

## Climate Change Commission for Wales'

### Position Paper on Transport & Climate Change in Wales

#### The Climate Change Commission for Wales

The Commission was established in 2007 as an important forum for developing and driving forward the Welsh programme of action to tackle the causes and effects of climate change. It brings together leaders and representatives from all sections of Welsh society, business, academia, the voluntary sector, environmental groups, political parties and local government. The Commission seeks to advise Welsh Government on climate change, mobilise action, build consensus across sectors and scrutinise and report on progress.

#### Developing this Position Paper

This is the first position paper produced by the Commission, and sets out our assessment and recommendations on transport and climate change in order to inform the work of the Commission and Welsh Government (WG) and advise stakeholders and the public on key issues and recommendations. Although some progress has been made towards decarbonising the transport sector and adapting the transport sector to climate change in Wales, the sector was highlighted in the Commission's first annual report as a key area for improvement. We therefore aim to raise the level of debate around transport and climate change and propose principles and priority actions to advance progress in this key area.

In developing the paper, the Commission's transport sub-group commissioned research (from CAG Consultants) and engaged with stakeholders (through interviews, a roundtable event, Commission discussions, and requests for evidence and comments on drafts<sup>1</sup>) in order to build on the best available evidence and reflect the expertise and experiences of those involved in decision-making and delivery on transport and climate change in Wales.

Accompanying this position paper are CAG Consultants' research report and a report of the stakeholder roundtable event, both of which have informed development of this paper by identifying challenges, progress to date, good practice, and priority actions. We have included here a summary of this information, highlighting where stakeholders emphasised or agreed on particular issues or priorities.

#### Climate Change and Transport in Wales

Climate change is a key issue for the transport sector – both because the sector is a **major emitter** of greenhouse gases and because it is potentially vulnerable to the **impacts of climate change**. The transport sector in Wales accounts for 20% of devolved emissions, and greenhouse gas emissions from the sector have increased in recent years. The Climate Change Strategy for Wales estimates that by 2020 emissions from transport can be reduced by 1.3 MtCO<sub>2</sub>e. Achieving Wales' emission reduction targets for 2020 and beyond requires stabilising, then reducing, emissions from the transport sector.

As outlined in the UK Climate Change Risk Assessment, a well-adapted transport network will be more resilient to future impacts of climate change, including damage and disruption associated with rising temperatures, changing precipitation patterns and extreme weather events (e.g., drought-related subsidence, sea-level rise, flooding, high winds). This will help reduce insurance and repair costs for businesses and public bodies, and avoid disruption associated with major damage to transport infrastructure.

#### Welsh economy

Climate change is not the only driver of change within transport. Other social, economic and environmental

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<sup>1</sup> The transport sub-group would like to thank all contributors, including Environment Agency Wales, CBI Wales, Climate Change Consortium of Wales, Sustrans Wales, Countryside Council for Wales, Bus Users UK Cymru, Cardiff University, Wales Council for Voluntary Action, Welsh Local Government Association, and all Commission members and participants at the stakeholder roundtable.

objectives and pressures are also part of the context in which the transport system must evolve. The primary driver of transport demand is the Welsh economy; with a fragile economy and low GDP levels, **accessibility** of employment and training opportunities is vital for the nation's sustainable development. Around half the Welsh public have been identified as being in '**transport poverty**' (i.e., spending at least 10% of income on running a car), and while increasing fuel costs have seen an increase in rail use, many (particularly in rural areas) without alternatives to driving struggle to access leisure, health or employment activities, with knock-on effects on well-being.

Furthermore, with significant **economic costs** associated with congestion, physical inactivity, noise, air pollution, and accidents, there is a strong policy and business case for developing more efficient, multi-modal, low-carbon, resilient systems for improving access and connectivity in Wales. At the same time, there are also significant **economic and employment opportunities** associated with research, development and innovation, within both the transport and ICT sectors (e.g., new vehicle technologies, teleconferencing and other alternatives to travel). Indeed, low-carbon opportunities are highlighted in the *Science for Wales* national research strategy.

### Welsh geography and society

Welsh geography and the shape of its society and economy also pose a unique set of challenges for addressing climate change within transport. Historically, east-west terrestrial transport links are more developed than north-south links; while significant transport demand stems from a large rural population coupled with a trend towards **centralisation** of health and other services, and long-distance transport (from Ireland and Wales to England and Europe).

