



Rialtas na hÉireann
Government of Ireland

Low Emission Vehicle Taskforce Progress Report September 2018

1. Overview

The Low Emission Vehicle (LEV) Taskforce was established in December 2016 to consider the range of measures and options available to Government to accelerate the take-up of low carbon technologies in the road transport sector. The terms of reference of the Taskforce are set out in Annex I.

The LEV Taskforce is jointly chaired by the Department of Transport, Tourism and Sport (DTTAS) and the Department of Communications, Climate Action and Environment (DCCAE). It includes representatives from across the public sector and has consulted widely with industry, stakeholders and representative groups.

The work programme of the Taskforce has been structured into two distinct phases. The first phase focuses exclusively on electric vehicles (EVs). This includes both battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs)¹. The second phase of the Taskforce's work programme will cover all other low emission vehicles.

The Taskforce has three working groups which are:

- Working Group 1 which focuses on market growth stimuli, visibility and public leadership in LEV uptake in Ireland and is chaired by DTTAS.
- Working Group 2 is concerned with infrastructure, energy regulation and pricing and is chaired by DCCAE. Its overall objective is to devise a sustainable policy framework to ensure satisfactory, effective and efficient LEV charging and fuelling infrastructure.
- Working Group 3 whose role is concerned with planning legislation and building regulations is chaired by the Department of Housing, Planning and Local Government (DHPLG).

Working Groups 1 and 2 have been established as part of the first phase of the work programme. Given the role of Working Group 3 spans both EVs and other LEVs, it will form part of the second phase of the work programme. As part of the working groups' meetings to date, a range of stakeholders and industry experts have been consulted in addition to stakeholder events being held on the topics of incentives and charging infrastructure. The meetings and stakeholder events are set out in Annex II.

¹ Throughout this report the term electric vehicle (or EV) refers to both battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs).

The Government, on foot of the LEV Taskforce's interim recommendations in advance of Budget 2018, expanded the suite of supports available for EVs in Ireland. This included the introduction of Benefit-in-Kind tax relief, a grant for the installation of home chargers, a grant for the use of EVs in the taxi/hackney/limousine sector, a reduction in tolls for electric vehicles and a public awareness programme. The recommendations made are listed in Annex III and the full list of supports currently available is set out in Annex IV.

Working Groups 1 and 2 have now concluded their work under the first phase of the Taskforce's work programme and this report summarises their workings and findings. The second phase of the work programme will begin its work, including examining the role of alternative fuel technologies such as natural gas, biomethane and hydrogen, in September 2018.

2. Market Growth Stimuli

2.1 Review of existing fiscal incentives

Incentives are fundamental in developing the adoption of new technology as they assist in:

- overcoming or alleviating barriers to adoption;
- increasing awareness; and
- increasing confidence in new or unknown technology.

In Ireland, a number of incentives had been introduced in order to stimulate the growth of EVs. An incentive programme was launched in April 2011 consisting of a €5,000 grant towards the purchase of a new EV as well as Vehicle Registration Tax (VRT) relief of up to €5,000. Later measures included EVs being made eligible for the lowest rate of motor tax and EVs and charging equipment being included on the list of products qualifying for accelerated capital allowances².

In relation to EV charging supports, ESB eCars had been running a nationwide programme involving the rollout of EV domestic charging points, offering to install the first 2,000 home charge points free of charge. They had also rolled out a comprehensive network of public charging points (standard and fast) charge points across the country. Public charging has been free since 2010 and some County Councils provide parking at no cost to EV owners in certain areas.

² Permits for the write off of the capital costs in year 1 rather than over the traditional 8 year period.

Fiscal incentives in place before the LEV Taskforce was established
<ul style="list-style-type: none"> • Vehicle Registration Tax (VRT) Relief
<ul style="list-style-type: none"> • EV Purchase Grant Scheme
<ul style="list-style-type: none"> • Charging Supports
<ul style="list-style-type: none"> • Accelerated Capital Allowances (ACA)
<ul style="list-style-type: none"> • Excise Relief

The uptake in EVs has grown (see Annex V) with over 1,400 new EVs registered in 2018 to the end of July compared to 925 for all of 2017 and 697 for all of 2016. Notwithstanding this positive growth, the number of EVs on the roads remains low and continued support to build on this progress is required. Incentives are recognised as a significant tool in increasing the uptake of EVs; however, their costs do place a burden on the Exchequer.

In order to assess the current and future cost, impact and feasibility of existing and potential incentives, a review of the current measures and policies in place was carried out. The costs of existing and additional supports were detailed along with projections of how these might evolve into the future if they were to be maintained. These were examined under a high and low growth EV scenario (20,000 EVs and 8,000 EVs by 2020) and in relation to two different timeframes (2018 to 2023 and 2018 to 2030). The first timeframe coincides with the point at which it is projected EVs will reach price parity with conventionally fuelled vehicles while the latter timeframe is aligned with climate change targets and the expectation that by 2030 onwards all new car sales in Ireland will be zero emission (or zero emissions capable).

As expected, the cost of supports has increased in line with the number of EVs registered in Ireland (Figure 1) and will continue to rise under projected growth scenarios (Figure 2). The total cost of existing supports provided to end of 2016 was estimated at €19.4 million with VRT relief accounting for the largest cost, followed by the SEAI purchase grant and then the cost of the home charger and fuel excise³.

³ This figure does not include the cost of the Accelerated Capital Allowance and the cost of the public charging network and supplying free on-street and public charging.

