

# SFT Local Authority EV Tariff Workshop

27<sup>th</sup> October 2022

Ryan Robertson  
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# East Lothian Council



- Population ~107,000 - rapidly growing
- Six towns 5-20k pop, no cities (yet neighbouring Edinburgh)
- 70% of households have driveways
- Highest number of devices per head of population in mainland Scotland
- Most "On-Street" households soon to be within 5 minutes walk of sites
- Supports our wider Active and Sustainable Travel plans



# Our ~~EV~~ Car Chargers



43kW+

of which

43-50kW = Journey chargers

>50kW = High-power Journey chargers



7-22kW



7kW

# Simple, Scalable 5 Year Plan 2018-23

## ALPHA HUBS

1 Site per town



## BETA HUBS

1 Site per 5,000 population



## OMEGA SITES

1 Site per town



Hotspots of "On-Street Households"



# Simple, Scalable 5 Year Plan 2018-23

1 Site per town

ALPHA HUBS



# Simple, Scalable 5 Year Plan 2018-23

1 Site per 5,000 population

BETA HUBS



# Simple, Scalable 5 Year Plan 2018-23

1 Site per town

OMEGA SITES



# Simple, Scalable 5 Year Plan 2018-23



Hotspots of "On-Street Households"



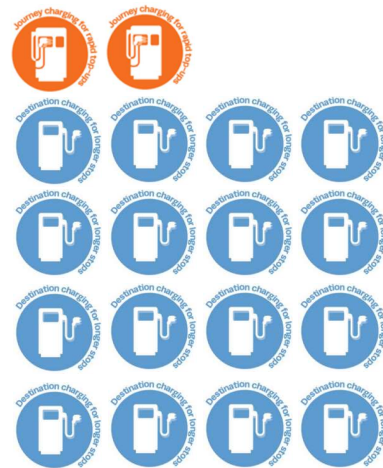


# Simple, Scalable 5 Year Plan 2018-23

+1 "Strategic" Site

High-power Journey chargers

Destination chargers



# Simple, Scalable 5 Year Plan 2018-23



ALPHA



BETA



OMEGA







ON-STREET

# Where have we got to?

One of the **highest number of car charging devices** in the UK per head of population

**141 of 200** Council chargers installed, including:

-  2 x High-power Journey (up to 150kW) chargers
-  21 x 50kW Journey chargers
-  79 x 7-22kW Destination chargers (+24 in progress)
-  39 x 7-22kW On-street chargers (+50 in progress)

100% funding secured via Transport Scotland & OZEV ORC schemes for remainder

Commercial operators:

- A few destination chargers at restaurants/resorts
- Beginnings of commercial investment along A1 corridor (4 x Journey chargers)

An increasingly diverse, resilient & capacious network

# EVA Scotland tariff guidance

ELC is a Corporate Member of Electric Vehicle Association Scotland (EVA Scotland)

Tariff guidance document here:

[https://www.eva.scot/assets/documents/EVA\\_Scotland\\_Tariff\\_Guidance\\_for\\_Scotland\\_2022\\_Issue\\_2.pdf](https://www.eva.scot/assets/documents/EVA_Scotland_Tariff_Guidance_for_Scotland_2022_Issue_2.pdf)

**Model** not **Rates** is key

- **Minimum Fee** not **Connection Fee** due to equal opportunity impact
- **Differential Per kWh** Rate to encourage behaviour change and greenest, cleanest energy use
- Capped **Overstay Fee** after Grace period in line with the value of a Penalty Charge Notice

Growing consistency amongst LAs?



