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## NORTH AYRSHIRE COUNCIL

21 February 2023

### Cabinet

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<b>Title:</b>	<b>Electric Vehicle Charging Infrastructure Investment in Ayrshire</b>
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<b>Purpose:</b>	To update Cabinet on the findings from the Ayrshire Public Electric Vehicle Charging Business Case and the proposed next steps.
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<b>Recommendation:</b>	<p>That Cabinet:</p> <ul style="list-style-type: none"><li>I. notes the findings from the Ayrshire Public Electric Vehicle Charging Business Case including the identification of a new concession contract as the preferred delivery mechanism for expansion of the public vehicle charging network;</li><li>II. provides delegated authority to the Executive Director (Place) to develop and enter into an Inter Authority Agreement with East and South Ayrshire (represented by the Ayrshire Roads Alliance) to govern the specification, procurement, implementation and operation of the proposed concession contract; and</li><li>III. agrees to receive a further update report on completion of (ii) above, prior to the procurement of the proposed concession contract.</li></ul>
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### 1. Executive Summary

- 1.1 As part of the Council's ambition to achieve net zero carbon emissions by 2030, options for new delivery models to increase the provision of Electric Vehicle (EV) infrastructure and support the uptake of EVs have been explored. Utilising external funding, a 'pathfinder' business case, jointly undertaken with East and South Ayrshire Councils, has been prepared which provides recommendations on the scope, locations, delivery model and funding arrangements for a significant expansion of the public EV charging network in Ayrshire.
- 1.2 In tandem, a new, four-year £60 million fund for local authorities was launched by the Scottish Government, with £30 million provided by Transport Scotland to

support the roll-out of an enhanced vehicle charging network. The proposals in the Ayrshire pathfinder business case were developed to align with this fund to maximise the potential for leverage of external funding as part of our emerging plans.

- 1.3 Four commercial models have been identified as options for delivery of new electric vehicle chargers at scale and pace. The preferred mechanism is a model where the EV network would be leased via a concession contract to an experienced commercial operator.
- 1.4 In order to advance to the next stage of this project, an Inter Authority Agreement would be entered into between the three Ayrshire councils, setting out the proposed governance processes and arrangements for the specification, procurement, development, delivery, operational and monitoring stages of the project, with a further update to Cabinet prior to any procurement of the concession contract.
- 1.5 East and South Ayrshire Councils have plans to consider a similar report through their respective decision-making processes, and approval from all three authorities will be required to progress to the next stage of the project.

## **2. Background**

- 2.1 In June 2019, North Ayrshire Council declared a climate emergency, committing to achieve net zero carbon emissions by 2030, for both Council estate emissions and area-wide emissions. As part of the route map to achieve this target, the Council's first Electric Vehicle (EV) Strategy (2021-25) was approved in May 2021, the aim of which is to increase the number of EVs being used throughout North Ayrshire by creating a robust network of EV charge points.
- 2.2 As of January 2023, the Council has installed 29 publicly accessible EV charge points throughout North Ayrshire (11 rapid and 18 destination charge points), utilising approximately £740,000 funding provided through Transport Scotland's local authority installation programme. A further 17 publicly accessible charge points are at various stages of installation across the Council area and will all be operational by March 2024. However, Transport Scotland's current full-subsidy funding model for electric vehicle charging investment is ending.
- 2.3 Scottish Futures Trust (SFT) is a multi-disciplinary centre of expertise working in collaboration with both the public and private sectors, to help plan, fund and deliver future infrastructure. Transport Scotland and SFT published a joint Electric Vehicle Charging Infrastructure Report in July 2021, which highlighted the progress made in delivering publicly available EV charging infrastructure and the challenges and opportunities associated with significantly expanding the public charging network to support the growing demand for EVs. One of the report's key findings related to identifying opportunities for greater private sector investment and involvement in EV charging infrastructure in the short to medium-term through partnership approaches with local authorities to provide a sustainable and long-term delivery proposition for a public electric vehicle infrastructure network.

- 2.4 In October 2021, SFT sought expressions of interest from local authorities to undertake a business case to explore alternative delivery models for public EV charging through private sector investment. North Ayrshire Council was successful in our application and received £50k funding towards the development of the business case. SFT were keen to understand the potential of partnership working between local authorities, therefore East and South Ayrshire Council, via the Ayrshire Roads Alliance (ARA), were invited to participate. A further £25k of funding was awarded and the business case was expanded to include consideration of EV infrastructure across the whole of Ayrshire.
- 2.5 In January 2022, Scottish Government published its draft vision for Scotland's Public Electric Vehicle Charging Network. A new, four-year £60 million fund for local authorities was launched, with £30 million provided by Transport Scotland to support private sector investment, while maintaining the benefits of an integrated, consumer focused network that actively encourages public transport and active travel choices.
- 2.6 The proposals in the Ayrshire wide business case were developed to align with the £60 million fund to maximise the potential for leveraging external funding for the anticipated proposals for expansion of our electric vehicle charging network. A further key aspect was to ensure that business case principles were underpinned by the need for a 'just transition' ensuring EV infrastructure is available in rural, remote and more deprived areas, and not limited to commercially attractive locations only.