Although some transport infrastructure has been improved, contributing for example to increased rail ridership, much work is still needed (e.g., electrification of Valleys lines). Critically, there are vastly **different challenges facing rural and urban areas**: in employment centres (especially Cardiff), there is over-demand, over-crowding and congestion, while elsewhere in rural Wales, there are problems of access.

Geography is also significant for climate change impacts and resilience. The UK, as an island nation, is highly reliant on imports and exports; and ports and their supporting infrastructure are particularly at risk due to their **coastal** location. This is particularly the case for southeast Wales, which is projected to experience greatest sea-level increases. Sea-level rise, combined with increased storm surges and coastal erosion, are major concerns for ports, but also coastal road and rail systems. Furthermore, since any logistical chain is most vulnerable at **intermodal** points (e.g., where sea transport meets road/rail), protection of these sites (e.g., from flooding) must be prioritised. Future-proofing transport systems means taking account these climate impacts, along with **demographic** (e.g., aging population) and other societal changes.

### Governance, policy and delivery

There are also governance challenges arising from the partial **devolution** of transport to the Welsh Government. This means that investment decisions, for example in relation to the rail network, compete with other UK priorities. Furthermore, delivery of transport cuts across **public, private and third sectors** and involves a range of organisations operating at different scales.

While the Wales Transport Strategy and National Transport Plan include greenhouse gas reduction as a key objective, they also reflect potentially **competing objectives** of enhancing national and international connectivity. Similarly, transport initiatives are assessed using the Welsh Transport Planning and Appraisal Guidance (WelTAG); this considers social, economic and environmental impacts, but gives no greater weighting to low-carbon/resilience impacts than to other (e.g., heritage, revenue) benefits, despite emissions reduction being a WTS priority.

This policy and delivery context is further complicated by links to **planning**. Land-use planning has a profound impact on transport patterns, network management issues and the mitigation of and adaptation to climate change through transport. While transport (including the 'transport hierarchy'; see below) is reflected in national planning policies and guidance (e.g., Planning Policy Wales, Technical Advice Note 18, Welsh Transport Planning and Appraisal Guidance), in practice transport and land-use planners often do not work closely together and climate change mitigation and adaptation considerations are not embedded within new developments and regeneration projects.

Other governance and delivery challenges relate to capacity, skills and funding, particularly in the context of recent public sector cuts. Some stakeholders felt transport planners and policy-makers tend to focus on infrastructural improvements over ‘softer’ (behavioural) interventions, due to professional **training** and organisational culture.

**Funding** was also seen as a key issue, not only the need for a clear investment strategy (noted in our annual report), but also problems associated with the division between capital and revenue funding streams, which tend to favour capital projects (e.g., road building). Revenue funding is heavily committed to concessionary fares, the Arriva trains franchise and bus subsidy grants, with little scope for funding further behaviour change programmes – including those which might *reduce* demand.

Thus, the challenges associated with decarbonising and improving the resilience of transport in Wales include improving connectivity (between north, mid and south Wales and within rural communities) to employment and training opportunities and to services without increasing carbon emissions; and addressing health, social and economic costs of unsustainable transport, all within a complex policy and delivery landscape and changing climate and society. A key opportunity here relates to the roll-out of super-fast broadband with ICT potentially reducing the need to travel and cutting transport costs for individuals and organisations.

## Principles

Our recommendations for progressing action to tackle climate change within the transport sector in Wales are grounded on evidence and best practice (see below) and can be summarised in terms of six key principles:

- Applying the sustainable transport hierarchy: *avoid, shift, improve*, in all developments and projects;
- Achieving better coordinated, integrated, strategic and target-driven policy;
- Focussing on regional and city scale for transport and spatial planning;
- Raising ambitions and providing sufficient resources to effectively meet the challenges laid out above and to leverage opportunities for businesses and communities;
- Ensuring policy is based on evidence, evaluation and stakeholder engagement;
- Future-proofing transport systems to consider both the changing climate and social trends;
- Considering social, economic and environmental implications and exploiting co-benefits (particularly economic) of low-carbon, resilient transport.

## What do we know? Evidence and best practice

There is clear evidence that low-carbon, climate-resilient transport also brings a host of economic, social and environmental **benefits**, such as improved health, lower costs, social inclusion, and environmental protection. Much is known about how to achieve these benefits. Evidence highlights the need for a range of interventions to achieve sustainable transport, including **both ‘hard’ and ‘soft’** (i.e., infrastructural and other, e.g., informational, organisational, economic) measures. In terms of priority, measures should: (a) avoid transport demand, (b) shift to more sustainable modes, and (c) improve efficiency (the **‘transport hierarchy’**).

