

## **Section 1 - Tandridge District Council: Soft Market Test (SMT) for Electric Vehicle Charging Points in Council Car Parks**

### **Number of respondents:**

The SMT received 16 responses from Chargepoint Operators (CPOs).

### **Questions respondents were asked to consider:**

1. **Funding:** It is unlikely that the Council will have capital investment for the installation, operation and maintenance of charge points. Therefore, what funding options can your organisation provide?

The majority of CPOs offered fully funded ('concession') options, along with other part-funded and client funded options. Some options included seeking to gain government funding for the chargepoints, in which case most CPOs would contribute 25% of the costs. Leasing chargepoints was also mentioned in one contribution.

Several CPOs noted that any chargepoint sites, to be fully funded, would need to be commercially viable. Such sites can be assessed on several criteria, such as: potential footfall / dwell time, existing level and type of infrastructure, location to transport and business hubs. For less commercially viable / lower usage sites, obtaining government funding would be beneficial and potentially increase site options.

A further key element to consider is the costs associated with connecting the site to the electrical grid and whether any upgrades would be necessary. If these 'DNO costs' are high, it is likely that a site will not be commercially viable.

Out of the Council's list of car parks, data to hand suggested that approximately two sites may be commercially viable, and others not, due to lack of suitable grid connection or small size of the car park. However this data would need to be reviewed as part of a potential tender exercise, and in light of the Council's preferred funding model. In addition, the Council would confirm grid connections with the local energy supplier UK Power Networks.

2. **Length of contract:** if TDC were to partner with your organisation, what would be the minimum contract length to manage, operate and maintain and the charge points?

Typically the length of contract offered relates to the level of investment required from the CPO. For fully funded options, the contract lengths ranged from 12 – 20 years. A key driver for these models is the CPOs return on investment, which is most often only available via a long-term partnership. One CPO mentioned that all their local authority chargepoints are currently running at a loss. Fully funded options usually entail the CPO being the owner of the equipment and accepting liability for maintenance, repair and so forth.

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Shorter contracts are available for part-funded and when using grant funding, typically between 1- 12 years.

Other factors that can affect the length of contract – which mostly relate to funding options – are: the type of charger installed, as slower charges are less expensive than faster ones.; hardware costs; Grid connection (DNO) costs; Profit share %; Cost per kWh; Rental fees for the bays; Installation costs; Value of grant funding towards the project. Again, a key determining element is the DNO costs, as it has a high impact on the financial viability of sites.

3. **Scope of the contract:** does your organisation offer installation, maintenance and future-proofing (design & technology) of the chargepoints? In addition:
  - a. Would the contract cover vandalism?
  - b. How quickly could faulty chargepoints be fixed?

The majority of CPOs offered full end-to-end solutions whereby all installation, maintenance and repair costs are included – typically for fully funded options. If the Council were to fund the project, it is highly likely that it would assume liability for these costs or have to take out insurances to cover them.

Regarding covering vandalism and future-proofing, several CPOs said these would be covered, however others mention that they would not be.

All respondents stated similar response times to repair faults, depending on the severity of the fault. Most faults can be fixed remotely, and most chargepoints can send automatic fault messaging to the supplier.

4. **Back office system:** what are the features of the back-office maintenance and operating system you use? For instance:
  - a. Is it compatible with other charge point systems?
  - b. Does it have a strong track record for reliability?
  - c. Can usage data be shared with the Council and other Surrey local authorities?

There were mixed responses regarding CPOs' back-office system compatibility with other systems. Some operators favoured their own bespoke designed systems, whereas others had signed up to the Open Charge Point Protocol (OCPP). The OCPP is "an open-source communication standard for EV charging stations and network software companies. Simply put, any EV charging station that is OCPP-compliant can be configured to run any similarly OCPP-compliant software."<sup>1</sup> Hence with these systems there are greater opportunities for interoperability and the option to switch to different software systems/suppliers.

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<sup>1</sup> EVBOX (2021) *Understanding OCPP: Why Interoperability Matters*, EV Box. Online available: <https://evbox.com/us-en/understanding-ocpp> [Last accessed 15/06/2021]. Note: this reference does not imply any preference for this organisation, it is included only as an aid for explanation.

