Driving Change: Scottish Lessons for Wales' Electric Vehicle Future

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Published with Jamie Thomas, Assembly Member Support Staff

Cynulliad Cenedlaethol Cymru
National Assembly for Wales

Plaid Cymru
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INTRODUCTION

I take both a personal and political interest in promoting a shift from petrol and diesel to new, greener, propulsion technology.

I have had a lifelong interest in the motor vehicle, from transport, engineering and aesthetic perspectives, but I'm acutely aware of the harm caused to our environment by petrol and diesel, both in terms of greenhouse gas and particle emissions.

Growing understanding of this environmental harm is a one of the main drivers behind the policy goals set internationally in relation to new, cleaner propulsion technology. These goals go hand-in-hand with actions to enhance cleaner mass public transport options.

Proposals have been put forward to phase out new petrol and diesel cars in the UK by 2040. Others, including my party, Plaid Cymru, are encouraging even more ambitious targets. But whatever the precise timetable, we are heading towards radical change, and we in Wales face a choice:

> *either we let change happen to us and try to 'cope' with that change as best we can, or we embrace that change, and try to stay on, or even better, ahead of the curve. I believe we should opt for the latter.*

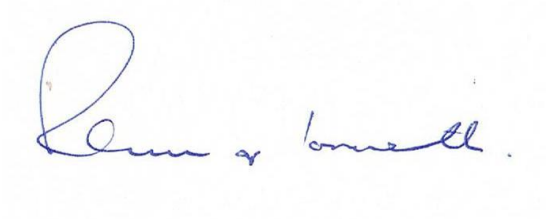
A study published by HSBC in 2018 highlighted the scale of the challenge. It showed that Wales has by far the poorest infrastructure for charging electric vehicles in the UK, with only 31 publicly-funded charging points available in Wales, compared with 743 in Scotland, 185 in Northern Ireland and 2,862 in England.

Per capita figures provided a starker picture. Scotland had one charge point for every 7,127 people, whilst Wales' proportion stood at a truly staggering one charge point for every 98,806 people.

So what next for Wales?

Recent budget negotiations between Welsh Government and Plaid Cymru saw Ministers agree to commit £2m towards the developments of a national rapid charging network. With those spending plans still in development, we should be learning from best practice elsewhere.

Learning from the Scottish experience could prove valuable to us, and following a fact-finding visit to Scotland I'm pleased to be able to present this brief report to the National Assembly for Wales's Economy, Infrastructure and Skills Committee as part of its inquiry into Electric Vehicle Charging Infrastructure.



Rhun ap Iorwerth, Assembly Member for Ynys Môn.

THE LANDSCAPE IN SCOTLAND

I visited Scotland in March 2019, meeting officials from Scottish Government and Dundee City Council. Scottish Government could give me an overview of national strategies, whilst Dundee was chosen because of the city's reputation as an EV roll-out innovator.

Perhaps the most striking impression I got in my discussions with both Scottish Government and Dundee City Council was that this is a very established policy area for them.

The current headlines on ULEV (Ultra Low Emission Vehicle) adoption in Scotland are:

- In 2018 (Jan-Oct data) 4.6% of new cars registered in Scotland were low carbon (battery electric, plug in hybrid, full hybrid or a range extender)[1]
- Growth in the registration of new EV and PHEV (plug-in hybrid) vehicles is higher in Scotland (46% growth), over the past year, than the rest of the UK (33%)[2]
- Over 10,000 ultra-low emission vehicles are now licensed in Scotland (to end 2018)[3]
- 41% of respondents to the 2017 Scottish Household Survey said they would consider buying an electric car or van compared to 36% in 2016[4]

Much work still needs to be done, and there are many challenges ahead for Scottish Government as a result of their success as they've pursued their ULEV agenda, but let's assess how they've got to this point.

[1] Official Data from the The Society of Motor Manufacturers and Traders (SMMT).
[2] Official Data from the The Society of Motor Manufacturers and Traders (SMMT).
[3] Official Data from UK Government's Department for Transport (DfT).
[4] Official Data from the 2016 Scottish Household Survey.

THE SPARK FOR CHANGE

Switched on Scotland: A roadmap to widespread adoption of plug in vehicles (2013)[5]

The Climate Change (Scotland) Act 2009 set world-leading greenhouse gas emission reduction targets, including a target to reduce emissions by at least 80% by 2050[6], as well as complete decarbonisation of the road transport sector, and an interim target to reduce emissions by 42% by 2020, which it is on track to meeting[7].

