Item 3

21st November 2023

Glasgow City Council

Environment and Liveable Neighbourhoods Committee

Report by George Gillespie, Executive Director of Neighbourhoods, Regeneration and Sustainability

Contact: Deborah Paton Ext: 76862

Approach to public electric vehicle charging infrastructure in Glasgow

Purpose of Report:

- To present a recommended option for the future delivery of public electric vehicle charging infrastructure in Glasgow
- To agree to take this recommended option to City Administration Committee for approval

Recommendations:

It is recommended that the Committee notes the contents of the report and agrees to refer this report to City Administration Committee for approval.

Ward No(s):	Citywide:
Local member(s) advised: Yes ☐ No ☐	consulted: Yes ☐ No ☐

1 Introduction

This report presents a strategic approach to public electric vehicle charging infrastructure (EVCI) in Glasgow. It is accompanied by "A Public Electric Vehicle Charging Strategy and Expansion Plan for Glasgow" by Mott MacDonald, funded by Transport Scotland via Scottish Futures Trust

2 Current approach to electric vehicle charging infrastructure in Glasgow

2.1 The Glasgow Transport Strategy: Policy Framework was adopted by the Council in March 2022. Under Policy 103, this clearly places electric vehicles within the context of cars as per the overarching sustainable travel hierarchy set out in the statutory National Transport Strategy, whilst ensuring the Council works to encourage accelerated transition from internal combustion engine vehicles to electric and low carbon vehicles.

2.2 Currently in Scotland and in Glasgow, there is a mixture of public EV charging infrastructure:

- Commercially operated EV public charging points, whereby customers flexibly pay as they charge (some require a registered account to access the charge point or to access cheaper unit rates of electricity). These charging points are located on private land and tend not to be part of the overall ChargePlace Scotland network (see next).
- Publicly operated EV charging points part of the ChargePlace Scotland network, which require registration with ChargePlace Scotland to access. In Glasgow, many of these are run by Glasgow City Council. The ChargePlace Scotland network has been developed by Transport Scotland over the last decade through grant funding of local authorities and other organisations to create a national network of publicly available charge points. Local authorities (or whoever installs the charge point using Transport Scotland funding) have however had to take ownership of installation and pay for the electricity consumed.

2.3 As of 1 September 2023, the Council has installed 327 charge points across 170 units for public use. These chargepoints are located in a mixture of on-street sites and public carparks and are connected to the ChargePlace Scotland (CPS) network. A list of publicly available charge points on this network, including those provided by the Council and other organisations can be found at www.chargeplacescotland.org/live-map.

2.4 As of spring 2023, Glasgow City Council implemented a fee for use of public EVCI operated by the Council in Glasgow. Information on this is available at www.glasgow.gov.uk/EVCharging and www.chargeplacescotland.org.

3 Changing context for provision of EVCI and projected demand

Transport Scotland's changing model of funding

3.1 The context for public EVCI is changing. Transport Scotland is changing their model of funding, which is linked to the need to develop a competitive market for public EVCI provision. As set out in a "Vision for Scotland's Public Electric Vehicle Charging Network" by Transport Scotland (June 2023), the vision is:

- "Local communities, businesses and visitors have access to a well designed, comprehensive and convenient network of public charge points, where these are needed.
- The public electric vehicle charging network works for everyone regardless of age, health, income or other needs.
- Scotland has attracted private sector investment to grow and sustain the public electric vehicle charging network.
- The public charging network is powered by clean, renewable energy and drivers benefit from advancements in energy storage, smart tariffs and network design.
- People's first choice wherever possible is active travel, shared or public transport with the location of electric vehicle charge points supporting those choices."

3.2 As stated within the Transport Scotland Vision document, significant levels of private investment will be required to deliver the stepchange in the public charging network envisaged. The Vision document states that "It will be important that conditions are optimal to attract further investment and local authorities will have a key role to play in this through partnership working to identify local and regional charging needs as well as delivering efficiencies and economies of scale."

3.3 In 2022, Transport Scotland published plans to launch a new public Electric Vehicle Infrastructure Funding (EVIF) programme. Transport Scotland is making £30m of funding available to local authorities over the next four years, with the aspiration that this will lever at least a further £30m from the private sector to grow the public EV charging network. This new funding programme will replace previous funding arrangements directed at local authorities to support the installation of public EV charging infrastructure, including the LAIP programme[1].

3.4 Some early funding from EVIF allocated to local authorities has been used by Glasgow City Council and the wider Glasgow City Region to commission work on future demand for public EVCI, potential locations as well as explore operational models to achieve this stepchange.

[1] Source: https://www.scottishfuturestrust.org.uk/storage/uploads/evinfrastructurefundfaqpublished01june2022.pdf

3.5 Associated with this change is a desire to see local authorities working together to develop investable propositions at scale, which are likely to be more attractive to the market and therefore more deliverable.