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The majority of CPO back-office systems can share data with the Council, using dashboards with multiple indicators, such as: live status of chargers, kWh usage, cost of sessions and CO2 savings. There were not many definitive statements on data sharing outside of the Council. However it is not expected that this would be a significant obstacle, and some CPOs were happy to fully share data.

Although not common, a few CPOs mentioned that their systems can support contactless card payment, pay as you go options, and web pay. Hence with some CPOs, users do not have to be members or download an App.

5. **Compatibility & speed:** are your chargepoints compatible with all electric vehicles on the market, if not which are excluded? Further:
  - a. What charge speed would you recommend installing in TDC's car parks and why?
  - b. Ability to control or limit charging speeds remotely?

All CPOs noted that their chargers are compatible with all EVs on the market, and some highlighted that their hardware can be futureproofed should changes be necessary. One CPO noted that one EV manufacturer would not be compatible, although this manufacturer provides adapters for their customers, so the vehicles can be used with standard chargers.

There was a mix of charger speeds suggested by CPOs, possibly due to the fact that they have not conducted full feasibility studies of the Council's car park sites. 7-22 kW mostly featured, with other recommendations for faster chargers such as 50 – 150 kW to allow for rapid charging.

The type/speed of charger would relate to the specific installation site. For instance, typical charge times for a 50kW unit are around 40 minutes, while ultra-rapids offer <20 minutes for compatible cars. Therefore the type of charger installed will depend on the likely dwell time of users. In the longer stay car parks, 7kW to 22kW chargers would provide slower charging for those parked for more than two hours / all day, whilst rapid chargers would be more applicable if dwell time is less than 1hr.

All operators could load manage and control charging remotely.

6. **Revenue sharing:** given the size and number of TDC car parks, would there be options for sharing the revenue / profit from the chargepoints?

The majority of CPOs said they would consider revenue / profit sharing, with most preferring the latter. The proposed share ranged from 2-25%, although was typically 5-10%. Notably these arrangements would again be dependent on other factors such as the funding model, length of the contract, type of equipment installed, tariffs, cost of installation, and expected usage.

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7. **Non-negotiables:** are there any non-negotiable elements of a potential partnership, such as traffic regulation orders and parking policies, that the Council should be aware of?

Nearly all CPOs did not foresee any significant non-negotiables. However a few CPOs noted that:

- traffic regulation order (TRO) work would be at the Council's expense;
- sites would, ideally, be accessible 24hr a day;
- it would be beneficial for the Council to enforce parking regulations, so only EVs park in EV bays. Some CPOs may require assurances from the Council on this;
- exclusivity over a site / car park would be preferable;
- there would likely be contractual clauses related to early-termination, as this could significantly impact a CPO's return on investment. For instance, this could apply should the Council wish to change the use of car park, say to another type of development.

8. **Bay blocking:** does your offering include ways of addressing bay blocking?

Bay blocking can relate to users remaining parked at a chargepoint after their vehicle is charged, or 'ICEing', whereby non-EVs park in EV bays. The majority of CPOs has a system in place to address the former, such as parking sensors and notifying users that their vehicles are fully charged via Apps. Other options included the use of: overstay charges; sensors that notify parking enforcement officers; lamppost CCTV systems; and the ability to use chargers as payment meters. However some instances, namely ICEing would rely on parking officers to enforce TROs.

9. **Council resource:** other than contract management, do you envisage the Council needing to provide further resources, such as officer time and capital, over the length of the contract once the charge points are in place?

All CPOs envisaged no extra resource being required for fully funded options, as all aspects are covered by the supplier such as: customer services, payment, and repair.

It is likely that the Council would need to be involved in any applications for government funding and would meet with a CPO quarterly to monitor usage and performance. If not provided for in a contract, the Council may need to pay for vandalism. Some CPOs also mentioned that it would be advisable if the Council could utilise its parking enforcement teams to support the effective use of the chargepoints.

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10. **Environment:** What are the environmental credentials / embedded carbon of your charge points? For instance, do you manufacture your charge points using recycled materials, and minimise shipping distance and the materials / processes related to site construction?

Most CPOs had strong environmental credentials and are pro-actively working to reduce emissions related to shipping and installation. Some chargers were made from recycled material and could be recycled at the end of their life.