### **Business Case**

- 2.7 Mott MacDonald Limited were appointed to develop the business case, which was completed in December 2022. The business case sets out how North, East and South Ayrshire Councils could work together to expand the EV charging infrastructure network to meet projected EV demand over the next three to four years.
- 2.8 In consultation with key stakeholders, the objectives for the Ayrshire EV business case were developed with the following key outcomes:
- **Usable** – the public EVI network will give people access to a technologically advanced, well maintained, reliable network.
  - **Equitable** – the EVI network will work for everyone. It will adopt the 'Place Principle' and community wealth building principles to achieve better outcomes for people and communities. It will ensure that the islands and rural areas are not left behind, acting as a catalyst for local economic development.
  - **Viable** – it will be commercially viable and will attract private sector investment.
  - **Connected** – It will promote the use of public transport and active travel as people's first choice in line with the National Transport Strategy, especially as part of trip chaining.
- 2.9 The business case sets out proposals for collaborative delivery, between the three Councils and the market, by blending required public investment for EVI with

commercial EVI investment. It proposes a viable investment programme which could enable the Ayrshire local authorities to work with commercial suppliers to increase EV charge points from an existing 126 publicly funded and managed charge points, to an estimated 433 across Ayrshire. Table 1 below highlights the number of proposed and existing charge points across the three Ayrshire Council areas emerging from the study:

Table 1. Summary of Total Proposed EVCI to be Procured

	No. of proposed Residential (7kW)	No. of proposed Destination (22kW)	No. of proposed Rapid (50kW)	Total proposed charge points	Total existing & proposed charge points
<b>North Ayrshire</b>	<b>39</b>	<b>53</b>	<b>12</b>	<b>104</b>	<b>150</b>
East Ayrshire	58	31	3	92	146
South Ayrshire	69	35	7	111	137
<b>Total</b>	<b>166</b>	<b>119</b>	<b>22</b>	<b>307</b>	<b>433</b>

North Ayrshire's forecast EV infrastructure requirements, which includes both public and privately owned EVCI, is summarised below:

Table 2. North Ayrshire 2025 Forecast Requirement

	<b>Low Scenario</b>	<b>Central Scenario</b>	<b>High Scenario</b>
Residential (Slow)	40	78	125
Destination (Fast)	122	244	340
Rapid	34	62	87
<b>Total EV Sockets</b>	<b>196</b>	<b>384</b>	<b>552</b>

The business case proposes 150 EVCI for North Ayrshire through a mix of dual socket AC posts and 'single socket' DC and this equates to 271 sockets in total. In relation to the 2025 forecast, the Council's 271 EV sockets would make up approximately half of the total EV socket requirement in the high forecast scenario in 2025 (552 EV sockets) and the private sector (e.g. operators such as Pod Point, Instavolt, Gridserve) would be expected to provide the balance.

2.10 A desktop exercise was carried out to confirm the potential locations for the proposed EVCI – the proposed locations are detailed in Appendix 1. An EV Optimisation tool was used to analyse each local authority area based on an established methodology. The suggested sites generated were then reviewed and modified based on a range of considerations including:

- Aim for 99% of Ayrshire properties without off-street parking to be within a 10-minute drive of a charge point

- Five-minute walking catchments have been assumed to residential chargers where off-street parking is limited to help deliver the 'equitable' and 'usable' objectives. However, for rural locations, local provision will be dependent given the need to meet the 'viable' objective
- Scottish Index of Multiple Deprivation (SIMD) – ensure Transport Scotland's EVCI vision is met through the Just Transition and ensure EVCI are available in a range of demographic areas
- Existing petrol stations – where the private sector may develop existing petrol stations into future rapid charging sites
- Existing supermarkets and retail parks – where destination and rapid charging could be provided by the private sector
- Trunk roads – proximity to well-trafficked routes through the region, where the private sector is likely to develop rapid charging hubs
- Placemaking criteria – use the placement of EVCI to promote high streets and town centres, such as within public car parks
- Public Transport and Active Travel – proximity to public transport and active travel infrastructure

Recommendations for EVCI locations within each local authority mostly focus on providing destination charging at car parks owned by the councils at schools, leisure centres or near high streets. Rapid charging has only been recommended where market failure could exist in more rural locations.

The proposed list of site locations at Appendix 1 will require further investigative work and detailed site surveys will be undertaken and the list of locations will be robustly reviewed to ensure suitability. Public consultation will also be carried out to inform the public of the plans to introduce more EVCI in Ayrshire and the locations will be finalised thereafter.

2.11 The estimated capital investment required to deliver the above network is summarised below:

Table 3. Summary of Total Proposed EVCI Capital Costs (excluding ongoing transaction and maintenance costs)

	Total Proposed EVCI Estimated Cost	Estimated Grid Connection Costs	Estimated Total Capital Cost
<b>North Ayrshire</b>	<b>£1,356,800</b>	<b>£532,800</b>	<b>£1,889,600</b>
East Ayrshire	£905,600	£170,800	£1,076,400
South Ayrshire	£1,225,600	£355,800	£1,581,400
<b>Total</b>	<b>£3,488,000</b>	<b>£1,059,400</b>	<b>£4,547,400</b>

These cost estimates are based on £8,580 for 7kW AC chargers, £8,910 for 22kW AC chargers and £46,760 for 50kW DC chargers. Grid connection cost estimates are variable depending on the proposed EVCI location and the associated power output.

