and Live Stream module have been designed in a way that the operator can easily set up on the computer.

In addition, the necessary data are transferred to the Scada system established in the plant by TEKSAN in order to monitor the parameters related to the generator sets. The trainings of the operators were given by the TEKSAN authorities in order to operate the system without error. Meanwhile, container-types of canopies with special sound insulation were produced in order for the power system established in Veliefendi Race Course located in a central region of the city to operate at the minimum volume that will not disturb the public.

As a result of these applications, all advantages of the synchronization system such as low initial investment cost, flexible use, reliable system, ease of service and maintenance, ease of delivery and spare parts supply have been utilized. Furthermore, the system designed to allow the Turkish Jockey Club to benefit from the city network system in the future will also meet the company's next term targets.

Consequently, a reliable power system has been established thanks to the cooperation of TEKSAN, which sought to respond to all possible power needs with 2 units of 2120 kVA and 2 units of 1915 kVA diesel generator sets and produced solution, and to Turkish Jockey Club officials.



Trabzonspor Akyazi Stadium / Turkey

TEKSAN power solutions for uninterrupted excitement of football.

PROJECT NAME

Trabzon Akyazi Stadium Project, Turkey

PROJECT REQUIREMENTS

Solutions that will be used as the main power sources to feed the lights that provide field illumination to avoid any interruption during games.

SOLUTION WE DELIVERED

TEKSAN offered 24/7 spare parts and technical support while providing the power solution that the project needs along with the prime diesel solutions with fast delivery time, affordable and high performance.

In the project jointly realized by Housing Development Administration (HDA), Trabzon Metropolitan Municipality, General Directorate of Youth and Sports and Highways, the most important feature distinguishing the facility, which has 41.513 spectators capacity and is one of Europe's most modern stadiums where Trabzonspor, one of Turkey's leading clubs, will play matches, from the other sport complexes is the fact that it is Turkey's first stadium project built by fill dirt method.

In this important project in which TEKSAN provided the necessary mains power to the spots providing illumination along with 1x2200 kVA, 1x2065 kVA and 1x1900 kVA prime power diesel generator sets, a special ventilation system in accordance with the working standards of the products was designed by performing the measurements and analyses necessary for the evacuation of the exhaust gases produced by generators.

Vakifbank / Turkey



European and world champion Vakifbank Sports Hall's energy needs from TEKSAN.

PROJECT NAME Vakifbank Sports Hall, Turkey

PROJECT REQUIREMENTS

Meeting the energy needs of semi-olympic pool swimming pool for 200 people, free sport areas, 2 SPA centers, gymnasium in the facility with a capacity of 2500 people on 33.300 m² area.

SOLUTION WE DELIVERED

Solution is delivered for auxiliary power during mains electricity interruption with 1400 kVA standby diesel generator set.

Vakifbank Sports Hall built by Vakifbank Sports Club, which was founded in 1986 and has brought important worldwide championships and cups to Turkey, has a capacity of 2500 people on an area of 33.300 m².

The facility has nine storeys and has a multi-purpose sports hall, two volleyball training halls, a semi-olympic swimming pool with six lanes, a press center, a gymnasium, a conference hall, camp facilities, sevaral sports fields, fitness and spa center, sauna, Turkish bath and steam rooms, restaurant and cafeteria, children's playgrounds, offices, and an indoor parking lot for 250 cars.

TEKSAN which will provide the energy needs uninterruptedly delivers auxiliary power solution during mains electricity interruption with 1400 kVA standby diesel generator set.

TEKSAN is proud to meet the energy requirement of such a large project.

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Egemer Erzin Natural Gas Cycle Power Plant / Turkey

Egemer Erzin Natural Gas Cycle Power Plant has been using TEKSAN GENERATOR sets.

PROJECT NAME

Egemer Erzin Natural Gas Cycle Power Plant, Turkey

PROJECT REQUIREMENTS

The supply of energy that will be commissioned following the disconnection of the mains power and the switchboard and required for the operation of auxiliary plants, cooling and lubrication systems of turbines

SOLUTION WE DELIVERED

1x2500 kVA diesel generator set with container type special sound insulation canopy which is suitable for synchronous operation with grid.



Egemer Erzin Natural Gas Cycle Power Plant was put into operation in 2014 by Egemer Elektrik Uretim A.S., affiliated to Ak Enerji Elektrik Uretim A.S. which is one of Turkey's leading investor organizations, as a combined cycle power plant in Hatay's Erzin district.

In the project in which GE and Gama Power Systems consortium are turn-key basis contractors, GE company is responsible for the supply of main energy production equipment (gas and steam turbines and boilers), and the other partner Gama Power Systems is responsible for general and detail engineering services, all construction and electromechanical installation works.