Chargepoints mostly have long lifespans, such as between 8 to 20 years, depending on future proofing.

In addition, some CPOs highlighted that they use renewable energy to supply the electricity for their chargepoints.

11. **Social value:** are there other opportunities that could benefit the community from your charge points? For example: the ability to install other smart technology; provision of public engagement sessions with the local community or social media content; use of local workforce?

Many CPOs offered lots of options with regard to social value, these included:

- Using / upskilling local workforce;
- Work / college placements and work experience;
- Taking part in public engagement events, taster days with local community and schools; and other PR and marketing to educate potential users and generate awareness;
- Possibility to support solar pv / battery storage installations and community energy;
- Focus on making chargepoints accessible to all drivers with different needs, such as wheelchair users;
- Provision of air-quality sensors
- Experience of conducting building energy efficiency surveys;
- Ability to use chargepoints for wi-fi, advertising, displays, CCTV, public help points.

12. **Procurement framework:** is your organisation part of an existing procurement framework?

The majority of CPOs were part of more than one procurement framework, with others being members of at least one framework.

13. **Do you have experience of working with Local Authorities?**

All CPOs had experience working with Local Authorities, some having conducted multiple chargepoint installations.

**14. Is there anything further you would like to add?**

A few additional remarks were put forward by CPOs:

- One emphasised that the central government vision aligns with interoperability and not to tie users to specific applications; and also support contactless, swipe and PIN enabled payment.
- There could be potential to link the chargepoints to current Council systems and interfaces.
- Possibility to support discount schemes, including for Council employee and fleet vehicle charging.
- It would advantageous for the Council to think carefully about its preferred pricing schedule and ensure this is communicated clearly in a potential tender, and that this and other project costs are clearly itemised. In addition, pricing, profit shares and funding arrangements will likely influence the price the end user pays, which the Council should again carefully consider.
- As mentioned above, the choice to choose an OCPP member supplier could have significant implications.

**15. Is there any information you would require from the Council or other organisations that would only be available if you were the chosen supplier?** For instance, technical specifications required to assess revenue generation or installation costs.

Several CPOs highlighted additional data that would be of use for them when choosing to bid for a potential future tender:<sup>2</sup>

- Confirmation of the Council's proposed sites for chargepoints, access to these sites and site surveys;
- The DNO costs for each site;
- Any modelling on potential EV uptake;
- User profiles, such as short, medium, long stay volumes; number of cars daily / weekly who park at the sites; and reasons for parking e.g. shopping, walking the dog etc.
- Any council requirements regarding its preferred financial model and payment rates.

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<sup>2</sup> These would not necessarily be at the Council's expense.

## Section 2 – Suggested sources for further information on Electric Vehicles

Below is a list of suggested sources for further information on electric vehicles, chargepoints and wider pieces on climate change. Please note that the inclusion of these sources does not equate to the Council supporting or showing preference towards a particular source / author, neither does the Council assume liability for the factual accuracy of the sources. They are included as a guide for readers who are expected to make their own judgements on the sources. All sources were last accessed 15/06/2021. Full references have not been provided, readers can find full details using the provided web links.

- HM Government - Road to Zero publication:  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/739460/road-to-zero.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739460/road-to-zero.pdf)
- HM government - The 6<sup>th</sup> carbon budget response:  
<https://www.gov.uk/government/news/uk-enshrines-new-target-in-law-to-slash-emissions-by-78-by-2035>
- HM Government - 10-point plan for a Green Industrial Revolution for 250,000 jobs:  
<https://www.gov.uk/government/news/pm-outlines-his-ten-point-plan-for-a-green-industrial-revolution-for-250000-jobs#:~:text=The%20Prime%20Minister's%20ten%20points,supporting%20up%20to%2060%2C000%20jobs.>
- Energy Saving Trust article on the benefits of EVs and support with purchasing:  
<https://energysavingtrust.org.uk/advice/electric-vehicles/>
- Energy Saving Trust policy proposals for Wales:  
<https://energysavingtrust.org.uk/wp-content/uploads/2021/03/Energy-Saving-Trust-Green-Recovery-Policy-Proposals-ahead-of-the-2021-Senedd-Election.pdf>
- Climate Change Committee - Local Authorities and the Sixth Carbon Budget:  
<https://www.theccc.org.uk/publication/local-authorities-and-the-sixth-carbon-budget/>
- Climate Change Committee - The UK's transition to electric vehicles:  
<https://www.theccc.org.uk/publication/the-uks-transition-to-electric-vehicles/>
- Local Government Association - The Case for EVs and charging infrastructure:  
<https://www.local.gov.uk/case-electric-vehicles>