2.12 The full programme costs are approximately £5.4million, which includes the capital costs above alongside other items such as maintenance and transaction costs. It is proposed that this would be met through private sector investment, grant funding from the Scottish Government and through operational cashflow (the income generated from the Council's existing portfolio of charge points and newly installed EVCI). By maximising private sector investment, whilst ensuring a viable rate of return for an operator, the grant requirement is optimised to approximately £3.2 million. This would then inform an application to Transport Scotland's national £60 million fund. Transport Scotland has been kept apprised of our pathfinder work and is anticipated to welcome an application for the 100% grant funding requirement. The breakdown of funding requirement is presented in the table below:

Table 4. Funding Sources

Funding Source	Value £, based on 2022 prices
Capital funding (grant requirement)	£3,200,000
Private Investment	£2,000,000
Operational cashflow available for funding	£200,000
<b>Total Upfront Investment Requirement</b>	<b>£5,400,000</b>

2.13 It should also be noted that the proposed concession contract includes passing the operation and maintenance of the Council's existing EVCI to the new commercial private partner. As a result, the Council would forego the current EV tariff income from our existing portfolio of EVCI (approx. £50,000 per annum). In return, the Council will no longer be responsible for the operation and maintenance cost for the EVCI. Therefore, the cost for electricity bills, repairs, maintenance contracts and most importantly the capital cost for the replacement of the Council's existing aging EVCI assets would be passed to the commercial private partner.

2.14 There are a number of variables that can affect the cost of EVCI installation including civil works, grid connection and wider grid upgrades, therefore the above capital costs are estimated at this time and would be subject to a full procurement exercise.

### **Operating Model**

2.15 As noted above, there is a strong case for continued local authority intervention in the UK EVCI market. This is driven primarily by local authority targets to achieve Net Zero by 2045 (for Scotland), with the transition away from internal combustion engine vehicles to electric vehicles being a key component of the strategy to deliver this. However, surveys also show that the current lack of charging infrastructure is the main barrier to consumer adoption of EVs, with 43% of respondents citing this as their primary deterrent in a recent Scottish study. At the

same time, the combination of potentially high initial investment costs and uncertain user demand present barriers to fully private sector led expansion of the EV infrastructure network. There is a role for public sector intervention to address market failure and stimulate the required expansion of EV charging infrastructure.

2.16 The business case identified four potential commercial models to consider for the delivery of an expanded network, ranging from fully private-sector-led, fully public-sector-led, and two public-private partnership hybrids. These are summarised below:

Table 5. Commercial model options

	<b>A – Privately owned and operated</b>	<b>B – Privately operated only</b>	<b>C – Privately operated with risk share</b>	<b>D – Public sector owned and operated</b>
Approach	Private sector ownership and operation of network	Public sector ownership with private sector operation	Public sector ownership with private sector shared-risk/revenue operation	Public sector ownership and operation of network
Existing and new EVCI asset ownership	Private	Public (concession model)	Public (concession model)	Public
Loss making assets	Bundled with profit-making assets	Bundled with profit-making assets	Bundled with profit-making assets	Public
Operator	Private	Private	Private	Public
Risk to LA	No	No	Yes	Yes
Revenue stream to LA	No	No	Yes	Yes
Tariff setting	Private	Private / Public	Private / Public	Public

- **Model A** assumes that the private sector would own and operate all existing and new assets, giving them greatest control over tariff setting and charger locations.
- **Model B** assumes that the public sector would ultimately own all existing and new assets, but that the network would be leased via a concession model to a private sector operator who receives all revenue but assumes all asset and operating risk.
- **Model C** is the same as Model B, except that the public sector also enters into a risk and revenue sharing agreement with the operator (as part of the terms of the concession), receiving a level of income for assuming a level of operating risk.
- **Model D** assumes that the public sector would own and operate all existing and new assets, giving them full control over tariff setting and charger locations.

2.17 The models were qualitatively assessed with weighted scoring in relation to affordability, social outcomes, risk allocation, contestability, procurement, resources and revenue. Although any of the models could potentially be viable, Model B scored the highest and is the recommended option. In selecting Model B, all capital investment requirements (besides the element which would be grant funded), future revenues, management, maintenance, repairs running costs and the main capital and revenue risks would all be the responsibility of the commercial sector for the duration of the contract, and therefore there is no further financial burden on the Council. In addition, the ability to leverage in private sector funding is expected to improve the prospect of a successful grant funding application to Transport Scotland. Appendix 2 provides further detail on assessment scoring of the four different models.

2.18 The concession contract is expected to be for a duration of 20 years. In years 11,12,13, the EVCI assets will undergo a replacement programme which the operator will be responsible for financing and implementing. Once the concession contract ends, it is expected that we would procure for another concession contract and within that there will be a requirement to replace the existing EVCI and the end of the useful life.

### **Tariffs**

2.19 In December 2021, the Council introduced a tariff for the use of EV charge points in North Ayrshire, in line with recommendations from the Electric Vehicle Association (EVA) Scotland and Charge Place Scotland. The current tariffs are as follows:

- £0.19 per kWh for Destination charge points (7kW and 22kW)
- £0.30 per kWh for Rapid charge points (50kW)

The Council's tariff equates to 5.4p per mile for Destination charge points and 8.6p per mile for Rapid charge points. There is currently no tariff set for EV charge points in East and South Ayrshire Council, however a tariff is being developed and is expected to be introduced during 2023.

