

**LOW EMISSION TRANSPORT: A STRATEGY FOR  
CLEANER, GREENER TRANSPORTATION FUELS**

**CLEAN STREETS, RECYCLING & ENVIRONMENT  
(COUNCILLOR MICHAEL MICHAEL)**

**AGENDA ITEM: 3**

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**DIRECTOR OF PLANNING, TRANSPORT & ENVIRONMENT**

**Reason for this Report**

1. To approve the Council's strategy and proposed actions for delivering a transition to low emission transportation in the City.

**Background**

2. Cardiff has recently been identified as one of a number of cities in the UK with deficient air quality standards. In some cases, these standards breach legal limits. It is estimated that around 40,000 premature deaths per year in the UK can be attributed to this poor air quality.
3. There are multiple causes of poor air quality but the most significant contributor in the city is nitrogen dioxide emissions from diesel and other fossil-fuelled vehicles.
4. A series of high court challenges at national level in the UK has underlined the need for strategic, multi-sectoral government action to address this issue. As part of its response to this Welsh Government has now issued an Air Quality Direction to Cardiff under Section 85(5) of the Environment Act 1995. This requires Council action to "deliver compliance with legal limits for nitrogen dioxide in the area" in the shortest possible time.
5. The Council has been proactive in addressing the challenge and, in advance of the Air Quality Direction, has developed a Clean Air Strategy for Cardiff, which identifies transportation as a key area for action.
6. Alongside this, the Council has also produced a Transport and Clean Air Green Paper. This is aimed at refreshing and enhancing transport policies in recognition of the challenges arising from city growth, such as congestion and air quality. Fundamentally, this will focus on the need to tackle congestion and offer active travel options to discourage

unnecessary private car use, keeping the city moving and ensuring the health of cities. It is recognised, however, that there will still be a residual need for motorised transport, and an urgent need to tackle current air quality issues attributable to this.

7. The Low Emissions Transport Strategy is focussed on the Council's responsibilities and aspirations in dealing with this significant public health issue by supporting a transition away from fossil fuels for transportation. It is also aimed at encouraging key partners in the City to consider similar actions. The Strategy forms a key strand of the Clean Air Strategy for Cardiff, together with developing transport policy and other emerging actions.

## Issues

8. The Council's influence on transportation in the city is considerable, and policy action to manage this and its associated carbon emissions is well established. For example, our Transportation and Land Use policy seeks to manage growth in motorised private transport and to encourage cleaner and more active forms of travel as the city grows. The Council also runs a sizeable motorised fleet of vehicles in delivering its services, and positive action on driver behaviour and vehicle specification has reduced the fleet's carbon emissions by approximately 10% between 2014/15 and 2015/16. Further to this, we also have relationships with a wide range of partners including the Cardiff and Vale University Health Board, Universities and Cardiff Bus, regulatory influence over the local Taxi community, and a considerable reach in our procurement activities amongst a very broad supply chain. In each of these areas there have been attempts to move towards more sustainable delivery methods.
9. The recent spotlight on Air Quality issues in the city however, has underlined that there is more to do. As a major policy player, service provider and purchaser the Council is in a position to instigate and lead changes that can both improve our own performance and also influence and enable others in the city to make similar changes. Together, these changes could make a significant contribution to improving air quality standards in Cardiff.
10. In recognising this opportunity, a study was commissioned in the spring of 2017 to help us to clarify the Council's role and to determine the most effective points of intervention for us in addressing the issues. The study was supported and funded by a successful bid to the Welsh Government's "Smart Living" programme. The study has delivered:
  - A "**State of Play**" analysis highlighting the current national policy initiatives, best practice cases and potential funding opportunities available to the Council.
  - **Stakeholder engagement** with internal and external stakeholders, and key players from the vehicle and fuel industries to understand and assess the issues and opportunities for change; and

- A final **Advisory Report** distilling the findings of this research into a series of key recommendations for action.
11. The reports are available as background papers to this report and their findings have helped to steer the recommended actions in the Low-Emission Transport Strategy.

