



WEST OXFORDSHIRE
DISTRICT COUNCIL

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Name and date of Committee	CABINET - 16 MARCH 2022
Report Number	AGENDA ITEM 12
Subject	ELECTRIC VEHICLE CHARGING POINT INFRASTRUCTURE AND FEE SETTING
Wards affected	All
Accountable member	Cllr David Harvey Email: david.harvey@westoxon.gov.uk
Accountable officer	Claire Locke, Group Manager Email: claire.locke@publicagroup.co.uk
Summary/Purpose	To seek agreement to proceed with EVCP installations utilising funding allocated within the MTFs, to make amendments to the Parking Order(s) and to consider the approach to setting fees that customers will pay to charge their vehicles.
Annexes	Annex A – Summary Business Case Annex B - Benchmarking data for cost per kWh Annex C - Equalities Impact Assessment
Recommendation(s)	<p><i>It is recommended that Cabinet :-</i></p> <ul style="list-style-type: none"><i>(a) Approve, subject to receipt of appropriate grant funding, the first phase of EVCPs, as detailed in this report, with costs of approximately £42,404</i><i>(b) Note that a further report will be brought to Cabinet to agree final estimated costs, once grant funding has been obtained and prior to work commencing;</i><i>(c) agree that a standard fee per kWh is introduced based on the formula within the report, comprising revenue costs + £0.04. Based on current electricity price forecasts of £0.24per kwh, the fee to the customer would be £0.37 per kwh;</i><i>(d) that delegated authority is given to the Deputy Chief Executive in consultation with the Deputy Leader and Cabinet Members for Finance and Climate Change to review and set fees between the</i>

	<p><i>annual renewal process, to mitigate the risk of financial losses to the Council, as costs fluctuate;</i></p> <p><i>(e) That amendments are made to the Parking Order, restricting vehicles from parking in charging bays unless they are charging a vehicle;</i></p> <p><i>(f) delegated authority is given to the Deputy Chief Executive in consultation with the Cabinet Member for Environment to review and make a final decision following consultation feedback on the amendments to the Parking Order;</i></p>
Corporate priorities	<ul style="list-style-type: none"> ● Modern Council Services and Sustainable Finance ● Climate Action
Key Decision	YES
Exempt	NO
Consultees/ Consultation	

1. BACKGROUND

- 1.1 In March 2021 Cabinet adopted the Oxfordshire Electric Vehicle Infrastructure Strategy which set out in the accompanying report the aspirations, procurement and broad delivery plan between partners in Oxfordshire.
- 1.2 The countywide partnership 'Park and Charge' has already opened five charging locations within West Oxfordshire that meet certain criteria for the grant funding the partnership received. But to meet the targets set out in the strategy there is a need to improve further the existing local electric charging infrastructure capability, encourage the market shift towards an electric future and assist in the achievement of the Council's carbon-zero by 2030 target.
- 1.3 Procurement of an EVCP supplier has now been completed and 7 compliant bids were received, with Electric Blue (EB) Charging being awarded the contract. Bids were assessed on cost and quality criteria and the companies' own green credentials and approach to innovation being key factors in the evaluation.
- 1.4 The cost criteria considered were unit prices for EVCP, basic installation costs and ongoing revenue costs for back office services, repair and maintenance. However, site specific costs are required to assess the connection costs as this will vary by site according to the proximity to electricity sub-stations or feeder columns and the above and below ground conditions and works required.
- 1.5 The strategy sets out a phased approach to EVCP installations, with the first phase focussed on Council owned car parks, with the ambition of providing EVCP in easily accessible public car parks which provide a good geographic coverage of the district.
- 1.6 Council owned car parks should enable a more rapid programme of installation as there is no need to secure land owner consent and enter into legal agreements to lease, buy or otherwise occupy land. The strategy sets out an ambition to consider non-Council owned sites after this first installation phase.
- 1.7 Phase 2 will look at further opportunities.

