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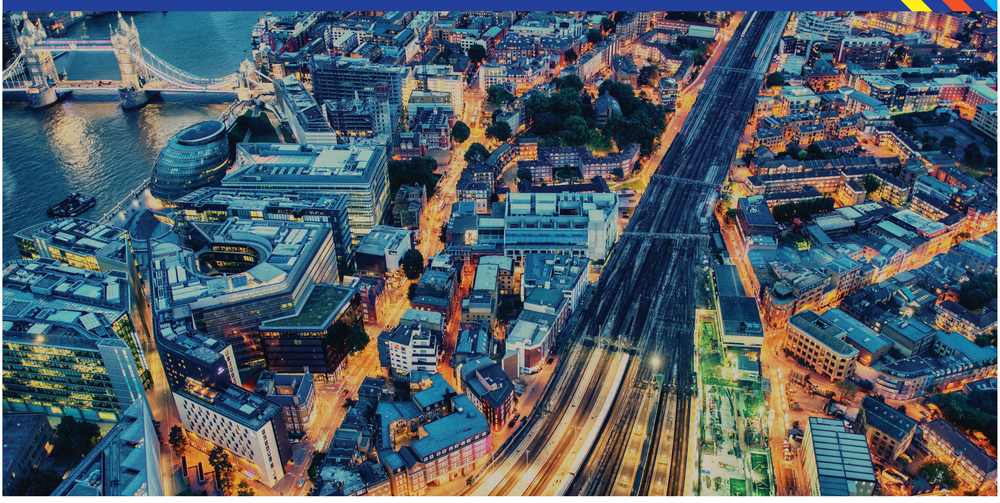
London Power Tunnels



The project

It is National Grid's job to connect people to the energy they use. We play a vital role, delivering gas and electricity efficiently, reliably and safely to millions of people across Great Britain.

We are building a new network of cable tunnels in South London, 32.5km in length, between Wimbledon and Crayford. This forms part of our £1 billion investment to ensure a continued safe and secure supply of electricity to the Capital.

The works are essential to replace existing electricity cables which are coming towards the end of their useful life. By placing the cables in deep underground tunnels, we will reduce disruption across the Capital.

The project is called London Power Tunnels phase 2 and follows the success of our original London Power Tunnels project, which involved building 32km of tunnels and two new substations between 2011 and 2018.

We made a number of significant achievements on the project. This included: recycling 99% of waste material removed from the tunnel; designing a state-of-the-art substation at Highbury and a development to accommodate new business units and affordable homes; and working with over 30,000 pupils across London schools to promote engineering skills.

We have secured all planning approvals for phase two of London Power Tunnels from the relevant local authorities along the tunnel route, and have also progressed Compulsory Purchase Orders (CPOs) for land rights beneath properties along the route.

The contract for the tunnels has been awarded to Hochtief Murphy Joint Venture for the detailed design and build of our tunnel network, which will house the new electricity cables. Construction works will begin in March 2020 and the project is due to be completed in 2026.

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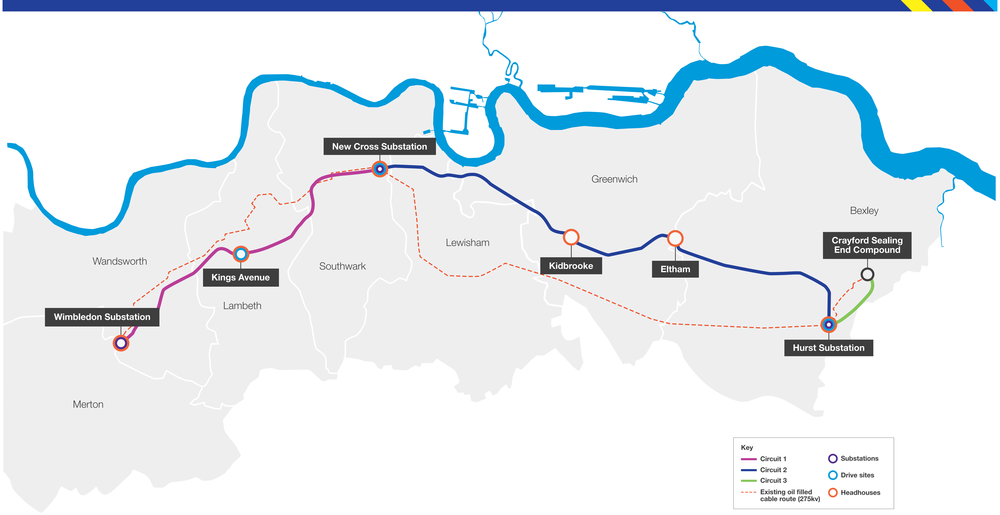

Tunnel route

- The total length of the tunnels will be 32.5km.
- The depth of the tunnels will range between 12m and 63m. The majority of the tunnels will be around 30m deep (the height of a typical nine-storey building).
- We do not need planning approval for the tunnels and shafts as they are below ground. Therefore, we can carry out these works under our permitted development rights.
- We have secured planning approvals where they are needed. This includes approval for building headhouses, which will provide access points and ventilation to the tunnel.