### Why We Need to Act

12. In addition to the urgent Air Quality issues and legal Direction outlined above there are a number of other key concerns and motivations for Council action in moving towards cleaner transport fuels. In particular:
- Increasingly, businesses and employees expect cities to be ahead on this agenda. Cardiff's wider **Competitive Position** and "World Class Offer" would therefore be boosted by positive actions around low emissions. The world's most progressive and productive cities are also leaders in technological advancement. Our actions in this strategy will help to present us as a city at the forefront of transportation technology, offering a cleaner, healthier and smarter quality of life.
  - The Council has statutory **Carbon Reduction** targets set by European, National and Welsh Government policy. These targets are being addressed on a number of fronts including our Energy and Waste activities, but transport is also a major component, accounting for 24% of Carbon Emissions nationally. WG has recently stated that all public sector organisations in Wales will need to be Carbon Neutral by 2030 and therefore action to reduce carbon emissions from our transport activities will form part of this statutory requirement. Other city wide and national carbon reduction targets will also be a particular challenge for us as the city grows.
  - **Cost control** on council fleet is a key consideration in the current financial context with fuel costs alone amounting to £1.5m in 16/17. Evidence provided in the background study to this report is clear that a transition to towards non-fossil fuel vehicles could result in lower "whole of life" costs for the fleet and would also protect against the inevitable increase in fossil fuel costs in future years.
  - There is currently a **Demand/Supply Standoff** in the low emission vehicles industry. New vehicle technologies are constantly emerging but there is still a lack of supporting re-fuelling/re-charging infrastructure in the city to give consumer confidence in these new technologies. Clearly the Council's ability to influence public consumer choice on vehicles is limited, but it is in a position to show strategic leadership in this area. By acting as an "intelligent customer" and early adopter of low emission transport technologies the Council could provide a boost to market confidence in the wider community as well as starting to put in place some of the supporting infrastructure needed to allow consumers to opt for low emission transport more easily.

## **Strategic Vision**

13. The studies and discussions that have guided this strategy have identified a series of opportunities for the Council to grasp. Many of these are direct actions addressing the delivery of routine services, but it is also clear that the Council has a wider leadership role that could help to stimulate change in the city and region. The strategic vision is therefore to position the Council as a “catalyst for change”, proactively addressing city wide Air Quality challenges. The areas of particular focus are on:
  - Facilitating and speeding up a pathway to zero emission transport,
  - Using our procurement power to instigate change and provide broader market confidence,
  - Engaging with and supporting local innovation, and
  - Working with partners to secure the best Circular Economies for the City and for Wales
14. Seven specific areas for action to support this vision have been identified and an action plan has been developed to steer our work in these areas. This is discussed below.
15. It is also the intention to develop a communications and events strategy to promote our actions and the wider opportunities for Cardiff citizens and businesses.

## **Fleet Procurement**

16. The background study for the Strategy analysed the “whole of life” costs for different vehicle categories in our fleet and compared these across a range of diesel, petrol, electric and hydrogen fuel options. This identified that electric vehicles were already the most cost effective option for our small vehicles, pool cars and smaller white vans, provided that relevant charging facilities are in place. It also identified that there are fewer low emission options for heavier vehicles but that research and product development in this area, particularly for Hydrogen vehicles, was progressing at a pace, with some local centres of excellence emerging amongst the South Wales academic and innovation community.
17. The work also highlighted a range of best practice around the UK with the fleet transition programmes in Dundee and Fife, and an electric pool car scheme in Bristol providing good evidence of success.
18. The study also clarified, however, that these successes had depended on a reliable fuelling/recharging infrastructure being put in place alongside the fleet.
19. Drawing on the evidence of this analysis our strategy for future Council fleet procurement will therefore be repositioned to deliver:
  - i. An appropriate number of electric vehicles in our light fleet at the earliest opportunity,

- ii. An assessment of a proposed target to have 100% zero emission vehicles in the light fleet by 2022,
- iii. A review to steer our next pool car procurement to include zero emission vehicles,
- iv. A plan for the installation of necessary recharging facilities at key Council sites, and
- v. The inclusion of an “innovation” requirement in our heavy fleet procurement to encourage the piloting and testing of new technologies as they emerge, and with clear longer term targets to adopt these where possible.