To achieve this, Transport Scotland put together their 'Roadmap' in 2013 which was formulated through a series of workshops, complemented by input from an Electric Vehicle Strategic Board, comprised of experts in their field. 120 experts from 78 different organisations were consulted in the process of putting the roadmap together, supplemented by additional consultation with other stakeholders.

Areas of focus:

The roadmap identified five key areas of focus that would enable them to lead the way in terms of encouraging adoption of plug-in vehicles:

- providing public sector leadership
- making strategic investments
- promoting incentives
- mobilising key stakeholders
- outreach and education

Within those areas of focus a number of crucial actions would be driven by Scottish Government such as the installation of charge points at all main Government building by the end of 2014 and the phased replacement of all Government vehicles with plug-in alternatives (see the full list of actions in Annex 1), with the aim of achieving seven key goals:

1. **Policy Frameworks** – embedding plug-in vehicles in all relevant areas of policy to advance progress on climate change, air quality, renewables, energy security and public health
2. **Market Development** – making plug-in vehicles more desirable than fossil-fuelled alternatives
3. **Recharging** – deploying targeted, convenient and safe recharging infrastructure across Scotland to meet the charging needs of the market
4. **Sustainable Transport** – promoting more sustainable transport systems rather than adding to existing problems
5. **Energy Systems** – having Scotland's energy grid support market growth of plug-in vehicles, made smarter by controlled charging and distributed energy storage
6. **Economic Opportunity** – recognising how early leadership in advancing plug-in vehicles would create jobs and make Scottish businesses more competitive
7. **Communication and Education** – Increasing awareness of and confidence in plug-in vehicles to encourage more widespread adoption

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[5] Transport Scotland, (2013). *Switched On Scotland: A Roadmap to Widespread Adoption of Plug-in Vehicles*.
[6] *Climate Change (Scotland) Act (2009)*. pp. 1.
[7] Scottish Government, (2015). The Scottish Report on Progress towards Meeting the Interim Target. https://www.gov.scot/binaries/content/documents/govscot/publications/report/2015/10/scottish-report-progress-towards-meeting-interim-target/documents/00487838-pdf/00487838-pdf/govscot%3Adocument

Government invested £14m in 2013-15 to support work across the low carbon vehicle agenda, with **£8m invested in charging infrastructure** through the UK-Government-backed *Plugged in Places* scheme, and **deployed rapid charge points at intervals of no more than 50 miles on the country's primary road network** to enable extended all-electric journeys.

To encourage uptake at a local level, Scottish Government and Local Authorities used local planning, parking and traffic management powers to encourage adoption of plug-in vehicles, offering **100% funding for the installation of home charge points** and **used procurement policies to support the adoption of plug-in vehicles in Council and taxi fleets**.

Market Development:

Scottish and UK Governments already have a number of incentives in place to reduce the cost of purchasing plug-in vehicles and installing charge points, including grants, fiscal incentives, and local benefits such as provision of free electricity or parking.

In terms of marketing the vehicles themselves, Scotland recognised how imperative it is that ULEVs are promoted in terms of their whole-life costs and savings.

There are a number of case studies of Scotland trying to lead the way in their early attempts to get EVs on the agenda by putting on roadshows and initiatives across the country.

Scottish Borders Council, for example, held an EV roadshow over five days in towns across the Local Authority in April 2013, where people could speak to council staff and vehicle manufacturers to find out more about EVs, how they are charged and whether such a vehicle would be beneficial for them.

Education Scotland's Curriculum for Excellence, preparing young people for the rapidly changing world of the 21st century, includes a focus on ULEVs.

Scotland's Low Carbon Skills Fund assists employers to train their workforce in areas such as maintenance, servicing and repairs of ULEVs, and colleges up in Scotland now offer such training.

Recharging Network:

Through investment provided by Transport Scotland, motorists can apply to the Energy Saving Trust for 100% funding to install a home charge point for their plug-in vehicle. Private organisations can do the same for their premises. Scottish-based businesses can access an interest-free loan of up to £50,000 for ULEVs, with a repayment term of up to six years.

The **Energy Saving Trust** appears to have been vital to Scotland in their work to encourage adoption of ULEV technology – particularly investment in the charging network.

To supplement the local authority public sites, the EST offer workplace grants to help organisations to install EV charging infrastructure on their premises[8]. Organisations may be eligible for grant support if they meet one or more of the following criteria:

- Currently operate EVs, or have firm plans to introduce EVs in the near future
- Employ staff who drive EVs and would benefit from charging at work
- Can make a charge point publicly accessible

[8] Energy Saving Trust - Scotland. https://www.energysavingtrust.org.uk/scotland

- Located at a key strategic position for charging infrastructure
- Operate a large car park (50+ bays)

So far 461 workplace charge points have been installed with this funding and the EST are tasked with delivering 350 workplace charge points in the 2018/19 financial year.[9]

	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	Total To end 2018
Workplace charge points	0	5	48	98	101	81	128	461

The EST also run the Electric Vehicle Homecharge Scheme[10] to help fund home charge points.

