

# Electric Vehicle Charging: Edinburgh's Experience

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# Context

- Opportunistic – relying on Transport Scotland grants.
- Increasing numbers of residents asking for charging infrastructure in Edinburgh.
- Nothing on–street.
- Policy Drivers- Scottish Government Energy Strategy and targets for EVs.
- Council’s approach –
  - agenda seen as a key element of the Sustainable Energy Action Plan BUT
  - not strategic and no service lead.
  - not coordinated across service areas – issues not addressed such as maintenance.

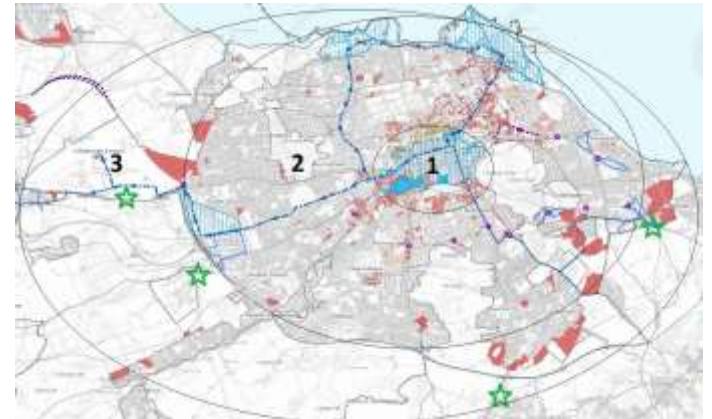
# Current Charging Infrastructure

- 96 charging points across Edinburgh .
- All off street.
- Most owned by the Council or on public sector land.
- Council manages the Transport Scotland: Plugged in Places and Switched on Fleet grants on behalf of other partners.



# Electric Vehicle Action Plan

- Key strategy in the decarbonization of transport (part of the Sustainable Energy Action Plan).
- Set up an EV Working Group.
- Approved in December 2017.
- Sets out a strategic approach to EVs and wider e mobility issues [*addressing Council management of EVs*].
- Proposed the introduction of “zones” across the city.
- Five key objectives – first being the development of strategic Charging Hubs
- Sought approval for the commissioning of a Business Case for on-street charging.



# Electric Vehicle Business Case: Remit

- Three key tasks:
  - Determine the growth of EV vehicles in Edinburgh over two scenarios 2020 and 2023;
  - Select the infrastructure to meet that demand; and
  - Identify the best locations across the city to site the infrastructure.
- Consider different users.
- Develop a financial business case that would detail the investment needed to deliver EV infrastructure.
- Consultant asked to focus on the three zones developed as part of the EV Action Plan.
- Also asked to look at a number of growth scenarios.
- Commissioned in December 2017. Took 8 months to complete.

# EV Business Case : Key Findings

Reported to Committee in December 2018.

- Low, medium and high growth scenarios for 2020 and 2023.
- 280 on-street charge points required for three user types.
- Investment of £2.1m up to 2020 and £3.3m (total) up to 2023.
- 7,175 tonnes of carbon saved.
- 14 tonnes of NO<sub>2</sub> saved.
- 68 locations identified across the city as possible “EV hubs”.

Figures since the Business Case was completed suggest growth projections might be an underestimate.



# EV Charging : Challenges and Issues

Locations

Standardisation

Procurement

Parking Impact

TROs

Maintenance

EV Users

Grid

Costs

Back Office  
Function

Planning

Communications

Type of Infrastructure

Tariffs

Enforcement



# EV On Street Infrastructure: Locations

- Crucial to have a rationale for the locations. Edinburgh Business Case used a matrix of different parameters to select best locations.
- Grid access– Major issue. Need liaison with DNO asap.
- Compliance with the Codes of Practice/required permits.
- Need to consider impacts of civils works and timescales – links with other council services.
- Need to consider the impact on parking if removing parking bays.



Blue star indicates locations of first tranche of 14 EV on-street hubs across the city



# EV On Street Infrastructure: Planning and Regulations

- Avoiding street clutter issues.
- Need to comply with planning requirements and all relevant regulations.
- Checking permitted development rights.
- TROs will be needed – lengthy process – risk of objections.
- Important to liaise closely with other service areas.
- Plans for new development.



# EV On Street Infrastructure: Enforcement

Need to consider the enforcement policy.

- Issues such as maximum stay times, charge times and any return periods.
- Implications for blue badge holders?
- Penalties for non-compliance?
- Who enforces the policy?

Importance of the “back office function”  
– links to maintenance/data and usage.  
Use of technology to assist enforcement.



# EV Infrastructure: Tariffs

- Need to determine if there is a financial case and possible revenue.
- Different tariffs for different users?
- Transport Scotland has issued guidance 15p/17.5p and 20p (max) per KWh.
- Differential tariffs for AC and DC e.g per KWh versus per minute?
- Costs of maintenance and operation need to come out of revenue.
- Edinburgh Business Case proposed 20pKWh tariff across all users – considering use of differential charges.