2. EVCP INSTALLATIONS PROPOSED

- 2.1 The Burford (Guildenford) Car Park is proposed for the first phase of installations. This provision will result in 8 charging connections (4 EVCPs).
- 2.2 The supplier has recommended the installation of 7kW charge points for a number of reasons:
 - (a) without major sub-station upgrades and capacity charges the following configurations could be installed:
 - 4 x EVCPs servicing 8 x 7kW connections/car parking bays
 - 2 x EVCPs servicing 4 x 22kW connections/car parking bays
 - 3 x 7kW EVCP and 1 x 22kW EVCP servicing a total of 8 connections/car parking bays (however the 7kW chargepoints would be de-rated slightly down to 6kW if all being used)

- (b) Currently there are only a few cars that can actually take 22kW of power on the AC type 2 connector. Most can only take a maximum of 7kW even if plugged into a 22kW chargepoint. This is because the vehicle restricts this power, not the chargepoint.
 - (c) The Off-street Residential Charge Point Scheme, which provides funding favours bids based on 7kW chargepoints as more charging bays are delivered for the same funding so can service more users overnight.
 - (d) The majority of car manufacturers are still utilising 7kW type 2 sockets for most EV's. Where the industry is seeing most changes is in the power of rapid chargepoints from 50kW to 150-200 kW (with CCS sockets). The supplier can alter units in the future if needed due to their modular construction, which provides for future proofing and ensures only the defunct component is replaced, not the whole charging point unit.
 - (e) Rapid chargers are ideal where motorists want to charge and move on quickly and it would not be practical for motorists to charge for 40 minutes but be parked in the space for 3 hours whilst they shop. The fast chargers require a longer charge and therefore encourage people to shop or use local facilities for longer, without the need to move their cars.
- 2.3 Theoretically to future proof sites and enable additional EVCP to be added as demand grows, ducting size at each site could be increased. However, the power (from a single DNO connection) to each site is already being maximised, so this could be an extra cost that produces no benefits. Fast chargers have been proposed for phase 1 at each site as this provides for quicker installation and maximises the number of charge points that the network can accommodate. Rapid chargers could be considered for future installations in other locations which will be a bigger undertaking as it will probably require sub-station upgrades and bigger feeder pillars at each site.
- 2.4 Once grant funding has been obtained and a final decision to proceed is made, there is a lead time for the units of 16 weeks. Therefore EB Charging plan to commence work in the Autumn 2022, unless any unforeseen issues arise. More detailed information on timelines for works and commissioning will be communicated publicly as soon as it is confirmed.
- 2.5 Following this initial installation, further sites can be assessed and costed for EVCP installations. These second phase site assessments would be able to be prepared during mobilisation and construction for phase one, so delivery could be continuous. A further report will be brought forward for decision on prospective phase two installations.
- 2.6 Subject to funding being available, further sites could then be considered that provide a wider geographic spread of charging point infrastructure. These could potentially include locations where the Council does not own car parks and needs to reach agreement with landowners such as Town and Parish Councils.
- 2.7 A technology refresh is built into the contract at Year 10 (within capital costs) and therefore the business case is calculated on the full 20 year contract period. The refresh funds will either be held by the Council or held in an Escrow account.

3. PARKING ORDER AMENDMENT

- 3.1 Car parks are the subject of Parking Orders (Traffic Regulation Orders apply on the Highway) and enable the Council formally to adopt restrictions which can be legally enforced in the car parks. The installation of EVCP requires a variation to Parking Orders to require that:
- Only electric/ hybrid electric vehicles can park in EV bays
 - Vehicles can stay for a maximum period to allow charging but ensure good turnover and therefore availability of charging bays. The emphasis being these bays are for charging, not longer term parking.
- 3.2 A variation to the Council's existing Parking Order will be required including the necessary statutory and public consultation.
- 3.3 The enforcement of these bays will be at the Council's discretion and will be carried out by Parking Enforcement Officers, who currently enforce parking in all Council controlled Off-street car parks (service being brought in-house).

