

SP Group building the first large-scale underground substation in Southeast Asia

Singapore, 6 April 2021 – SP Group [SP] is constructing the first large-scale underground substation in Southeast Asia. Located at Labrador, SP will build its 230kV¹ electrical substation underground to optimise space in land-scarce Singapore for urban growth and development.

Group Chief Executive Officer of SP Group, Stanley Huang, said: “In our business of enabling a low carbon, smart energy future, we are building sustainable and resilient infrastructure. Taking a holistic approach, we are constructing this substation underground, freeing up space above for a 34-storey development. This is in line with Singapore’s urban renewal plans and our own SDG² goals of ensuring access to reliable, sustainable and modern energy for all and tapping on innovation to build sustainable infrastructure.”

Substations are part of essential infrastructure that power homes, offices, industries and public services. By freeing up prime land spaces for residential, commercial or recreational purposes, land use and resources can be optimised. By going underground, the Labrador substation alone will free up three hectares of prime land space, or the equivalent of four football fields. When in service, the substation will serve the electricity needs of nearby towns such as Alexandra, Clementi, Keppel, Pasir Panjang, and the Science Park district.

Typically, building a substation underground would be more resource-intensive and require specialised engineering capabilities as compared to above-ground. This is due to complexities in construction and the need to use materials and equipment that are suitable for subterranean environment. For example, detailed engineering studies and suitable construction methods are implemented to control the impact to the surrounding buildings

¹ Electrical transmission substations range between 66kV to 400kV. When running at full capacity, one 230kV substation can power up to eight towns, each the size of Toa Payoh.

² United Nation’s Sustainable Development Goals



and infrastructure. In addition, the equipment in the substation must be of low-fire risk, with cooling systems installed to prevent the build-up of heat in the equipment. The long-term benefits of building substations underground outweigh the costs. In addition to optimising land resources for other purposes, underground substations have a lower risk of being exposed and damaged. This will enhance asset and network security.

Mr. Huang added: “Leveraging our extensive experience in constructing the underground electricity cable tunnels that span across Singapore, we will be able to deal with the complexities of building this underground substation. With the learnings and experience gathered from this project, we can explore the possibilities of housing more substations underground.”

The Labrador underground substation is part of the Urban Redevelopment Authority’s underground Master Plan 2019. The electricity substation at Labrador and the commercial building are scheduled for completion in 2024. SP today announced that it has awarded the building contract of the substation to main contractor Hyundai Engineering & Construction Co. Ltd.

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About SP Group

SP Group is a leading utilities group in the Asia Pacific, enabling a low-carbon, smart energy future for its customers. It owns and operates electricity and gas transmission and distribution businesses in Singapore and Australia, and sustainable energy solutions in Singapore and China.

As Singapore's national grid operator, about 1.6 million industrial, commercial and residential customers benefit from its world-class transmission, distribution and market support services. These networks are amongst the most reliable and cost-effective world-wide.

Beyond traditional utilities services, SP Group provides a suite of sustainable energy solutions such as cooling and heating systems for business districts and residential townships, electric vehicle fast charging and green digital energy management tools for customers in Singapore and the region.

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