### **Electric Vehicle Charging Infrastructure**

- 20. Our background studies identified a comparative lack of recharging infrastructure in Cardiff and Wales generally. They also demonstrated that the English and Scottish towns and cities with the highest levels of provision had benefitted from government funding to support the introduction of their recharging infrastructure.
- 21. A range of funding opportunities available to the Council was identified in the study, in particular grants from the Government’s Office for Low Emission Vehicles (OLEV) and Welsh Government. However, it also became clear that there were a number of uncertainties in the market making it difficult to identify a clear strategy on which to base any grant-funding bid. In particular there were questions about how to identify the best locations for charging points to ensure the widest availability to the council and the public. There were also issues around the various speeds and connection formats of charging points, lack of clarity over the process and governance structures needed manage the sale of electricity to customers, and an unclear picture of current demand in the city.
- 22. In response to this the Council commissioned further detailed work to generate a better understanding of these issues and to develop a clear strategy for a roll out of charging infrastructure.
- 23. The details of this study are still being considered but will trigger and support the following actions:
  - i. A fully evidenced bid to OLEV and/or Welsh Government in Summer 2018 for grant funding for an initial tranche of charging facilities,
  - ii. A consideration of what legal and governance structures would be needed to publicly “trade” on-street energy supply, and
  - iii. A strategy against which to measure and direct the growing number of private sector providers showing interest in providing similar infrastructure in order to ensure maximum benefit to the City.
  - iv. Informing the Council’s approach in exploring the feasibility of initiating a trial scheme of charging points based on latest technology.

## **The Council's Energy Supply Role**

24. Any significant step-change in demand for electric and other low emission vehicles will inevitably raise questions about where the energy needed to power them will come from. Although the vehicles themselves will deliver air quality improvements in their immediate vicinity, this effect will be compromised on a national scale if the source of that energy is from fossil-fuelled power stations elsewhere.
25. Welsh Government has set a target for Wales to generate 70 per cent of its electricity consumption from renewable energy by 2030, a significant increase from the current level of 32%. This will require action at all levels, from small scale local renewable schemes to larger national scale projects.
26. The Council has been active in this sector for some time and has either directly installed, or facilitated the provision of almost 37 megawatts of renewable energy generation in the city. We also have plans to add to this, with projects for a 6MW solar farm and a renewable heat network currently under consideration. There is a clear opportunity to use these renewable generation resources directly to provide energy for the emerging zero emissions fleet.
27. The Council has already engaged in a series of collaborative innovation projects (funded by Welsh Government, National Government and Innovate UK) that have helped to gather intelligence on this potential. In particular, we've been testing the viability of using innovative portable solar and wind generators to charge electric vehicles, and have examined the technological viability of using excess solar farm power to produce hydrogen.
28. There is therefore a strong motivation for us to continue in this direction and so, as part of the Low Emission Transport strategy we plan to:
  - i. Consider options for vehicle recharging in the business cases for our existing and proposed renewables projects, and
  - ii. Continue to engage with the academic and innovation sectors to explore future opportunities and identify best practice as technologies develop.

## **Council Procurement Strategies**

29. The Council purchases a very wide range of products and services in carrying out its duties and functions. Many of our supply services, such as transportation for school children and the delivery of meals-on-wheels, are highly reliant on motorised transport, but almost all of our procurement actions trigger some sort of motorised transportation need. It is clear, therefore, that carbon and air quality impacts associated to our procurement activities are considerable. It is also clear that that Council leadership to encourage, and eventually specify, a transition to low emission transport in our supply chains could have very significant positive effects for the city.

30. We know that change of this nature will take some time, and that suppliers will need to understand and be comfortable with the implications for their own businesses. However, evidence from our studies suggests that, with the appropriate infrastructure in place, there could be some quick wins for both the Council and our suppliers, and that as infrastructure and vehicle technologies develop and expand there is scope to drive further positive change.
31. A new Socially Responsible Procurement Policy will be launched by the Council in April 2018. This specifically commits to minimising emissions arising as part of our various procurement activities. Building on this policy, together with the evidence and actions arising from the Low Emission Transport Strategy, it is the intention to further develop our procurement approach in stages to:
  - i. Begin awareness raising of the Council's low emission requirements and wider benefits with suppliers and contractors,
  - ii. Assess and secure quick-win opportunities with willing suppliers,
  - iii. Encourage suppliers and contractors to make a commitment to reduce emissions as part tender process for suitable contracts, and
  - iv. Build specific low emission requirements into relevant contracts where deemed appropriate and likely to deliver measureable improvement.