# EV ON Street Infrastructure: Users

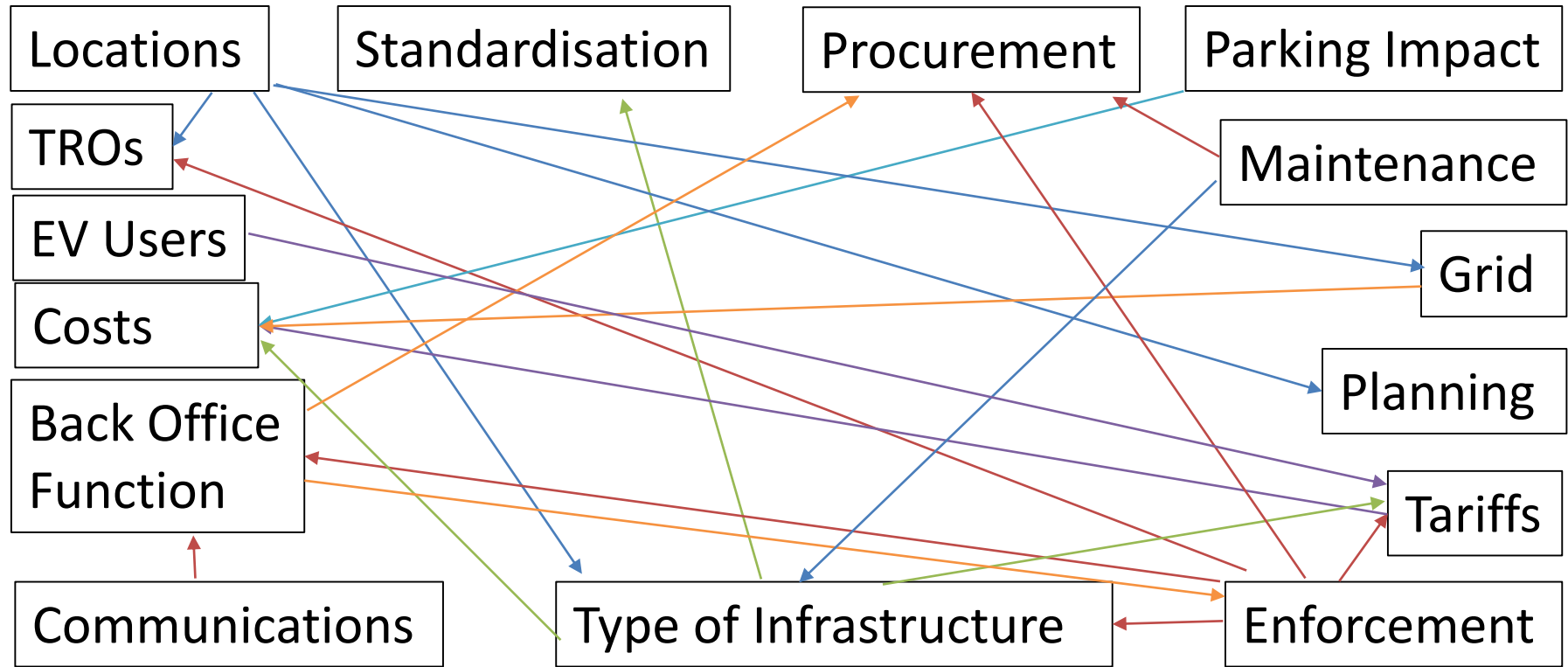
- Essential to have charging points fully utilised.
- Need procedures and systems to ensure quick turnover especially for Rapid chargers (*where the potential revenue sits*).
- Consider user types and need to consult with user groups for their input.

CEC consulted with EVAS/Taxi groups and Communications/Engagement strategy being developed.

# EV On Street Infrastructure: Procurement

- Range of procurement options – concession/partnering etc. Drive out benefits.
- Existing frameworks that could be used - ESPO.
- CEC approach – for in house model, assets owned by the Council with preferred contractor selected through OJEU contract.
- Need for considerable pre-procurement work to develop detailed drawings for each hub (also for TROs).

# EV On Street Charging : COMPLEX!!



# EV On Street Charging : Conclusions

- Complex agenda/lots of different elements/time consuming.
- Number of service areas need to be involved –finance planning/procurement/parking/fleet/environmental health/licensing.
- Needs to be as strategic as possible but it's also “horses for courses”. Consider what you need – risk of being swayed by all the different solutions – e.g use of street lighting
- There is a potential revenue stream but need to think about the governance – who leads this?
- Best to have a business case if possible.

# Edinburgh EV Business Case: Next Steps

- Report to Committee 28 February 2019 with implementation plan up to 2020.
  - First tranche for 14 on street EV Hubs.
  - Dedicated rapid chargers for taxis. Fast chargers for residential and slow for park and ride.
  - Detailed project plan developed for the installation programme.
  - Project Board being established
  - Programme to be managed in house.
- Decisions to be made on charging and type of infrastructure at hubs.
- Procurement options being assessed – soft market testing to be carried out.
- Application made to Transport Scotland for funding.



# Other EV Work

- CAN DO Challenge. CEC awarded funding to look at integrated energy solutions for EV Charging. 3 Companies currently involved.
- Large scale solar canopies/battery storage for park and ride.
- Wider expansion of e-mobility projects.