Section 1: Wimbledon to New Cross

Length: 12km
Planned construction: March 2020 – October 2025
Operational by: 2025

Section 2: New Cross to Hurst

Length: 18km
Planned construction: March 2020 – October 2026
Operational by: 2026

Section 3: Hurst to Crayford

Length: 2.5km
Planned construction: March 2020 – October 2024
Operational by: 2026

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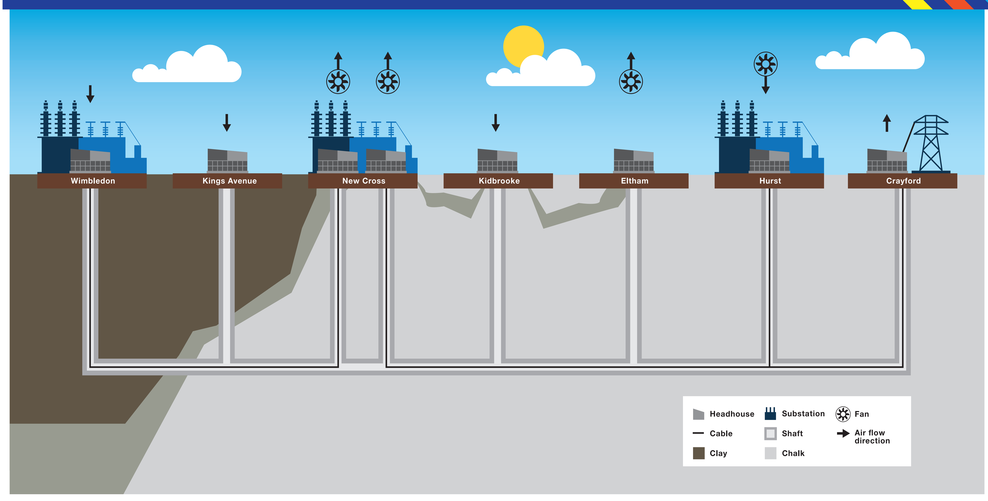


Shafts and headhouses

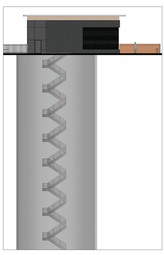
Shafts and headhouses are required at key points along the route of the tunnels. A tunnel boring machine will travel between these points as it progresses along the route.

A headhouse is a building which covers a shaft. Shafts and headhouses are required for the following reasons:

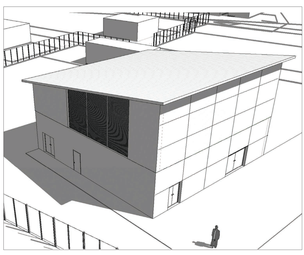
- Health and safety – it will be essential to have access points to ensure the safety of our workforce during construction. The shafts will also be used to access the tunnel for maintenance work once the tunnels are built and operational.
- Ventilation – ventilation equipment, in the form of fans, will be required at some sites to cool the cables and regulate the temperature inside the tunnels.

We are building the tunnels and shafts under our permitted development rights, which means we do not need planning permission for these elements of the project. However, there are points along the tunnel route where we need to build headhouses to cover the shafts. Where these are not on our operational land, we have secured planning permission for them.

The headhouses are designed in order to minimise their visual impact on the local area. For example, materials have been chosen to complement the surrounding environment, in agreement with local authorities along the route.



Drawing of shaft



Drawing of headhouse

Image of Tunnel Boring Machine (TBM)

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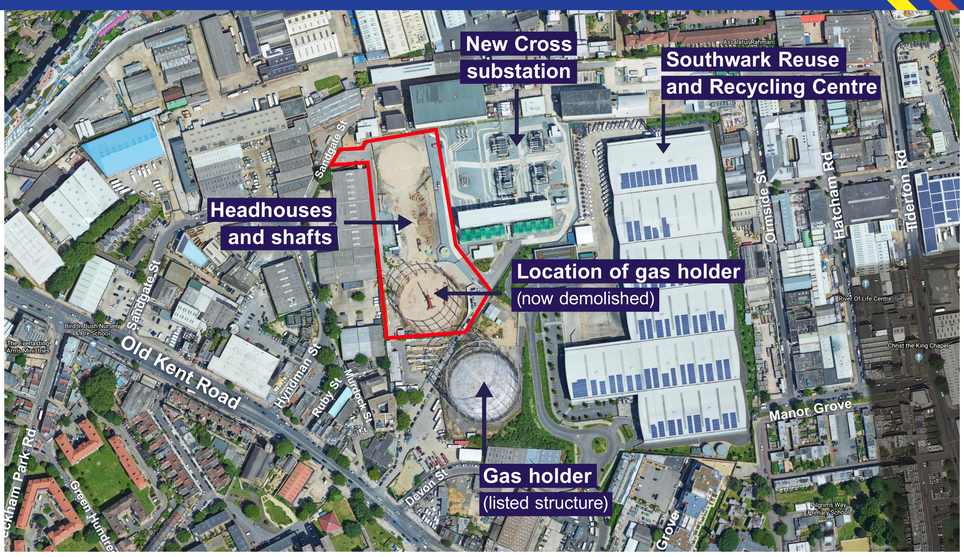