Since 2012, 1,928 domestic charge points have been installed with this funding and the EST are tasked with delivering 1200 domestic charge points in FY18/19.[11]

	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	Total To end 2018
Domestic charge points	0	0	97	131	404	490	806	1928

Whilst the EST does operate in Wales it doesn't seem that it is currently undertaking specific EV-related work in Wales.

Scottish Government can also provide up to 25% match funding for local authorities that wish to apply for the UK Government's grants to install on-street residential chargepoints[12].

It is worth noting that at present **Scottish Government fully subsidises the electricity usage from its 1,000 publicly available charging points,** therefore EV owners only pay for home charging.

Scotland also benefitted as one of eight projects selected for the UK Government's *Plugged in Places* scheme, run by the Office for Low Emission Vehicles (OLEV)[13]. The *Plugged in Places* projects were designed to take different approaches to setting up plug-in vehicle charging schemes, aided by match funding from OLEV. This was intended to explore the effectiveness of different strategies, locations and chargepoint types, and Scotland have very much taken the bull by the horns since the scheme ended with their charging infrastructure.

[9] Official Data provided by Transport Scotland.
[10] Energy Saving Trust. Electric Vehicle Home Charge Scheme.
https://www.energysavingtrust.org.uk/transport/electric-vehicles
[11] Official Data provided by Transport Scotland.
[12] Energy Saving Trust. On-street Residential Chargepoint Scheme.
https://www.energysavingtrust.org.uk/transport/local-authorities/street-residential-chargepoint-scheme
[13] The Office for Low Emission Vehicles. (2013). Plugged-in Places.
https://www.gov.uk/government/publications/plugged-in-places/plugged-in-places

Cross-cutting Objectives:

The 2013 roadmap set out the way forward by identifying the necessary future progress across all stakeholders in Scotland and specific actions that were to be taken by the Scottish Government to help establish the market for plug-in vehicles.

Our counterparts in Scotland recognised that achieving the Roadmap vision would require sustained action in each of the seven areas outlined with failure to do so making progress slow and inefficient. Delivery also requires a long-term strategic approach that results in crosscutting actions and not isolated initiatives.

The £2m we in Plaid Cymru secured as part of a budget agreement with Welsh Government to go towards the development of a rapid charging infrastructure for Wales[14] is a welcome boost to the current complement of charging points in the country, but it is just a drop in the ocean compared to what is need, and also it needs to be a part of a long-term strategic investment plan to encourage adoption of EVs across the country.

[14] Welsh Government. (2017). Final Budget 2018-19. A New Budget for Wales. [online] Available at: https://gov.wales/sites/default/files/publications/2018-06/final-budget-2018-2019-note.pdf

CHARGEPLACE SCOTLAND

ChargePlace Scotland (CPS)[15] is the national network of public EV charging points, in Scotland. There are nearly 1000 publicly available charge points on the CPS network, including over 175 50kW rapid chargers capable of charging an EV to 80% in 25 minutes.

The average distance from any given location to the nearest public charge point is just 2.78 miles in Scotland – the lowest in Great Britain where the average is 4.09 miles[16].

Network Use[17]:

Year	Total Charging Sessions	Total kWh	EV miles provided
2015	148,832	936,860.519	3,406,766
2016	298,762	2,108,257.077	7,666,389
2017	424,865	3,516,945.481	12,788,893

Aims for FY18/19:

Since 2012, the Scottish Government has invested over £15 million in the development of the CPS network. It is planning a further £15m investment plan for FY18/19, in an additional 1,500 new charge points to be placed in homes, at businesses and on local authority land.

Local Authority partnership:

Grants are offered to local authorities to install chargers either on public land to create the national network, or in their depots to support their EV fleet vehicles. Scottish Government has aimed to install 150 public charge points in FY18/19.

Electric A9:

The Electric A9[18] is Scotland's longest EV-ready route. It is being hailed as a flagship to demonstrate that EVs offer advantages to motorists in rural, as well as urban, Scotland.

It will deliver charge point 'hubs' in and around local communities along the A9. Each hub facility will provide multiple charge points, with access to associated amenities. In addition to the 12 locations with chargers already on the route, an additional 30 locations will be investigated for development in the next few years.

