Finance Committee



Date: 19 November 2024

Item: Power Purchase Agreement Comet: Contract Award

This paper will be considered in public

1 Summary

- 1.1 TfL is London's largest single consumer of electricity, using around 1.6TWh per annum at a cost of around £350m. This represents around 43 per cent of our operational carbon emissions and accounts for 337,000 tonnes of emitted carbon per annum.
- 1.2 The Mayor of London has set a target for London to be net-zero carbon by 2030. As London's strategic transport authority, TfL is responsible for implementing the Mayor's Transport Strategy (MTS), which provides that TfL will aim for rail services under its control to be zero carbon by 2030.
- 1.3 To meet this target, we have set out a plan to transition the way we purchase electricity to ensure it is sourced from renewable generation. Our Energy Purchasing Strategy shared with the Committee in July 2024, outlines the plan to procure up to 70 per cent of our total electricity needs from a generator through renewable energy corporate power purchase agreements (PPAs). The first step in this initiative, known as PPA Comet, involves procuring up to 12.5 per cent of TfL's electricity demand (or up to 200GWh) from a new renewable project. The proposed project has already secured planning permission, and is due to commence construction in 2026. Power delivery from the asset is anticipated to begin in 2028.
- 1.4 The procurement process is close to completion, and this paper set outs the contract award recommendation.
- 1.5 This paper seeks Procurement Authority to enable the award of a contract for the first generator PPA and associated agreements to advance our Energy Purchasing Strategy. Delivery of the electricity under the generator PPA will be effected through a concurrent onsale PPA and with an Energy Supply Agreement Addendum to our existing energy supply contract under the CCS Framework (known as "sleeving") to be signed concurrently or shortly thereafter.
- 1.6 A paper is included on Part 2 of the agenda, which contains exempt supplementary information. The information is exempt by virtue of paragraphs 3 and 5 of Schedule 12A of the Local Government Act 1972 in that it contains

information relating to the business affairs of TfL or an issue where a claim to legal professional privilege could be made. Any discussion of that exempt information must take place after the press and public have been excluded from the meeting.

2 Recommendations

- 2.1 The Committee is asked to note the paper and the exempt supplementary information on Part 2 of the agenda and:
 - (a) approve Procurement Authority of £225m for electricity purchased under a Power Purchase Agreement for 15 years and the costs under the associated onsale/sleeving arrangements for the same duration; and
 - (b) note that matters for which Procurement Authority is sought above extend beyond the current TfL Business Plan and Budget and provision will, therefore, need to be made in future Business Plans and Budgets.

3 TfL ambition and context

- 3.1 The Mayor's Transport Strategy, the London Environment Strategy, and TfL's Corporate Environment Plan outline a vision for a zero-carbon London, with a specific ambition for all rail services under TfL's control to be net-zero carbon by 2030. Achieving this goal requires eliminating fossil fuels use, enhancing energy efficiency, and increasing the use of on-site renewable energy. As self-generating sufficient renewable electricity within London to power the entire transport network is currently not feasible, TfL will continue to predominantly depend on grid-supplied electricity for its operations.
- 3.2 This paper addresses electricity that TfL directly procures from the Great Britain (GB) electricity grid, which currently accounts for 43 per cent of our operational carbon emissions (approximately 337,000 tonnes CO₂e per year). While TfL does not directly procure electricity for all TfL-branded services, their emissions are included in these figures for completeness.
- 3.3 To align with our 2030 target, TfL plans to transition to renewable electricity sources, while ensuring financial viability and alignment with broader energy procurement needs.

4 Renewables purchasing - strategic choices

Business as Usual (BAU) energy purchasing and its limitations

- 4.1 TfL has been utilising the procurement services and frameworks of the Crown Commercial Service (CCS) for energy purchasing since 2013. This has enabled us to take advantage of additional commercial leverage as we aggregate our volume with other public sector organisations.
- 4.2 Although the CCS has provided competitive prices in the past, they do not currently have an option available which is consistent with TfL's net zero ambitions. Continued reliance on grid-supplied electricity under TfL's business as usual (BAU) contracting structure is not a viable option if we are to meet our 2030 target.
- 4.3 Despite the Government's target to decarbonise the grid by 2030, challenges remain including in relation to planning delays and long wait times for grid connection dates, which put that target at risk. The development of schemes such as PPA Comet, however, will help accelerate the Government's goals for achieving grid transition.

