



Cork – A low-carbon vehicle hub

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Executive Summary

The purpose of this Energy Cork discussion paper is to provide recommendations, for transport and environmental policymakers and stakeholders, which will encourage a transition to more sustainable road transport vehicles

Energy Cork believes that Cork is ideally placed to become a national hub for low-carbon vehicles (electric and Compressed Natural Gas (CNG) vehicles). By implementing a number of policy measures, while recognising the national and global factors at play, Cork could lead other regions in the move towards a rapid increase in low-carbon vehicles

Electricity and CNG offer distinct and compatible advantages in the domestic and commercial/public transport sectors respectively. Energy Cork recommends a “holistic” approach to promoting low-carbon vehicles, maximising the advantages of both.

Recommendations for CNG Vehicles

- **Excise duty freeze for CNG** – reducing the risk perceived risk of investing in equipment, vehicles, buildings and personnel; we suggest that the present 0% excise rate for CNG be confirmed for a ten year period. This will support investment decisions and encourage change.
- **Free travel on all toll-roads CNG vehicles**
- **Encourage CNG adoption in particular, highly visible and relevant situations e.g. use of CNG buses on highly visible routes.**

Recommendations for Electric Cars

- **0% VAT on electric vehicles** – As an initial boost to electric vehicles sales, the VAT rate applied should be reduced to zero from the current standard rate of VAT (23%). This reduced rate could be applied for a limited period and followed by a period where VAT is applied at a reduced rate (13.5%).
- **Develop mechanisms for employers to support their employees adoption of electric vehicles**
- **Free parking in Cork City and County for electric vehicles**
- **Free travel on all toll-roads electric vehicles**
- **Encourage electric vehicle adoption in particular, highly relevant situations e.g. electric cars available from car rental companies, use of low or zero emission vehicles in environmentally or emission sensitive locations (such as national parks and strictly licensed pharmaceutical facilities).**

What's the issue?

The purpose of this Energy Cork discussion paper is to provide recommendations, for transport and environmental policymakers and stakeholders in the Cork region, which will encourage a transition to more sustainable road transport vehicles and distinguish Cork as a national hub for low-carbon road vehicles (electric cars and Compressed Natural Gas (CNG) public transport and commercial fleets).

The transport sector is responsible for 32% of Ireland's primary energy requirement¹ and 21% of Ireland's greenhouse gas emissions². Irish transport energy requirements are currently almost exclusively met by oil products. These products, or crude oil to produce them, are all imported, with no domestic source of supply. Road transport is a crucial aspect of Ireland's economy and society. Measures to encourage more efficient use of road transport (public transport, lift sharing, etc), to implement and encourage alternative modes of transport (rail, cycling, walking, etc) and to reduce the demand for road transport via sensible planning and development are all essential tools for managing the negative environmental impacts of road transport.

Another key tool, and the subject of this discussion paper, is ensuring Irish road vehicles and fleets are as efficient and environmentally sound as possible.

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How can CNG and electric vehicles help?

By encouraging the adoption of CNG vehicles by commercial fleet managers and public transport providers, and electric cars amongst private citizens, the environmental, economic and security of supply advantages of low-carbon vehicles can be realised.

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¹ http://www.seai.ie/Publications/Statistics_Publications/Energy_in_Ireland/Energy_in_Ireland_1990_-_2012_Report.pdf

² http://www.epa.ie/climate/communicatingclimatescience/whatisclimatechange/whatareirelandsgreenhousegasemissionslike/#.U_SSp_J0zIU

Environmental Benefits
<p>Compressed Natural Gas</p> <ul style="list-style-type: none"> • Natural gas is the cleanest of all fossil fuels, delivering a circa 25% reduction in CO² and 80% in nitrogen and sulphur emissions when compared with oil products. • The advancement of CNG in the transport mix will also act as a key enabler for the development of Bio-Gas, which will allow renewable, carbon neutral transport in Ireland, using indigenous sources.
<p>Electricity</p> <ul style="list-style-type: none"> • Based on the current fuel-mix of electricity generation in Ireland, emissions from electric vehicles will on average be less than half of those of a conventional internal combustion engines (70gCO²/km for an electric car versus 150gCO²/km for a conventional car). • Electric vehicles have no point-of-use emissions so do not damage air quality.