Charge Point Network Operator – 'the back office':

As the network operator, CPS provides a 'back-office' system for all Scottish charge points funded by the Scottish Government, regardless of who is the provider of the charge point. This single, core resource offers a number of advantages:

- a 24-hour customer service helpdesk
- charging website and map
- dedicated social media presence

[15] ChargePlace Scotland. http://www.chargeplacescotland.org
[16] National Chargepoint Registry UK. https://www.national-charge-point-registry.uk/
[17] Official Data provided by Transport Scotland.
[18] The Electric A9. https://chargeplacescotland.org/electrica9/

- Ability to fix minor faults remotely
- A single Scotland-wide payment card
- Enhanced fault management system
- Data-gathering which can then be used to map demand etc

The current CPNO contract was awarded to Charge Your Car Ltd (now owned by BP Chargemaster Ltd) in 2016.

ENCOURAGING PUBLIC BODIES TO TAKE CHARGE

Transport Scotland and the Society of Chief Officers of Transportation Scotland (SCOTS) supported the Urban Foresight consultancy in publishing ***A National Framework of Local Incentives for Electric Vehicles*** *(2016)*[19]. It identified a range of measures that could be implemented by local authorities to encourage the adoption of electric and plug-in hybrid vehicles.

These measures covered four key areas:

- Parking
- Planning and Building Regulation
- Road Access and Charging
- Taxis and Private Hire Vehicles

The incentives proposed in the framework had to pass two tests: they had to enhance the relative advantage of a ULEV over a fossil-fuel equivalent, and they had to incentivise investment in ULEVs or recharging infrastructure.

Parking incentives involved discounted, free or priority parking for ULEV owners, as well as reducing parking bays for high emissions vehicles and having dedicated parking bays for car clubs if they utilised ULEVs.

Planning and Building Regulation incentives related to the inclusion of ULEV charging dedicated parking for new developments, making sure that ULEV readiness is specified in building codes, and having charge point installation designated as a permitted development right.

When considering **Road Access**, ULEVs would be given use of bus and high-occupancy vehicle lanes, as well as toll road/road charge exemption, whereas the adoption of low/zero emission zones being encouraged would result in penalties or restrictions on high emission vehicles accessing certain parts of any given town or city.

The incentives for **Taxis and Private Hire vehicles** follow a similar trend, but as we will see in the case study for Dundee referenced later in this report, having the sector itself on-board can make a significant difference in terms of encouraging EV adoption. Licensing fees for EV taxis and private hire vehicles are reduced in Scotland, and the quota on the number of taxi licenses given to a company can be lifted if EVs are included in a fleet.

In terms of **Procurement**, public sector use of taxis and car clubs should stipulate the requirement for use of ULEVs. This has been particular effective in Dundee.

Targeted incentives have played a key role in encouraging EV adoption in Scotland.

[19] National Framework of Local Incentives for Electric Vehicles. (2016). Urban Foresight, pp.2-27. Available at: https://urbanforesight.org/wp-content/uploads/2016/11/REP-1409-TS-A-National-Framework-for-Local-Incentives.pdf

REFLECTING ON SCOTLAND'S EV SURGE

Switched on Scotland Phase Two: An Action Plan for Growth (2017)[20]

By 2017, Scottish Government felt good progress had been made, but identified three key points that they would need to continue to address to continue to push the ULEV agenda:

- Reducing the cost of owning and driving a ULEV
- Making ULEVs a convenient fit with the needs and lifestyles of drivers
- Promoting a change in culture whereby ULEVs are widely recognised as a preferred alternative to ICE vehicles

Transport Scotland had already invested £3.7m to support the installation of charge points at 1,100 homes and 350 workplaces, as well as £3.5m to introduce 350 EVs to 50 public sector fleets through collaboration with the Energy Saving Trust.

Support for widespread adoption of ULEVs by 2017 formed a central part of several significant national policies in Scotland, including the 2017 Draft Climate Change Plan, the 2016 refreshed National Transport Strategy, the 2015 Cleaner Air for Scotland repot and the 2017 Draft Scottish Energy Strategy, with the majority of local transport strategies in Scotland contain references to ULEVs too.

Other notable achievements included the fact that Scottish Government had introduced 82 EVs to car clubs across the country, which was more than the rest of the UK Combined at the time, with charge points installed at 11 ferry terminals and over 50 stations across Scotland by the end of 2017.

With 37 actions covering a broad range of areas proposed in 2013, by 2017 and the arrival of this plan for growth, Scottish Government had settled on a more focussed 10 actions relating to infrastructure and support, electric mobility services, and helping to realise the benefits of EVs (see the full list of 10 actions in Annex 2).