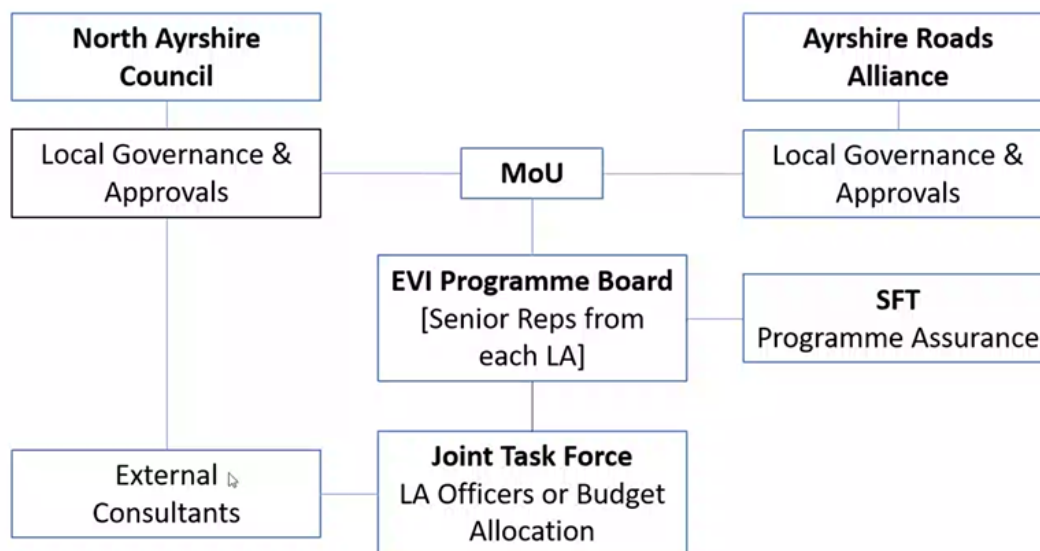
2.20 The business case recommends a new tariff be implemented across the three Council areas for price synergies and consistency within the region. The updated tariff would be determined at procurement stage, informed by the need to set a rate which continues to enable and incentivise EV uptake, but which reflects the costs of electricity used and a share of the wider operating costs of the network.

### **Governance**

2.21 Figure 1 below provides a representation of the governance proposed for the next stages of this project.



Figure 1. Proposed Procurement and Development Organogram



2.22 SFT has commissioned legal advisors Burness Paull to prepare an Inter Authority Agreement template, as a pro forma that can be used by other organisations seeking mutual delivery of EVI Pathfinder projects. This would set out the proposed governance process for the specification, procurement, development, delivery, operational and monitoring stages of the project. The draft Inter-Authority Agreement and associated Memorandum of Understanding has been reviewed by Legal Services, who would continue to provide advice as discussions progress further with Ayrshire Roads Alliance in finalising the details of the document.

2.23 The next steps for the overall EVI programme would be as follows, with timescales estimated at this stage:

Next Steps	Timescale
Approval of the Ayrshire Public Electric Vehicle Charging Business Case within each of the three Ayrshire Councils	February 2023
The three Ayrshire Councils enter an Inter Authority Agreement to progress with the EVI programme	Q2 2023
Submit the business case proposal to Transport Scotland and apply for funding of £3,200,000 for project delivery	Q2-3 2023
Public consultation, where required, for key sites	Q3-4 2023
Final feasibility work on site infrastructure (including grid connection) and capital works requirements for the selected locations	Q4 2023

Development of tender documentation to procure a commercial private partner. Transport Scotland has already allocated funding for Council staff and consultancy time to cover this stage. Thereafter, overseeing contract awards and monitoring contractual delivery will be required. This will include ensuring commercial partners deliver to time and budget, dealing with problems and issues, and reporting on progress (including quarterly progress updates to SFT and Transport Scotland).	Q3-4 2023
Commercial private partners in place and commencement of capital works for new EVI and the replacement of existing assets (capital installations is expected to be a three year programme)	Q2-3 2024

2.24 East and South Ayrshire Councils have plans to consider a similar report through their respective decision-making processes, and approval from all three authorities will be required to progress to the next stage of the project. Subject to this tripartite agreement, it is recommended that one of the Ayrshire authorities act as the lead authority for the next phase of the programme. It is proposed that East Ayrshire Council undertake this role, given their current role in undertaking procurement activity for multiple authorities via the Ayrshire Roads Alliance.

2.25 The business case proposes a completely new operating model for the delivery of a public EVCI network, in the context of a dynamic, fast-moving sector reflecting a range of variables including battery range, charging type and speed, and continued innovation in charging provision. The business case, at this stage, is designed to establish the key principles to significantly expand our public EVCI network in a financially sustainable way which will be further developed and finalised through the proposed Inter Authority Agreement. A further update would be brought to Cabinet prior to commencing procurement of the concession operator.

### 3. Proposals

It is proposed that Cabinet: (i) notes the findings from the Ayrshire Public Electric Vehicle Charging Business Case and identification of a new concession contract as the preferred delivery mechanism for expansion of the public vehicle charging network; (ii) provides delegated authority to the Executive Director (Place) to develop and enter into an Inter Authority Agreement with East and South Ayrshire (represented by the Ayrshire Roads Alliance) to govern the specification, procurement, implementation and operation of the proposed concession contract; and (iii) agrees to receive a further update report on completion of (ii) above, prior to the procurement of the proposed concession contract.

## **4. Implications/Socio-economic Duty**

### **Financial**

- 4.1 The Council is investing significantly in the journey to net zero, taking action on climate change and addressing the Climate Emergency. A total of £9.7 million has been allocated from the Council's Investment Fund to support our climate change aspirations to deliver two solar pv farm projects. In addition, £1.69 million of Investment Fund has also been assigned to progress a range of low carbon projects. The Ayrshire Public Electric Vehicle Charging Business Case is a precursor to accessing external funding. The total capital costs required for funding are approximately £5,400,000. This will be met through private sector investment, grant funding from the Scottish Government and through operational cashflow. By maximising private sector investment, whilst ensuring an attractive rate of return, the grant requirement is optimised to approximately £3,200,000.

### **Human Resources**

- 4.2 The administrative resources required for delivery of the project will be met from existing resources. The capital costs for the project would be met from a mixture of external funding and commercial investment as noted within the report at paragraph 2.12.

