

Appendix B – Detailed Options Appraisal

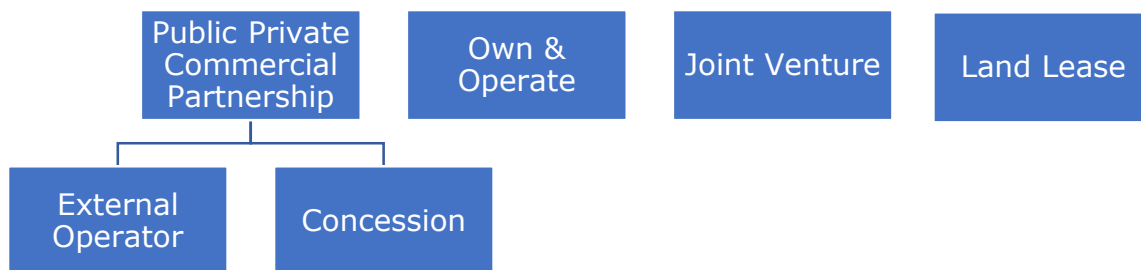
A. Different procurement options for Electric Vehicle charging solutions

To place some context to this appraisal it is worth highlighting some of the challenges and risks of EV charging within South Warwickshire

Cost	<ul style="list-style-type: none"> • Deployment of EV charging can come at significant cost. • Long term programmes are required to deliver a return on investment
Risk of obsolescence	<ul style="list-style-type: none"> • The long-term nature of the initiative could mean technology is superseded before paying for itself • Changing needs of users can make replacement of equipment costly
Uncertainty of charging behaviours	<ul style="list-style-type: none"> • The market is currently immature and future behaviours will evolve over time • The portfolio of chargers (i.e., speed of chargers) may need to change over time to meet demand • The influence of other commercial activities i.e., chargers in supermarkets will affect future strategies • The Council will need to consider future needs and design the network it thinks it needs

One of the key decisions that must be made in the procurement process is selecting an appropriate commercial arrangement with an EV Charger provider. This in essence is the division of investments, ownership, risk and responsibilities between the Council and a service provider.

Although terminology can vary, there are four common and successful arrangements in place within the current marketplace.



1. Own and Operate

This would be the most involved model for the Council. We would pay for all capital costs, operational costs and retain all ownership, control, responsibility, risk, and revenue. The Council would take full ownership of the charge-points and have the autonomy to select the charge-point location, type and number and set charging tariffs, while receiving 100% of the revenue. The Council would be responsible for covering the ongoing costs, i.e., insurance, back-office software, and electricity supply as well as maintenance of the charge-points. It needs to be considered that in a rapidly changing infrastructure that there is a risk in having out of date infrastructure early in the process. Also, the ongoing cost would be significant with the charge-points unlikely to provide significant return on investment for an extended period.

Although it can offer potentially the highest potential returns the Council in the long term, it would be responsible for all initial supporting infrastructure costs including sub-station development or upgrade; and will have the full liability for future proofing its offering in a fast evolving market

2. A Joint Venture (JV)

This is an alternative for delivering EV infrastructure and an alternative to a purely contractual agreement with a service provider. Setting up a JV comes with its own range of risks, which need to be considered carefully beforehand. The JV entity should represent the best route for risk management for the Council where it is unable to achieve this through contractual arrangements.

The following points are important to consider before setting up a JV for EV infrastructure procurement and delivery:

- The Council will still own a reputational risk for choosing this arrangement. It cannot be seen as transferring all risk to the private sector by creating an arm's length relationship. This differentiates it from a Public Private Commercial Partnership (see below).
- A JV involves collaboration between parties with different goals and ambitions.
- In addition to the technical and operational aspects, the Council would need to think about the process of selecting a JV partner. In some cases, the Council may procure a partner for a JV which later enters contracts with the same Council. If this happens the Council must keep clear separation between its role as a JV Partner and as a Council client

3. Land Lease

This approach is a low-risk low revenue commercial arrangement where the Council retains little control over the resulting service by leasing land it owns to a service provider. The Council would offer land holdings which may be suitable for EV charging and leases them to a service provider. All capital and operational costs are covered by the service provider who also retains the risk and responsibility associated with installation, maintenance, and asset utilisation. The Council would have no control over the infrastructure that is deployed. It would also be subject to the Council's Local Plan and Business Development objectives.