It has been estimated that Erzin Natural Gas Combined Cycle Power Plant with an installed capacity of approximately 900 MW will meet about 2.6% of energy demand of Turkey with 6,7 billion kWh electric energy production.

An equipped solution has been provided with TEKSAN's product that includes CO_2 gas automatic fire detection and extinguishing system with a power of 2500 kVA, special sound insulation, container type canopy, which



is custom painted in marine standards, has the feature of being controlled through Scada with fiber optic / ethernet features and operating in parallel with the mains, and has superior features such as special double-wall cylindrical fuel tank and seismic limitation for the needs of the facility. The continuity of the energy supply has been ensured for the power plant cooling system, lubrication system, HVAC, UPS and fire system with a diesel generator that will be activated during a complete energy interruption.

Hatay Erzin Power Plant which has been built using the most advanced technology standards and complies with high efficiency required by energy market conditions, environmental emission criteria and European standards preferred the solution of our team of experienced engineers on high energy requirement. TEKSAN, which has completely met the customer needs in this important project, has shown its difference and the quality again as well as in many projects.



Ministry of Energy and Natural Resources of Turkish Republic preferred TEKSAN.

PROJECT NAME

Heas Hamitabat Power Plant Project, Thrace

PROJECT REQUIREMENTS

The Power Plant meets approximately 7% of Turkey's electric power generation, and the generated power meets energy needs of Thrace and a large part of European Side of Istanbul.

SOLUTION WE DELIVERED

TEKSAN products with 1 unit high voltage alternator (6,3 kV) 2500 kVA, 1 unit 1500 kVA (400 V) that we have specially designed for the project serves as the black start generator of the gas turbines in the project. Foundation of Heas Hamitabat Natural Gas Combined Cycle Plant, acting as an affiliate of Ministry of Energy and Natural Resources of Turkish Republic, is laid in March 17, 1985 and the first and the last units were put into use on 24th of November, 1985 and on 13th of April, 1989 respectively. Plant is a combined cycle plant with 1120 MW installed power and it is comprised of 12 units, 8 of which are Gas Turbines, each one having 96 MW power, and 4 of which are Steam Turbines, each one having 96 MW power.

In power plant, there are 4 combined cycle plants. Each combined cycle plant is comprised of 2 gas turbines and 1 steam turbine.

Heas Hamitabat Power Plant, providing alone 7% of electric power generation in Turkey, meets energy needs of Turkish Thrace and large part of Istanbul's European Side. The power outages that may occur due to any problems that arise in the power plant will affect the whole of Turkey, particularly Turkish Thrace and Istanbul.

An emergency energy supply is needed to power up lubrication and water circulation pumps, ventilation, excitation and automation systems so that the plant could reinitiate generating electricity in such power outage that might be experienced.





A 1500 kVA generator set with high voltage alternator (6,3 kV) was specially produced as a solution to the power need called "Black Start" in energy production plants.

Project design is done following to preimplementation activities such as operational scenarios of the generator sets to be installed in the facility, determining installation spots for generator sets, positioning 2500 kVA standby generator set in to the room prepared for demounted old genset and placing 1500kVA generator sets outside the building, installation and commissioning of them, field studies and meetings of TEKSAN after sales services team with plant authorities. 2500 kVA standby genset amongst aforementioned generator sets which are specifically designed for operating automatically in case of any power outage in plant is capable of reactivating excitation system and pumps by energizing transformer's inputs through its two outputs, 400 V and 1900 V. As for 1500 kVA generator set, it supplies power to internal requirements and automation system.

The fact that such a huge energy production plant has chosen TEKSAN as supplier of emergency power system required for performing "Black Start" is such a süblime success as well as evidencing that it is a reliable partner with its services provided to Heas Hamitabat Plant.



PROJECT NAME

T.P.A.O Natural Gas Storage and Capacity Expansion Plant Natural Gas GenSet Project, Turkey

PROJECT REQUIREMENTS

Cost effective auxiliary power source with high efficiency and performance for all storage facility.

SOLUTION WE DELIVERED

The 1010 kW natural gas generator, the thermal efficiency of which is 49 % and the electrical efficiency of which is 39 %, providing all the energy the plant needs has been designed to operate synchronously with the grid that is available, and primarily when there is no grid. The system providing great advantages with these features also has an option to be converted into cogeneration system in case of adding heat recovery system, and brings along the opportunity to reach higher saving rates with such an improvement. With this project, a solution with minimal environmental impact while producing energy at lower costs compared to diesel has been delivered to customer, and customer satisfaction has been ensured with the fast delivery of this affordable solution.

The presence of active gas line in regions and the fact that they are available for energy generation or conversion in case of no existing grid or often interruptions in the mains provide cost advantages due to low fuel consumption for the businesses. The yield rates that have been rising along with the developments in the gas engine technology in the recent years enables electricity generation cost with the same cost or even lower than that of the mains.