4. FINANCIAL IMPLICATIONS

Business case

- 4.1 A detailed financial model has been built to assess costs, including variable electricity costs and income based on low, medium or high usage. The projections within this report are based on average usage and average projections for electricity prices based on current market knowledge gathered through our energy tender process. While pricing structure has been designed to reflect changes in supply costs, usage of the chargepoints could vary which would result in a higher or lower return to the Council.
- 4.2 Increases in electricity prices can be reflected into the pricing model to protect the Council from market changes and recommendations to delegate pricing adjustments to the Cabinet Members for Finance and Climate Change are included within this paper to enable the Council to be 'fleet of foot' in this regard.
- 4.3 Attached at Annex A is a summary of the average (over 20 years) annual revenue impact of the investment including all running costs and debt financing costs. The key assumptions used to build the model are:-
- 1.5 uses per charger per day (fast 7kW) in year one rising to 2.5 uses per charger per day by year ten (4 EVCP)
 - 365 days of operation available 24/7
- 4.4 Overall, using the medium projection model, for an estimated net capital investment of £42,400 the Council will see an improvement on its revenue account of £4,000 – significantly higher than the minimum target set out in the Recovery and Investment Strategy. This is however heavily influenced by the receipt of the grant as discussed in section 5 below.
- 4.5 The guidance within the Council's Recovery Investment Strategy seeks a minimum return of 3.5% above the cost of capital (estimated at 6.2% to cover principal and interest repayments) and therefore this appraisal comfortably meets the investment criteria with a

return after borrowing costs of 9%. With the revenue cost of borrowing, cost for staffing and annual revenue costs for back office services (recommendations (g) and (h)) included the likely payback period on investment is 10 years.

- 4.6 It should be noted that the business case is largely influenced by the capital cost for installation, most of which is the length of civil works to install cabling.
- 4.7 The cost of replacing the charge points in year 10 of the contract is included with a 22% increase in cost built in for the hardware/installation to mitigate against any future increase to prices. This would be a like for like replacement of the units. If units fail before that 10 year period, the failed components can be replaced as part of the repair and maintenance contract. Their modular construction means a failed component does not require replacement of the entire unit, which is a more sustainable approach.
- 4.8 The total estimated cost for the proposed installations is £90,404 which includes a 5% contingency sum for unforeseen capital works.

Grant funding

- 4.9 EB Charging is supporting the Council in applying for Government funding to partially fund the capital cost of this project. The Office for Zero Emission Vehicles has grant funding for local authorities for on-street charging points. This includes publicly accessible car parks.
- 4.10 The OZEV funding available is for 75% of the capital costs of procuring and installing the charge point and includes for costs associated with electrical connection, of up to £13,000 per charge point unit. This equates as, up to £15,172 per EVCP, which is £60,688 per site. A conservative estimate of £48,000 (£12k per EVCP) grant funding for the site at has been included.
- 4.11 Car parks must be owned by the local authority and situated in or close to a residential area that lacks off-street parking, with parking accessible on a 24/7 basis with local residents able to access the car parks for free overnight between 6pm and 8am. Each charge point must have its own dedicated EV bay which is enforced by a Traffic Regulation Order and the 'maximum stay' time must be no greater than 4 hours during the day to ensure residents have suitable access.
- 4.12 The Burford car park is accessible 24/7 and is located in the town centre with residential properties in close proximity, many of which only have limited on-street parking and little or no private off-street parking (driveways or garages).
- 4.13 It is anticipated that around £40,000 - £60,000 per car park of OZEV funding can be secured for this phase of EVCP installations, reducing the Council's capital contribution to approximately £42,000. However, as this funding has not yet been secured, a further report will be brought to Cabinet once final costs are known. This will also allow final contractual checks and confirmation to Cabinet that there are no other issues or costs that they need to be aware of.
- 4.14 A summary showing total return with and without grant funding is shown below. Only with the grant does the business case meet the returns set out in the Recovery and Investment Strategy.

	With Grant	Without Grant
Total Capital Expenditure	£90,404	£90,404
Grant Funding	£48,000	£Nil
Net Financing	£42,404	£90,404
Capital Financing	£ 2,655	£5,659
Net Income after Financing	£ 3,855	£850
Investment Yield %	9%	1%

FEE SETTING

4.15 In fee setting the Council needs to consider:

- Covering revenue costs (electricity, back office, repair & maintenance costs) as a minimum;
- Making charges competitive, as charges which exceed local alternatives may result in low usage and may not encourage the desired switch to low emission vehicles;
- Some allowance for rapidly fluctuating electricity prices;
- Building in a charge to generate an income in line with the investment strategy.

4.16 The usage per charge point across this EVCP infrastructure is hard to estimate. However existing charge point usage data provided in Annex B and national data shows a strong incremental growth in electric vehicle ownership. There is an identified shortage in EVCP provision across the district with ZAPMAP (<https://www.zap-map.com/live/>) illustrating the location of existing public and commercial charge points (includes hotels, supermarkets etc).

