



Power Generation

EMERGENCY POWER GENERATION FOR TÜRK TELEKOM IN ISTANBUL

Who Telecommunications company Türk Telekom
What Emergency power supply based on 16-cylinder Series 4000 diesel gensets for the Istanbul center of telecommunications provider Türk Telekom
Where Istanbul, Turkey

Since July 2011, three emergency power gensets from Rolls-Royce have ensured that telecommunications company Türk Telekom in Istanbul can continue to provide services to its customers during power outages. The Rolls-Royce DS 2595 D5S model gensets, which are powered by 16V 4000 G63 diesel engines, produce 5,190 kVA of electric power and cut in to generate emergency power within nine seconds in parallel mode. Rolls-Royce and its local distributor equipped the entire 144m² facility with everything from gensets through switch cabinets to electrical plant.



A Rolls-Royce solution

Istanbul, Turkey – Turkey’s economy is growing. In many sectors, the country already rates among the leading nations. Prime Minister Erdogan is aiming to make Turkey one of the world’s top ten largest economies by 2023 – the centenary of the founding of the Republic. And the key to that is energy because if you want to grow, you need power. However, the country’s rapid growth means that Turkey’s power network is not always stable and that is why Rolls-Royce is in demand among private Turkish companies to provide continuous power based on gas engines and emergency power generated by diesel units. Rolls-Royce has already installed systems producing 150MW of power in the country and 76 units were added in 2013 alone.

Rolls-Royce supplies tailored emergency power solutions

Turkey’s end users primarily need gensets which deliver between 800 kVA and 3,075 kVA. And they have a high opinion of Rolls-Royce as a systems provider for custom-tailored emergency power products. The Turkish Electricity Transmission Company estimates that the annual rise in electricity demand between 2009 and 2023 is likely to be around 6%. The target is 125,000MW of installed power. For comparison, in 2010, the total was still 54,423MW. The power supply problem is most acute in Istanbul where most of the foreign companies in the country have established locations. The city is home to one fifth of the nation’s population – who use telephone, television and Internet services provided by Türk Telekom. That is why, in July 2011, when it needed to replace the existing emergency power gensets at its Istanbul anatolian side headquarters, the company decided to update and cater for the increasing energy demand by installing three Type DS 2595 D5S emergency gensets from Rolls-Royce. They are powered by three MTU Type 16V 4000 G63 diesel engines which produce 5,190 kVA of electric power.

Complete solution from a single source

A market demand analysis for the Turkish communications network had already been conducted. “We chose the more powerful units to make sure we are well prepared to meet future demand,” said Ali Aydın, Senior Energy Manager at Türk Telekom. Istanbul-based MTU Turkey was able to use its experience as a systems provider to completely equip the 144 square meters underground facility, supplying everything from gensets through switch cabinets to electrical plant. The gensets were built in Friedrichshafen, Germany, and Aydın has confidence in the emergency supply units from Rolls-Royce: “They have been running without any sort of problem at all, right up to the present. I can recommend the gensets and the fast and thorough implementation of the project without hesitation.” One of Rolls-Royce’s special services is to ensure that the manager receives an SMS as soon as a power outage occurs and the gensets have started up.

In the hotly contested private telecommunications market, it is vital for Türk Telekom to be able to provide uninterrupted service for its customers. That is why, before the units were dispatched to Istanbul and went into service, Rolls-Royce subjected them to comprehensive and thorough tests involving simulated load imposition on its own highly modern test stands at its headquarters in Friedrichshafen.

More powerful emergency gensets guarantee continuous data flow

The gensets run in parallel and each can serve as a back-up for the other. Their high torque means the engines have rapid and high load imposition capability and can achieve operating status, stable voltage and frequency, within nine seconds. Load can be imposed from this point on. Türk Telekom’s central facility needs around 2,200 kVA of energy per hour. 33% of Turkey’s Internet volume emanates from



Three Type DS 2595 D5S emergency gensets are powered by three MTU Type 16V 4000 G63 diesel engines which produce 5,190 kVA of electric power. (Pictures: Robert Hack/MTU)



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here. The station is Türk Telekom’s third biggest in the country and the company has a total of around 5,000 individual stations which are gradually allowing it to adapt to the ever expanding telecommunications scene – using more powerful emergency gensets. Of course, it is not only private use of the telephone, GSM, web-TV and Internet services which is growing. Service systems such as banks, the education authorities, the police and other security services are also connected. The consequences of a loss of systems data for Türk Telekom’s customers are unimaginable.

Rolls-Royce – not a one-off solution

Türk Telekom’s use of emergency power technology from Rolls-Royce is not limited to Istanbul. Also at its location at Erzurum in the east of the country the company has installed diesel gensets, this time two gensets with MTU Series 2000 engines.

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- 1 Ali Aydın, Energy Manager at Türk Telekom (left), was delighted with the handling of the project and the installation of the MTU Series 4000 emergency backup gensets. Furkan Yazıcı from the Rolls-Royce Application Engineering Department advised Türk Telekom on the project-specific design details. (Picture: Rolls-Royce)
 - 2 With more than 13 million people living there, Istanbul is the city with the highest population in Turkey. In order to provide uninterrupted service for its customers, Türk Telekom relies on emergency power gensets from Rolls-Royce. (Picture: Rolls-Royce)