[20] Transport Scotland, (2017). Switched On Scotland Phase Two: An Action Plan for Growth https://www.transport.gov.scot/media/39306/switched-on-scotland-phase-2.pdf

DUNDEE CITY COUNCIL – A CASE STUDY

I'd heard of Dundee's work in promoting EVs. Press and social media coverage of various initiatives had caught my eye. I was hearing positive stories. I needed to visit.

Dundee's reputation is as a city of 'Jam, Jute and Journalism'. Well, to the old traditions relating to soft fruit, cloth and the written word, add a new passion… for electric vehicles!

This is a city that has reinvented itself, as seen in the stunning new waterside V&A Museum and the booming gaming industry, and embracing new vehicle technology fits in nicely.

It's happened in less than a decade. Dundee had an acute air quality problem. Typical transport and industrial pollution was exasperated by the local topography. Key council officials identified ULEVs as part of the solution, and set out to transform the city, and win over hearts and minds.

TIMELINE:

2011 – Dundee City Council purchased four electric cars and four 7kw chargers through 40% grant funding.

2012 – Installed first 50kw charger and increased EV car fleet to 16.

2013 – Installed grant-funded fleet depot chargers and 4 publicly available 50kw rapid chargers.

2014 – Grant-funded further council depot chargers and started purchasing EV vans.

2015 – Started to develop a city-wide EV infrastructure strategy and wider regional infrastructure. Bid for OLEV GUL cities project was developed and submitted.

2016 – Successful £1.86m funded bid, followed by £600,000 award from OLEV for taxi infrastructure. Funding would contribute towards three new strategic EV hubs in the city and wider regional infrastructure.

2017 – Hub planning began. Council EV policy incentives involving Taxi Licensing changes, free car parking for EV drivers, free charging for all. The Council increased EV numbers to 68 and continued to enhance EV infrastructure with grants from Scottish government.

2018 – Three EV hubs completed in the city.

Successful bid for car park EV project involving European, Westminster and Council funding. Each site will consist of 20 charging bays with dynamic load charging with solar and battery storage renewables.

2019 – Car park projects set to be completed by end of the year. Scottish Government £2.5m project involving EV infrastructure, including new housing developments integrating EV charging into every house build. Council EV fleet at present stands at 102 vehicles and the Taxi EV fleet accounts for 16% of the city's taxis.

PARTNERSHIPS

Although driven by determined Council officials, change could not happen without the involvement and support of key partners. Partners include Transport Scotland, OLEV, Swarco, SSE, Urban Foresight, Nissan, Kia, Michelin and more.

Taxi companies are among the most crucial partners locally. Dundee taxi firm, 203020, reported that its drivers had driven over 2.5 million all-electric miles by May 2017 and that each driver is saving roughly £120-£130 a week on fuel.

The company's owner, David Young, who has now sadly passed away, saw the business sense in taking advantage of various **council incentive schemes** – including preferential licencing terms and free charging facilities - and made the shift to EV. He also invested in charging infrastructure at his depot. EV taxis are now a very visible reminder of a transport culture shift in Dundee.

David Young was named in 2017 among GreenFleet's 100 most influential people in the UK in reducing carbon emissions[21].

The public as partners - 700 drivers in the city are signed up to the council's free parking initiative, and there are three EV charging hubs placed strategically across the city with plans for a fourth on a major link road north to be developed in the near future.

Private developers - Tesla, seeing advances in the city, decided to invest in the installation of a network of destination chargers for Teslas on the outskirts of the city.

Starting with four EVs and four charge points in 2011, Dundee City Council has strategically built its way up to the point where as of May 2017, it had 83 EVs in its own fleet, that had driven over one million miles and delivered an estimated saving on fuel cost of 70%. Those numbers have increased since then with over 100 EVs now in the council fleet.

But crucially the Council set the tone for others to follow and come on board as partners.

The future – Ongoing EV projects including doubling the EV council fleet, developing a fourth EV hub, and developing Community EV projects.

Even in these relatively early days of EV adoption, Dundee City Council is showing what **can** be done.

[21] Dundee Evening Telegraph. (2017). Dundee taxi boss makes 'most influential' list. Available at: https://www.eveningtelegraph.co.uk/fp/dundee-taxi-boss-makes-influential-list/

WALES – THOUGHTS ON OUR CURRENT POSITION

My intention with this report is to help inform the debate in Wales on EV adoption. In Scotland the debate is much more mature, and that is reflected in the significantly better developed infrastructure.

I am presenting the report to the National Assembly for Wales's Economy, Infrastructure and Skills Committee as part of its inquiry into charging infrastructure, and in doing so I welcome that inquiry as a sign that Wales is now genuinely starting to engage with the EV/ULEV vehicle agenda.