4.17 EB Charging has provided usage projections based on a range of low, medium and high usage. A prudent midpoint estimate has been used for the business case. It is possible that demand in the District is higher than national projections and the relatively poor provision in EVCP locally means there is high demand for chargers.

4.18 The costs of EVCP provision, excluding the Council's management costs, are:

- Capital cost for installing charging points (Unit cost, grid connection, ground works and cabling, traffic management (if relevant)) which are site specific
- Software and Back office customer services (Fixed fee based on number of units/sites)
- Annual repair and maintenance service (Fixed fee based on number of units/sites)
- Electricity cost (variable)

4.19 The last year has seen a very volatile period in the energy markets, with significant increases in gas and electricity prices and further increases possible. As the cost of electricity will be the largest proportion of the fee charged to the customer for vehicle charging, estimating the electricity cost the Council will incur is challenging and the biggest element of financial risk. Charges which are over inflated to build in risk could result in charging fees higher than competitors and therefore low usage. However, if fees are set too low the Council could incur losses. It is therefore important the Council can remain responsive to fluctuating electricity costs and alter fees when needed to achieve a steady net income level.

4.20 Benchmarking on EVCP charges has been carried out and is included in Annex C. However EB Charging has advised that competitors are likely to increase fees to address energy price rises, therefore benchmarking data is unlikely to remain representative. Most notably we

have just received the new pricing structure from the Oxfordshire Park and Charge programme and they have set the new prices from February 2022 at £0.35 per kWh for day charging (£0.30 per kWh for night charging). The current indicative charge being considered in this report is £0.37 per kWh.

- 4.21 The Council will enter into a new energy contract on 1st April for its gas and electricity supplies. Based on specialist advice the Council decided not to fix energy prices at the point of renewal, as there was a significant risk that this resulted in higher overall costs as prices are currently so high. There is no spare officer capacity currently to manage the EVCP supplier contract, closely monitor energy prices, usage of EVCP and income. If the Council is to protect its income and reduce the risk of financial losses additional staff resources are required. A part time resource is proposed which would be shared with partner Councils. This would be cost effective as the majority of the work involved, such as monitoring energy markets, would be the same to benefit all Councils. The cost to West Oxfordshire District Council would be in the order of £3,117 per year.

Due to the complexities of the costs involved and the changing energy prices, it is recommended fees to the customer are set based on 'Revenue costs + £0.04'. Based on current pricing and forecasts, the following is recommended at the time of writing:

Fee comprises:	Costs
Electricity cost per kWh	£0.24
Staff resources - contract & income management	£0.03
Back office services (Payments, customer service)	£0.01
Repairs and maintenance contract	£0.01
Capital outlay (including contingency sum)	£0.04
Sub-total	£0.33/kWh
Contingency / Return on Investment	£0.04
Indicative Fee to customer	£0.37/kWh

5. CONCLUSIONS

- 5.1 The phased roll out of EVCP across the district will support and encourage the take up of electric vehicles and contribute to the delivery of the Council's Climate Emergency aims. Cost risk presented by fluctuating energy prices can be managed through appropriate staff resourcing and the provision for rapid decision making, to ensure fees to the customer remain fair, affordable and competitive whilst not placing the Council at risk of sustained financial losses. The net projection is that a surplus can be generated which can underpin the provision of Council services or be utilised for a sinking fund for future EVCP replacement.

6. LEGAL IMPLICATIONS

- 6.1 Pursuant to powers in the Road Traffic Regulation Act 1984 a variation to the Parking Orders will be required in order to install EVCP;
- 6.2 The Council will be required to conduct statutory public consultation prior to the variation of the Parking Orders;

7. RISK ASSESSMENT

- 7.1 There are a number of cost risks associated with this EVCP infrastructure provision, but notably:
- Fluctuating electricity costs, with a particularly volatile utility market
 - Demand for EVCP - demand is based on national projections and supplier experience at similar sites. However, demand may be higher or lower, affecting both utility costs but also income achieved. Whilst electricity costs are only incurred if supply is used, other revenue costs will be incurred regardless of demand.

Fees and charges for Council services are normally set annually. However, in this case this could result in significant losses if costs rise soon after fees are set. Close monitoring and the ability to respond to price rises and alter fees relatively swiftly should mitigate this risk.

