Market Segment: Construction

POWER PROFILE

Customer: NÖMAYG A.O

Location:
Gebze-Izmir motorway, Turkey

Customer Business Issue:
Power to produce an average of 10,000 tons of asphalt per day and supply power and light to road junctions, tunnels and services.

Solution:

2019	6 x C15 500 kVA
	6 x C9 250 kVA
2018	2 x C32 1100 kVA
	1 x C32 1250 kVA
	6 x C15 500 kVA
	6 x C9 250 kVA
2017	2 x C18 660 kVA
2016	2 x 3516B HD 2500 kVA
	2 x 3512B HD 1875 kVA
	2 x C32 1250 kVA
	1 x C32 1100 kVA
	3 x C13 400 kVA
	2 x 3412 900 kVA
2015	1 x 3616B 2250 kVA
	1 x 3512B HD 1875 kVA
	3 x C32 1250 kVA
	1 x C18 600 kVA
	6 x GEP200 200 kVA

Cat® Dealer:
Borusan

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POWER NEED
Curving its way through the northwest of Turkey is the new Gebze-İzmir motorway. At 408 kilometres, it's one of the biggest Built-Operate-Transfer (BOT) highway projects in the country.

The highway runs from the city of Gebze, Kocaeli, rises over İzmit Bay on a suspension bridge before connecting to the Bursa Ring Motorway, and then extends all the way to Balıkesir before connecting to the İzmir Ring motorway.

The Gebze-İzmir motorway is expected to make a great contribution to the Turkish economy and environment by significantly reducing travel time between İstanbul and İzmir from 8-10 hours down to 3.5 – 4 hours, reducing not only fuel consumption but also emissions and noise pollution.

Crossing the İzmit Bay via the suspension bridge now only takes 6 minutes compared to 1 hours 20 minute on the previous road or 45-60 minutes by ferry.

Enhanced economic growth of North-Western Turkey is also expected as industrial investments go beyond İstanbul and Bursa, attracting investment to Balıkesir and Manisa cities on the new route.

With the scope of the construction project for the motorway including two carriage ways in each direction (consisting of 3 lanes and an emergency lane each), junctions, connection roads, a suspension bridge, tunnels, maintenance, operation and toll collection facilities, the power requirements of the project were expected to be varying and complex over several years of construction.

SOLUTION
NÖMAYG A.O were established for construction of the Gebze-İzmir motorway by invester company OTOYOL A.Ş. who are a partnership of the most experienced companies in Turkish construction markets and specialists for motorways, tunnels, dams and other engineering structures.

NÖMAYG A.O were the main construction contractor with responsibility for the suspension bridge, highway and turnkey construction works. As frequent users of Cat® generator sets, NÖMAYG A.O has an excellent relationship with local Cat dealer, Borusan.

NÖMAYG A.O leveraged this relationship, working together with Borusan, as solution partners, winning the contract through their expertise, technical superiority of Cat generator sets and the extensive service network of Borusan Cat.

The Gebze-İzmir motorway was built in two phases. Phase one is between Gebze and Bursa. The second phase begins in Bursa and ends in İzmir. However, one of the biggest challenges was creating approximately 8,600,000 tons of asphalt that would be needed to complete the project.

"Depending on where we were in each phase, and to generate the amount of asphalt we needed, we brought in several Cat generator sets," said Ahmet Erhan Titrek, Consultant (Electrical Engineer) with NÖMAYG A.O."

"We averaged about 10,000 tons a day. We had 200 to 2,500 kVA generators that were used as spare power for the Osmangazi suspension bridge and for power and lighting at road junctions, three tunnels, all service and parking places, security, maintenance complexes, intelligent traffic systems and toll collection systems."

CAT®

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Supplying the 53 Cat generator sets was Cat dealer Borusan. “We followed this large BOT project closely,” said Alptekin Ercan, Regional Sales Manager for Borusan. “Even though the competition was challenging, I think we had some competitive advantages, including technical superiority and our broad service network. Plus, with the help of our SpecSizer Program, we could ensure that we offered optimum generator set power and highlight the fact that we understand the precise needs of our customer.”

RESULTS

Following the contracting process, Borusan made a detailed delivery schedule with Caterpillar and the customer and accordingly monitored the process very closely. Since it was a highway construction, there could be no excusable delay, making every decision critical. The generator sets were delivered and commissioned with huge success.

“Completing at the beginning of August 2019, this project was the biggest BOT (Build Operate Transfer) project within Turkey and involved both arranging large-scale loans from banks and preparing a team of qualified experts. Natural delays in project design and expropriation phases required long working hours and patience with every step of the process requiring time, surreal effort and complete teamwork. All these stages were overcome one by one with hard work and determination, ensuring the project was completed before the contract date,” said Ahmet Erhan Titrek, NÖMAYG A.O.

“The long service intervals and quality of Cat generator sets is renowned worldwide which allowed us to accomplish our long period cost calculations, with a lower total cost of ownership (TCO) compared to the competition.”

“Our customer value agreements (CVA) with Borusan include maintenance, labour and spare parts for all our generator sets. In this way, all the after sales services of the generator sets are guaranteed by Borusan.”

“The responsiveness for all technical support and servicing throughout the construction phases and since completion has proved to us that we made a really good decision by choosing Cat generator sets.”

Alptekin Ercan, Regional Sales Manager for Borusan concluded, “This is a huge project that all machine and generator set producers would like to win. We followed the project with Caterpillar closely and had their continued support throughout, working as one in order to benefit from our teamwork providing the best service to the customer.”

“During the construction period, our skilled technicians remained onsite to ensure all maintenance and servicing were able to be carried out quickly and efficiently. They will continue to provide support for all generator sets including routine maintenance, servicing and technical support when needed as part of our CVA with the customer.”

For more information, please visit cat.com/powergeneration

Generator sets ranging from 200 to 2,500 kVA have been installed to provide power for intelligent traffic systems and toll collections systems as well as providing power and lighting at road junctions, tunnels and services.

LEKE0013-00 May 2020