# Our tariff model & rates

Implemented in Feb 2020, 6 weeks before Lockdown 1.0

- 🔑 16p per kWh, £1 Minimum, No time limits, parking not restricted to plugged-in vehicles
- 🔌 16p per kWh, £1 Minimum, 4 hour time limits\*, parking restricted to plugged-in vehicles
- 🔌 30p per kWh, £1 Minimum, 45 minute time limits, parking restricted to plugged-in vehicles
- 🔌 30p per kWh, £1 Minimum, 45 minute time limits, parking restricted to plugged-in vehicles

- Parking restrictions also enforced by Parking Attendants. £60 PCN for contravention.
- £30 Overstay Fee on Journey chargers only after 45 minutes (30 minute grace period)
- No difference between “membership” or “ad-hoc”/PAYG pricing
- The need to offset increasing warranty, maintenance and gross replacement costs

\* Except Long Stay and Park and Ride locations

# Our tariff model & revised rates

Revised on 1<sup>st</sup> July 2022 (ideally would have been 1<sup>st</sup> April but elections were an issue)

 Differential Peak and Off-Peak per kWh rates, varies depending on network\*

 25p per kWh

 40p per kWh, £2 Minimum

 50p per kWh, £2 Minimum

- £30 Overstay Fee on Journey chargers only after 45 minutes (30 minute grace period)
- No difference between “membership” or “ad-hoc”/PAYG pricing
- ELC sets all tariffs, regardless of which network chargers are registered with
- ELC benchmarked against commercial operators in East Lothian only

\* [https://www.eastlothian.gov.uk/info/210566/roads\\_and\\_transport/12662/electric\\_east\\_lothian/2](https://www.eastlothian.gov.uk/info/210566/roads_and_transport/12662/electric_east_lothian/2)

# Our tariff model & revised rates

Likely to be revised again on 1<sup>st</sup> April 2023 and annually thereafter

 Differential Peak and Off-Peak per kWh rates, varies depending on network\*

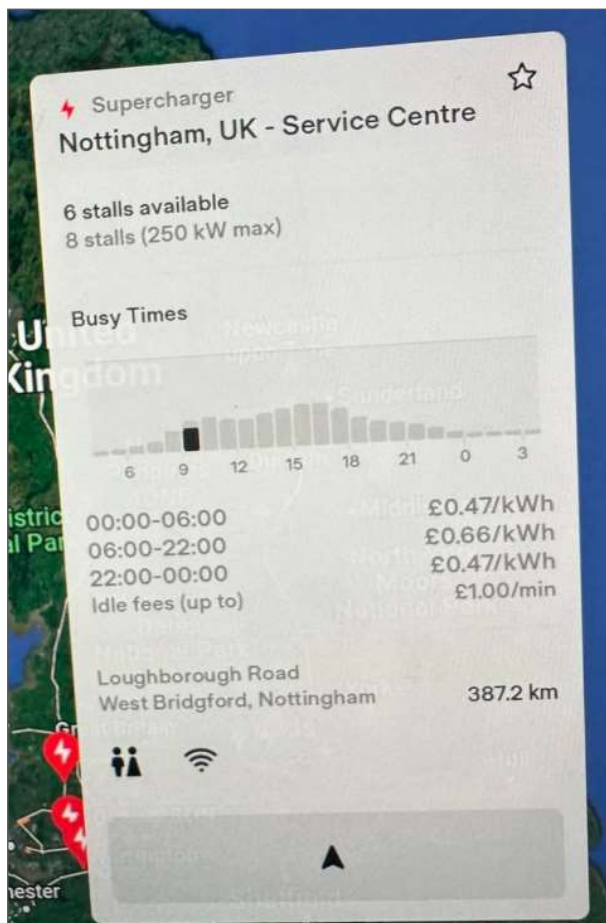
 \_\_\_p per kWh

 \_\_\_p per kWh

 \_\_\_p per kWh

- £30 Overstay Fee on Journey chargers only after 45 minutes (**10** minute grace period)
- Journey charger **£1 per minute Idle Fees** (regardless of above 45 minute limit)?
- Widen benchmarking against commercial operators to the Lothians?
- Removal of minimum fees & time limit enforcement via TROs (police via eMSP)

# Tesla's Supercharge Network Model



- **Differential Peak and Off-Peak per kWh rates** at some sites\*
- Peak and Off-Peak times are consistent, where applied
- **No Overstay Fees** only Idle Fees
- **Idle Fees** only applied when site at  $\geq 50\%$  capacity
- **Uncapped** £0.50 per minute Idle Fee, **5** minute grace period
- **Idle fee doubles** (£1 per minute) at 100% capacity\*\*
- In-app notifications and Tesla Navigation via Tesla SuC Network
- **80% SOC limit at busy sites** (user re-adjustable to 100%)\*\*\*
- Not that anyone reads the small print – its just seems to work!