- 7.2 Future refurbishment/replacement costs are also uncertain. Whilst EB Charging has included refurbishment costs within the business case costs there is a risk these are higher or technological advances mean units become obsolete and require replacement. The most significant costs in installation are the ground works and cabling, not the units themselves, so replacement with new electrical units is not a significant risk, unless the power supply in the location is insufficient. However, it is possible electrical charging becomes obsolete and is replaced by alternative power i.e. hydrogen.
- 7.3 The anticipated revenue income profile has been modelled using a range of usages and rates to provide the most likely outcome(s) for consideration. Demand and some costs remain uncertain and therefore income is not guaranteed.

8. EQUALITIES IMPACT

- 8.1 An Equalities Impact Assessment is attached as Annex C.

9. CLIMATE AND ECOLOGICAL EMERGENCIES IMPLICATIONS

9.1 Installing EVCP will deliver directly against the Councils Climate Emergency Strategy, seeking to reduce carbon from transport in the District. There is overwhelming evidence that petrol and diesel-powered vehicles cause pollution, which contributes to poor air quality and is dangerous to public health. About a third of CO₂ emissions in the UK come from transport, with petrol and diesel vehicles being major contributors to this.

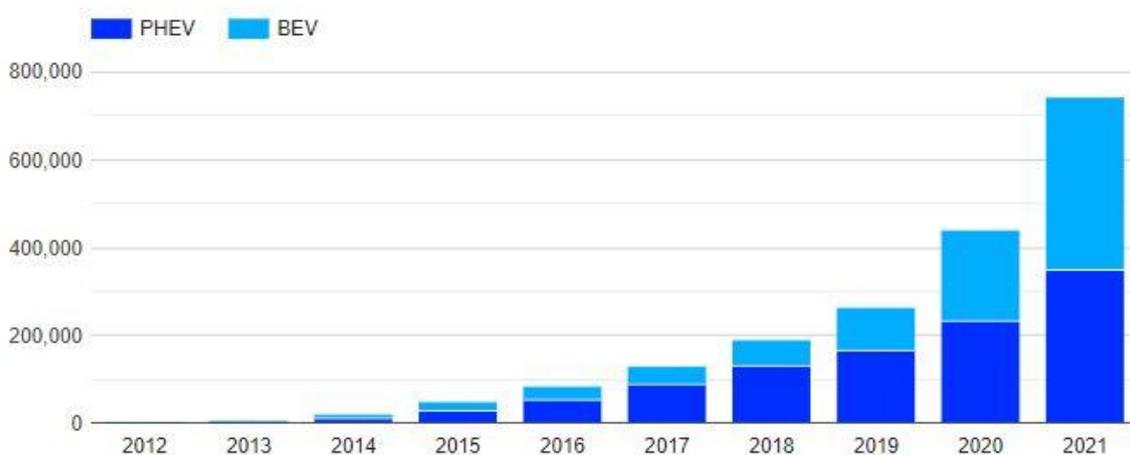
	Kg of CO ₂ per mile	Fuel
Medium car	0.265	Diesel
	0.299	Petrol
	0.286	LPG
	0.112	Plug in hybrid electric

Data source: <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversionfactors-2020>

9.2 Providing an accessible network of electric vehicle charging points will play a vital role in facilitating the uptake of electric vehicles,

The UK has seen a surge in demand for ultra-low emission vehicles, including electric vehicles.

Cumulative number of plug-in vehicles registered in the UK (2012 to date)



Source: SMMT, OLEV, DfT Statistics. Updated: December 2021

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9.3 The Council wishes to power the EVCP with 100% renewable energy and is liaising with its new energy broker Beond, to establish whether they can supply this or if there is an alternative to contract with a supplier who can provide a renewable supply, at an affordable

price. Beond will run an auction for the actual energy supplier, so this will change to ensure the Council receives best value in a changing market. The arrangement means that as a minimum the Council will be supplied with traceable REGO's from whichever new supplier wins the auction so certificates that can be traced back to green energy sources owned by that supplier.

9.4 Green energy supply was considered during the recent procurement exercise. It was recommended that the Councils keep purchasing traceable Renewable Energy Guarantees of Origin (REGOs), since these represent the best currently available evidence of meaningful connection between generation and consumption of renewable-source electricity. There are electricity suppliers that have an intrinsically 'greener' business model. However, these suppliers tend to be smaller and therefore, in the current challenging market, less stable.