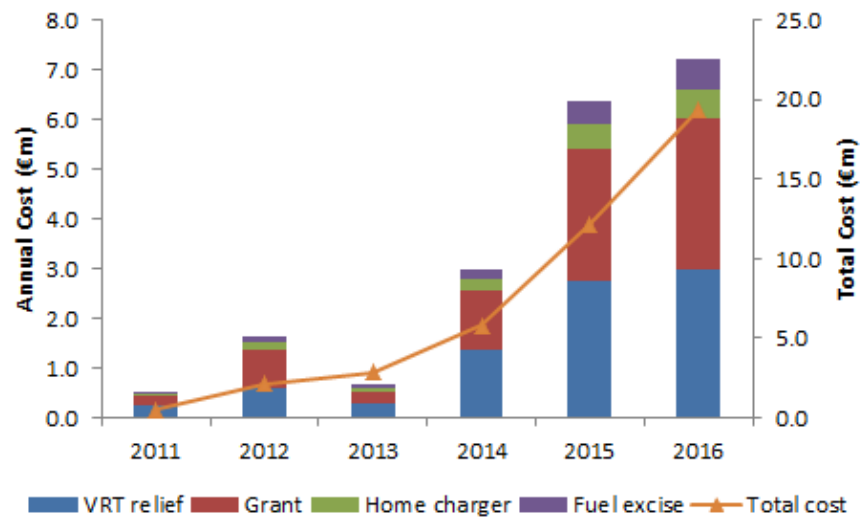


Figure 1: Costs of existing supports, 2011-2016

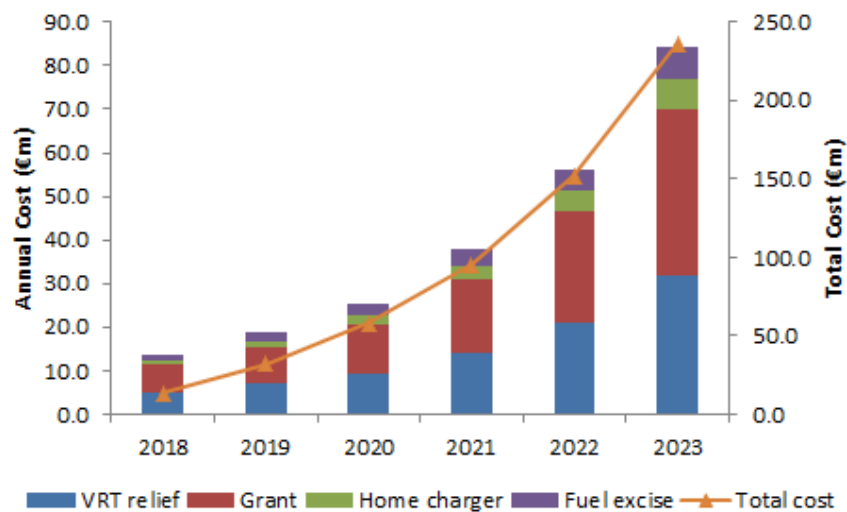


Figure 2: Cost of maintaining supports under low growth scenario, 2018-2023

2.2 Review of additional fiscal incentives

The feasibility of introducing a number of additional incentives to encourage EV uptake was also considered by the Taskforce, including a implementing a reduced tolling incentive scheme, introducing a parking incentive, and the potential role of taxation measures.

Currently, tolls are charged on eleven sections of the national road network in Ireland. The primary purpose of tolling in Ireland is to offset the cost of construction and maintenance of the infrastructure as well as playing a role in demand management. Transport Infrastructure Ireland (TII) estimate that there were 340 million tolled journeys taken in 2017 with

approximately 400,000 drivers being considered 'heavy toll users'. Hence, a reduced tolling regime was perceived as a meaningful incentive to encourage a large cohort of people (namely private car commuters) to transition towards EVs. Under Budget 2018, DTTAS secured funding to support a reduced tolling scheme for EVs which was subsequently introduced in July 2018 and is administered by TII on behalf of DTTAS. It is expected that the scheme will run until c. 2022 (or up to a maximum of 50,000 EVs), with the level of incentives reducing in-line with the uptake of EVs. Discount rates of 50% and 25% are available for BEV and PHEV drivers respectively up to a maximum of €500 per year; higher discounts are available on the M50 during off-peak periods. This initiative will be kept under review to determine its impact and incentives levels will be adjusted accordingly.

The feasibility of introducing parking incentives such as free or reduced rates for EVs was also reviewed. It was informed by stakeholder consultation with both local authorities and private car operators as well as comparative research on international benchmarks. In addition, the potential role of a number of taxation options in encouraging greater EV uptake were also examined, including Benefit-in-Kind, motor tax relief, fuel excises and a VAT refund scheme. The introduction of a 0% Benefit in Kind treatment for EVs was perceived as representing the biggest incentive the tax system could offer to incentivise the early adoption of EVs.

2.3 Visibility and Public Leadership

Developing public awareness has been identified as a key enabler to increasing the uptake of EVs. In order to meet this need, a public awareness campaign was developed by the Sustainable Energy Authority of Ireland (SEAI) with the assistance of stakeholders in the LEV Task Force. It was launched in April 2018 and it is envisaged that it will run for a 3 year time frame.

The key aspects of this scheme are:

- A national public awareness campaign to raise the profile and understanding of EVs;
- A public driver experience roadshow to provide people across the country with the opportunity to drive an EV and better understand their benefits;
- Public sector and commercial fleet trials allowing public bodies and business to trial EVs (both cars and small vans) over a number of months; and
- Potential supports for car sharing schemes providing the opportunity for non-EV owners to use EVs on short trips.

Alongside broader public awareness, the Irish public sector can play a role in promoting environmental measures through Green Public Procurement which can act as a driver for innovation and competitiveness in the industrial sector, encouraging the development of new technologies. The Office of Government Procurement (OGP) has responsibility for the National Public Procurement Policy Framework which sets out the procurement procedures to be followed by Government Departments and State Bodies under national and EU rules. While it is clear that the public sector has a policy mandate to engage in Green Public Procurement for transport vehicles and services it has to be acknowledged that the public sector accounts for a relatively small proportion of the market for road transport vehicles and transport services. With respect to the passenger car segment, the share of vehicles that are publicly procured makes up less than 1% of all cars. Of this, An Garda Síochána passenger car fleet would represent approximately 60% of all the passenger cars in operation in Government departments or local authorities.