### **Legal**

- 4.3 Officers would engage with internal and external legal advisors for the next stage of this EV Infrastructure project.

### **Equality/Socio-economic**

- 4.4 By utilising capital investments to support a green economic recovery, the Council is tackling climate change, whilst supporting fair green jobs, addressing inequality and creating a fairer economy. It is essential that our green economic recovery continues to play a key part of our collective net zero aspirations. The recommendations provide an opportunity to develop an approach for decarbonisation and to achieve net zero emissions targets in a way which builds upon the principles of Community Wealth Building, focussing on using our land and assets and supporting local and sustainable supply chains.

### **Climate Change and Carbon**

- 4.5 The proposal aims to:
- make a positive contribution to national carbon reduction targets
  - contribute to the Council's commitment to be carbon neutral by 2030
  - contribute to the delivery of the EV Strategy 2021-2025 and the development of a network of strategically located EV charge points across North Ayrshire

The proposals would also contribute to the delivery of the North Ayrshire Environmental Sustainability & Climate Change Strategy (ESCCS) Transport and Travel workstream.

## **Key Priorities**

4.6 The proposals contained within the report support the North Ayrshire Council Plan priorities:

- Active and strong communities
- Inclusive, growing and enterprising local economy
- A sustainable environment; and
- People enjoy good life-long health and wellbeing

## **Community Wealth Building**

4.7 The EV Infrastructure programme helps to deliver the wider need for a 'just transition': a people-focused network; accelerating commercial investment; coordinating with the electricity network; and integration with Scotland's sustainable transport system. The vision of this programme is to provide a usable network, accessible for all and through the 'Place Principle' which is based on the needs of communities, ensuring they are in the right places to provide benefits. A 'Community Wealth Building' approach is adopted to act as a catalyst for local economic development (particularly tourism), whilst also ensuring that rural and island communities are not left behind.

## **5. Consultation**

5.1 Consultation and stakeholder engagement for this business case has taken place through engagement with targeted stakeholders, public/business surveys, and a webinar for non-domestic tenants and local community groups. The resident and business surveys which were open from 31<sup>st</sup> March 2022 to 2<sup>nd</sup> May 2022, provided essential insights that enabled the demand modelling in the Economic Case to be tailored to Ayrshire. In total, there were 70 responses from the businesses survey and 450 responses from the residents' survey.

RUSSELL McCUTCHEON  
Executive Director (Place)

For further information please contact **David Hammond, Head of Sustainability, Corporate Property & Transport**, on 01294 324514.

## **Background Papers**

N/A

Appendix 1 - Potential locations for North Ayrshire Proposed EVCI

Table 1. List of Proposed Destination Charger (7kW to 22kW) Sites

Ref.	Site	Post Code	X Coordinate	Y Coordinate	Location	EVCP	Max kW Output	Primary Substation	Comment
D1	Afton Road Car Park, Stevenston	KA20 3EY	226690	641901	Car Park	1	22.0	Stevenston	Assumed average 22kW. Moved from Schoolwell St car park at NAC request.
D2	Ardeer Youth and Community Centre, Stevenston	KA20 3NB	226903	641227	Off-Street	2	7.0	Stevenston	Assumed average 7kW. Reduced from 22kW at NAC request.
D3	Auchenharvie Academy, Stevenston	KA20 3JW	225873	641727	Off-Street	2	7.0	Stevenston	Assumed average 7kW. Reduced from 22kW at NAC request.
D4	Auchenharvie Leisure Centre, Stevenston	KA20 3JR	225627	641672	Off-Street	2	7.0	Stevenston	Assumed average 7kW. Reduced from 22kW at NAC request.
D5	Beith Community Centre	KA15 2BQ	234794	654187	Off-Street	1	22.0	Kilbirnie	Assumed average 22kW
D8	Blackwaterfoot Car Park, Blackwaterfoot	KA27 8ET	189584	628142	Car Park	1	22.0	Hunterston	Assumed average 22kW.
D9	Bradshaw Street Car Park, Saltcoats	KA21 5HR	224788	641215	Car Park	1	7.0	Saltcoats main	Assumed average 7kW
D10	Caledonia Car Park, Irvine	KA12 0AA	232265	639129	Car Park	3	7.0	Dalrymple Drive	Assumed average 7kW. Reduced from 22kW at NAC request.
D11	Castlepark Community Centre, Irvine	KA12 9LQ	232220	640573	Off-Street	2	7.0	Ravenspark	Assumed average 7kW. Reduced from 22kW at NAC request.
D12	Civic Centre, Ardrossan	KA22 8HJ	223129	642413	Car Park	1	7.0	Saltcoats Main	Assumed average 7kW. Changed from Glasgow St.
D14	Dalry Primary School/Community Sports Hub	KA24 5DR	228904	649386	Off-Street	2	7.0	Kilbirnie	Assumed average 7kW.
D15	Eglinton Park, Irvine	KA12 8TA	231924	641862	Off-Street	2	7.0	Irvine	Assumed average 7kW. Moved from St Mark's/Annick Primary at NAC request. Reduced from 22kW at NAC request.
D16	Garnock Community Campus, Garnock	KA14 3BJ	232476	652767	Off-Street	1	22.0	Kilbirnie	Assumed average 22kW. Complement existing charger
D18	Garrison House, Millport	KA28 0DJ	216446	655034	Off-Street	1	22.0	Hunterston	Assumed average 22kW.
D19	Gateside Street Car Park, Largs	KA30 9LG	220409	659411	Car Park	1	7.0	Largs	Assumed average 7kW. Moved from Main St
D20	Girdle Toll, Irvine	KA11 1AQ	233943	640268	Off-Street	1	22.0	Riverside	Assumed average 22kW utilisation.
D21	Glen Road, West Kilbride	KA23 9BL	220540	648288	On-Street	1	22.0	Hunterston	Assumed average 22kW.
D22	Invercloy Car Park, Brodick, Isle of Arran	KA27 8BD	201496	636066	Car Park	1	22.0	Saltcoats Main	Assumed average 7kW. Reduced from 22kW at NAC request. Moved from Shore Road.
D23	Kilmeny Terrace Car Park, Saltcoats	KA22 8DX	223582	642136	Car Park	1	7.0	Saltcoats Main	Assumed average 7kW. Changed from South Crescent Road.
D24	Largs Campus, Largs	KA30 9EU	221260	659995	Off-Street	1	22.0	Largs	Assumed average 22kW. Complement existing charger
D25	Main Road Fairlie Car Park, Fairlie	KA29 0AB	221013	655410	Car Park	1	7.0	Fairlie	Assumed average 7kW. Moved from Jetty Road.
D26	Main Street Car Park, Dreghorn	KA11 4AH	235244	638219	Car Park	1	22.0	Riverside	Assumed average 22kW.
D28	New St Car Park, Dalry	KA24 5AF	229395	649356	Car Park	1	7.0	Kilbirnie	Assumed average 7kW
D29	Newton Street Car Park, Kilbirnie	KA25 6HN	231530	654381	Car Park	1	7.0	Kilbirnie	Assumed average 7kW
D30	Portencross Car Park	KA23 9QA	217661	648796	Car Park	1	22.0	Hunterston	Assumed average 22kW.
D32	Roslin House, Stevenston	KA20 3JL	226270	641923	Off-Street	1	22.0	Stevenston	Assumed average 22kW. Moved from Lockhart ASN Campus at NAC request.
D33	Seafront Car Park, Largs	KA30 8LZ	220198	659574	Car Park	2	7.0	Largs	Assumed average 7kW. Reduced from 22kW at NAC request.
D36	Silverburn Road Car Park, Whitling Bay	KA28 8PS	204544	626213	Car Park	1	22.0	Hunterston	Assumed average 22kW.
D37	Skelmorlie Community Centre	PA17 5AH	219537	668047	Off-Street	2	7.0	Finnock Bog	Assumed average 7kW. Complement existing charger. Reduced from 22kW at NAC request.
D38	Smith Street Car Park, Dalry	KA24 5BZ	229291	649450	Car Park	2	22.0	Kilbirnie	Assumed average 22kW.
D39	Springside Community Centre	KA11 3BG	236989	638788	Off-Street	1	22.0	Riverside	Assumed average 22kW.