Natural gas generator sets are increasingly preferred by the businesses because of these advantages they provide

T.P.A.O. (Turkish Petroleum Corporation) Natural Gas





Storage and Capacity Expansion Plant stands out as one of the most important gas driven generator applications in Turkey. The entire electrical energy demand of "Northern Marmara and Degirmenkoy Natural Gas Storage - Capacity Expansion Plant" built in Silivri is met by the solution specially designed by TEKSAN.

The 1010 kW natural gas generator set, which was commissioned in January 2016, was produced and put into operation in a way that will meet the power need of T.P.A.O. Northern Marmara and Degirmenkoy Natural Gas Storage - Capacity Expansion Plant whenever there is no grid. Besides, it is possible to feed the system uninterruptedly by the natural gas generator set which is directly integrated to the natural gas line even if there is an available grid.

Considering the fact that the facility is a natural gas storage facility with high storage capacity, a 1010 kW natural gas generator set has been chosen as backup power source for the project.

The thermal efficiency of natural gas generator set, which meets all the electricity needs of the plant, is 49 % and the electrical efficiency of it is 39 %.

The generator sets designed to operate synchronously

with the grid when it is available, and primarily when there is no grid. Thus, the gen sets provide great advantages Furthermore, the option of upgrading this natural gas generator set into cogeneration system by adding a heat recovery system onto the product, delivers an opportunity of reaching higher savings in the coming period for the facility.

Due to the fact that the natural gas prices are more advantageous than that of diesel fuel, while operating with low compression rates, where they wear less in longer run-times. Also, ignition is made in a better way with the spark plugs used in the system and NOx emission settings can be made, and beyond that, owing to the fact that it is an eco-friendly solution, natural gas generator option is becoming more popular in the preferences of the customers.



Ahal - Derweze Gas Turbine Plant / Turkmenistan



TEKSAN solutions were chosen for Ahal – Derweze Gas Turbine Plant.

PROJECT NAME

Ahal - Derweze Gas Turbine, Turkmenistan

PROJECT REQUIREMENTS

The commissioning of gas turbines in case of black-start, auxiliary power source to feed the lubrication and cooling systems during the disconnection of gas turbines in emergency.

SOLUTION WE DELIVERED

TEKSAN has provided not only the production of 4x1400 kVA synchronized generator sets with black start feature specially designed for the project but also the electric project optimization to ensure efficient and efficient operation of the system. Calik Enerji, one of Turkey's leading energy companies, preferred TEKSAN products in their projects of Ahal-2 and Derweze Simple Cycle Gas Power Plant in Turkmenistan which they performed with American firm Foster Wheeler, expert in preparing oil & gas projects.

4 units of 1400 kVA synchronized generator sets were given to each site for Ahal 2 / 252.2 MW, Derweze / Pressure Simple Cycle Natural Gas Power Plant with 504,4 MW capacity, the largest power plant projects which are very important for Turkmenistan and have been built at a time. These generator sets provide the feeding of lubrication and cooling systems for the commissioning of gas turbines in case of black- start and during the disconnection of the gas turbines in emergency situations.

Generator sets have undertaken a very critical task as there is no other energy source to feed these support systems in the event of an emergency.

Foster Wheeler Project firm creates a list of companies, only from which bids can be obtained for the project specification they prepare, and they accept only the quotations of the companies which are on this list. Our Project Team, which is compound





of competent experts in their field, has been included in the list. After analyzing the details given in the technical specifications of the project, TEKSAN Project Team has determined the most suitable generator set models together with the product features in terms of technical and commercial perspectives. For the effective operation of the system, the optimizations on the system and the electrical project was prepared and proposed to Calik Energi and the project firm Foster Wheeler. The necessary revisions have been completed in cooperation with these companies, and the delivery of the generator sets have been realized after conducting the essential tests in the factory. TEKSAN products have been delivered by completing the field test in a short time with commissioning team, which has a solid experience in similar projects.

This project has shown that both TEKSAN and its products are effective in natural gas conversion plants due to their critical roles undertaken. Thus, TEKSAN has taken its place in supplier lists of companies working on special projects related to this sector.





Allai Newroz Telecom / Iraq

Reliable power solutions from TEKSAN for uninterrupted communication.