### **Influencing Local Partners**

32. As well as directly procuring goods and services, the Council has a wide network of relationships with other major players and service providers in the city. Some, such as Cardiff Bus and the local taxi community are entirely embedded in the transport sector whilst others such as the local Health Trust, Police force and other public sector partners have much wider activity patterns that often resemble those of the Council. Each of these organisations exerts an impact on transportation and air quality, and so aligned action amongst them could deliver benefits far beyond the immediate reach of the Council.
33. The Council is therefore keen to put Low Emission Transportation on the agenda in our on-going partner relationships and discussions to ensure that we can share learning and best practice and identify useful synergies and opportunities to increase the overall impact of our actions.
34. In order to progress this the Council plans to:
  - i. Work through the Public Service Board to ensure that tackling air quality becomes a collective action in Cardiff, sharing best practice and learning, and aligning our strategies and actions where appropriate,
  - ii. Work with Cardiff Bus to understand their current investment approach, and together identify more ambitious future opportunities,

linked projects and potential funding sources for alternative fuel buses,

- iii. Work with the local Taxi Community to share the best practice examples achieved in other cities and to support willing operators to understand and deliver potential new business models, and to develop a targeted plan for change. This may include collaborative work to identify and benefit from available grants and support funding, as well as joint work to identify the best locations for Council led recharging infrastructure to be made available for taxis.
35. It should be noted that we are currently in the process of reviewing our taxi licensing policy which may include upgrading the technical specification required for diesel and petrol cars. As the infrastructure around low emission transportation matures the Council can keep the technical specifications for licensed vehicles under review.
  36. We must also be mindful of the current Welsh Government review of taxi licensing policy and how future legislative changes to national standards may impact on local taxi licensing policy. Currently the Council have no enforcement powers or ability to set standards in relation to private hire and Hackney Carriage vehicles that are licensed by other local authorities in the UK and can operate legally within the city. Any changes to taxi licensing policy must also take account of the provision of wheelchair accessible vehicles to ensure there are no detrimental impacts of policy changes in that regard.

## **City Growth**

37. The recently approved Local Development Plan for Cardiff envisages a significant growth in residential and employment based development in the period up to 2026. The plan includes policies to manage traffic impacts associated to this growth and to achieve a resource efficient and climate responsive design that minimises emissions.
38. Draft Supplementary Planning Guidance (SPG) relating to Managing Transportation Impacts is due to be approved by Council in April 2018. This states that where there is an opportunity for developments to include EV charging facilities, and particularly within proposed public and/or communal car parks, the Council will encourage and seek to secure an appropriate level of provision through the planning process.
39. Welsh Government is currently consulting on a new National Planning Policy Framework, and this includes references to the low emission vehicle charging sector, including a proposed policy requiring 10% of non-residential parking spaces to have EV charging points. In view of the evolving national policy framework and changing technologies the Council will:
  - i. Approve Supplementary Planning Guidance on “Managing Transportation Impacts” in April 18

- ii. Prepare a formal paper to consider how best to address low emission transport through planning policy/SPG or other most appropriate route.
- iii. Engage with major developers in the city set out the Council's expectations and to encourage best practice in new development

### **Supporting Innovation**

40. Many of the technologies in the low emission transportation sector are well established and mature and, as outlined in the Strategy, there are many opportunities ready to be taken. However, it also clear that continued research and development will be needed to support some of the more challenging areas.
41. In particular, there is a need for more cost effective solutions for very heavy vehicles where battery technologies can't yet provide sufficient power. Alternative fuels such as hydrogen and biofuels are showing considerable promise in this area but more work is needed to bring these to the mass market.
42. Similarly, increasing the supply of clean, locally produced renewable energy for vehicle recharging is also an area where further research and testing is needed.
43. The concept of using electric vehicle batteries to provide power back to the grid in times of high power demand is another area of growing interest that needs to be supported through pilot demonstration schemes.
44. The Council has a strong history of engaging with the academic and innovation communities around energy. In this process we've secured National and International grants to partner with research and development organisations to help develop, test and demonstrate new technologies.
45. There is an opportunity to continue to this approach to innovation as part of our longer-term commitment to supporting a transition to low emission transport. We will continue to build relationships with relevant academic and industry partners, and together seek funding opportunities to make progress on the more difficult areas. In particular our focus will be on:
  - i. opportunities to test and specify new vehicles and vehicle enhancements,
  - ii. opportunities to engage with and support local sources of Hydrogen and other bio-gas fuels,
  - iii. testing and demonstrating new business models for local electricity generation and distribution for vehicle recharging, and
  - iv. exploring opportunities for "Vehicle-to-Grid" projects based on our charging infrastructure roll-out.