Witness also the budget deal between Plaid Cymru and Welsh Government providing £2m towards developing a national rapid charging network, along with statements from a number of Local Authorities on EV initiatives. The Assembly also discussed my proposal for *an electric vehicle charging planning Bill* on May 16, 2018[22].

> **NDM6720 Rhun ap Iorwerth (Ynys Môn)**
>
> To propose that the National Assembly for Wales:
>
> 1. Notes the proposal for an electric vehicle charging planning Bill.
>
> 2. Notes that the purpose of this Bill would be to:
>
> a) introduce planning guidelines for new developments, whether they are public buildings or housing;
>
> b) ensure that new buildings must include charging points for electric vehicles;
>
> c) make it easier for people to use electric vehicles in order to reduce carbon emissions.

I was pleased to see elements of this proposed bill included in a significant Welsh Government document published in March 2019:

Prosperity for All: A Low Carbon Plan[23]

This is a wide-ranging document, covering many sectors from energy and agriculture, housing to industry, and of course includes the future of transport and ULEVs.

There are a number of relevant sections:

- **Policy 5** refers to new guidelines under Planning Policy Wales which requires new non-residential developments to have charging points in at least 10% of the spaces available
- **Policy 50** discusses increasing the proportion of vehicles which are electric and ultra-low emission by encouraging UK Government to retain incentives promoting the uptake of electric vehicles

[22] Ap Iorwerth, Rhun (2018). An electric vehicle charging planning Bill. National Assembly for Wales. Available at: http://senedd.assembly.wales/mgIssueHistoryHome.aspx?IId=22008.
[23] Prosperity for All: A Low Carbon Wales. Welsh Government. Available at: https://gweddill.gov.wales/docs/desh/publications/190321-prosperity-for-all-a-low-carbon-wales-en.pdf.

- **Policy 51** outlines how Welsh Government will invest the £2m Plaid Cymru secured towards creating a network of rapid charging points to enable longer distance travel by electric vehicles throughout Wales
- **Policy 52** relates to Welsh Government's aim to reduce the carbon footprint of buses to zero by 2028
- **Policy 53** relates to 'promoting and facilitating' an early transition to ULEV taxis to reduce the carbon footprint of Taxis and Private Hire Vehicles to zero by 2028
- **Policy 54** discusses Welsh Government's general commitment to reduce transport emissions across the board
- **Proposal 4** in the plan pertains to how Welsh Government will move to ensure all new cars and light goods vehicles in the Public Sector fleet are ultra-low emission by 2025 and where practically possible, all heavy goods are ultra-low emission by 2030
- **Proposal 14** refers to Welsh Government assessing the potential of pilot activity to trial ultra-low emission public transport and taxis at specific locations to establish Wales' first all-electric public transport town in advance of wider rollout
- **Proposal 15** will see Welsh Government build on their plans to decarbonise public transport fleets to promote the decarbonisation of private sector fleets in Wales

These are positive policies and proposals, which I welcome as steps in the right direction.

I would sound a few notes of caution. Firstly, we need a specific, bespoke ULEV strategy, not merely included as part of a wider strategy on carbon reduction. The plan notes that '*lack of charging infrastructure should not be a barrier to EV uptake in Wales*.' I disagree. Although the most charging is likely to take place at or near home or place of work, **there has to be a visible, accessible and reliable charging network in order to give people the confidence to go electric**.

My experience of driving from my Ynys Môn constituency to Cardiff Bay in the summer of 2018[24], in partnership with Renault UK, was evidence of the effect of a lack of infrastructure. Yes, I made it – but only by driving via England!

It is noted that Welsh Government expects business and industry will drive much of the roll-out of charging infrastructure, however Welsh Government must also recognise its own role and responsibility.

I would reiterate here that we need to revolutionise transport as a whole. We need to get more people out of cars, of course, and investing in public transport has to be a national priority. But cars will remain a crucial part of the transport landscape in Wales, so we've got to make them kinder to the environment, hence ULEVs.

Welsh Government could either wait for enough people to buy ULEVs before driving its own investment in the infrastructure, which makes little sense to me, or it could do as Scotland has done, and see the real value in investing money, time and effort now in encouraging behaviour change.

[24] Driving the Future: My Week in an Electric Vehicle (2018). Rhun ap Iorwerth. Available at: https://www.youtube.com/watch?v=z7SHefXbA7g.

CONCLUSIONS

After looking at the Scottish experience, it strikes me that there are a number of fundamental requirements for moving forward here in Wales. Scotland has various models that we could emulate (Annex 1 and Annex 2 outline a number of key elements to the development of their ULEV agenda), but I could summarise some key lessons I learnt about key actions and principles as follows:

Leadership – Welsh Government needs to show in a much more dynamic way that progressing the EV agenda in Wales is a clear priority, as part of the journey towards achieving a low carbon future. Accelerating ULEV take-up should become a clear national goal.