PROJECT NAME

Allai Newroz Telecom, Iraq

PROJECT REQUIREMENTS

Supporting the transmitters used in the field with uninterrupted prime power sources with special sound level to avoid the interruption of communication services such as sound transmission and data transmission

SOLUTION WE DELIVERED

600 pieces of prime generators with 21-33 kVA power and special sound level (60 dB(A) - 1 meter) have been produced with remote monitoring modules, the installation of the products in the field has been realized in a short time along with the fast delivery dates of TEKSAN, and the customer has been ensured to avoid extra cost burdens. The first investment cost has been minimized with the products provided at reasonable prices, and a reliable uninterrupted power solution has been provided with spare parts and technical service support. Allai Newroz Telecom which was founded in 2007 and continues infrastructure works in the field of telecommunications in Northern Iraq has the vision of becoming the telecom operator of the Northern Iraq. The company that has a wide range of services, develops and offers telecom technologies that make the life easier for its customers.

Allai Newroz Telecom, which has carried out many successful projects in the field of communication technology in recent years such as the establishment of fiber optic cable infrastructure exceeding 1.500 km and providing the integration of whole North and South Iraq with the whole world, and the establishment of wireless internet network infrastructure in Northern Iraqi regions like Erbil, Duhok and Süleymaniye using EV-D0 technology with the new CDMA network.

600 units of super silent prime generator sets with powers ranging between 21 and 33 kVA, which were





designed specificly for Telecom sector, manufactured for Allai Newroz Telecom, the company that preferred TEKSAN as a solution partner in their projects. All of the süper silent generator sets have been installed in areas that are close to the base stations located in the region.

While the sound level of regular products used in similar Telecom projects is in-between 70 to 72 dB (A) at 1 meter, it was reduced to 60 dB (A) at 1 meter with special insulation technology and software in "super silent" generator sets developed by TEKSAN for Allai Newroz Telecom.

Besides, thanks to D500 Remote Monitoring and Control Module, the data of the sets installed on the field can be monitored remotely. In addition, in case of emergencies, products can be intervened through internet of GSM based infrastructure. Thus service provider's operational expenses have been reduced and the financial losses due to the interruption of the services have also been avoided.



ssion Loss, dE







BRT preferred TEKSAN as a solution partner.

PROJECT NAME BRT Media Project, Cyprus

PROJECT REQUIREMENTS

Selvilitepe needs uninterrupted energy for all broadcasting and communication in the country at the highest point of Northern Cyprus which has 1024 meters above the sea level.

SOLUTION WE DELIVERED

2 units of 660 kVA diesel generator sets, which were produced by Teksan, have been preferred for base stations at Selvilitepe and Iskele Municipality so that broadcasting could be continued uninterruptedly in case of a power outage in mains electricity. Special solutions that provide extra protection from lightning that may fall on products were also offered in the project with an altitude of 1024 meters. Bayrak Radio and Television Corporation initiated its first activities in media sector as Bayrak Radio in 1963 and still present since the television broadcast in 1976 with its rapid rise, is one of the most important broadcasters which ensures the voice of Turkish people resident in Cyprus are heard by the world.

BRT has preferred 2 units of 660 kVA diesel generator sets, produced by Teksan, for base stations at Selvilitepe and Iskele Municipality so that broadcasting could be continued uninterruptedly in case of a power outage in mains electricity.

Selvilitepe is known to be one of the highest points in Cyprus which has 1024 meters above the sea level and plays a critical role for all broadcasting and communications in the country.

In this region which has challenging environmental conditions and strategical importance, BRT authorities





have chosen TEKSAN as their solution partner. 2 generator sets with 660 kVA power are proposed in line with analysis and feasibility studies conducted, some special measures such as special insulated engine indicators, electrical surge arresters, special connectors and bus bars, bus bar isolators, sleeves for bus bars, are devised for the protection of the generators to be located at one of the highest locations in Cyprus and to be exposed challenging weather conditions such as thunderbolts, strong wind and heavy rain.

TEKSAN has proven itself with solid expertise in commissioning and widespread after sales services in Cyprus and successfully completed this project in a short span of time.







TEKSAN is always with you in your most challenging projects.

PROJECT NAME Mobile Stone Crusher, Turkey

PROJECT REQUIREMENTS

Providing the energy need of specially produced stone crusher.

SOLUTION WE DELIVERED

A special 330 kVA prime type generator was coupled with 450 kVA special type alternator for the continuous operation of the mobile crusher, in addition, the field type air intake filters to prevent dusty environment effects and leaf type manual shutter to prevent dust from entering the machine when the machine is not working were used. Founded in 1973, Topcu Machinery operated in the fields of production, maintenance and repair of machines used in the mining and construction sector until 2011. The company entirely directed to production of mobile machines by establishing a strategic partnership with Ozyurt Machinery.

Ozyurt Machinery aiming to produce better solutions by determining the shortcomings of existing mobile machines with a different perspective caused by 40 years' experience of production, maintenance and repair continues its projects with the mission of quality and reliability.

The company has a 10-year global validation patent for the crusher with pellet and generator placed on it, one of its most important projects.