\* <https://www.teslarati.com/tesla-supercharger-non-tesla-ev-pricing-details/>

\*\* [https://www.tesla.com/en\\_GB/support/supercharger-idle-fee#all-pricing](https://www.tesla.com/en_GB/support/supercharger-idle-fee#all-pricing)

\*\*\* [https://www.tesla.com/en\\_GB/support/supercharger](https://www.tesla.com/en_GB/support/supercharger)



# Tesla's Supercharge Network Model

How to replicate without having as much information on users, as Tesla does?

- Historic data can give us details of "Busy Times"
- Live charger data can give us details of current availability
- Bay occupancy sensors can give us details about blocking\*
- Dynamic "Agile" pricing if rates not simply linked to HH rates\*\*
- This data can be shared with roaming & mapping partners and displayed in-app/in-car
- Eventually "Plug & Charge" (for newer compatible vehicles)



\* <https://fuuse.io/blog/combating-ev-charging-bay-hoggers>

\*\* <https://www.connectedkerb.com/stories/agile-streets-project-leads-charge-to-smarter-future>

(photos by David Pickles, Jorro Ltd)

# “Vietnamization” & “Balkanisation”

*“Vietnamization [as opposed to Americanization] was a policy of the Richard Nixon administration to end U.S. involvement in the Vietnam War through a program to expand, equip, and train South [Vietnam] at the same time steadily reducing [direct involvement]”.*

LAs to expand, equip and train themselves for the rapidly approaching end of Transport Scotland involvement in funding and management of EV infrastructure?

What is the future of the ChargePlace Scotland network?

*“Balkanization is the fragmentation of a larger region or state into smaller regions or states, which may be hostile or uncooperative with one another.”\**

\* Wikipedia!

# “Vietnamization” in East Lothian

**1/4 of ELC’s Public estate is not on CPS (soon 1/3):**

- 34 Public On-Street bollard style chargers
- +27 being installed this year
- 2 “Private” eCar Club bollard style chargers
  
- 5 Public On-Street bollards style chargers
- 2 Public Destination chargers
  
- 10 Public On-Street bollards style chargers
  
- 4 Private Fleet V2X chargers



# “Balkanisation” in East Lothian?

Will this actually be an issue?

All ELC Journey chargers accept **Contactless payment**

Other “**Ad-Hoc**” Access via

- QR Code
- URL

Eventually “Plug & Charge” (for newer compatible vehicles)