Since December 2010 all public contracting authorities that are procuring road transport vehicles, under 3.5 tonnes, must take into account the operational lifetime energy and certain environmental impacts, including energy consumption, emissions of CO₂, and emissions of nitrous oxide (NO_x), non-methane hydrocarbons (NMHC) and particulate matter. The OGP is in the process of researching the possibility of putting into place a Framework competition for BEV and PHEV cars and vans which could possibly act as a direct drawdown Framework and provide a mechanism for any public sector body to purchase an EV. Alongside the environmental benefits, the utilisation of EVs by Government bodies would play a positive role in increasing wider awareness and potentially act as inducement for members of the public to try an EV. In terms of broader transport services, potential also exists to apply the principles of green public procurement to contracts and frameworks for transport service, in line with Government and European commitments⁴.

The role of small public service vehicles (SPSVs) (Taxi/Hackney/Limousine) as a demonstrator of EVs was examined. Specific consideration was given to current SPSV regulations, industry suitability and vehicle availability. At the beginning of 2018, there are over 20,000 SPSVs licenced to operate in Ireland with up to 50% located in Dublin; however, EV uptake in the SPSV sector is low with only 11 EVs in operation in the sector (9 BEVs and 2 PHEVs).

The electrification of the SPSV fleet will have limited impact on our total transport emissions

⁴ This could encompass specific criteria to be included when tendering for certain transport services such as evaluating average fleet CO₂ emissions, specify type of fuel used and consumption levels, encourage using vehicles with bi-fuel or flex-fuel capacity and provide award criteria marks for companies with strong sustainability and environmental policy.

with less than 5% of transport CO₂ emissions come from the public transport fleet (buses, rail and taxis); however, it would likely yield wider benefits, such as: instilling public awareness and confidence in the uptake of EVs; providing a strong leadership and demonstration role; improving urban air quality and noise pollution; and assisting in the meeting of policy objectives arising from the *National Mitigation Plan*⁵ and *National Policy Framework: Alternative Fuels Infrastructure for Transport in Ireland 2017 to 2030*⁶.

Conclusive findings from this item of work included the introduction of an industry specific EV grant scheme, alongside consideration of additional support measures such as dedicated charging infrastructure for electric SPSVs. The grant scheme was launched on the 1st of February 2018 and provides grants of up to €7,000 towards the purchase of an EV for use as a small public service vehicle. The scheme is administered by the National Transport Authority (NTA) on behalf of DTTAS and is funded under the Green Public Transport Fund.

3. Infrastructure, Energy Regulation and Pricing

3.1 Electric Vehicle Charging Infrastructure

The *National Policy Framework: Alternative Fuels Infrastructure for Transport in Ireland 2017 to 2030* sets out the needs for private and public charging in Ireland. Although the existing capacity of the charging network is considered adequate, development of infrastructure to meet the growing demand is necessary.

The *Framework* sets out the growth profile of public and private charging infrastructure in the period out to 2030. As part of the LEV Taskforce's work, the types of charging infrastructure and potential ownership models were examined. EV charging has been considered across the following four categories:

- Home charging;
- On-street charging;
- Location/destination charging; and
- Fast charging.

⁵ <https://static.rasset.ie/documents/news/national-mitigation-plan-2017.pdf>

⁶ <http://www.dttas.ie/sites/default/files/publications/public-transport/english/alternative-fuels-framework/6186nfpalternative-fuels300517.pdf>

Home charging is considered the primary method of charging for the majority of EVs in Ireland. Charging at home at night is a very cost-effective way to charge an EV and it also has benefits for the electricity system as demand is generally low at these times. Given the high proportion of homes with driveways and dedicated parking spaces, Ireland has greater capacity for home charging than many other countries.

In early 2017, ESB eCars confirmed they would cease providing a free domestic charge point to qualifying parties at the end of 2017. Given the importance of home charging, it was considered important that a replacement incentive was provided; this was included in the LEV Taskforce Budget 2018 recommendations. As a result, SEAI commenced a new grant of up to €600 to support the installation of a home charging point for the purchasers of new and second hand EVs from the start of 2018.

The provision of home chargers in apartment blocks or other residential areas where shared private parking is provided remains challenging due to the lack of dedicated parking and the sharing of costs between residents. The most cost-effective method of installing such infrastructure is during initial construction or when refurbishment work is being carried out. In larger apartment blocks with internal parking areas the most cost effective approach is for an EV aggregator (charge point operator) to install and operate the EV chargers within the internal apartment complex. The EV aggregator could be the apartment management company who could provide charging tailored to their customer's requirements. These issues will form part of the Working Group 3 work programme which includes consideration of building regulations that apply to both new and refurbished buildings.

On-street charging is considered necessary for owners of EVs who do not have access to a private parking space. They also provide the opportunity for people to park and charge their EV. The fees associated with parking when charging at an on-street charger vary by Local Authority and area and in some cases there are no fees for parking while in others, users must have resident permits or pay for parking. It is likely that there will continue to be a mixture of free and paid parking associated with on-street charging with the relevant Local Authority determining which is most appropriate. The Taskforce noted that dedicated spaces for charging EVs should be suitably identified and where possible highly visible.

A large portion of the existing network of on-street charging points are considered in need of upgrade or replacement. However, while the payment of fees for use of the infrastructure would provide a level of income, it would not be sufficient to stimulate investment in existing and new on-street chargers.

Location/destination charging includes chargers provided at hotels, shopping centres, visitor attractions, places of employment, private car parks etc. Such chargers are considered a feature that can, and will be, provided as a service for the benefit of the customers and/or employees. There are numerous examples of such chargers being installed and it is expected to grow alongside the number of EVs.