The generator Canopy was designed in the same color as the machine upon the special request of the company.

TEKSAN GENERATOR, a power solution partner of this project, has developed a special product for the mobile crushers coupled to 450 kVA private alternator for higher performance of 330 kVA prime product.

Field type air intake filters were used for continuous operation of the generator in a heavy dusty environment, and the leaf type manual shutter was added to prevent dust from entering the machine when the machine is not working.

OPTIONS

Dish type vibration block was used between motor and chassis.

The panel produced using Schneider branded materials was placed on the side and the panel was covered with plate.

The device was installed on the location determined on the machine, not on the panel.

The fuel tank has been strengthened. Special-purpose double-wall fuel tank was produced, and filter was inserted in the mouth of the fuel filling.

Fuel tank ventilation was carried to the front of the radiator, and sump ventilation was carried to the front of the canopy.

The feature of audible warning with the horn was added in the project to be used in cases of malfunction and when the fuel is low.

Replaceable sand filter in Canopy air intake areas, and hood application in front of filter and radiator were performed.

SOME OF OUR REGIONAL REFERENCES...

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Europe



Aksaray Hospital / Aksaray, TURKEY Standby 4x1650 kVA Diesel Generator Sets



Acıty Outlet Center Project / TURKEY 4x500 kWe Trigeneration System



Corum State Hospital / Corum, TURKEY Standby 3x1130 kVA, 2x1425 kVA, 1x1650 kVA Diesel Generator Sets



Iskilip State Hospital / Corum, TURKEY Standby 2x1130 kVA Diesel Generator Sets



Batıkent AVM / Ankara, TURKEY Standby 2x905 kVA, 2x705 kVA Diesel Generator Sets



Dicle University / Diyarbakir, TURKEY Standby 8 units of 275-1425 kVA Diesel Generator Set



TED University / Ankara, TURKEY Standby 2x550 kVA-1x133 kVA 1x581 kVA Diesel Generator Sets



Tekronot Automotive Factory / Düzce, TURKEY Standby 3x1425 kVA Synchronized Diesel Generator Sets



A.Özcan Rubber Factory / Ankara, TURKEY Standby 2x750 kVA Diesel Generator Sets



Edirne Sultan Murat I State Hospital / TURKEY 2x430 kW Trigeneration System



Türksat / Ankara, TURKEY Standby 2x155 kVA-1x90 kVA Diesel Generator Sets



Tercan State Hospital / Erzurum, TURKEY Standby 1x1900 kVA Diesel Generator Sets



National Maritime Safety and Emergency Response Center / Antalya, TURKEY Standby 2 x1425 kVA Synchronized Diesel Generator Sets



Erzurum Airport / Erzurum, TURKEY Standby 2x1125 kVA Synchronized Diesel Generator Sets



Antalya Coast Guard Command / Antalya, TURKEY Prime 1x1900 kVA Diesel Generator Set



Erzurum, TURKEY Standby 1x1400 kVA, 1x200 kVA Diesel Generator Set

Erzurum Treatment Plant /



Tüpraş / Batman, TURKEY Standby 1x2500 kVA Diesel Generator Set



Afad Project / Erzurum, TURKEY Standby 2x335 kVA, 4x220 kVA Diesel Generator Sets



Bursa Teleferik A.Ş. / Bursa, TURKEY Standby 2x774 kVA, 1x826 kVA, 1x550 kVA, 1x144 kVA, 1x51 kVA Synchronized Diesel Generator Sets



25th World Inter - University Winter Games / Erzurum, TURKEY Standby 3x695 kVA Synchronized Diesel Generator Sets





T.I.G.E.M / Eskisehir, TURKEY 1x255 kWe **Biogas Cogeneration System**

Tusas Engine Plant / Eskisehir, TURKEY

Standby 1x1650 kVA

Diesel Generator Set



Standby Diesel Generator Sets

Standby 7x774 kVA

A 101 / Istanbul, TURKEY 22 units of 254-520 kVA



Viaport Venezia / Istanbul, TURKEY Standby 7x750 kVA, 10x560 kVA, 8x750 kVA Synchronized Diesel Generator Sets

Nidakule Atasehir / Istanbul, TURKEY

Synchronized Diesel Generator Sets



Tanap project / Gümüşhane, TURKEY Standby 2x662 kVA **Diesel Generator Sets**



Taşyapı Fourwinds / Istanbul, TURKEY



Hatay Hospital / Hatay, TURKEY Standby 5x1900 kVA **Diesel Generator Sets**



Standby 6x1000 kVA Synchronized Diesel Generator Sets



Hatay Water Treatment Center / Hatay, TURKEY 7 standby units in the range of 33-1100 kVA and 1 standby unit of 2681 kVA Automatic Diesel Generator Sets with Custom Sound Level Canopy