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- Local Government Association – Council’s spearheading climate change effort (inc. installation of chargepoints):  
<https://www.local.gov.uk/about/news/councils-spearheading-national-climate-change-effort>
- Local Government Association - A councillor’s workbook on the local pathway to net zero Councillor Workbook (inc. EVs):  
<https://www.local.gov.uk/publications/councillors-workbook-local-pathway-net-zero>
- Go Ultra Low [general] - a joint government and industry campaign (supported by the Office of Low Emission Vehicles, vehicle manufacturers, energy providers and the Society of Motor Manufacturers and Traders):  
<https://www.goultralow.com/>
- Go Ultra Low – Benefits of choosing an EV:  
<https://www.goultralow.com/choosing-an-ev-benefits-of-choosing-an-ev/>
- Go Ultra Low - One EV registered in the UK every three minutes in 2020:  
<https://www.goultralow.com/consumer/one-ev-registered-in-the-uk-every-three-minutes-in-2020/>
- Carbonfootprint.com – Why make move to full electric:  
[https://www.carbonfootprint.com/electric\\_vehicles.html](https://www.carbonfootprint.com/electric_vehicles.html)
- Gauging Economic Consensus on Climate Change, *Institute for Policy Integrity* – *New York University School of Law* (March 2021).  
<https://policyintegrity.org/publications/detail/gauging-economic-consensus-on-climate-change>
- The Intergovernmental Panel on Climate Change (IPCC) [the United Nations body for assessing the science related to climate change.] – Special Report – Summary for Policy Makers and Headlines documents:  
<https://www.ipcc.ch/sr15/>
- UN Climate Change Conference (COP 26):  
<https://ukcop26.org/>
- UK Met Office - Temporary exceedance of 1.5°C increasingly likely, May 2021:  
<https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2021/chance-of-temporarily-reaching-1.5-c-in-next-five-years-is-increasing>  
  
Link to main report: World Meteorological Organization (2021):  
[https://hadleyserver.metoffice.gov.uk/wmolc/WMO\\_GADCU\\_2020.pdf](https://hadleyserver.metoffice.gov.uk/wmolc/WMO_GADCU_2020.pdf)
- Articles on the lifetime emissions of EVs:  
<https://www.carbonbrief.org/factcheck-how-electric-vehicles-help-to-tackle-climate-change>



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<https://www.bbc.co.uk/news/science-environment-51977625>

<https://www.drax.com/energy-policy/how-clean-is-my-electric-car/>

- News article - EVs costing less in insurance, tax and fuel:  
<https://www.futurenetzero.com/2021/05/07/evs-now-cheaper-to-insure-than-petrol-or-diesel-cars/>
- News article - UK businesses investing in EVs:  
<https://www.futurenetzero.com/2021/05/07/uk-businesses-to-invest-15-8bn-in-evs-over-the-next-year/>
- News article - Vehicle manufacturers committing to carbon-neutral car production:  
<https://www.futurenetzero.com/2021/04/07/polestar-commits-to-creating-carbon-neutral-car-without-offsetting/>  
<https://www.energylivenews.com/2021/04/30/volkswagen-commits-to-carbon-neutrality-by-2050-at-the-latest/>
- News article - Delivering Net Zero Leading to Increased Mining:  
<https://www.futurenetzero.com/2021/05/26/delivering-net-zero-will-require-massive-expansion-of-mining/>
- News article - EV Batteries playing a key role in future flexible energy market:  
<https://www.futurenetzero.com/2021/05/25/virtual-power-station-created-by-uk-power-networks/>
- News article – Warning from climate committee that UK is not keeping pace with climate risks:  
<https://www.futurenetzero.com/2021/06/16/uk-fails-to-keep-pace-with-increasing-climate-risks-ccc-warns/>