news

Completed: $2.4b tunnel project for 1,200km of cables

Giant network of tunnels to house electricity cables go up to 80m deep — one of the world's deepest projects

JOSE HONG

A warren of giant tunnels that will safeguard Singapore's electricity supply for the future has been completed.

The $2.4 billion effort to house 1,200km of extra-high voltage cables is one of the world's deepest electricity supply projects.

Singaporeans will begin tapping this electrical source from next year, said energy utility company SP Group yesterday.

Given the depth, it will be easier to monitor and replace cables inside these tunnels and carry out upgrading works in the future, experts said.

Most tunnels will be about 60m — the height of a 20-storey Housing Board building — beneath the ground but some will be at 80m, the deepest among any tunnels here.

SPACE

"We had to build 60m deep because Singapore lacks space," said Mr Michael Chin, SP Group's managing director of infrastructure and projects.

The three tunnel systems are called the North-South, East-West and Jurong Island-Pioneer tunnels.

SP Group said the high-voltage cables in the tunnels will mainly replace eight circuits running north and south or east and west across the country.

These circuits, built in the 1980s, are the oldest transmission cables still in use here.

The laying of cables, which will begin early next year, is projected to be completed by 2022. The first cables will go online by the end of next year.

About 500km of cables will be laid, which is less than half the capacity of the tunnels. They will supply about 20 per cent of Singapore's peak demand, which last year was 7,194MW, according to Energy Market Authority data.

It also projected electricity demand to rise by about 2 per cent a year.

The impact of the project on electricity prices is expected to be minimal.

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For most of their distance, the tunnels are 6m in diameter, about two storeys high, but at junctions, they swell to 11m, the height of about three storeys. PHOTO: **LIANHE ZAOBAO**

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The cables' lifespan is 30 years, which means they can be replaced up to four times inside the tunnels.

Crucially, they will be much easier to replace than cables that run under roads and require traffic to be disrupted as engineers dig up and cover the streets

Mr Chin said because all land under 30m belongs to the state, the cables no longer need to follow the road and can run in straight lines beneath private property.

Said engineer Teo Chor Kok, a council member of The Institution of Engineers, Singapore: "With the cable tunnels, it is easy for SP Group to do any cable works or upgrading with minimal disruption to traffic and Singaporeans.

"It is difficult to monitor cables when they are under a road... Now, you can just go inside the tunnels with your equipment."

josehong@sph.com.sg

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