HATSU Hatay Water Treatment Plants / Hatay, TURKEY 42 units of standby Diesel Generator Sets at various powers



Egemer Erzin Natural Gas Cycle Power Plant / TÜRKEY Standby 1x2500 kVA



Diesel Generator Set Custom Sound Insulated Container Canopy

Garanti Bank / TURKEY

Diesel Generator Sets

Standby 855 units of 46- 80 kVA



Brandium Hotel-Residence-Shopping Mall / Istanbul, TURKEY

Standby 22x774 kVA,4x660 kVA Synchronized Diesel Generator Sets



Carrefoursa Maltepe Park Shopping Mall / Istanbul, TURKEY Standby 2x905 kVA, 2x1130 kVA Synchronized Diesel Generator Sets



Cagri Hypermarkets / Istanbul, TURKEY Standby 4 units of 30-50 kVA Diesel Generator Sets





Maslak Kar Plaza / Istanbul, TURKEY Standby 2x1600 kVA Synchronized Diesel Generator Sets



- Varyap Meridian Residence / TURKEY Standby 8x660 kVA Synchronized Diesel Generator Set
- Standby 8x750 kVA Synchronized Diesel Generator Set Standby 2x880 kVA Synchronized Diesel Generator Set Standby 1x825 kVA Synchronized Diesel Generator Set

Bikur Plaza / Istanbul, TURKEY Standby 2x695 kVA Synchronized Diesel Generator Sets

Istanbul Sapphire / TURKEY Standby 2x2100 kVA AUTO Synchronized Diesel Generator Set Standby 2x1425 kVA

Synchronized Diesel Generator Set

Europe



Varyap Pendik Plaza / Istanbul, TURKEY Standby 3x1100 kVA Synchronized Diesel Generator Sets



Sariyer Hospital / Istanbul, TURKEY Standby 4x1130 kVA Diesel Generator Sets

Beylikduzu Hospital / Istanbul, TURKEY



Trendist Atasehir Community Buildings / Istanbul, TURKEY Standby 3x1130 kVA, 2x905 kVA, 3x631 kVA Synchronized Diesel Generator Sets



Istanbul 216 Community Buildings / Istanbul, TURKEY Standby 2x880 kVA Synchronized Diesel Generator Sets



Buyukcekmece Hospital /



Standby 3x1130 kVA

Diesel Generator Sets



Kayabasi Housing Project / Istanbul, TURKEY Standby 4x880 kVA, 4x552 kVA **Diesel Generator Sets**



Kadıkoy - Kartal Metro / Istanbul, TURKEY Standby 2x1900 kVA Synchronized **Diesel Generator Sets**



Santa Farma Pharmaceutical Factory / Istanbul, TURKEY Standby 3x2500 kVA Synchronized Diesel Generator Set



A.S.K.I. / Ankara, TURKEY 3x1000 kW **Biogas Cogeneration Set**



Medical Park Goztepe / Istanbul, TURKEY Standby 3x715 kVA, 2x775 kVA Synchronized Diesel Generator Sets

Abdi İbrahim Almati Pharmaceutical Factory /



Cekmekoy-Uskudar-Umraniye Metro / Istanbul, TURKEY Standby 3x2200 kVA Synchronized Diesel Generator Sets were specially designed as Medium Voltage (6300V).



Istanbul, TURKEY Standby 2x657 kVA Synchronized Diesel Generator Sets



Kepez 300 - Bed State Hospital / Antalya, TURKEY Standby 4x1650 kVA Synchronized Diesel Generator Sets

Synchronized Diesel Generator Sets

Istanbul, TURKEY Standby 2x1650 kVA



2x400 kW Trigeneration system Istanbul 29 Mayis University /

Istanbul, TURKEY Standby 2x721 kVA Synchronized Diesel Generator Sets

Zeytinburnu Ataturk Student Dormitory / Istanbul, TURKEY Standby 2x1130 kVA Synchronized Diesel Generator Sets



T.P.A.O. Silivri / Istanbul, TURKEY 1010 kWe Natural Gas Generator Set







Kordsa Teknopark / Istanbul, TURKEY Standby 1x1900 kVA Diesel Generator Set





Sinan Erdem Sports Center / Istanbul, TURKEY Standby 3x1900 kVA Synchronized Diesel Generator Sets



Yenikapi Activity Area / Istanbul, TURKEY Standby 2x1900 kVA Synchronized Diesel Generator Set



Vakifbank Sports Hall / Istanbul, TURKEY Standby 2x1400kVA Synchronized Diesel Generator Set



Izmir Park Shopping Mall / Izmir, TURKEY Standby 4x778 kVA Synchronized Diesel Generator Sets