Investment – Public declarations of EV ambition must then be backed by significant investment.

Strategy – Decisions need to be made with urgency on a number of key pillars regarding the development of EV infrastructure in Wales e.g. Scotland's development of ChargePoint Scotland as a single, recognisable and accessible brand for existing and potential EV users, and a focal point for delivery of infrastructure, has proved very valuable.

Incentives – I saw evidence in Dundee of how incentivising key sectors can contribute significantly to EV growth e.g. using taxi licencing powers and defining procurement expectations clearly to favour EV, along with initiatives such as free charge points to kick-start adoption. I also believe there is scope to investigate the potential of introducing new **Statutory Obligations** e.g. legislation requiring strategies for ULEV roll-out by public bodies, such as I am suggesting in an Assembly 'Legislative Proposal' on May 15th 2019, or stringent planning regulations to deliver charging infrastructure in new developments.

Partnership – Welsh Government should maximise the potential offered by working in partnership with others e.g. the Energy Saving Trust has played a prominent role in ULEV developments in Scotland. Wide-ranging partners across both public and private sectors will be vital for the realisation of a genuine national ULEV ambitions.

Communication and Education – An ambitious national outreach programme will be necessary to educate the public about the benefits of switching to EVs and the development of infrastructure etc.

Innovate and Normalise – Let's make statements as a nation that raise the profile of ULEVs, and normalise their use. Can we introduce our own electric highways, as Scotland has done with their Electric A9? Why not see the proposed investment in a pan-Wales charging network as a means to rebrand the A470 and A487 for a new ULEV generation? The P1 and P2 – Power 1 and 2 - EV highways?

Let's show that Wales is eager to embrace the future.

ANNEX 1:

Summary of actions for Scottish Government in the 2013 Roadmap, grouped into focus areas.

Public Sector Leadership		
Action #	**Action details**	**Completion**
1	Transport Scotland to continue to engage with colleagues across Government and the wider public sector to promote the inclusion of plug-in vehicles in relevant policies and strategies.	Ongoing
4	Scottish Government, as part of ongoing vehicle replacement cycle, to replace fossil-fuelled vehicles with plug-in vehicles where appropriate.	Ongoing
7	Scottish Government to prepare legislation to implement a new permitted development right for off-road charge points.	2013-14
15	Transport Scotland to provide funding and work with partners to support evidence-based analysis of public sector fleets to create new opportunities for the deployment of plug-in vehicles.	2013-15
20	Transport Scotland to install charge points at all main Scottish Government buildings.	2013-14
32	Scottish Government to consider how best to strengthen guidance for planning authorities relating to plug-in vehicle charge point provision in new developments as part of a review of Scottish Planning Policy.	2013-14
Strategic Investments		
Action #	**Action Details**	**Completion**
2	Transport Scotland to review the existing evidence base and identify needs for new research or data to support the development of policies which impact on plug-in vehicles, such as air quality, health and energy	Ongoing
8	Scottish Government and its partners to continue to engage with international plug-in vehicle networks and projects to attract funding and support policy debates.	Ongoing
10	Transport Scotland to work with OLEV to share data and insights from the Plugged in Places project	2013-14
16	The Scottish Government, Scottish Enterprise and partners in the public and private sector to promote Scotland as an attractive location to introduce new consumer offerings and mobility services for plug-in vehicles.	Ongoing
18	Transport Scotland to continue to provide funding for the safe and convenient installation of domestic, workplace and en-route charge points.	2013-15
22	Transport Scotland to commission a review of the opportunities to transition infrastructure provision in Scotland from a Government-funded pilot to a private sector-led initiative that meets Scotland's long-term needs for recharging infrastructure.	2014-15
24	Transport Scotland to roll out a network of pay-as-you-go charge points in Scotland – making payment for charging/parking as straightforward as possible for plug-in vehicle drivers.	2013-14
25	Transport Scotland to deploy rapid charge points at intervals of at least 50 miles on Scotland's primary road network to enable extended all-electric journeys.	2013-15
26	Scottish Green Bus Fund to continue to support the wider roll-out of low emission buses across Scotland.	Ongoing

