

Media release

Mumbai is now 400 KV national grid Integrated Adani commissions Khargar-Vikhroli transmission line

Mumbai's unique and first ever 400 KV connection established, with commissioning of a double circuit transmission line by Adani Energy Solutions Limited

This line was languishing for more than a decade and got awarded to Adani in 2021 through bidding

Editor's synopsis

- Mumbai city (Vikhroli) connected first time with 400 KV national grid
- Project comprises first 400 kV GIS substation of Mumbai
- Challenging project with 6 towers on creek and special horizontal towers in urban areas
- It will provide much-needed redundancy and stability to power supply

Ahmedabad, 2 October 2023: Khargar Vikhroli Transmission Limited (KVTL), which will enable additional power to be brought into Mumbai and thus enable in meeting the city's growing and future electricity demand, is commissioned. Built by Adani Energy Solutions Limited (earlier known as Adani Transmission Limited), the energy solution, transmission and distribution arm of the Adani portfolio, the project is critical for Mumbai as the existing capacity of the transmission corridor is not sufficient to carry further power into the city.

Mumbai witnessed grid failure twice in recent times – on 27 February 2022, and on 12 October 2020; localities across the metropolis went dark for a considerable period. The Khargar-Vikhroli line will bring additional 1,000 MW reliable power to Mumbai city as a solution to mitigate any such incidents in the future. With this project's commissioning, Mumbai gets a 400 KV grid within its municipal geography, bringing enhanced import capability within its electricity grid and improving reliability and stability. For consumers, it provides that much more sustainability to commuting through bullet trains, Metro Rail and city railways, as also for commercial and residential establishments.

KVTL comprises approximately 74 circuit kilometres of 400 kV and 220 kV transmission lines, along with a 1,500 MVA 400kV Gas Insulated Substation (GIS) at Vikhroli, the first 400KV substation of its kind in Mumbai. Occupying approximately 9,500 sq m area, it has the most compact design when it comes to 400 KV substations. Its unique design vertically stacks 400kV and 220kV GIS, thus minimizing space requirements.

AESL braved a number of challenges while laying the line, mainly in surmounting difficult terrain, but these were overcome with the use of technology and innovation. For instance,

six towers were constructed in creeks using heavy rigs on floating barges. In urban areas, height restrictions in some locations were overcome by adopting special horizontal configuration towers.

The KVTL project starts in the Kharghar area of Navi Mumbai, traverses through its urban locations and terminates at Vikhroli in Mumbai city. The project includes the following major elements:

- 400 kV/220 kV GIS Vikhroli substation, having 1500 MVA transformation capacity
- Air Insulated System switchyard at Kharghar
- 400 kV double/multi circuit Kharghar-Vikhroli line
- 400 kV loop in loop out (LILO) on Talegaon-Kalwa line at Vikhroli
- 220 kV LILo on Trombay-Salsette line at Vikhroli