Izmir İzsu Treatment Plant / Izmir, TURKEY



Veliefendi Race Course / Istanbul, TURKEY Standby 2x2100 kVA Diesel Generator Sets Standby 2x1915 kVA Diesel Generator Sets Special sound insulated container type canopies



Darica Park AVM / Izmit, TURKEY

Synchronized Diesel Generator Sets

Standby 3x750 kVA



Istanbul Aquarium / Istanbul, TURKEY Standby 1x1500 kVA, 1x1900 kVA Diesel Generator Sets



Standby 3x657 kVA Synchronized Diesel Generator Sets



Hilton Kozyatagi / Istanbul, TURKEY Standby 4x774 kVA Synchronized Diesel Generator Sets



Hospital / Izmit, TURKEY Standby 2x1900 kVA, 2x1400 kVA, 2x676 kVA, 2x821 kVA Synchronized Diesel Generator Sets

Symbol Kocaeli Shopping Mall-Residence-



Vialand / Istanbul, TURKEY Standby 17x1130 kVA Diesel Generator Sets



Standby 2x1000 kVA Synchronized Diesel Generator Sets



Maiden's Tower / Istanbul, TURKEY Standby 1x150 kVA Diesel Generator Set





Topkapi Palace / Istanbul, TURKEY Standby 1x424 kVA Diesel Generator Set



Izmit Race Course / Izmit, TURKEY

Standby 6x552 kVA

Diesel Generator Sets



Galata Tower / Istanbul, TURKEY Standby 1x80 kVA, 1x 50 kVA Automatic Diesel Generator Sets

Bostanci Dedeman Hotel / Istanbul, TURKEY Standby 4x1130 kVA Synchronized Diesel Generator Sets





Kagizman State Hospital / Kars, TURKEY Standby 2x880 kVA Diesel Generator Sets

Kirikkale High Specialized Hospital / Kirikkale, TURKEY Standby 5x721 kVA Diesel Generator Sets

Sekerpinar Ramada Hotel / Izmit, TURKEY

Europe



Samsung Kirikkale Power Generation Plant / Kirikkale, TURKEY Standby 1x275 kVA Diesel Generator Set



Sanliurfa Race Course / Sanliurfa, TURKEY Standby 5x778 kVA Diesel Generator Sets



Heas Hamitabat Power Plant / TURKEY Standby 1x2500 kVA , 1x1500 kVA Diesel Generator Set



Embil Cerkezkoy Pharmaceutical Factory / Tekirdag, TURKEY Standby 3x905 kVA Synchronized Diesel Generator Sets



Eregli Hospital / Konya, TURKEY Standby 4x1130 kVA Diesel Generator Sets





Malatya Hospital / Malatya, TURKEY Standby 4x1900 kVA Diesel Generator Sets



Trabzon Akyazi Stadium / Trabzon, TURKEY Standby 1x1900 kVA, 1x2065 kVA, 1x2200 kVA Diesel Generator Sets

Van Women's Diseases Hospital /

Yozgat Drinking Water Facilities /

Kale Kilit Cerkezkoy Factory /

Synchronized Diesel Generator Sets

Tekirdag, TURKEY Standby 7x1650 kVA



Manisa Waste Water Treatment Plant / Manisa, TURKEY Standby 1x2500 kVA Diesel Generator Set



2x880 kWe Cogeneration System

Van, TURKEY

Yozgat, TURKEY

Standby 1x1900 kVA Diesel Generator Sets



Anadolu Glass Factory / Mersin, TURKEY Standby 2x2280 kVA Automatic Diesel Generator Sets





Sinop Hospital / Sinop, TURKEY Standby 2x880 kVA Diesel Generator Sets



Tuzla State Hospital / TURKEY 2x400 kWe Trigeneration System





EMBL Heidelberg Biology Institute / GERMANY Standby 1x1000 kVA Diesel Generator Set

Maritza east 1 Power Generation Plant Stara





Southmead Hospital / ENGLAND Standby 2x1035 kVA Diesel Generator Set

BRT Media / CYPRUS Standby 2x660 kVA

NATO Film City Camp / KOSOVA Standby 3x1565 kVA Synchronized Generator Sets

Synchronized Diesel Generator Sets



Pinsk Hospital / BELARUS Standby 2x275 kVA Diesel Generator Set

Zagora / BULGARIA Standby 1x330 kVA

Diesel Generator Set





Zackenberg Research Institute / GREENLAND Standby 1x27 kVA Diesel Generator Set



Marquardt Otel / MACEDONIA Standby 1x1425 kVA Diesel Generator Set Synchronized with the mains



ING Haagse Poort / HOLLAND Standby 2x385 kVA Synchronized Diesel Generator Sets



Grozny City Project / RUSSIA Standby 8x275 kVA,1650 kVA Synchronized Diesel Generator Sets