A Public Electric Vehicle Charging Strategy and Expansion Plan - projected demand for public EVCI in Glasgow

3.6 Over 2021/22, Glasgow City Region (GCR) took part in a Pathfinder project with Scottish Futures Trust on public EVCI. An associated Taskforce comprising GCR officers and representatives from all GCR local authorities has overseen this project, which produced some initial projections on demand for public EVCI.

3.7 Building on this, Mott MacDonald consultants were procured (through competitive tender led by GCR) to do follow-on work as required by Scottish Futures Trust to access the (aforementioned) EVIF. It should be noted this work was predicated on involvement of the private sector in future provision of EVCI. This work has now produced a **Public Electric Vehicle Charging Strategy and Expansion Plan for Glasgow City Council** (and also a Plan for the wider GCR area) which sets out the business case and associated ask for EVIF from Transport Scotland to help trigger private sector investment in a concession-style EVCI contract, should that be the path the Council wishes to follow.

3.8 This work has done initial forecasts of the level of EVCI potentially needed in Glasgow by 2026 and 2030, and is shown in the table below. For clarity, residential chargers are aimed at supporting residential use and located accordingly, whilst destination chargers would be at points / facilities regarded as a destination for journeys e.g. leisure centres, which could benefit non-residents who require public EV charging.

Table 0.1: GCC Forecast EVCI Requirements

	2026 Forecast Requirement			2030 Forecast Requirement		
	Low	**Central**	**High**	**Low**	**Central**	**High**
Residential (Slow)	821	1,317	1,645	1,386	2,153	3,086
Destination (Slow)	832	1,357	1,631	1,892	2,970	4,303
Destination (Fast)	137	224	269	312	490	711
Rapid	366	591	721	944	1,520	2,218
Total Devices	**2,156**	**3,489**	**4,266**	**4,534**	**7,133**	**10,318**

Source: Mott MacDonald

3.9 The work then forecast the **'strategic provision'** most likely required by 2026 – 1805 devices. The term 'strategic provision' is used to identify EVCI estimated to be procured through a concession contract, which would be in addition to existing and independently provided EVCI, to meet the strategic aims of the GCC business case. This therefore **excludes** existing EV chargepoints (upgraded where required), and new publicly accessible charge points assumed to be installed by independent providers (without any intervention from the public sector), totalling 1684 devices.

Summary of Total Proposed EVCI to be Procured (central forecast)

	Residential AC (7kW)	Destination AC (7-22kW)	Rapid DC (50kW)	Total Future Strategic Provision	Total Strategic Provision (Existing & Future
Existing (2023 Baseline)	0	208	20	228	1,805
New / Future (Based on 2026 Forecast)	1,317	207	53	1,577	

Source: Mott MacDonald

3.10 The estimated capital investment required to achieve the above network is summarised below. From this £20.9m, the feasibility modelling suggested indicative private sector investment of £18.5m, with grants and public sector investment covering the remaining amount, if required.

Table 0.2: Summary of Total Proposed EVCI Capital Costs

Cost Item	Value £, 2022 prices
Existing Asset replace and update	£2,000,000
Capital Enabling Costs	£4,000,000
Capital EVI + Installation Costs	£11,800,000
Standard DNO Costs	£3,100,000
Total Capital Cost requirement	**£20,900,000**

4 Spatial criteria for location of future public EVCI

4.1 As part of the Mott MacDonald work, indicative location identification analysis was carried out for future destination and residential chargers forming the Strategic Provision above. Some of these criteria are being consulted on via the Glasgow Transport Strategy Spatial Delivery Framework and this work will be reported to Committee early in 2024. The overarching considerations used in the site identification process across the Glasgow City Region were:

- Scottish Index of Multiple Deprivation (SIMD)
- Council Land Ownership data
- Bus routes
- Active travel routes
- Public transport interchanges
- Trunk roads
- Conservation areas
- Placemaking criteria

4.2 In addition, the following aspects have been taken into account in site selection in Glasgow specifically:

- Forecasts of EV demand combined with availability of off-street parking
- Proximity to active travel network and public transport hubs (linking to the concept of Park & Ride and Mobility Hubs contained within the GTS

Spatial Delivery Framework), to offer opportunities for onward travel by sustainable modes.

- Analysis of Scottish Index of Multiple Deprivation data to ensure equity of coverage in the city
- Application of GTS policy including avoiding significant provision along (on) key travel corridors for bus and cycling in particular, to avoid roadspace pressures

4.3 For destination chargers, the above criteria have been considered as well as:

- A focus on key public sector trip attractors, and 10 min driving catchments around these. Indicative locations include council owned car parks, transport hubs, leisure centre, leisure and cultural facilities, community hubs/centres, and health centres. The rationale for this is that the Council can play a role in the transition required in public EV charging infrastructure through efficient use of public land – and moreover, this public land will likely be required to support the transition required, in initial years. The locations modelled are purely indicative, and further work would be needed to identify and agree specific sites as part of any concession contract.