Fast charging is commonly considered to be 40kW and above. In general, fast charging provides the ability to charge the majority of current EVs to circa 80% in around 20 minutes. The level of output of fast chargers is expected to increase as battery size and demand for faster charging grows. Fast charging is considered vital to overcome the 'range anxiety' associated with EVs. The network of fast chargers in Ireland is generally focussed around the national road network.

For fast charging, there is a range of connection types and therefore it is considered necessary for fast chargers to accommodate all key connection types that are in active use⁷. It is important that where fast chargers are provided they are publically accessible on a 24-hour basis.

3.2 Electricity System

As part of the work of Working Group 2, likely future impacts on the electricity system were examined. The electricity network in Ireland is split into the transmission system (generally 110kV and above) and the distribution system (that connect to the majority of customers). EirGrid operates the transmission system and ESB Networks operates the distribution system. Both State Bodies have on-going programmes evaluating the current and likely future impact of EVs on the electricity network.

EirGrid's 'Tomorrow's Energy Scenarios 2017' describes projected figures for EVs captured as part of a public consultation on future energy use in Ireland. The projections show that, whilst overall electricity demand on the transmission system will increase, it should be possible to mitigate and manage the impacts of EV penetration on the transmission system. The impact of EVs and other technologies on the transmission system will be assessed in detail in EirGrid's Tomorrow's Energy Scenarios system needs assessment report which will be published by the end of 2018.

⁷ Connection types include CCS (DC), CHAdeMO (DC) and Fast-AC. Although the European Union has set out that CCS is the standard, a number of types are in active use in Ireland.

The impact on the distribution system has been examined by ESB Networks, informing the development of structural and smart network solutions to ensure the efficient and safe accommodation of growing EV uptake. The primary impact on the distribution system is the increased load at local level – particularly in urban areas where the distribution system was designed based on an average use across homes. Though the introduction of multiple EVs charging at the same time can significantly increase the capacity needed on a local distribution network, as could the extra load created through the electrification of heat (e.g. through the installation of heat pumps), ESB Networks has been developing solutions to help keep the cost of any reinforcements low by adopting a “smart grid reinforcement” strategy, with a balance of smart-grid and structural solutions.

In order to accommodate this additional load on existing networks, some targeted local reinforcements to the distribution network are likely to be required. This will depend on the level and pace of uptake of EVs in each local area. A key measure that will minimise the impact on the electricity system is encouraging the majority of charging to take place at times of low demand – e.g. at night via home charging. This will be aided by the introduction of smart meters/connection policies which will provide the potential for a greater financial incentive for charging at off peak times.

3.3 Regulation

The majority of the EV charging network in Ireland was installed as part of a large scale innovation project to determine efficient and sustainable ways of delivering network capacity for EVs in Ireland as uptake grows over the coming years. This was substantially funded through regulated network charges approved by the Commission for the Regulation of Utilities (CRU) and provided to ESB Networks. In October 2014, the CRU determined that the charging network should not form part of the regulated asset base of ESB Networks, and subsequently in October 2017 that no further expenditure on EV infrastructure would be funded from regulated electricity distribution network charges. The decision established that the public charging network should operate on a commercial basis while also providing for the potential sale of the network at an appropriate point.

It is expected that there will be no sale of the public charging network in the short to medium term and that ESB Networks will ensure that it is adequately maintained and operated. There have been a number of maintenance issues with the public charging network. Work is underway to resolve these issues through upgrades and, in the case of those with the highest

reliability issues, replacement of public chargers. The decision by the CRU also set out that charge point operators are not considered suppliers of electricity thus eliminating a potential barrier to the development of new charging points.

A key outcome of the regulatory decision is clarity that regulated electricity distribution network charges will not provide a long-term funding mechanism for the development and operation of public chargers. Therefore, the funding of public charging (both on-street and fast) must transition, over the coming years, to a commercially viable model. In order to do this, alternative funding streams will be needed. This will include users of the infrastructure making a contribution and, in the short-term, a level of State support.

3.4 Pricing

Currently, EV users can charge at the public charge points for free. This is unsustainable in the medium to long-term and creates issues in relation to demand management – e.g. unnecessary use of public charge points in place of charging at home. There is no incentive for consumers to charge at home at low-demand times when the most cost-effective method of charging for an EV user is at public charge points. It is therefore considered appropriate that fees would be levied for the use of public chargers. However, the level of fees is critically important in order not to act as a disincentive to the purchase of EVs. It is also important that consumers who may be occasional users of public chargers do not have to join a particular scheme in order to use public chargers (i.e. ad hoc charging must be available). This will also ensure full interoperability – i.e. all users will be able to charge at all public chargers.

The introduction of fees for use of public chargers would provide an income stream to support the operation of the infrastructure without adding significant extra cost to the majority of EV users (due to the majority of charging taking place at home). However, due to the limited number of EVs currently in Ireland (circa 6,000 at the end of July 2018), it is unlikely to be commercially viable to develop and operate new public chargers even with the introduction of fees. It is therefore considered necessary to provide capital supports for the development of both on-street and fast chargers.

It should be noted that in July 2018 the first Call for Applications under the Climate Action Fund was launched. A key component of the fund is the potential to provide capital funding for public charging infrastructure. Depending on the success of the Climate Action Fund in supporting public charging, further supports specifically designed to support public charging may be needed.

Home charging should be the most cost-effective method of charging an EV, followed by on-street public charging and then fast charging. As fast charging will be used relatively infrequently by most EV users (e.g. on long journeys), it is considered reasonable that the associated fees could be on a par with fueling a fossil fuel vehicles for the same journey.