Energy Procurement Options

4.4 TfL has explored various approaches for procuring renewable energy, as detailed in the Energy Purchasing Strategy paper to the Committee on 11 July 2024, this is summarised in figure 1 below.

Option	Is this route currently available / deliverable?	Does this route meet our 'green credentials'?
1) The Business as Usual (BAU) Grid Procured through		Grid not decarbonising until
CCS (with grid mix)	Current route	beyond 2035
2) The Do Minimum Green Tariff (Grid Mix + REGO)	Available through CCS	Available Green Tariffs used REGOS, are not net additional
3) Public Buying Organisation PPA Solution	Solutions are in early developed but are not available	Solutions being considered could allow for net additionality
4) Power Purchase Agreements	PPA market growing	Can specify an 'additional' PPA
5) Direct Investment in Assets	High risk to TfL, and needs PPA	Would satisfy additionality

Figure 1: Options for procuring renewable energy, Strategic Objectives Analysis

- 4.5 Option 1 is our BAU approach and has been discussed above. Option 2 (Green Tariff) is offered through BAU purchasing routes and relies on Renewable Energy Guarantees of Origin (REGO) certificates. These mechanisms do not provide clear additionality, as the certificates reflect the existing supply of renewables on the grid and are traded independently of this supply.
- 4.6 REGOs are certificates that are issued by Ofgem for each megawatt hour of electricity that has been generated from a renewable source. REGOs can be sold separately to the power with which they are associated to 'green up' organisations' fossil fuel-based supplies. This means the certificates do not necessarily support or incentivise the development of new renewable energy projects. If an organisation purchases REGOs, there is no direct impact on the GB Grid and no net additional abatement of carbon emissions. While REGOs are

not without any merit (at the margin an increase in demand for REGOs increases its price, which can provide investment incentives for future renewable developers), green tariffs are often criticised as 'greenwashing' as the lack of transparency and how they are used can be misleading.

- 4.7 Option 3 (Public Buying Organisation) does not currently exist, but would see an organisation such as the CCS providing a simpler route to market for renewable energy that provides additionality. Option 5 (Direct Investment in Assets) would involve capital expenditure, seeing TfL take on additional risk, alongside a PPA, but would provide additionality.
- 4.8 Option 4 is a PPA, which is a mechanism to directly contract renewable assets with an energy generator. PPAs remain the best strategic fit, however they come with limitations; these benefits and limitations are explored below.

Additionality in renewable energy contracts

- 4.9 The environmental value of a renewable electricity contract is determined by its ability to directly support new renewable projects. This concept, known as 'additionality', means that the contract drives the development of new renewable generation that would not have been built otherwise. TfL aims to support additionality, using its purchasing power to stimulate the domestic renewables market which accelerates decarbonisation of the grid and fosters job creation. An additionality requirement can be stipulated when procuring PPAs.
- 4.10 While cost competitiveness is essential, requiring additionality in a contract also brings broader benefits, such as accelerating GB grid decarbonisation, supporting green job creation, and enhancing national energy security. This aligns to TfL's duty as a local authority to bring best value in delivery.

Long-term price stability

- 4.11 Currently, the annual cost of TfL's electricity purchasing (at around £350m per year) is a significant element of our operational spend. In moving to new energy purchasing mechanisms we need to maintain the same financial advantages of our current approach.
- 4.12 PPAs are able to provide a long-term hedge (typically 10-15 years, with prices indexed to inflation as is market standard), offering price predictability and stability over an extended period. This approach can shield buyers from short-term market volatility, allowing for more consistent budgeting and financial planning. In the GB wholesale electricity market, opportunities to hedge prices are typically limited to a maximum of five years due to limited market liquidity, exposing buyers to fluctuations and potential price spikes.
- 4.13 The wholesale electricity market has experienced significant volatility in recent times. Although prices have begun to stabilise, they remain higher than pre-crisis levels, reflecting ongoing volatility. Gas-fired generation often sets the marginal

wholesale price, which is the cost of producing one extra unit of electricity. It is set by the most expensive power plant needed to meet demand at a given time. This price determines what all suppliers (generators) get paid in the wholesale market. As such, the GB energy market remains sensitive to fluctuations in global gas prices. Long-term PPAs can mitigate this risk by locking in prices over a fixed period. This is illustrated in figure 2 below.