Economic Benefits
<p>Compressed Natural Gas</p> <ul style="list-style-type: none"> • CNG is already used extensively elsewhere in Europe for commercial transport fleets. A number of Irish fleet managers have already successfully trailed CNG vehicles in a commercial setting. CNG offers fleet managers a potential lower-cost alternative to diesel/petrol vehicles. • Through increased utilisation of the existing natural gas network by wider adoption of CNG vehicles, the unit cost of delivered natural gas will decrease for both domestic and commercial users. As gas is used in the generation of electricity, any reduction in the cost of gas delivered will result in reductions in electricity prices.
<p>Electricity</p> <ul style="list-style-type: none"> • Fuelling (charging) an electric car costs significantly less than petrol or diesel models, approximately 1 – 2 cent/km versus 10 – 12 cent/km. The lifetime costs of running an electric car (including initial purchase, taxes, fuel, etc) are also significantly less.³

Security of Supply
<ul style="list-style-type: none"> • The current road transport energy mix consists, almost entirely, of petrol or diesel. The physical supply and price of both of these products is dependent on

³ <http://www.esb.ie/electric-cars/electric-car-driving/electric-car-benefits.jsp>

uninterrupted supply from world markets.

- CNG and electricity in the road transport fuel mix means a widening of the supply base to include domestic sources (natural gas, biogas, wind, hydro, coal, etc) and alternative international sources (natural gas).
- Electric vehicles also offer a potential “grid-balancing” role, where large numbers of vehicles could have their charging managed to reduce energy cost and balance supply and demand on the national grid.

What’s the hold-up?

Energy Cork and Bord Gais Networks (BGN) recently carried out two pieces of market/consumer research to obtain the views of potential purchasers on electric cars and CNG commercial vehicles respectively. BGN’s research focussed on commercial fleet managers and Energy Cork’s on private car drivers.

The major findings were as follows:

Compressed Natural Gas:

- Just 2% of respondents currently operate CNG vehicles and 78% have little or no knowledge of the use of CNG as a vehicle fuel. There is a clear knowledge gap.
- Approximately 15% of respondents envisage their organisations investing significantly in CNG in the next 5 years, 15% say they would like to trial CNG vehicles in the next year.
- A strong cohort of respondents found the environmental (70%), fuel cost saving (66%), and inclusion of CNG equipment in the Accelerated Capital Allowances scheme (66%) compelling reasons to invest in CNG vehicles.
- Respondents are also encouraged by Bord Gais Network’s development of the necessary infrastructure (72%).
- Key reasons deterring fleet managers from investing in CNG at the moments are – the perceptions that the technology is not “mainstream enough” to invest in currently (83%) and that the cost of investing in new vehicles, of any type, is prohibitive.

Electric Cars:

- Only 2% of respondents had ever driven an electric car, and only 8% had ever been inside one.
- 13% saw themselves owning an electric car in the next three years and 66% felt it likely that there would be more electric cars on the streets of Cork in the next 5 years.

- The two compelling reasons why respondents would consider buying an electric car are – low fuel costs (45%) and their environmentally friendly credentials (42%).
- By far the main reason why people would not consider buying an electric car was that they did not know enough about them (50%). This was followed by perceived up-front expense (14%).
- The primary thing that would encourage people to buy an electric car is “if they were more affordable”. This was followed by more charging points. Respondents also showed a secondary interest in free parking for electric cars and employer incentives for owning one.

CNG and electric cars have very different “target markets” in Ireland. Naturally, the findings of the two pieces of market research carried out by Energy Cork and BGN must be interpreted in light of this. However, one very striking common point between both sets of findings is the presence of a “Knowledge Gap” in both markets. Many fleet managers and private car owners do not know enough about CNG vehicles or electric cars to make informed decisions.

What should be done?

Energy Cork recommends the following policy measures be considered to accelerate the take-up of electric and CNG vehicles and, in particular, establish Cork as a national hub for such vehicles:

- **Fill the knowledge gap – dispel myths**
 - The market research clearly points to a significant knowledge gap amongst potential vehicle purchasers. Energy Cork recommends a limited but effective programme of state-led advertising encouraging the adoption of low-carbon vehicles as part of an overall sustainable transport future. Advertising must recognise the “word-of-mouth” nature of adoption of new technologies.
 - Trials of CNG vehicles and eCars Great Electric Drive Ambassadors have already increased visibility and knowledge of low-carbon vehicles somewhat. A more concerted and focussed promotion scheme for both technologies in Cork is required to boost awareness and acceptability of these technologies with consumers.
- **Incentives low-carbon vehicle users at all levels**
 - It is essential that potential buyers of low-carbon vehicles are convinced of the basic economic benefits of making their purchase. However, there are also additional measures that can be implemented that will encourage buyers who are “on the fence” and increase visibility and discussion of low-carbon vehicles.

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- **Allowing CNG vehicles use of bus lanes at all times**
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