4. Public Private Commercial Partnership (PPCP)

In essence this encapsulates various commercial arrangements between the Council and a service provider. The key strength of a PPCP arrangement is that it allows for a more flexible arrangement between the Council and the service provider. It can unlock private investment by more evenly sharing risk and revenue. It falls into two main models: -

External Operator

This arrangement can cover a multitude of different contracting models, but in summary the contractor and/or Council in various combinations of apportionment of responsibility; supplies, installs, manages, and operates charge-points at locations specified by the Council which the Council will own in exchange for a fee or revenue share.

Due to the range of different models, the risks around infrastructure and charger liability and tariff control can vary.

Concession approach

This is where the Council provides an opportunity for a single Delivery Point Operator (DPO) to implement an EV charging infrastructure and service utilising the Council's owned assets. The DPO installs all infrastructure necessary for the installation and operation of charge-points selected by themselves, including locations they have deemed commercially viable. The Council can retain some control over the quality of service and/or the location of the chargers depending on the attractiveness of their portfolio to the commercial market; and by having an active role in contract management and performance monitoring. The risk and responsibility all lie with the DPO who finances the capital and replacement costs for all the infrastructure.



More complex arrangements can be achieved, either through design or negotiation. For example, the Council could specify that the grid connection and groundworks ownership is returned to the Council at the end of the contract term. The provider then procures and installs the hardware, as well as taking responsibility for maintenance and operations




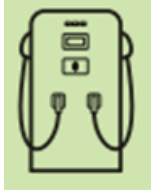
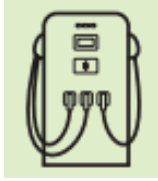
A summary of the advantages and disadvantages of the different approaches can be found in Table 3 below

B. Approximate costs of chargers, maintenance etc.

This section provides estimated costs for procuring and maintaining charge-points. It is based on 2019 information, but it is the best available indicative cost comparison. The difference in costs on a given charger type is due to supplier differences, in the procurement model, construction, materials and components.

Table 1 – Prices of different charge-points

Charge-Point Type	Typical Specification	Cost Range (£ Ex VAT, Delivery, and Installation)
Fast Type 2 Wall Mount 7Kw 	<ul style="list-style-type: none">• Display and LED Status indicators• GPRS Modem # 7kW, Mode 3 charger ##	£750 - £1,500
Fast Type 2 Dual Wall Mount 7Kw 	<ul style="list-style-type: none">• RFID Card Reader ###• Display + LED Status Indicators• GPRS Modem• 7kW, Mode 3 charger	£1,700 - £2,700
Fast Type 2 Dual Ground Mount 7Kw	<ul style="list-style-type: none">• RFID Card Reader	

	<ul style="list-style-type: none"> • Display + LED Status Indicators • GPRS Modem 7kW, Mode 3 charger 	<p>£1,700 - £5,000</p>
<p>Fast Dual Type 2 Wall Mount 22k</p> 	<ul style="list-style-type: none"> • RFID Card Reader • Display + LED Status Indicators • GPRS Modem 22kW, Mode 3 charger 	<p>£1,800 - £4,000</p>
<p>Fast Dual Type 2 Ground Mount 22Kw</p> 	<ul style="list-style-type: none"> • RFID Card Reader • Display + LED Status Indicators • GPRS Modem 22kW, Mode 3 charger 	<p>£3,000 - £5,000</p>
<p>Rapid Dual Outlet Type 2 & JEVs G105</p> 	<ul style="list-style-type: none"> • RFID Card Reader • Display • LED Status Indicators • GPRS Modem 43kW AC or 50kW DC. Mode 3 or 4 charger 	<p>£15,000 - £25,000</p>
<p>Rapid Triple Outlet Type 2, CCS & JEVs G105</p> 	<ul style="list-style-type: none"> • RFID Card Reader • Display • LED Status Indicators • GPRS Modem 50kW DC, Mode 3 or 4 charger ##### 	<p>£15,000 – 30,000</p>