Old Kent Road site (New Cross substation)

Our existing 'New Cross' substation site is located to the north of Old Kent Road in South Bermondsey. We will need to build two shafts next to our existing site to help dig the tunnels towards Kings Avenue and Eltham.

We also need to build two headhouses to cover the shafts. The headhouses will then be used for ventilation and as permanent access points to the tunnels once they are built.

The works are being carried out under our permitted development rights and have been agreed with the London Borough of Southwark.

As part of our preparatory works for the site, we have carried out ground remediation works which involved digging an area where the shafts will be built, and removing any unwanted materials and contaminated land. These works started in June 2019 and are expected to finish this month (February).

Key facts:

- **Dimensions:** The shafts will be 10.5m and 15m in diameter and 34m in depth (the same length as three London buses). The headhouses will have a maximum footprint of 15m by 15m, reaching a maximum height of 10m (the height of a typical three-storey building). We are also installing two super grid transformers.
- **Working hours:** 24-hour working, Monday to Friday, will be required while we build the shafts and carry out tunnelling works. On Saturdays, our working hours will be 7am to 1pm. During the night, our works will largely take place below ground and there will be no work on Sundays or Bank Holidays. Occasional out of hours work may be necessary and we will keep you informed about this.

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Old Kent Road site (New Cross substation)

Key facts continued:

- **Traffic movements:** We anticipate that there will be up to 240 Heavy Goods Vehicle (HGV) movements per day during peak activity between summer 2020 and 2025, while we build the tunnels.
- Following the construction of the shafts and tunnels, there will be a significant reduction in the number of HGV movements required per day as we clean the tunnels, install the cables and cable brackets, fit-out the shafts and build the headhouses to cover the shafts.
- Our construction vehicles will avoid peak morning and evening times, and we are working with the London Borough of Southwark to agree a Detailed Construction Logistics Plan.
- **Access:** Our construction vehicles will use an existing private road joining the A2 (Old Kent Road) to enter and leave the site.

Timeline:

- We plan to start works in **March 2020 and finish in 2026.**
- The two tunnels are scheduled to be built between **summer 2020 and 2024.**
- The two headhouses are scheduled to be built between **2024 and 2026.**

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Managing our impact

National Grid is committed to carrying out our essential works with minimal impact on the local community and environment. We have carried out environmental assessments and are producing detailed Construction Environmental Management Plans and Construction Logistics Plans to support our activities.

Construction traffic

We will do all we can to minimise any disruption associated with our construction traffic. This includes:

- Building temporary access roads, which will route construction traffic to our sites, avoiding the need to use main roads.
- Managing HGV movements and avoiding peak morning and evening times where possible.
- Promoting car share incentives.

Considerate Constructor Scheme

Our works are part of the Considerate Constructors Scheme. This means that we are committed to reducing the impact of construction activity on the local community. We will also work in a sustainable manner to reduce any negative impact on the environment when carrying out our activities.

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In the community

Community relations

We are committed to working with local communities and have a community relations team in place who will keep you informed about our works through a number of channels including:

- Public information events.
- Project updates by letter or newsletter.
- A dedicated community relations phone number and email.
- Local media.
- Project website.

Working with London schools

As part of our ongoing commitment to the communities in which we work, we are partnering with social enterprise, MyKindaFuture, to deliver a Science, Technology, Engineering and Mathematics (STEM) and careers engagement programme with secondary schools across the route. Our activities will give pupils the opportunity to participate in National Grid interactive STEM workshops, and we will also deliver careers fairs and online mentoring for students in years 12 and 13. We will be running a pilot of the initiative in March and the scheme will be rolled out from September 2020 to coincide with the new academic year.

Community Grant Programme

Our Community Grant Programme is aimed at community organisations and charities in areas where National Grid is impacting local people through our operations. We fund projects run by charities and community groups that meet local community needs by providing a range of social, economic and environmental benefits.

If your project meets our criteria you can apply for a grant of up to £20,000. For more information, visit **betl.nationalgrid.co.uk**

Contact us

Call our Freephone helpline number:
0800 783 2855 (lines open 9am to 5pm, Monday to Friday)

E-mail: **nationalgrid@londonpowertunnels.co.uk**

Visit: **www.londonpowertunnels.co.uk**