# TfL secures 15-year solar power deal to electrify London Underground



Transport for London (TfL) has taken a significant step towards its ambitious goal of operating on 100% renewable electricity by 2030, signing a 15-year Power Purchase Agreement (PPA) with EDF Renewables UK. This agreement will secure renewable electricity from a new solar farm planned for Longfield, Essex, expected to begin construction in 2026. The solar facility is set to deliver up to 80 GWh annually, which is enough to power the entire London Underground network for a year.

TfL, the largest single electricity consumer in London with an annual usage of approximately 1.6 terawatt hours, aims to source up to 70% of its electricity through PPAs. The fixed-price nature of the contract provides protection against the volatility of energy markets, ensuring cost stability. Rachel Cary, Head of Industrial Strategy at Energy UK, highlights that PPAs are instrumental in unlocking investments for renewable energy projects, contributing to improvements in air quality, system cost reductions, and accelerating the transition towards a cleaner energy system.

The Longfield solar farm is projected to generate around 400 GWh annually by the end of the decade, marking a substantial contribution to the UK’s renewable energy capacity. Over the duration of the 15-year contract, this partnership with EDF Renewables is expected to cut TfL’s carbon emissions by over 28,000 tonnes—equivalent to the emissions from approximately 33,300 flights between London and New York. In addition to energy generation, the site will implement environmental enhancements including tree and hedgerow planting and habitat regeneration, aiming for a biodiversity net gain of 87.1%—significantly surpassing the legal requirement of 10% under the Environment Act 2021.

The agreement aligns closely with broader ambitions to make London a zero-carbon city by 2030, a target championed by the Mayor of London. In this context, the Mayor has also launched a climate finance taskforce tasked with mobilising an estimated £75 billion in investment for climate-related infrastructure, involving key stakeholders from the financial sector. This initiative aims to accelerate funding for projects facilitating London’s transition to a low-carbon economy.

Meanwhile, TfL is exploring additional measures to boost renewable energy use. It is searching for delivery partners for future private wire solar projects that could directly supply up to 64 MW of electricity to the Underground network, potentially fulfilling around 5% of the Tube’s electricity demand. Lilli Matson, TfL’s Chief Safety, Health and Environment Officer, emphasised that this PPA represents a landmark moment in the organisation’s mission to decarbonise London’s transport system. She underlined the broader benefits of supporting renewable energy investments, including job creation, biodiversity improvements, and national economic stimulation.

This commitment forms part of TfL’s comprehensive strategy to reduce carbon emissions in line with standards set by the Science Based Targets initiative, which validates the organisation’s goal to reduce emissions from both direct and indirect sources by 90% by 2030. It also supports the Mayor’s vision, highlighted in earlier announcements, to progressively power the Tube network entirely using renewable sources like solar and wind.

However, it is worth noting that while initiatives like TfL’s are vital, broader challenges remain for the UK’s renewable energy ambitions. Recent analysis by industry experts points to a likely shortfall in the country's national clean energy targets for 2030, with current estimates suggesting wind and solar may only supply around 44% of electricity, falling short of the 67% target. This gap is attributed largely to slow deployment rates, lengthy planning and grid connection processes, and uncertainties around market reforms. Addressing these systemic barriers will be crucial to enabling projects like the Longfield solar farm and other renewable initiatives to fully realise their potential.

In summary, TfL’s long-term PPA with EDF Renewables marks a considerable advance in decarbonising London’s transport infrastructure, reinforcing its commitment to environmental sustainability and energy resilience amid broader national challenges.