4. Recommendations

In advance of Budget 2019, the LEV Taskforce makes the following recommendations:

- Taking into consideration the deployment of incentives as a key feature in the development of the EV market globally, the maintenance of at least the existing VRT exemption and SEAI purchase grants;
- The continuation of the recently introduced Benefit in Kind (BIK) treatment to incentivise BEVs for at least 3 years, at the end of which a review evaluating its costs, overall effectiveness and impacts should be carried out;
- The development and publication of a new public procurement framework contract for EVs to allow public bodies to purchase EVs with reduced administrative burden. Further consideration to be given to additional means by which the public sector could assume a leadership role in this area;
- The continued support of the EV Public Awareness Programme which will run for 3 years and will involve a public awareness campaign to raise the profile and understanding of EVs; a public driver experience road show to provide an opportunity to drive an EV; and public sector and commercial fleet trials allowing public bodies and business to trial EVs;
- Continued support of the new tolling incentive regime to stimulate EV uptake and the EV grant scheme for the SPSV (Taxi/Hackney/Limousine) sector;
- The grant to support the installation of **home chargers** should be maintained in the short-term subject to an annual review with the provision of charging points for shared parking in apartment blocks to be considered by Working Group 3 in the next phase of the LEV Taskforce's work;

- A capital support should be provided for the development of existing and new **on-street chargers** and it is recommended that Local Authorities ensure that parking at all on-street charging points is dedicated for EVs that are using the infrastructure and clear information is provided on conditions of use including where parking charges apply;
- Based on the outcome of the first Call for Applications under the Climate Action Fund, a further capital support should be considered for the development of **fast chargers** which should be publically accessible on a 24-hour basis and accommodate key connection types in active use in Ireland;
- It is important that operation and development of public charge points is monitored and compliance with relevant standards and regulations is ensured. In this regard, it is proposed that an appropriate State Body be provided with this role including provision of powers in relation to public charge points as set out in the Alternative Fuels Infrastructure Directive⁸. This includes ensuring that where fees are levied for charging, any EV user can pay to use the infrastructure on an ad hoc basis;
- ESB Networks and EirGrid to continue to ensure the distribution and transmission systems are developed to accommodate the growing number of EVs in a safe and efficient manner;
- Non-Exchequer resources should be considered as EV penetration levels increase and commercially viable markets begin to develop in the provision/maintenance of recharging infrastructure; and
- The continued support of the recommendations outlined in this report must be kept under review in light of increasing EV uptake rates, the closing price differential with conventionally fuelled vehicles and the need for appropriate long-term signaling to the market of the progressive move towards LEVs. Relevant Departments will ensure that the scale, implementation and operation of all incentives are continually assessed in terms of appropriateness and effectiveness in light of technological, policy and market developments; additional measures and modifications to exiting incentives will also be considered to ensure the sustained development of the EV market.

⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0094&from=EN>

Annex I – Low Emissions Vehicle Task Force Terms of Reference

The Department of Communications, Climate Action and Environment (DCCAE) and the Department of Transport, Tourism and Sport (DTTAS), with the support of the Department of An Taoiseach (DoT), have convened an interdepartmental Low Emissions Vehicle (LEV) Task Force.

Objective

Present a range of measures and options that will assist in accelerating the deployment of LEVs in Ireland.

Outcome

Advance Ireland's position in reducing the use of fossil fuels and emissions from the transport sector thus assisting Ireland to;

- i) meet its target of a minimum of 10% renewable energy in the transport sector by 2020;
- ii) achieve its climate and air quality objectives and obligations between 2017 and 2030;
- iii) follow a pathway towards its long term ambition of decarbonising transport by 2050;
- iv) reduce energy costs and fossil fuel import dependency; and
- v) facilitate business and employment opportunities in the emerging electro- mobility industry.

Structure of the LEV Task Force

The work of the task force has been divided into three working groups;

- Market Growth Stimuli and Visibility;
- Infrastructure, Energy Regulation and Pricing; and
- Planning Legislation, Building Regulations and Public Leadership

The work programme of the task force will be divided into two phases. The first will focus solely on EVs (both BEVs and PHEVs) and the second phase will focus on all other alternative fuels.

The Task Force will report on an interim basis to Government on the first phase by June 2017.

The work of the Task Force will be supported by the modelling team of SEAI where

appropriate.

Implementation

A Steering Committee will be established with its membership comprising;

- Department of Communications, Climate Action and Environment (DCCAE (co-chair));
- Department of Transport, Tourism and Sport (DTTAS (co-chair));
- Department of Taoiseach (DoT);
- Department of Public Expenditure and Reform (DPER);
- Department of Finance (DoF)
- Department Housing, Planning, and Local Government (DHPLG);
- Department of Business, Enterprise and Innovation (DBEI);
- County and City Managers Association
- Sustainable Energy Authority of Ireland (SEAI);
- National Transport Authority of Ireland (NTA); and
- Transport Infrastructure Ireland (TII).

As stated above, the work of the LEV Task Force will be divided into two distinct phases and membership of the three Working Groups will be designed accordingly. Key stakeholders can be invited to the Working Group meetings for particular agenda items at the discretion of the chair. Terms of Reference for the Working Groups are contained in Annexes 1-3 to this document.

Stakeholder consultation will play a key role in the work of the Task Force and the proposed approach is set out in Annex 4.

Working Group 1 (WG1) - Market Growth Stimuli and Visibility

The objective of WG 1 is to present a range of 2020-2025 vehicle growth scenarios, recommend a revised national LEV target for 2020, accompanied by a roadmap and link these growth rates to a range of stimulus options and public leadership measures.

Phase 1

WG membership: DTTAS (chair); DCCAE; DHPLG; DPER; DoF; CCMA; SEAI; TII, NTA; and ESB (Relevant Department Divisions to attend as appropriate to the subject matter of meetings).