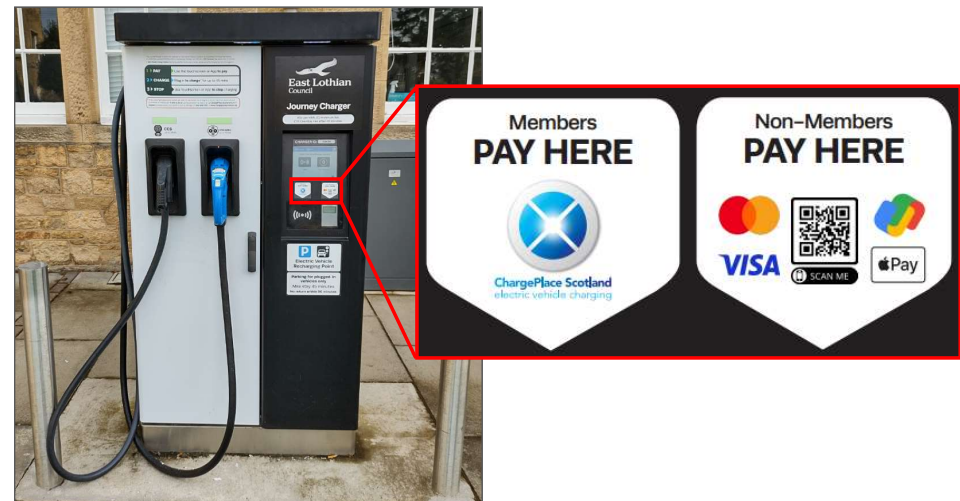
RFID card **Roaming**

- Zap Pay\*
- Allstar One Electric\*\*



\* <https://www.zap-map.com/faqs/zap-pay/>

\*\* <https://www.allstarcards.co.uk/our-cards/allstar-one-electric/>



# Lessons Learnt

- Don't rely on others to curate your data, particularly warranty and maintenance cover details
- The eMobility Service Provider industry is immature, but maturing East rapidly and feature rich back offices exist and available white-label
- Importance of professional graphic designer input especially to ensure owner "brand recognition" & clear relationships with stakeholders
- Labelling on-site needs to be sufficient to avoid generating complaints (both WRT Tariff and TRO elements) and updated as required
- Sufficient labelling on-site supports zero-tolerance policy to blocking & hogging although immediate post-implementation waiver advised

**Members PAY HERE**  
ChargePlace Scotland

**Non-Members PAY HERE**  
VISA Apple Pay

**40p per kWh. £2 minimum fee.  
£30 Overstay Fee after 45 minutes.**

This Journey Charger is owned and operated by East Lothian Council. Access is via ChargePlace Scotland membership or contactless payment/WebPay without membership. Pricing is per kWh and a **£30 Overstay Fee** applies after 45 minutes. A **£60 Penalty Charge Notice** may be issued after 45 minutes or to any vehicle using the charging bay and not plugged in.

**1 ▶ PAY** Use the touchscreen or App to pay

**2 ▶ CHARGE** Plug in to charge\* for up to 45 mins

**3 ▶ STOP** Use touchscreen or App to stop charging

\* If the main light above the outlet you wish to use is red the emergency button may have been pressed by mistake or maliciously. If safe to do so use touchscreen to reset it, or call ChargePlace Scotland's 24/7 helpline for assistance, or to report a fault or damage on 0141 648 0750 or [www.chargeplacescotland.org](http://www.chargeplacescotland.org)

**P** Electric Vehicle Recharging Point

Parking for plugged-in vehicles only  
Max stay 45 minutes  
No return within 90 minutes

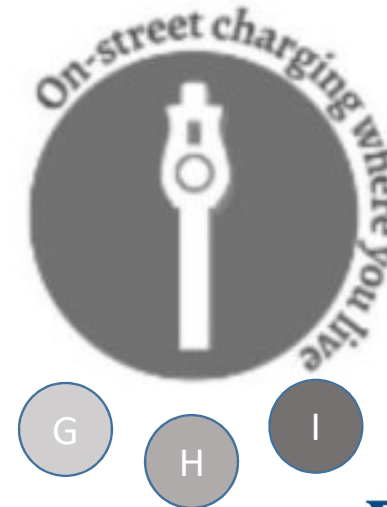
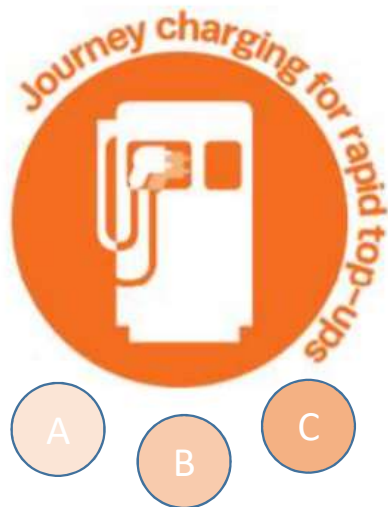
**Destination Charger**