Ref.	Site	Post Code	X Coordinate	Y Coordinate	Location	EVCP	Max kW Output	Primary Substation	Comment
D41	Strand, Beith	KA15 1DT	234831	653882	On-Street	1	22.0	Kilbirnie	Assumed average 22kW
D42	The Portal, Irvine	KA12 0BT	232319	638980	Car Park	2	7.0	Dalrymple Drive	Assumed average 7kW. Reduced from 22kW at NAC request.
D43	Viking Centre, Largs	KA30 8QL	220227	660048	Car Park	2	7.0	Largs	Assumed average 7kW. Complement existing charger. Reduced from 22kW at NAC request.
D44	Volunteer Hall Car Park, Irvine	KA12 0DA	232282	638770	Car Park	2	7.0	Dalrymple Drive	Assumed average 7kW. Reduced from 22kW at NAC request.
D45	West Kilbride Community Centre, West Kilbride	KA23 9EH	220304	648379	Off-Street	1	22.0	Hunterston	Assumed average 22kW. Moved from Main St Car Park
D46	Woodlands Primary, Irvine	KA12 0PU	232706	639415	On-Street	2	7.0	Dalrymple Drive	Assumed average 7kW utilisation. Proposed outside school in parking bays for versatility across the day. Reduced from 22kW at NAC request.
D47	Woodwynd Car Park, Kilwinning	KA13 6AE	230392	643392	Car Park	1	22.0	Byrehill	Assumed average 22kW. Complement existing charger

Source: Mott MacDonald

Table 2. List of Proposed Rapid Charger (50kW) Sites

Ref.	Site	Post Code	X Coordinate	Y Coordinate	Location	EVCP	Max kW Output	Primary Substation	Comment
D6	Bellman's Close Car Park, Beith	KA15 2AX	234904	654081	Car Park	2	50.0	Kilbirnie	Assumed average 50kW. Provides rapid charging in area with limited options close to A737
D7	Blackwaterfoot Car Park, Blackwaterfoot	KA27 8ET	189584	628142	Car Park	1	50.0	Hunterston	Assumed average 50kW. No rapid chargers in West of island. Suggest prioritise rapid over destination
D13	Cumbrae Ferry Terminal	KA28 0HQ	218329	658621	Off-Street	1	50.0	Hunterston	Assumed average 50kW. Provides rapid charging for vehicles waiting on the ferry.
D17	Garnock Community Campus, Garnock	KA14 3BJ	232476	652767	Off-Street	1	50.0	Kilbirnie	Assumed average 50kW. Complement existing charger and provides rapid charging in area with limited options
D27	Main Street Car Park, Dreghorn	KA11 4AH	235244	638219	Car Park	1	50.0	Riverside	Assumed average 50kW. Provides rapid charging in area with limited options close to B7081
D31	Princes Street, Ardrossan	KA22 8GA	222900	642108	On-Street	2	50.0	Saltcoats Main	Assumed average 50kW. Provides rapid charging for vehicles in town centre near ferry
D34	Seafront Car Park, Largs	KA30 8LZ	220198	659574	Car Park	2	50.0	Largs	Assumed average 50kW
D35	Ship House Car Park, Lamlash	KA27 8LT	202642	631042	Car Park	1	50.0	Saltcoats Main	Assumed average 50kW.
D40	Springside Primary School, Station Road	KA11 3AZ	236775	638748	Off-Street	1	50.0	Riverside	Assumed average 50kW. Provides rapid charging in area with limited options close to B7081