Andjik-III Drinking Water Production Plant Project / HOLLAND Standby 4x2200 kVA Synchronized Diesel Generator Sets



Vodafone Arnheim / HOLLAND Standby 1x1010 kVA Diesel Generator Sets

Africa

Middle East



Botswana Telecom / BOTSWANA Standby 30x22-90 kVA Diesel Generator Sets



Calik ENERJI LIBYA KHOMS PR / LIBYA Standby 2x2500 kVA Synchronized Diesel Generator Sets



Qarmat Ali Water Treatment Plant / IRAQ Standby 4 x1425 kVA Synchronized Diesel Generator Sets



Allai Newroz Telecom / IRAQ 600 units of standby Diesel Generator Sets ranging between 21-33 kVA Custom Sound Insulated Canopy Diesel Generator Sets



Savola Desert Irrigation Project / EGYPT Standby 77x330 kVA Diesel Generator Set



Erbil Italian Houses / IRAQ Standby 3x1135 kVA Synchronized Diesel Generator Sets



Seplat Petroleum / NIGERIA 1x375 kWe Natural Gas Generator Set



Necef al-Furat & almanathire Hospitals / IRAQ Standby 4x2280 kVA, 2x1400 kVA Synchronized Diesel Generator Sets



Serena Hotel / RUANDA Standby 3x700 kVA Synchronized Diesel Generator Sets



GAMA Erbil Khabat / IRAQ Prime 2x695 kVA Synchronized Diesel Generator Sets



Ferronile Steel bar Factory / SUDAN Standby 3x2120 kVA, 2x1915 kVA Synchronized Diesel Generator Sets



Basra Oil Field Weatherford / IRAQ Standby 9x2500 kVA Synchronized Diesel Generator Sets



Vodafone / TANZANIA Standby 2x1130 kVA Synchronized Diesel Generator Sets



Abu al-Qasim Site Mobile Generator Sets / IRAQ Standby Diesel Generator Sets with 2x3125 kVA, 11 kV Medium Voltage Alternator.



Rejal Alma Treatment Plant / SUUDI ARABIA Standby 1x1400 kVA Diesel Generator Set





Jeddah Movenpick Hotel / SAUDI ARABIA Standby 1x1400 kVA Diesel Generator Set

Kameran-hodeidah Power Supply Project / YEMEN Prime 3x1900 kVA Synchronized Diesel Generator Sets



Asia



Dostyk Plaza / KAZAKHISTAN Standby 2x2025 kVA Diesel Generator Set

Natural Gas Generator Set

1x1240 kWe





Ahal - Derweze Gas Turbine Plant / TURKMENISTAN Standby 4 x1400 kVA Black Start featured **Diesel Generator Sets**





Thailand Raiking Hospital / THAILAND Standby 1x1900 kVA **Diesel Generator Set**

TOO Shymkent KUS / KAZAKHISTAN



Standby 4x1815 kVA Synchronized Diesel Generator Sets

Yadigarlık Parkı / TURKMENISTAN



New Ashgabat International Airport / TURKMENISTAN Standby 4x1265 Kva Synchronized Diesel Generator Sets



Lukoil / UZBEKISTAN Standby 1x825 kVA **Diesel Generator Set**



Presidency of Turkmenistan / TURKMENİSTAN Standby 1x1000 kVA Diesel Generator Set



America



Etan Kraking Polyethylene Production Plant / TURKMENISTAN Standby 3x1380, 4x721 kVA Synchronized Diesel Generator Sets with Custom Sound Level Canopy



Polimeks aoK.1. Phase Project / TURKMENISTAN Standby 1x1130 kVA, 1x1265 kVA, 1x1600 kVA, - 4x1900 kVA, 5x2500 kVA Synchronized Diesel Generator Sets



Calik Enerji aSt 2 - Diesel Generator / TURKMENISTAN Standby 3x116 kVA, 4x500 kVA Synchronized Diesel Generator Sets



Calik Enerji aSt 1 Aşkabat Orbite / TURKMENISTAN Standby 1x825 kVA, Diesel Generator Set





Ingenio Aguai Sugar Factory / Bolivia



Lions Dive & Beach Resort Curacao / NETHERLANDS ANTILLES Standby 1x560 kVA Diesel Generator Set



Savola Desert Irrigation Project / Egypt Standby 77x330 kVA No overheating even in the hottest climate Special filtration against sand storms Diesel Generator Sets



Zackenberg Research Institute / Greenland Standby 1x27 kVA 0°C cold start Auto Diesel Generator Set



Fort Resort Hotel / Nepal (Altitude of 2.200 meters) 1x180 kVA Diesel Generator Set

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