**PAY HERE**  
ChargePlace Scotland SCAN ME

**East Lothian Council**

# Advice

- Be aware of non kWh related energy costs (DUoS, MOp, CCL etc.) if trying to set Destination & On-Street differential rates “at cost+”
- Set Journey charging tariffs at a rate that doesn’t undercut commercial operators and use surplus to offset other “cost+” rates
- Importance of understand any warranty and maintenance cover you have purchased and be prepared to dispute supplier claims
- Balancing extended warranty and maintenance costs against cost of replacing asset (/liability) and getting *free* 3-5 year warranty
- Stimulate and support a mature, flourishing & equitable EV charging ecosystem\* even if facilitating but not directly providing services



\* <https://www.cenex.co.uk/news/international-call-for-a-mature-flourishing-equitable-ev-charging-ecosystem/>



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# July 2022 Tariff Review Data

- Reviewed the per kWh rates of the following:
  - All Scottish Operators
  - Scottish Councils
  - Scottish Commercial Operators
    - Just those in the Lothians (12)
    - Just in East Lothian "right now" (Osprey & Podpoint)
    - Just in East Lothian "coming soon" (+Ionity & MFG)

		<=7kW Destination	22kW Destination	43-50kW Journey	>50kW Journey
All Scottish Operators	Minimum	£ 0.15	£ 0.15	£ 0.15	£ 0.28
	Median	£ 0.21	£ 0.23	£ 0.30	£ 0.49
	Maximum	£ 0.49	£ 0.50	£ 0.54	£ 0.69
Scottish Councils	Minimum	£ 0.15	£ 0.15	£ 0.15	£ 0.28
	Median	£ 0.20	£ 0.20	£ 0.27	£ 0.30
	Maximum	£ 0.28	£ 0.30	£ 0.35	£ 0.30
Scottish Commercial Operators	Minimum	£ 0.28	£ 0.28	£ 0.22	£ 0.42
	Median	£ 0.43	£ 0.35	£ 0.47	£ 0.49
	Maximum	£ 0.49	£ 0.50	£ 0.54	£ 0.69
Just Commercial in the Lothians	Minimum	£ 0.28	£ 0.28	£ 0.22	£ 0.49
	Median	£ 0.43	£ 0.39	£ 0.48	£ 0.50
	Maximum	£ 0.49	£ 0.50	£ 0.54	£ 0.69
Just Commercial in East Lothian (right now)	Minimum	£ 0.28	£ 0.28	£ 0.26	£ 0.49
	Median	£ 0.28	£ 0.28	£ 0.38	£ 0.49
	Maximum	£ 0.28	£ 0.28	£ 0.49	£ 0.49
Just Commercial in East Lothian (included coming soon)	Minimum	£ 0.28	£ 0.28	£ 0.26	£ 0.49
	Median	£ 0.39	£ 0.39	£ 0.49	£ 0.49
	Maximum	£ 0.49	£ 0.49	£ 0.49	£ 0.69

- Calculated the "right now" median:
  - <=7kW = £0.28
  - 22kW = £0.28
  - 43-50kW = £0.38
  - >50kW = £0.49

- Final rounded rates (Journey rate up to nearest 5p, Destination down to nearest 5p):
  - <=22kW = £0.25 (56% increase on previous rate)
  - 43-50kW = £0.40 (33% increase)
  - >50kW = £0.50 (67% increase)

- Minimum fees adjusted to try "not exceeding the equivalent per unit cost of 4kWh of energy delivered, commensurate with ensuring the post owner is at least cost neutral for any session" yet still be either £1 or £2
- Not able to support a "differential between [...] in the order of 10 to 20% of the unit cost of energy supplied to the owner" or "exceed 50% of the kWh unit cost paid by the post owner" without undercutting commercials.
- EVA Scotland described our rates as "fair, proportionate, and reflective of the current high energy costs faced in the UK, while continuing to provide flexible, affordable charging across the range of charge points offered".
- £5 Contactless Pre-authorisation fee remained - £20 is disproportionate.



**East Lothian**  
Council