- Stands for General Packet Radio Service and is used for data transmission

- Mode 3 charger is a fixed and dedicated socket outlet and is the preferred and safest solution for EV charging with full control and protection built in

- RFID stands for radio frequency identification and is a contactless and wireless way to transfer data

- Mode 4 charger is the only charging mode that provides direct current. This needs a current converter external to the vehicle to which to connect your charging cable

Table 2 – Indicative running costs for EV Charge-points

Item	Cost range (£ Ex VAT)		Comment
	Fast Charge Point	Rapid Charge Point	
Annual Maintenance Inspection	£100 - £200	£300 - £2,300	Only one site visit per year
Annual warranty in year 2 or year 3	£100 - £250	£500 - £2,600	Only covers certain parts under

Annual warranty in year 4 or year 5 or beyond	£150 - £500	£700 - £3,000	warranty. Will not cover user damage or vandalism
Annual (Continuous) Data Connection and Collection Fee	£60 - £200	£60 - £300	Covers typical CPNO # costs including cost of SIM card and mobile network charges. Covers cost for collection of usage data into database and presentation on web portals. May include PAYG ## service costs and other charges that are set out in the business plan with the charge point supplier. May not include connection testing for new equipment not tested with the selected CPMS ###
Annual Insurance for User damage to charge point	Not usually insured, unit re-seating Approx. £500 - £1,000 Type 2 socket replacement approx. £300	Not usually insured, unit re-seating approx. £1,000 - £3,000 tethered cable and plug replacement, approx. £300 - £2,000	The host usually pays for the correction of issues outside of insurance
Employers' liability insurance cover	Small administration fee to change details of policy		No significant change in policy costs
Public liability insurance cover			

CPNO – Charging Point Network Operator

PAYG – Pay as You Go

CPMS – Charge Point Management System

Table 3 – Summary of the advantages and disadvantages to the Council of different procurement models

Category	Own and operate	PPCP (External Operator)	PPCP (Concession)	Joint venture	Land lease
Who invests?					
Capital expenditure	Council	Council/Supplier/Shared	Supplier	JV	Supplier
Operational expenditure	Council	Council/Supplier/Shared	Supplier	JV	Supplier
Who owns?					
Distribution assets	DNO	DNO	DNO	DNO	DNO
Local connection assets	Council	Council	Supplier	JV	Supplier
Charging assets	Council	Council/Supplier	Supplier	JV	Supplier
Who controls?					
Technical specification	Council	Council	Shared	JV	Supplier
Location choices	Council	Council	Council	JV	Council
End user tariff	Council	Council/Shared	Supplier	JV	Supplier
Who is responsible?					
Planning approvals	Council	Council/Supplier	Supplier	JV	Supplier
Distribution assets	DNO	DNO	DNO	DNO	DNO
Local connection assets	Council*	Council/Supplier	Supplier	JV*	Supplier
Charge-point installation	Council*	Council/Supplier	Supplier	JV*	Supplier
Operations	Council*	Council/Supplier	Supplier	JV*	Supplier
Insurance	Council*	Council/Supplier	Supplier	JV*	Supplier
Customer service	Council*	Council/Supplier	Supplier	JV*	Supplier
Electricity purchase	Council*	Council/Supplier	Council or Supplier	JV*	Supplier
Decommissioning	Council*	Council/Supplier	Council or Supplier	JV*	Supplier
Who owns the risk?					
Technology obsolescence	Council	Council/Supplier	Supplier	JV	Supplier
Regulatory change	Council	Shared	Supplier	JV	Supplier
Electricity prices	Council	Council/Supplier	Council/Supplier	JV	Supplier
Utilisation	Council	Shared	Supplier	JV	Supplier

Who takes revenue?						
EV charging income	Council	Council/Shared#	Shared~	JV	Supplier	
Ground rent	N/A	N/A	N/A	N/A	Council	
*May be sub-contracted. #Operator share level is dependent on split of risk. ~Operator retains larger share						

Information from WDC Pre-Market engagement

Key	Scale
	Most favourable to Council
	Least favourable to Council