### 📌 Reference Map:

* Paragraph 1 – [[1]](https://airqualitynews.com/fuels/tfl-sign-deal-to-secure-solar-energy-supply-for-15-years/), [[4]](https://www.london.gov.uk/press-releases/mayoral/mayor-confirms-tube-renewable-energy-plan)
* Paragraph 2 – [[1]](https://airqualitynews.com/fuels/tfl-sign-deal-to-secure-solar-energy-supply-for-15-years/), [[2]](https://www.tfl.gov.uk/corporate/about-tfl/reducing-carbon-emissions)
* Paragraph 3 – [[1]](https://airqualitynews.com/fuels/tfl-sign-deal-to-secure-solar-energy-supply-for-15-years/), [[4]](https://www.london.gov.uk/press-releases/mayoral/mayor-confirms-tube-renewable-energy-plan)
* Paragraph 4 – [[1]](https://airqualitynews.com/fuels/tfl-sign-deal-to-secure-solar-energy-supply-for-15-years/)
* Paragraph 5 – [[1]](https://airqualitynews.com/fuels/tfl-sign-deal-to-secure-solar-energy-supply-for-15-years/)
* Paragraph 6 – [[1]](https://airqualitynews.com/fuels/tfl-sign-deal-to-secure-solar-energy-supply-for-15-years/)
* Paragraph 7 – [[3]](https://www.tfl.gov.uk/info-for/media/press-releases/2025/april/tfl-s-greenhouse-gas-emission-reduction-targets-and-net-zero-targets-validated), [[2]](https://www.tfl.gov.uk/corporate/about-tfl/reducing-carbon-emissions), [[4]](https://www.london.gov.uk/press-releases/mayoral/mayor-confirms-tube-renewable-energy-plan)
* Paragraph 8 – [[6]](https://www.ft.com/content/a4becd3c-f296-4bd6-a0db-33d681745a58), [[7]](https://www.ft.com/content/5d1451ac-ec64-4616-8ac9-36acd26f8939)

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## Bibliography

1. <https://airqualitynews.com/fuels/tfl-sign-deal-to-secure-solar-energy-supply-for-15-years/> - Please view link - unable to able to access data
2. <https://www.tfl.gov.uk/corporate/about-tfl/reducing-carbon-emissions> - Transport for London (TfL) is committed to reducing carbon emissions and supporting the Mayor's ambition for London to be net zero carbon by 2030. TfL aims to achieve this by decarbonising operations and supply chains, including transitioning to zero-emission buses and implementing energy efficiency measures in buildings. The organisation plans to source 100% of its electricity from renewable sources by 2030, primarily through Power Purchase Agreements (PPAs).
3. <https://www.tfl.gov.uk/info-for/media/press-releases/2025/april/tfl-s-greenhouse-gas-emission-reduction-targets-and-net-zero-targets-validated> - TfL's near and long-term greenhouse gas emission reduction targets, as well as its net-zero targets, have been validated by the Science Based Targets initiative (SBTi). This validation aligns TfL's goals with the Paris Agreement to limit global warming to 1.5 degrees Celsius. The targets include a commitment to reduce emissions from direct and indirect sources by 90% by 2030, supporting London's ambition to become a carbon-neutral capital by 2030.
4. <https://www.london.gov.uk/press-releases/mayoral/mayor-confirms-tube-renewable-energy-plan> - The Mayor of London, Sadiq Khan, has announced the first steps towards powering the Tube network with 100% renewable source electricity. This initiative is part of the Mayor's goal for London to reach net-zero carbon by 2030. The plan includes launching a Power Purchase Agreement tender to purchase approximately 10% of TfL's required electricity from renewable energy sources, such as wind or solar power.
5. <https://www.the-independent.com/news/business/transport-for-london-plans-to-set-up-dedicated-solar-farms-to-power-tube-network-b2639101.html> - Transport for London (TfL) is planning to establish dedicated solar farms to power the Tube network. This initiative is part of TfL's efforts to achieve its target of 100% renewable source electricity across its operations by 2030. The project aims to contribute to the Mayor of London's goal of a net-zero carbon London by 2030.
6. <https://www.ft.com/content/a4becd3c-f296-4bd6-a0db-33d681745a58> - Experts warn that Britain is likely to miss its 2030 clean energy targets, which aim for wind and solar to supply 67% of the country's electricity. Current planning suggests only a 44% share by 2030, up from 34.3% in 2023. Analysis attributes this shortfall to deployment rates and lengthy processes for obtaining planning permission, grid connections, and state subsidies. Significant changes in energy project implementation are required to bridge this gap.
7. <https://www.ft.com/content/5d1451ac-ec64-4616-8ac9-36acd26f8939> - A report by Cornwall Insight indicates that the UK is projected to miss its 2030 clean power targets due to various practical and investment barriers. The consultancy forecasts a shortfall of 32 gigawatts, primarily due to operational impediments and uncertainties surrounding market reforms. Despite efforts to enhance industry conditions and streamline the electricity grid connection process, further investments in infrastructure and clearer policies are needed to accelerate renewable energy growth.