The Council could require truly renewable energy supply for its EVCPs. However:-

- This would require a separate contract for a relatively small energy supply and therefore be more expensive than the contract obtained through Beond due to the buying power that supply will create.
- A contract procured in the current market is likely to mean the Council is tied in for at least two years at a time when energy prices are likely to be near their peak, meaning the Council could pay an inflated price throughout the life of the contract, even though energy prices are predicted to fall within 12 months.
- If the Council procures expensive energy it will need to recharge these costs to the customer and may cease being competitive, resulting in low usage and net losses for the Council.
- There is a significant risk from seeking a supply from smaller specialist green suppliers at this time, since their insolvency risk is higher.
- Seeking a separate supplier would require a procurement process that made renewable energy supply a requirement. There is less competition in this sector and the choice of suppliers will be smaller.

9.5 However, despite these challenges in the current market the Council is committed to moving to a green energy supply and will seek to achieve this as the market stabilises or as opportunities arise to generate its own energy, through investment in solar PV. There is a chance that a renewables supplier will be selected when Beond carry out the auction, but as price will be a major factor this cannot be guaranteed.

9.6 The business case is predicated on a 20 year service, with replacement units in year 10. In the medium term and certainly over the life of this contract it is highly likely that the renewables market will mature, with increased renewable supply available and costs reducing.

9.7 The introduction of EVCP and the additional electricity demand this will create will add to the Council's carbon footprint, taking the Council further away from its carbon neutral targets. However, EVCP infrastructure will support a switch to more sustainable transport and result in carbon reduction but this will not be reflected in the Council's CO₂e accounting as it is effectively increasing its own demand for power whilst facilitating a transition to EV for the wider community which are emissions for which the Council is not usually directly responsible.

10. ALTERNATIVE OPTIONS

- 10.1** The Council could decide not to install EVCP and to leave this provision to the market. However, current infrastructure across the District is limited so provision is likely to encourage a switch to electric vehicles.

11. BACKGROUND PAPERS

None.

Business Case

Business Case worksheet	Revenue Account Impact Scenario	Medium Use Scenario I
MANUAL INPUT		
Capital Scheme:	EVCP Burford (4 Chargers) Alfen 7kW	Average Annual Return
Net Yield Required to deliver cap ex financial target		3.50%
Capital Expenditure		90,404
less Govt Grant		(48,000)
Net Financing Required		42,404
Net Income Target to support Council Budget		1,484
Gross Income		32,217
Expenses		
Electricity		21,057
Service & maintenance		595
Software and Back office		617
Bank Charges		322
Admin Officer Contribution		3,117
		-
Total deductions		25,707
Net income before financing		6,510
Debt Financing incl MRP	2.29%	2,655
Net Income after financing	Revenue Account Impact	3,855
Net Income Yield on debt		9%
Income above Target Return		2,371

Annex B - Benchmark data - Fees for charging

Unleaded petrol is on average 148 pence per litre and average diesel price was 152 pence per litre. A new petrol Ford Fiesta will do 40.4 - 57.6 mpg, so taking an average of 49 mpg, will be **£27.18** for 200 miles. A new diesel Ford Fiesta will do 54.3 - 65.7 mpg, so taking an average of 60 mpg will be **£22.80** for 200 miles.

Average domestic electricity rate in the whole of the UK is about 20p per kWh (but is likely to rise shortly by nearly 50%). Fully charging a 50kWh electric car will cost around **£10.00** and give you about 200 miles of range. Using the indicative price for the CDC model of 37p per kWh this would mean around **£18.50** for 200 miles of range.

The following Table provides information on fees across sites in and around West Oxfordshire. Fees based on best available information found online in January 2022:

Company	p/kWh
Tesla	£0.30- £0.35
BP Pulse guest (ad hoc)	£0.35
Shell Recharge Chipping Norton	£0.41
Lidl Witney	£0.26
Park & Charge project Oxfordshire	£0.35 (daytime)
Cirencester Park Bathurst Estate	£0.25
Blenheim Palace	£1/hr
BP Witney (A40 at Eynsham)	£0.42
Westgate car park Oxford	Free but pay for parking
Worcester street car park Oxford	slow/fast £0.35 PAYG (other options and membership)
Seacourt Park and Ride, Oxford	Free