27	Support for the promotion of shared plug-in vehicles through the Developing Car Clubs in Scotland programme.	Ongoing
28	Transport Scotland to continue the deployment of charge points at park and ride sites and other transport interchanges.	2013-15
29	Transport Scotland to encourage the deployment of electric vehicle charging points at railway stations with bidders for the new ScotRail Franchise.	2013-15
34	Scottish Enterprise to unite, understand, support and strengthen Smart Mobility activity including (but not limited to) Transport Systems, Informatics and Energy Companies from which economic benefits flow. This will include growing capability and capacity around Smart Mobility, stimulating projects, realising benefits and expanding global reach.	2013-14
Incentives		
Action #	**Action Details**	**Completion**
3	Scottish Government to determine the role plug-in vehicles can play in Air Quality Action Plans as part of the review of Local Air Quality Management in Scotland.	2013-14
5	Transport Scotland to work with Energy Saving Trust and other stakeholders to prepare guidance on the actions that can be taken to promote plug-in vehicles.	2013-14
13	Scottish Government to work with the UK Government to assess the future provision of incentives and the most effective way to support the developing markets for plug-in vehicles.	Ongoing
14	Transport Scotland to work with local authorities, planning authorities and COSLA to develop a national framework for local incentives.	2014-15
17	Scottish Government to continue working closely with industry to meet the changing needs of the plug-in vehicle market.	Ongoing
30	Scottish Government to work with partners to undertake a study into the development of a national framework for establishing low emission zones.	2014
Mobilising Stakeholders		
Action #	**Action Details**	**Completion**
6	Transport Scotland to establish a multi-stakeholder group on fleets to review the challenges and opportunities for wider adoption and prepare necessary guidance and advice for public and private sector organisations.	2013-14
9	Transport Scotland to continue to co-ordinate partnership working and promote communication across the plug-in vehicle stakeholder community.	Ongoing
19	Transport Scotland to establish a multi-stakeholder group on recharging to review the challenges and opportunities and prepare necessary guidance and advice for public and private sector organisations.	2013-14
31	Transport Scotland to establish a multi-stakeholder group on energy systems to review the challenges and opportunities and prepare necessary guidance and advice for public and private sector organisations.	2013-14
33	Scottish Government to continue to work with energy suppliers to encourage the deployment of tariffs and technologies to manage	Ongoing

	recharging behaviours and maximise the emission reduction benefits across Scotland.	
Outreach and Communication		
Action #	**Action Details**	**Completion**
11	Scottish Government to develop a plug-in vehicle marketing campaign as part of wider Greener Scotland activity, to raise awareness, promote incentives and communicate benefits of plug-in vehicles.	2013-14
12	Energy Saving Trust to continue to promote its support for Scottish businesses to adopt plug-in vehicles through EV Awareness Raising Workshops, Sustainable Transport Advice Service and Interest Free Low Carbon Transport Loans and FuelGood driver training.	Ongoing
21	Transport Scotland to develop an outreach and education strategy for plug-in vehicles.	2013-15
23	Transport Scotland to continue to develop the electric vehicle content on the Greener Scotland website to provide information on plug-in vehicles, recharging and respond to the needs of EV and PHEV drivers.	2013-14
35	Energy Saving Trust to launch an electric vehicle network tool for individuals and organisations to allow them to speak to current plug-in vehicle owners and experience plug-in vehicles first hand at their local dealerships.	2013
36	The Scottish Government and industry bodies to work with Education Scotland to review existing resource provision for schools relating to plug-in vehicles and develop further where appropriate.	2013-15
37	Scottish Government to work with industry, Skills Development Scotland and other key stakeholders, such as the Scottish Funding Council, to quantify and determine the nature and demand for plug-in vehicle education and skills and review and revise provision accordingly.	2013-15

ANNEX 2:

Summary of actions for Scottish Government in the 2017 Plan for Growth, grouped into focus areas.

Infrastructure and Support		
Action #	**Action Details**	**Completion**
1	Support the increased deployment of public charging infrastructure by developing the ChargePlace Scotland network.	Ongoing
2	Provide financial support for the purchase of EVs and installation of private charging infrastructure.	Ongoing
3	Work with partners on procurement approaches that encourage investments in EVs.	Ongoing
4	Continue to work with partners to promote EVs as an alternative to fossil fuelled vehicles.	Ongoing
5	Embed support for EVs in strategies for transport, energy, climate change, air quality and the built environment.	Ongoing
Electric Mobility Services		
Action #	**Action Details**	**Completion**
6	Improve the user experience of the ChargePlace Scotland network.	Ongoing
7	Support the development of innovative EV charging hubs across Scotland.	Ongoing
8	Support local authorities in deploying measures that encourage adoption of EVs.	Ongoing
9	Consider the impact of emerging technologies and business models on EV adoption and infrastructure deployment.	Ongoing
Realising the Benefits		
Action #	**Action Details**	**Completion**
10	Support improvements in the collection, analysis, interpretation and dissemination of data and evidence on the economic, environmental and social benefits of EVs.	Ongoing