Figure 2: Electricity Prices: Day ahead baseload contracts monthly average (GB), Ofgem

On the other hand, a 15-year contract comes with the risk that we may be locking in prices now which are lower in the future.

Price Structure

4.15 Switching from wholesale exposure with our BAU contract, to a Consumer Price Index (CPI) linked structure, as provided by PPAs, aligns more closely with TfL's income patterns and supports effective budgeting. A mixed portfolio of energy purchasing further diversifies and manages risk.

Diversification

- 4.16 The PPA Comet tender aims to procure renewable electricity, with future PPA tranches planned to be procured to meet up to a total of 70 per cent of our needs. Our recently launched solar private wire project looks to contract for power from new build local solar assets. The remaining volumes will be procured through a renewable-backed flexible tariff. These diverse contracting mechanisms bring a mixed portfolio for net zero.
- 4.17 Under the BAU contract all of our electricity demand is met under the same mechanism. To date this has worked in our favour as the CCS Framework has delivered cost savings against wholesale prices.

5 Contracting structure of proposed PPAs

5.1 In setting the Energy Purchasing Strategy we have explored various types of PPAs. The below sets out the contracting structure of PPA Comet, and the type of Corporate PPAs TfL will contract up to the 70 per cent threshold.

PPA between the Generator and TfL

5.2 Under the proposed PPA, TfL will purchase renewable source electricity from a specified facility on a half-hourly, "pay-as-produced" basis. This means electricity is bought as it is generated. The PPA includes obligations for TfL that must be fulfilled by a regulated trading party, as detailed below, under the on-sale arrangement (Onsale PPA).

Onsale PPA between TfL and a regulated trading party

- 5.3 The Onsale PPA terms align closely with the Generator PPA. This agreement ensures that a regulated trading party registers the meters, takes delivery of the power, and handles market obligations for TfL.
- 5.4 For PPA Comet, TfL intends to use EDF Energy Limited as the regulated trading party to the Onsale PPA until at least 2029.
- 5.5 Additional fees will be payable to the regulated trading party for managing the PPA, including balancing and shaping services, known as the Management Fee.
- 5.6 As the Management Fee includes cost elements that fluctuate throughout the day, the final price will depend on the actual costs when the facility becomes operational. Alternatively, a 12-month fixed Management Fee is generally available. TfL plans to secure this fixed fee closer to the commercial operations date, when pricing becomes feasible.

Addendum to Energy Supply Agreement (ESA) between TfL and Licensed Supplier

- 5.7 The ESA Addendum amends TfL's existing Energy Supply Agreement under the CCS Framework with EDF Energy Customers Limited to facilitate the delivery of renewable energy purchased under the PPA. This process known as "sleeving", incurs a PPA Administration Fee, which will be charged via the CCS Framework terms.
- 5.8 The duration of the Onsale PPA as well as the ESA Addendum, is limited by TfL's current Energy Supply Agreement through the CCS Energy Framework to March 2029. However, both the Onsale PPA and ESA Addendum will be extended to align with TfL's future supply agreements as they are established, likely in 2026, to maintain TfL's flexible hedging strategy that allows for a purchasing horizon of at least 30 months ahead of delivery.

6 PPA Comet

- 6.1 The PPA Comet procurement looked to procure a 15-year PPA for 80-200 GWh per year of renewable electricity from a new build solar or wind asset, which would commence generating between April 2025 and December 2028. Due to strong market precedent the price structure is CPI linked with a cap and floor. The tender was published on 8 February 2023.
- 6.2 The supplementary information in Part 2 details the outcome of the procurement.

7 Next Steps

- 7.1 Subject to Procurement Authority being granted by the Committee, TfL will appoint the preferred bidder and finalise contract terms. Following execution of the PPA, onsale agreement, and ESA Addendum, we will announce the outcome.
- 7.2 Procurement authority for any proposed future PPA tranches will be sought from the Committee prior to award.

List of appendices to this report:

A paper containing exempt supplementary information is included on Part 2 of the agenda.

List of background papers:

Finance Committee, TfL Energy Purchasing Strategy update, 11 July 2024

Finance Committee, TfL Energy Purchasing: Crown Commercial Service and Power Purchase Agreements, 25 November 2020

Finance Committee, TfL Power Purchase Agreements, 23 November 2022

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