Tasks:

- Consider current grant and VRT regime – methods, duration and cost
- Consider options for tolls
- Consider options around benefit in kind
- Consider current motor tax relief
- Consider options for public parking
- Consider options regarding access to bus lanes
- Consider implementation of preferential access to restricted areas, for example Low Emissions Zones
- Consider options around energy credits and obligation schemes
- Consider options around excise
- Consider options around the Civil Service Mileage Allowance
- Consider options around the VAT Refund Scheme
- Consider SPSV and taxi regulations and licensing with regard to opportunities to promote EVs.
- Consider of public fleet procurement policy for EVs –size and nature of fleet, EV penetration, costs, charge points and links with Public Sector efficiency programme
- Consider type of public campaign required to communicate benefits of EVs
- Consider further supports to accelerate uptake e.g. leasing arrangements, increased penetration by car-sharing companies
- Consider Public Procurement policy and ways that public bodies can demonstrate support for low emission transport
- Consider any potential barriers posed by insurance
- Other as appropriate.

Phase 2

WG membership: DTTAS (chair); DCCAE; DHPLG; DPER; DoF CCMA; SEAI; TII, NTA; and GNI. (Relevant Department Divisions to attend as appropriate to the subject matter of meetings).

Tasks:

- Consider options around grants and VRT regime – methods, duration and cost
- Consider options for tolls
- Consider options around benefit in kind
- Consider current motor tax relief
- Consider options for public parking
- Consider options regarding access to bus lanes
- Consider implementation of preferential access to restricted areas, for example Low

Emissions Zones

- Consider options around Energy Credits and Obligation schemes
- Consider options around excise.
- Consider bus regulations and licensing with regard to opportunities to promote alternatively fuelled vehicles.
- Consider of public fleet procurement policy for alternatively fuelled vehicles – size and nature of fleet, penetration, costs, charge points and links with Public Sector efficiency programme
- Consider type of public campaign required to communicate benefits of LEVs
- Other as appropriate.

Working Group 2 (WG2) - Infrastructure, Energy Regulation and Pricing

The objective of WG 2 is to devise a sustainable policy framework to ensure sufficient effective and efficient EV charging and fuelling infrastructure for Low Emission Vehicles. The WG should consider the operation and integration of public and private charging systems. Similarly, for other alternative fuels the WG should consider the development of a sufficient network of refuelling points, providing an appropriate range of options in terms of low carbon alternatives.

Phase 1:

WG membership: DCCAE (chair); DTTAS; DBEI; CRU; SEAI; ESB and EirGrid. Tasks:

- Develop EV infrastructure growth profile, planning metrics and cost required for growth scenarios to 2025
- Consider Public vs Private ownership models – risks, benefits, integration and funding options
- Analyse customer pricing options (for both infrastructure and battery replacement) with regard to proposed business model – Public vs Private
- Examine EV infrastructure readiness with regard to market size, battery size and future domestic demand
- Appraise maintenance issues relating to current recharging infrastructure
- Examine domestic tariffs and testing of control mechanisms to avoid critical loading of electricity network
- Consider potential incentives for Domestic and Private chargers
- Examine research needs and relevant topics such as EU funding possibilities
- Consider the business opportunities for Ireland – research, technology, services and

jobs

- Other as appropriate.

Phase 2:

WG membership: DCCAE (chair); DTTAS; DBEI; CRU; SEAI and

GNI. Tasks:

- Assess infrastructure growth profile, planning metrics and cost required for growth scenarios to 2025
- Examine Public vs Private ownership models – risks, benefits, integration and funding options
- Appraise research needs and relevant topics such as EU funding possibilities
- Consider the business opportunities for Ireland – research, technology, services and jobs
- Other as appropriate.

Working Group 3 (WG3) - Planning Legislation, Building Regulations and Public Leadership

The objective of WG 3 is to ensure that building and planning laws for new developments, at all scales, facilitate charging and refuelling infrastructure, where appropriate, and mobility for LEVs. The secondary objective is to ensure that simple measures such as marking of public parking locations and keeping these locations free for LEV users are implemented via the correct channels.

Phase 1

WG membership; DHPLG (chair); DCCAE; DTTAS; ESB; CCMA; and the NTA.

- Identify and propose changes to all relevant planning laws, by-laws and statutory instruments relevant to EV charging infrastructure for all development types.
- Identify work to date and measures taken by each Local Authority with respect to EV promotion.
- Estimate the cost for implementing marking and clamping operations for on- street parking and the route for implementation uniformly – responsibility, legislation.
- Scope and support the role of local authorities in supporting adoption and usage of electric vehicles
- Consider charging infrastructure provision at State buildings and lands
- Other as appropriate.

Phase 2:

WG membership; DHPLG (chair); DCCAE; DTTAS; GNI; CCMA; and the NTA.

- Identify and propose changes to all relevant planning laws, by-laws and statutory instruments relevant to all refuelling infrastructure for alternative fuels.
- Identify work to date and measures taken by each Local Authority with respect to LEV promotion.
- Estimate the cost for implementing marking and clamping operations for on- street parking and the route for implementation uniformly – responsibility, legislation.
- Scope and support the role of local authorities in supporting adoption and usage of alternative fuelled vehicles.
- Other as appropriate.

Approach to Stakeholder Consultation

It is proposed to hold an all-day event for interested stakeholders in Q1 2017. The Work programmes and areas of consideration for the Working Groups will be discussed at this event and all stakeholders invited to share their views.

While the Working Groups undertake their tasks, stakeholders may be invited to meetings of the Working Groups as appropriate. Written submissions will also be invited from interested parties.

A preliminary list of stakeholders to be consulted is as follows:

- Commission for Regulation of Utilities (CRU);
- Environmental Protection Agency (EPA);
- Gas Innovation Group;
- Society of Irish Motor Industry (SIMI);
- Vehicle Importers;
- Irish EV Owners Association (IEVOA);
- EV SME Group;
- Tesla;
- Charge point manufacturers;
- Environmental Pillar;
- Road Haulage Association;

- Public Transport (including PSV) operators;
- Renewable Gas Forum;
- Irving Oil (Whitegate);
- BOC Gases;
- The Automobile Association;
- The Consumers' Association of Ireland; and
- Others - to be decided.