4.4 These principles were consulted on as part of the GTS: Spatial Delivery Framework in September/October 2023. The full results of this consultation and final principles / spatial criteria for the location of public EVCI will be included within the final GTS Spatial Delivery Framework, which will be presented to committee in early 2024. The deliverability of these spatial criteria however is linked to the operational way forward for public EVCI in the city (see next).

5 Delivery model options for the proposed way forward on EVCI

5.1 As part of the aforementioned Strategy & Expansion Plan work, alternative operational models for the delivery of the stepchange in public EVCI required has been developed and assessed.

5.2 A ‘do-nothing’ model has not been explored in detail. While the commercial sector has developed some EVCI, most significantly at retail locations and fuel stops, it is considered unlikely that there is the ability of this sector to deliver the required scale of EVCI required using private land assets alone and this may lead to a barrier to EV uptake and continued decarbonisation of vehicles. In order to assist the necessary growth of EVCI, and as a major land owner/ manager it is proposed that the Council consider use of public land for this purpose.

5.3 Proactive models considered were therefore explored as follows:

- Land lease model: The public sector owns the land, the private sector has the legal rights and responsibilities of owning and operating the charging infrastructure. This includes owning the physical charging

stations, related equipment, and any associated assets. The level of ownership and therefore risk to the public sector remains extremely low within this model, with a rent payment for use of the land.

- Concession model: the public sector and private sector can share the legal rights and responsibilities of owning the charging infrastructure, depending on the contractual agreement. The private sector takes responsibility for the day-to-day functioning and management of the charging infrastructure. Alternative models within this are privately operated only, where the public sector retains ownership of charging infrastructure with assets returning to the public sector at the end of the contractual period; and a privately operated with risk share approach, where ownership is shared. The Council would receive an income from running the concession which provided access to public sector land assets.
- Public sector owner-operator model: public sector owns and operates infrastructure, and responsible for investment, maintenance, back-office systems etc. Whilst the public sector may receive the income, all risk sits with public sector in this model.

5.4 The work has concluded that a concession model is the preferred option to continue to explore moving forward, and this is the Officer recommendation in this paper. The reasons for this are:

- A land-lease option would not give the Council substantive leverage over the roll-out of EVCI in the city compared to a concession model, as it would simply be the offer of sites to the private sector for rent, or responding to requests for specific sites from the private sector. It may also not achieve the stepchange of EVCI provision at the pace required.
- Under a public sector owner-operator model:
  - The Council would require to raise substantial investment to expand the public EV charging infrastructure as per the forecast demand set out earlier in this paper. In Glasgow, this could be c£20m up to 2027. Under financial modelling carried out, whilst net present value is overall positive, there would be periods of significant debt due to investment required, and internal rate of return is low.
  - The Council would require additional staff resources to expand and manage the stepchange in public EV infrastructure required to meet forecast demand. This could also entail taking on the operation of ChargePlace Scotland functionality for chargers in Glasgow when this ceases in future years, as Transport Scotland have said it will.
  - There is a degree of uncertainty over future demand for EV public charging infrastructure, and relatively small variations to projected income / operating costs could result in loss-making investment of public monies. A public sector owner-operator model would also be exposed to cost fluctuations and unknown risks in delivering, operating and maintaining a large portfolio of EV charging infrastructure.

- There are a number of legal issues that require to be explored in a public owner-operator model, including subsidy control considerations and vires (legal powers).

- Under a concession model:
  - The private sector is better suited to manage financial risk, regulatory risk, technological change risk. This is because private chargepoint operators are likely to hold a large portfolio (UK or Europe wide in some cases) of EVCI, providing more resilience to risk, and have specific expertise to manage these risks.
  - A concession model, depending on the nature of the contract and agreement, would give the Council the ability to influence the location of sites to ensure some areas within the city were not 'left behind' in the EVCI rollout e.g. by setting targets per area.
  - The Council would receive a fee from a concession model using public land assets, and could negotiate profit-sharing if desired. It should be noted the chargepoint operators would likely require influence over site selection and tariffs, though a concession contract could aim to guard against tariff extremes.
  - A concession model would also give the Council options at the end of a concession contract if Council ownership of the EVCI assets was built into the concession.

5.5 Some initial market engagement has been carried out by the Glasgow City Region in 2023. This has shown strong appetite from the private sector to work in partnership with the public sector on the delivery of EV charging infrastructure.