Source: Mott MacDonald

Table 3. List of Proposed Residential Charger (<7kW) Sites

Ref.	Site	Post Code	X Coordinate	Y Coordinate	Location	EVCP	Max kW Output	Primary Substation	Comment
R1	Anderson Drive, Saltcoats	KA21 6AS	225015	642464	On-street	2	7.0	Saltcoats Main	Assumed average 7kW
R2	Argyle Road, Saltcoats	KA21 5AF	224284	641994	On-street	2	7.0	Saltcoats Main	Assumed average 7kW
R3	Baird Avenue, Kilwinning	KA13 7AP	230244	643970	On-Street	2	7.0	New Cumnock	Assumed average 7kW
R4	Bensley Avenue, Irvine	KA11 1AH	233991	640216	Car Park	2	7.0	Dalrymple Drive	Assumed average 7kW
R5	Blacklands Avenue, Kilwinning	KA13 6HU	230254	642711	Car Park	2	7.0	Byrehill	Assumed average 7kW
R6	Braehead, Girdle Toll, , Irvine	KA11 1BE	233688	640462	Car park	2	7.0	Dalrymple Drive	Assumed average 7kW
R7	Brisbane Rd, Largs	KA30 8NW	220494	659962	On-Street	2	7.0	Largs	Assumed average 7kW
R8	Broomfield Place, Largs	KA30 8LA	220374	658766	On-street	2	7.0	Largs	Assumed average 7kW
R9	Broomlands Drive, Irvine	KA12 0DT	232488	638677	On-street	2	7.0	Dalrymple Drive	Assumed average 7kW
R10	Burns Avenue, Saltcoats	KA21 6HD	225013	642983	On-Street	2	7.0	Saltcoats Main	Assumed average 7kW
R11	Carment Drive, Stevenston	KA20 3LD	227021	641210	On-street	2	7.0	Stevenston	Assumed average 7kW
R12	Claremont Crescent, Kilwinning	KA13 7HF	229889	643467	On-Street	2	7.0	Byrehill	Assumed average 7kW

Ref.	Site	Post Code	X Coordinate	Y Coordinate	Location	EVCP	Max kW Output	Primary Substation	Comment
R13	Corserine Bank, Irvine	KA11 1LH	234001	639459	Car Park	2	7.0	Dalrymple Drive	Assumed average 7kW
R14	Dickson Drive, Irvine	KA12 9AH	232254	640450	On-Street	2	7.0	Ravenspark	Assumed average 7kW
R15	Dundonald Road, Irvine	KA11 4DB	235282	638120	Car park	2	7.0	Riverside	Assumed average 7kW
R16	Garelet Place, Irvine	KA11 1EX	234742	638956	Car Park	2	7.0	Riverside	Assumed average 7kW
R17	Garnock St, Dalry	KA24 4AW	229225	649001	On-Street	2	7.0	Kilbirnie	Assumed average 7kW
R18	Gladstone Road, Saltcoats	KA21 5LF	225018	641641	On-Street	2	7.0	Saltcoats Main	Assumed average 7kW. Changed from Windmill Wynd
R19	Glasgow Street, Isle of Cumbrae	KA28 0DP	216750	655014	On-street	2	7.0	Hunterston	Assumed average 7kW
R20	Glenapp Place, Kilwinning	KA13 6TQ	229504	642704	On-Street	2	7.0	Byrehill	Assumed average 7kW
R21	Haco Street, Largs	KA30 9BG	220765	659907	On-Street	2	7.0	Largs	Assumed average 7kW. Moved from Greenock Road
R22	Harbour Street, Irvine	KA12 8PZ	231310	638384	Car Park	2	7.0	Irvine	Assumed average 7kW
R23	Heatherstane Way, Irvine	KA11 1DU	235314	638925	Car Park	2	7.0	Riverside	Assumed average 7kW
R24	Holehouse Road, Largs	KA30 9JH	221003	659714	On-Street	2	7.0	Largs	Assumed average 7kW
R25	Ladeside Court, Kilbirnie	KA25 6BG	231157	653999	On-Street	2	7.0	Kilbirnie	Assumed average 7kW. Moved from Holmhead.
R26	Lanfine Way, Irvine	KA11 1BT	234004	640710	Car Park	2	7.0	Dalrymple Drive	Assumed average 7kW
R27	Lewis Wynd, Irvine	KA11 1HL	234020	638946	Car park	2	7.0	Dalrymple Drive	Assumed average 7kW
R28	Lismore Drive, Irvine	KA11 4JF	235002	637756	Car Park	2	7.0	Riverside	Assumed average 7kW
R29	Manuel Terrace, Irvine	KA11 4BY	235247	637877	On-Street	2	7.0	Riverside	Assumed average 7kW
R30	Milldown Place, Irvine	KA11 1EF	235256	638705	Car park	2	7.0	Riverside	Assumed average 7kW
R31	Montgomerie Street, Ardrossan	KA22 8HP	222996	642461	On-street	2	7.0	Saltcoats Main	Assumed average 7kW
R32	Morar Place, Irvine	KA12 9PU	232238	640971	Car Park	2	7.0	Ravenspark	Assumed average 7kW
R33	Muirside Road, Saltcoats	KA13 6NA	229165	642829	On-Street	2	7.0	Byrehill	Assumed average 7kW
R34	Newfield Place, Irvine	KA11 1NS	234524	640225	Car Park	2	7.0	Dalrymple Drive	Assumed average 7kW
R35	Princes Street, Ardrossan	KA22 8DQ	223012	641957	On-street	2	7.0	Saltcoats Main	Assumed average 7kW
R36	Redburn Place, Irvine	KA12 9BQ	231734	640461	Car Park	2	7.0	Ravenspark	Assumed average 7kW
R37	Stanley Road, Adrossan	KA22 7DL	223743	643428	On-Street	2	7.0	Saltcoats Main	Assumed average 7kW
R38	Sundrum Place, Kilwinning	KA13 6SP	229649	642917	Car Park	2	7.0	Byrehill	Assumed average 7kW
R39	Victoria Road, Saltcoats	KA21 5LG	224993	641712	On-street	2	7.0	Saltcoats Main	Assumed average 7kW