Annex II – Working Group meetings and stakeholder engagement

Working Group 1 met on the following five occasions:

- 1st February 2017;
- 15th March 2017;
- 3rd July 2017;
- 31st October 2017; and
- 22nd February 2018.

The working group also held a stakeholder engagement event on the 20th of July 2017 which considered and evaluated current and potential incentives to further increase the number of EVs. Representatives from relevant Departments, Agencies, State Bodies, businesses, companies, voluntary and member organisations and non-profit groups were in attendance and contributed to the overall findings.

The working group also invited a number of experts to present on a wide range of subjects including:

- Taxation options (Department of Finance);
- The industry perspective [The Society of the Irish Motor Industry (SIMI)];
- Electric Vehicle Public Awareness (SEAI);
- Consideration of toll incentives for EVs [Transport Infrastructure Ireland (TII)]; and
- Consideration of parking incentives for EVs (Galway County Council, Limerick City Council and Private Car Park Operators).

Working Group 2 met on the following six occasions:

- 14th March 2017;
- 14th July 2017;
- 22nd September 2017;
- 18th October 2017;
- 14th December 2017; and
- 3rd May 2018.

The working group also held a stakeholder engagement event on the 24th of November 2017. This examined the issue of public charging and included representatives from relevant Departments, Agencies, State Bodies, businesses, companies, voluntary and member organisations, and non-profit groups.

The working group also invited a number of experts to present on a wide range of subjects including:

- electric vehicle technology developments and analysis of Alternative Fuel Infrastructure Directive impacts across the EU (joint presentation by Sustainable Energy Authority of Ireland and ESB eCars);
- public charging infrastructure from the Electric Vehicle driver's perspective (Irish EV Owners Association);
- projected future penetration of Electric Vehicles on the transmission system as part of Tomorrow's Energy Scenarios (EirGrid);
- the challenges and solutions of increased electrification of Transport and Heat on the distribution system (ESB Networks); and
- Electric Vehicle Charging Infrastructure: Market and Policy (UCD Energy Institute).

Annex III – Interim recommendations in advance of Budget 2018

Low Emissions Vehicle Taskforce - Budget 2018 - EV Support Package suggested as part of collective recommendations by Department of Transport, Tourism and Sport and the Department of Communications, Climate Action and Environment as to how Government could make impactful decisions on climate mitigation measures, in the context of the budgetary and estimates processes.

The LEV Taskforce, jointly chaired by the Department of Transport, Tourism and Sport (DTTAS) and the Department of Communications, Climate Action and Environment (DCCAE), was established to consider the range of measures and options available to Government to accelerate the take-up of low carbon technologies, especially Electric Vehicles (EVs).

Work of the Taskforce has been underway since last December and a first Stakeholder Consultation Forum was held with Task Force members, motor/fuel industry interests, EV owners and environmental NGOs in July. Some common findings are emerging.

There are a range of support measures for EVs already in place. SEAI vehicle purchase grants and Vehicle Registration Tax (VRT) relief which amount to net support of up to €10,000 towards the purchase of each new EV are particularly noteworthy. In addition, installation of free home rechargers and unlimited free recharging at circa 900 public recharging points are offered, made available primarily using innovation funding that forms an element of electricity network charges.

Despite all of the supports that are in place, considered generous by international standards, the pace of transition to EVs has been slower than expected likely due to a range of factors including limited vehicle choice, range anxiety and low consumer awareness.

However, the pace of technology advancement is picking up, battery range is rapidly increasing, production costs are falling and a much improved choice of vehicles for consumers is widely signalled. These developments are expected to trigger faster transition worldwide in the passenger car fleet, although significant volumes of EV sales in Ireland are not expected before 2025 when EVs are expected to achieve price parity with fossil fuel powered vehicles.

In summary, as interim findings, the Task Force consider that Government action:

- must reflect our GHG emission reduction ambition, particularly as set out in the Mitigation Plan;
- should demonstrate leadership, increase awareness and understanding;
- must continue to address the purchase price disparity disincentive;
- should provide clarity about the availability of recharging infrastructure and relative pricing of recharging; and
- should stimulate transition earlier through introducing a range of new relatively low-cost incentives to EV ownership to widen their appeal.

As the numbers of EVs continues to grow, further development of the public recharging network is needed along with establishing a long-term source of funding for its operation and maintenance. It will be important that the transition to a sustainable funding model ensures that any cost of using public recharging is not a disincentive to the purchase of EVs. In particular, maintaining free public recharging up to a reasonable limit is considered a priority in the short-term.

In support of the findings to date and these objectives, the Task Force considers that the following elements could be considered for inclusion in a package to underpin our national ambition and speed up the transition to EVs that could be announced in Budget 2018:

Maintain purchase incentives

- A commitment to extend the existing €5,000 SEAI EV purchase grant out to 2020
- Continuation of the current VRT exemption for at least another 3 years
- Introduction of a home recharger grant to support the cost of installation

Leadership and awareness

- Introduction of a Public Awareness Programme that will include a public awareness campaign; a public driver experience roadshow to provide people across the country the opportunity to drive an EV; public sector and commercial fleet trials; and a car sharing scheme to allow non-EV owners to use EVs on short trips in major cities
- Introduction of an EV Taxi /Hackney/Limousine Grant and supporting measures to stimulate take-up in the high visibility Small Public Service Vehicle (SPSV) sector

(funded from within existing carbon reduction subhead within DTTAS)

- Elimination of the distortion in the tax code currently preventing the purchase of EVs and, particularly, hybrids/plugin hybrids for company fleets which is effected by confining VAT
- Refunds for vehicle fuel input costs to diesel only (petrol and electricity VAT not refundable)
- Introducing a new public procurement framework contract for EVs in 2018 allowing public bodies to purchase EVs with reduced administrative burden