6 Further issues to be explored and resolved

6.1 To progress towards this preferred concession model, substantive work is still required. This includes:

- Consideration of whether GCC wishes to pursue a city-only concession or partner with neighbouring authorities. The Transport Scotland EV vision encourages collaboration, as does COSLA, as regional groupings are likely to offer a more attractive investment offer to commercial providers & therefore maximise success of investment and delivery of EVCI. A collaborative approach could also lead to a better user experience if shared branding, payment systems etc. If collaborating, a decision needs to be made on a lead authority.
- The attached EV Expansion Plan is a technical report by external consultants, and more work is now needed to use it to inform a phased approach to the roll out of EVCI and a proportionate ask of EVIF from Transport Scotland to help gets sites ready for private sector investment. Alongside this, greater clarity is needed from Transport Scotland on how

EVIF will be released to the public sector and GCC will continue to seek that.

- Shaping the concession contract, including the types of charging infrastructure to be included, specification of any particular areas GCC wishes to ensure are provided for which may be less commercially attractive, consideration of tariff and sites acknowledging these may be key factors to help commercial operators manage risk over the concession contract (therefore maximising the attractiveness of the investment), as well as other Heads of Terms.
- Staff resourcing & teams within GCC to develop and manage a concession contract going forward.
- Further exploration of the interrelationship of fleet EV charging opportunities and public EVCI. Some initial work has been done on this via the GCR workstreams. This would need to be further explored including any opportunities for shared access by e.g. bus or coach operators.
- Future management and operation of GCC's existing EVCI assets, installed and attached (currently) to Chargeplace Scotland network with warranty/maintenance contracts and repairs managed by council officers. A decision needs to be made on whether this asset and activity remains fully in-house or if existing infrastructure is offered up to third parties to purchase outright alongside a concession agreement; or to manage as part of a commercial arrangement.
- Future management of the Chargeplace Scotland aspect of existing EVCI in Glasgow, as it is understood Transport Scotland do not plan to renew this back-office system and branding after the contract expires.
- Ensure any plans for a concession approach are linked to tariffs for existing EVCI in Glasgow, and a forthcoming paper on EV tariff reviews will be tabled at a future committee. Transport Scotland have stated that tariffs for EV charging are a requirement of accessing EVIF, set at an appropriate level to ensure private sector investment is attractive and encouraged. More information on EVIF can be found here.
- Continue to encourage further development of the EVCI network in Glasgow whilst a concession approach is being developed. The Council has no budget (from internal or external sources) to invest in significant EVCI, and there is potentially spare capacity in the existing EVCI that could be better utilised. Building Scotland (Amendment) Regulations 2022 on electric vehicle charging provision will see increased EV charging associated with new development, and the private sector will undoubtedly continue to invest in EVCI in Glasgow, particularly as a tariff is now in place for GCC-provided EVCI. The Council will keep under review any opportunities to expand EVCI in the interim.

7 Policy and Resource Implications

Resource Implications:

Financial:	This report recommends a path to maximise private sector investment in public electric vehicle charging infrastructure in Glasgow, though some investment may still be required by Glasgow City Council to prepare sites, supported by some grant funding from Transport Scotland.
Legal:	The report recommends new contractual agreements under a concession model with the private sector, and therefore Legal input will be required to develop these agreements.
Personnel:	Additional / redeployed staff resources will be required to manage a new concession contract.
Procurement:	Depending on regional collaboration and lead authority, significant requirement for procurement support. CPU have already participated in some discussions.

Council Strategic Plan: The Plan supports the following Council Strategic Plan 2022 – 2027

GRAND CHALLENGE THREE – Fight the climate emergency in a just transition to a net zero Glasgow
MISSION 1: Deliver sustainable transport and travel aligned with the city region

- Via proactive work to ensure delivery of EVCI in the city.

Equality and Socio-Economic Impacts:

Does the proposal support the Council's Equality Outcomes 2021-25? Please specify.	Yes, through supporting sustainable travel options for all.

What are the potential equality impacts as a result of this report?	A full EqIA has been done of the overarching Glasgow Transport Strategy.
Please highlight if the policy/proposal will help address socio-economic disadvantage.	A concession contract for future delivery of EVCI responds to Just Transition principles by ensuring some EVCI will be provided in all parts of the city, as opposed to only parts which commercial chargepoint operators find commercially attractive, thus ensuring equitable coverage.

Climate Impacts:

Does the proposal support any Climate Plan actions? Please specify:	**Action Number 52**. Enable a rapid and strategic shift to electric vehicles through increasing the current rate of deployment of EV charging infrastructure.
What are the potential climate impacts as a result of this proposal?	Increased uptake of electric vehicles which is a part of the decarbonizing road transport challenge.
Will the proposal contribute to Glasgow's net zero carbon target?	Yes, increased uptake of electric vehicles is a part of the decarbonizing road transport challenge.
Privacy and Data Protection Impacts:	No data protection impacts identified.

8 Recommendations

8.1 It is recommended that the Committee notes the contents of the report and agrees to refer this report to City Administration Committee for approval.