



ELECTRIC VEHICLE INFRASTRUCTURE DEVELOPMENT

Network Development Manager

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Electric Vehicles in Northern Ireland

Government Targets

The UK government's 10 Point Plan for a Green Industrial Revolution bans the sale of internal combustion engine (ICE) vehicles by 2030. All cars and vans sold after 2035 must be fully zero emissions at the tailpipe.

NI Electric Vehicle (EV) Forecasts

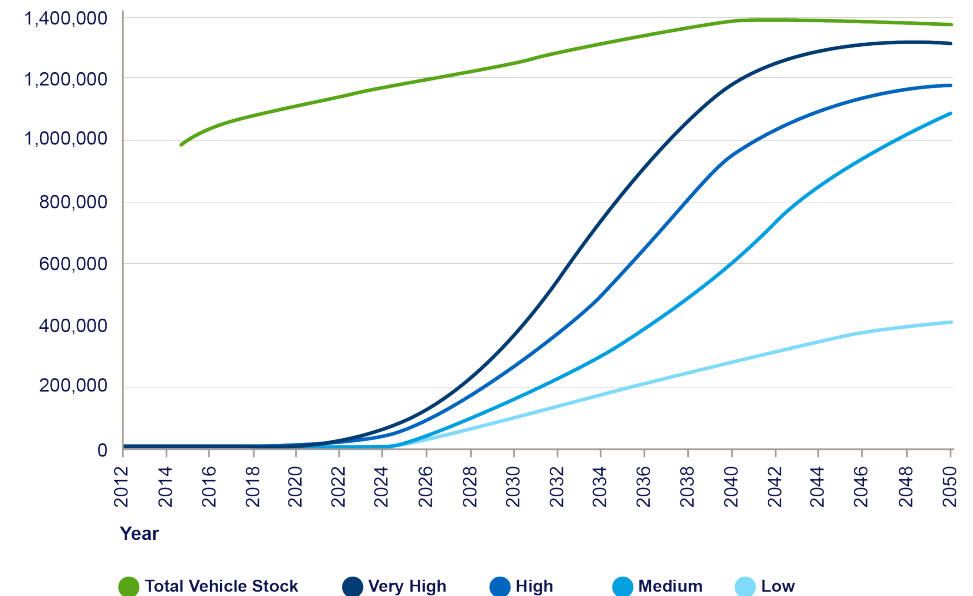
Energy consultancy Element Energy (EE) have modelled predicted EV uptake in Northern Ireland. The Very High uptake scenario is consistent with the UK's ban on ICEs after 2030 and:

- Predicts over 350,000 EVs in NI by 2030 and over 1.2 million by 2050;
- Predicts 28% of vehicles in NI will be electric by 2030 and 95% by 2050.

NIE Networks Role

NIE Networks is responsible for facilitating the connection of EV chargers to the distribution network. We undertake programmes of work to upgrade and reinforce the network to accommodate existing and planned installations.

EV uptake in Northern Ireland



Current EV Charging Infrastructure

The public EV charging infrastructure in Northern Ireland was largely installed between 2012 – 2014, and at the time provided three times more charging points per head of population than the UK average. These chargers are currently operated and maintained by ESB ecars. There has been little additional investment in public EV charging infrastructure since and as a result, Northern Ireland's charge point provision is now half of the UK average. This is reflected in the slower uptake of EVs.

Future EV Charging Infrastructure

An Effective EV Charging Infrastructure in NI is likely to consist of:

1. **Home Charging** - individual 7kW chargers connected to the home installation of the EV owner;
2. **Public Charging** - individual 7 to 50kW chargers located in public spaces (similar to the current infrastructure);
3. **Rapid Charging Hubs** - grouped 50kW (Rapid) to 350kW (Ultra Rapid) Chargers – the EV equivalent of a fuel filling station;
4. **Destination Charging** – individual or grouped 3.5 to 7kW – These chargers would be provided by business for the sole use of their customers and/or staff.

NIE Networks investment to date for EVs has focussed on facilitating Home Charging. Public Charging, Rapid Charging Hubs and Destination Charging lie mostly outside of our remit. In these cases we would only offer a connection to the electricity network.

Home Charging Investment to Date

ENA Low Carbon Technology (LCT) Notification Process

NIE Networks utilises the ENA LCT notification process to record EV charger installations. The process is split into two pathways:

1. Fit and Inform;
2. Apply to Connect.

At the end of Q4 2020, NIE Networks had received 1,560 EV charger notifications, compared to 4,722 plug in cars and light goods vehicles recorded by the Department for Transport. This equates to a notification rate of 33%.

Investment to Date

To date NIE Networks have invested over £2 million to facilitate the uptake of low carbon technologies across Northern Ireland including electric vehicles, heat pumps and solar panels. This investment includes:

- Upgrading small pole mounted transformers;
- Upgrading larger ground mounted transformers;
- Upgrading primary substations to facilitate generation (e.g. solar panels) installed in domestic dwellings.