Source: Mott MacDonald

## Appendix 2 – Commercial Model Assessment

The four commercial models were assessed by scoring them against the objectives of affordability, social outcomes, risk allocation, contestability, procurement, resources and revenue.

### Assessment Parameters

For all objectives, each model has been qualitatively scored on a scale of 0 to 3. The following table provides examples of what, in each case, constitutes a low score and a high score, and also suggests a weighting against each objective from 1 to 3.

Objective	Low score example	High score example	Suggested weighting
Affordability	Models which maximise capital investment burden to local authority, e.g., model D	Models which minimise capital investment burden to local authority, e.g., model A	3
Social outcomes	Models which release chargepoint location and pricing control to private sector, e.g., model A	Models which retain chargepoint location and pricing control with public sector, e.g., model D	3
Risk allocation	Models which assign high-resource / high-reward risks to public sector, e.g., model D	Models which assign high-resource / high-reward risks to private sector, e.g. model A	3
Contestability	Models which grant long-term full infrastructure ownership to either sector, e.g., models A or D	Models which limit competition enhancing assets to private sector, e.g., model B	2
Procurement	Models with greatest level of public-private partnership, e.g., model C	Models with least level of public-private partnership, e.g., models A or D	1
Resources	Models requiring greatest local authority back-office resource commitment, e.g., model D	Models requiring least local authority back-office resource commitment, e.g., model A	1
Revenue	Models least likely to return a long-term profit to the local authority, e.g., model A	Models most likely to return a long-term profit to the local authority, e.g., model D	1

Source: Mott MacDonald

The suggested weighting values reflect the following local authority priorities:

- Affordability, social outcomes and risk allocation are given the highest weightings because the model:
  - Must be affordable to the Council
  - Must meet the Councils' vision of providing a fair and equitable network, and
  - Should not expose the Council to unmitigated risk.
- Contestability, procurement, resources and revenue are given lower weightings as, though these are important objectives, they are of a lower priority.

### Assessment Scoring

Based on the above scoring parameters, the following table presents a high-level scoring assessment of the four commercial models against the objectives.



**Table 1. Commercial model scoring – weighted results**

<b>Objective</b>	<b>A – Privately owned and operated</b>	<b>B – Privately operated only</b>	<b>C – Privately operated with risk share</b>	<b>D – Public sector owned and operated</b>
Affordability	3	2	2	1
Social outcomes	1	3	3	3
Risk allocation	3	3	2	1
Contestability	1	3	3	2
Procurement	2	2	1	3
Resources	3	3	2	1
Revenue	1	1	2	3
<b>Weighted avg score</b>	<b>2.07</b>	<b>2.57</b>	<b>2.29</b>	<b>1.86</b>
<b>Normalised score</b>	<b>0.81</b>	<b>1.00</b>	<b>0.89</b>	<b>0.72</b>

Source: Mott MacDonald

The following observations can be drawn from these assessment results:

- Model D scores lowest, for though it would give the local authority maximum control over the implementation and operation of EVCI network and would potentially maximise revenue, it would also fully expose the authority to the significant commercial uncertainties of this emerging market, while requiring a level of capital investment and back-office resource commitment that many authorities are not best placed to generate and sustain.
- Model A scores second lowest. The fully market led approach is better placed to effectively handle market uncertainties and while shielding the local authority from commercial risk, but the downside is that it is also less likely to deliver a socially equitable network (as loss making locations would be unlikely to proceed) and while the considerable up-front investment could also prove commercially unviable to the private sector. Private ownership of the underground connections would also potentially reduce the long-term contestability and adaptability of the network.
- The two hybrid models provide an opportunity to combine the respective strengths of models A and D, with the combination provided by model B – ‘privately operated only’ – resulting in the highest score. This model retains local authority ownership of all assets with no exposure to capital risks, which are covered by a combination of private sector concessionaire investment and grant subsidy. This gives the public sector control over chargepoint specifications, locations and, to some degree, tariffs, while allowing the private sector to handle all commercial risks in return for collecting all revenue. Model C is similar but with revenue share to the local authority, but this is in exchange for exposure to financial downside risks which could potentially outweigh revenue gains if realised (and which local authorities may be less well placed to manage than EV charging organisations who have greater capability to forecast future demand). This model therefore scores lower than Model B.

Overall, based on this assessment, Model B is recommended for further consideration as the preferred commercial model to support local authority intervention into the EVCI market for the three Ayrshire Councils, working together.

For reference, the unweighted assessment results in the same ranking of models.