## **Conclusion and Recommendations**

46. The Low Emission Transport Strategy discussed in this report sets out the Council's vision and actions to begin a transition away from polluting fossil fuels for transport. It is based on independently researched evidence of best practice and success elsewhere, and offers a low cost but high impact strategy to improve our own performance. It also has the potential to influence and enable others in the city to make positive changes.
47. Target dates and details for each of the key actions are set out the Strategy and Action Plan attached to this report, and this will be supported by a communications campaign to promote and share the strategy more widely.
48. Each individual action area is linked, however, and there are particular dependencies between them. Most significantly, it is essential that charging and refuelling infrastructure in the city grows in order to support and facilitate the uptake of low emission vehicles. One of the priorities for us, therefore, will be to bid for government grant funding support for an initial roll out of electric vehicle charging points in the city.

## **Reason for Recommendations**

49. To approve actions to help deliver compliance with legal limits for nitrogen dioxide in the city.

## **Financial Implications**

50. As this report is recommending the approval of a strategy there will be no direct financial implications. The detailed proposals that develop from the strategy will however have financial implications which will require appropriate mechanisms, including business cases, to demonstrate that Value for Money is being received by the Council.

## **Legal Implications**

51. The report sets out the Council's strategy for supporting a transition away from polluting fossil fuels for transportation in the city; and seeks approval of a plan of actions aimed delivering this transition.
52. It is noted from the body of that the report the Welsh Government has issued the Council with a Directive that requires the Council to deliver compliance with legal limits for nitrogen dioxide in the area at the earliest opportunity. Accordingly the Council must ensure that the strategy puts in place measures to ensure compliance with the Directive
53. Since the subject matter relates to statutory requirements, it is not only important that those requirements be fulfilled, but also that the process of achieving this is compliant. This means that the Council may be required to carry out appropriate consultations.

54. Any consultation must be adequate and fair and it should be noted that the carrying out of consultation may give rise to a legitimate expectation that the outcome of the consultation will must therefore be considered as part of the decision making process.
55. It is noted that the Council intend to bid for Government grant funding to accommodate its proposals and it should therefore noted that if such grant funding is secured the Council would be bound to comply with the terms and conditions of the grant secured.
56. With regards arrangements with external bodies, further advice should be sought prior to procurement of those arrangements.
57. The Council has to satisfy its public sector duties under the Equalities Act 2010 (including specific Welsh public sector duties). Pursuant to these legal duties Councils must in making decisions have due regard to the need to (1) eliminate unlawful discrimination, (2) advance equality of opportunity and (3) foster good relations on the basis of protected characteristics.

Protected characteristics are:

- Age
  - Gender reassignment
  - Sex
  - Race – including ethnic or national origin, colour or nationality
  - Disability
  - Pregnancy and maternity
  - Marriage and civil partnership
  - Sexual orientation
  - Religion or belief – including lack of belief
58. As such decisions have to be made in the context of the Council's equality act public sector duties. Vulnerable people with respiratory and other illnesses are more likely to be affected by poor air quality. Accordingly an Equality Impact Assessment should be carried out the purpose of the Equality Impact Assessment is to ensure that the Council has understood the potential impacts of the proposal in terms of equality so that it can ensure that it is making proportionate and rational decisions having due regard to its public sector equality duty. The decision maker must have due regard to the Equality Impact Assessment in making its decision.
  59. The decision maker should also have regard when making its decision to the Council's wider obligations under the Wellbeing of Future Generations (Wales) Act 2015. In brief the act makes provision with regards promoting/improving wellbeing.

## **RECOMMENDATION**

Cabinet is recommended to approve the Council's strategy and proposed actions for delivering a transition to low emission transportation in the City.

**Andrew Gregory**  
**Director**  
**13 April 2018**

*The following appendices are attached:*

Appendix1 - Low Emission Transport Strategy

*The following background papers have been taken into account*

Cardiff Sustainable Fuels – State of Play Analysis  
Cardiff Sustainable Fuels Workshop Report  
Cardiff Sustainable fuels – Final Advisory Report  
Cardiff EV Feasibility Study