Planned Home Charging Investment

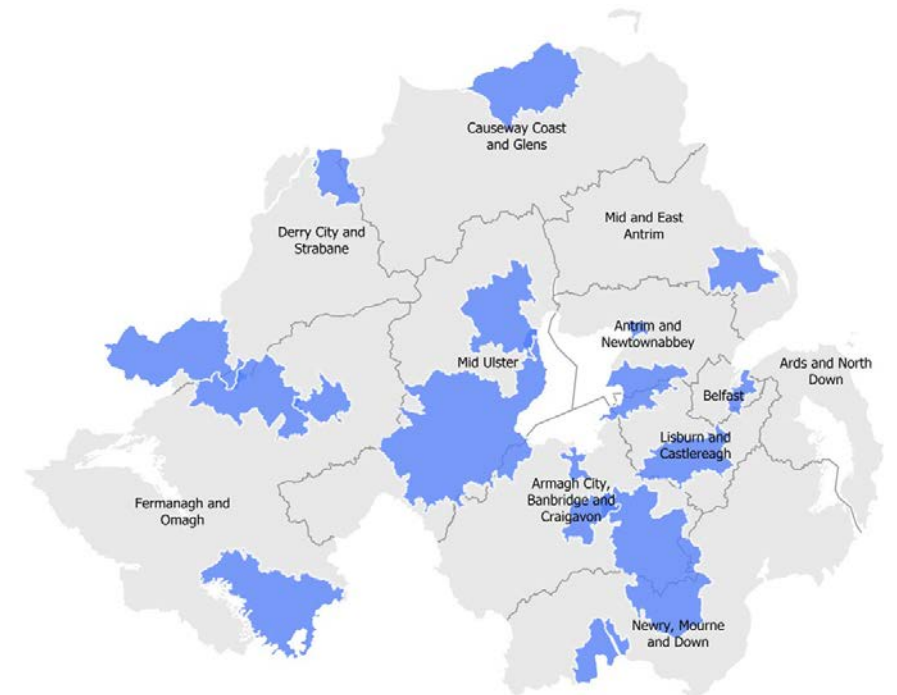
RP6 Investment

- To date, investment to facilitate EVs has been driven by notifications received via the ENA notification process.
- NIE Networks have been allocated an additional £438.52 per EV notification up to the end of RP6 to facilitate EVs.
- NIE Networks intend to procure a localised LCT forecasting tool to predict the uptake of EVs down to street level.
- Localised forecasting will be utilised to identify network reinforcement needs “just in time”.
- In the future, investment will be driven by a combination of notifications and localised forecasts.
- Changes to NIE Networks Statement of Connection Charges may need to be considered also.

Planned Home Charging Investment

RP7 Investment

- Significant investment needed as electric vehicle uptake begins to accelerate, the vast majority of this will be conventional reinforcement
- Implementation of smart solutions tested via innovation projects has the potential to delay some infrastructure investment
- Smart solutions include:
 - Active Network Management
 - Smart Asset Monitoring
 - FLEX Project
 - SCADA monitoring on the LV network
- Forecasting will play an essential role in proactively targeting investment including the identification of areas where smart solutions could be deployed



How You Can Help

Notifications

- To date NIE Networks investment in EVs has been driven by notifications received via the ENA notification process.
- Forecasting will play a role in future investment strategy but notifications remain essential to target network reinforcement.
- Assistance in lobbying EV charger installers to follow the ENA process.

Engagement

- Ongoing engagement with local councils to understand if EV uptake forecasts are accurate.
- Sharing of information such as results from LCT forecasting tool. This could be used to highlight areas with little off street parking that would benefit from public charging infrastructure projects to encourage EV uptake.

Planning Delays for Infrastructure

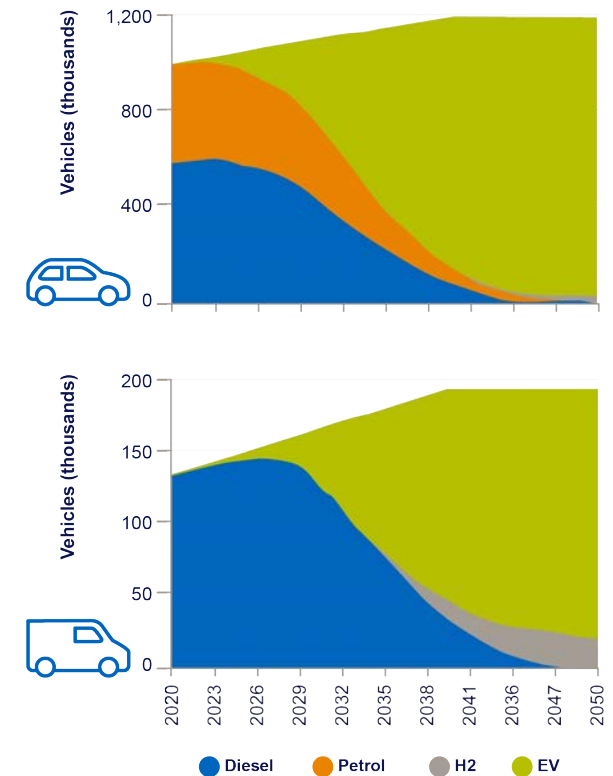
- In Northern Ireland, the average planning time for major applications is 55 weeks against a target of 30 weeks.
- Delays in Northern Ireland largely caused by statutory consultees failing to respond and lack of local community support
- The current planning process presents a major challenge for the delivery of 2030 renewables targets.

Conclusions

1. Element Energy's Very High uptake model (also known as Scenario World D and E) predicts over 350,000 EVs in Northern Ireland by 2030 and over 1.2 million by 2050.
2. NIE Networks role is to facilitate the connection of electric vehicle chargers to the distribution network.
3. NIE Networks have invested over £2 million to date to reinforce the network for LCTs.
4. Investment to date has been driven by notifications of EV charger installations received via the ENA notification process.
5. The notification rate currently sits at 33%. NIE Networks would appreciate assistance from local councils to promote the ENA notification process to installers.
6. Ongoing engagement with local councils will enable NIE Networks to determine if localised LCT forecasts are appropriate.
7. Changes to NIE Networks Statement of Connection Charges may need to be considered also.
8. Current planning delays in infrastructure may not be sustainable to reach the ambitious targets likely to emerge from the Energy Strategy.

Uptake Scenarios for Cars and Vans

Scenario World D&E



THANK YOU