Recharging Infrastructure and Electricity pricing

- Expansion of the public recharging infrastructure network with a focus on increasing the number of rapid rechargers
- Continued operation of the existing public recharging infrastructure including continuing a level of free recharging for all EV owners

New incentives for EV ownership to stimulate demand

- A new company car Benefit in Kind (BIK) regime incentivising EVs without mileage conditions (tax cost in the range of €200,000 to €7m per annum depending on a number of factors)
- A change to BIK rules that ensures there is no BIK liability associated with recharging an EV in the workplace
- A new toll incentive regime (discount or tax based) for zero-emission capable and ultra-low emitting cars (estimated at €11m over 4 years and < €1 m in Year 1 -funding for which was sought by DTTAS within Carbon Reduction additional funding under Capital Plan mid-term review process)

Budget 2018 presents the ideal opportunity to build on the recently increased visibility and credibility of electric vehicles and demonstrate strong Government support for the earliest feasible transition in support of our national policy commitment for 2030 in relation to zero emissions vehicles as well as our binding international commitments in the areas of carbon reduction, renewable transport energy and air quality improvement.

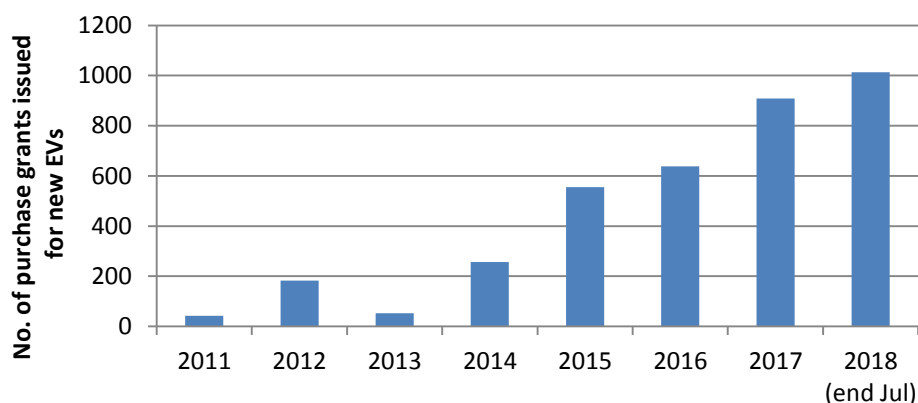
Annex IV – Current list of Electric Vehicle supports

Measure	Description
Public Engagement Programme	<p>A National Awareness Campaign was launched on April the 18th 2018 as part of a wider public engagement programme which aims to increase awareness and familiarity with the technology of electric vehicles. There are a number of additional strands including:</p> <ul style="list-style-type: none"> - Roadshows - Public sector and commercial fleet trials - Potential support for EV use in car sharing trials
<u>Test driving an Electric Vehicle</u>	An interactive map shows the availability of dealers throughout the country and enables a test drive to be booked online.
<u>Purchase Grant Scheme</u>	A grant of up to €5,000 towards the purchase of a new Battery Electric Vehicle (BEV) or Plug-in Hybrid Electric Vehicle (PHEV). The grant is applied through the relevant motor dealer.
<u>Domestic Charger Grant</u>	A grant of up to €600 towards the installation cost of a domestic charge point for new and second-hand BEV or PHEV.
VRT Relief	VRT relief of up to €5,000 for BEVs (until end 2021), up to €2,500 for PHEVs (until end 2018) and up to €1,500 for hybrids. .
<u>Low Motor Tax</u>	BEVs qualify for the lowest tax band of motor tax at €120 per annum. While, a PHEV is typically taxed at circa €170 per annum.
Lower fuel and maintenance costs	Studies show that you can save circa 70% annually on fuel costs in comparison with a diesel alternative.

Measure	Description
Comprehensive public and on-street charging network	ESB eCars rolled out a network of electric vehicle charging points throughout Ireland including approximately 70 fast chargers. A map outlining the availability of these charge points is updated in real time. This network is complimented by charge points provided at locations such as hotels, shopping centres, visitor attractions, places of employment and private car parks.
<u>Toll Incentive Scheme</u>	From July 1 st 2018, BEV and PHEVs will qualify for 50% and 25% toll reductions respectively up to a maximum €500 annual threshold for private vehicles and a maximum annual threshold of €1,000 for commercial vehicles (greater off-peak rates also apply to the M50 toll).
0% Benefit-in-Kind (BIK) Rate	BEVs qualify for a 0% Benefit-in-Kind rate without mileage conditions.
<u>Accelerated Capital Allowance (ACA)</u>	BEV/PHEVs and their associated recharging infrastructure qualify under the Accelerated Capital Allowance (ACA) scheme. This scheme enables businesses to identify and buy the most energy efficient equipment including electric charging infrastructure and write down the cost of such equipment in the year of purchase rather than over 8 years.
<u>SPSV Grant Scheme</u>	A grant of up to €7,000 or €3,500 towards the purchase of a BEV or PHEV respectively for vehicles in the taxi /hackney/limousine sector.

Annex V – Electric Vehicle Uptake

Increasing numbers of electric vehicles – including battery electric vehicles (BEVs) and plug-hybrid electric vehicles (PHEVs) – have been supported by the SEAI purchase grant since its introduction in 2011. This growth is shown in the graph and table below.



Year	No of Grants	Amount (Euro)
2011	42	198,000
2012	183	767,400
2013	53	242,200
2014	257	1,203,400
2015	555	2,647,800
2016	638	3,038,800
2017	908	4,262,000
2018 (to end Jul)	1013	4,664,200
Total	3,649	17,023,800

The increasing sales of new electric vehicles – including battery electric vehicles (BEVs) and plug-hybrid electric vehicles (PHEVs) – is also shown by cumulative annual data from CSO in the graph below. Note these figures differ from SEAI mainly due to timing of grant payments.