The Climate Change Strategy for Wales emphasises the role of behaviour change in addressing climate change, but transport behaviours are strongly influenced by contextual factors, such as the built environment and transport and ICT infrastructures. While social marketing measures (e.g., personal and organisational travel planning), car sharing, teleworking/shopping and other ‘smarter choice’ measures, can encourage modal shift and reduced demand, the UK Sustainable Travel Towns evaluation highlighted that these softer measures must be accompanied by harder, infrastructural and fiscal measures to **lock in behaviour change and avoid rebound effects**, undesirable modal shift or induced traffic (e.g., ICT generating transport demand through newly-created relationships; new public transport services drawing demand from other public or active modes instead of from drivers; traffic reduction measures freeing up road space and attracting more drivers). This highlights the need for **integrated, long-term and target-focussed** transport and spatial planning which address – though a range of measures – the multiple drivers of demand and the range of social, economic and environmental consequences of interventions.

While international action on climate change has stalled, there is greatest potential for effective action at more **local levels**, including regional and city scales (e.g., European Covenant of Mayors, to which Cardiff is a signatory), which reflects sensitivity to large urban-rural and inter-regional differences. Cardiff University's Sustainable Places Research Institute has substantial expertise in this area; and various resources and guides are available to support local transport policy and delivery (e.g., Low-Carbon Vehicle Partnership's Local Transport Authority Toolkit; Leeds University's Low-Carbon Cities methodology).

Although some investments (e.g., in ICT infrastructure) may benefit multiple regions, there cannot be a 'one size fits all' solution to achieving sustainable transport. Urban and rural areas, and north, south, east and west Wales, face distinct challenges. For example, a city-region metro scheme may suit Cardiff; while car-share schemes work particularly well for rural communities where alternatives to the car are few, and transport poverty may be higher. Critically, transport investments should identify current demand is and how this is met, and **target key services, events and organisations**, as well as different modes of transport. For example, car share schemes could be promoted at key social (sport, music, etc.) events; and travel plans developed for major employers.

Evidence also highlights the important role for **stakeholder engagement** in transport policy and planning to ensure a range of expertise and perspectives are included, and to build trust and buy-in. Within Wales, although examples of good practice exist (e.g., the M4 CEM process), there is more to do to embed engagement in decision-making. For example, there is a clear role for the Commission (via the transport sub-group) to establish regular communication with WG, feeding in advice and evidence, and helping build links to the wider stakeholder community.

Engagement can also help build better links between national priorities and the work of the regional transport consortia and strategically address and coordinate key regional concerns including transport, economic development and land use planning with relevant stakeholder organisations. At Local Development Plan (LDP) level, sustainability appraisals integrate climate change concerns into the decision-making process; but some consortia stakeholders felt the process of decision-making at plan and scheme levels could be improved by more effective scrutiny of options with emission reduction and adaptation as key drivers.

Within Wales, examples of good practice are evident, as outlined in the next section. Good practice examples in the UK include the Green Bus Fund (to support low-emission technologies) and Cycling Cities & Towns (which have led to an average increase in cycling of 27%), as well as local authority initiatives (Cambridge guided busway; London hybrid buses, cycle hire and congestion charge; Leeds City Council resilience planning, hybrid buses, and low-carbon city planning; etc.).

Yet, more ambitious and wide-ranging improvements to transport systems have taken place within European cities, such as Stockholm, Malmo, Montpellier and Copenhagen due to strong sustainable transport and land-use policies (including greater public transport subsidies, and transport coordination). In the Netherlands, for example, over one-quarter of trips are made by bicycle (compared to under 5% in the UK); while in Freiburg (Germany), bicycle trips have tripled and public transport ridership doubled over the last three decades. WG-funded research from international case studies also shows a clear link between ICT investments (e.g., broadband) and positive economic outcomes (reduced business costs, market opportunities, access to training, etc.). Learning from Germany, the Netherlands, and New York City on conducting transport vulnerability assessments can also be transferred to Wales.

Much can be **learnt** within Wales from the vision and scale of these pioneering cities and regions, and many stakeholders feel Cardiff should lead the country in identifying similarly ambitious goals. This has significant **resource** implications; for example, to achieve walking/cycling investment levels of Copenhagen, Wales would need to invest £50-60m a year (from £10m at present).

### **How are we doing? Reviewing progress**

Welsh Government's Climate Change Strategy (CCS) includes 11 measures (WT1-11) to reduce transport emissions and two adaptation actions (Actions 1 and 15). Assessing progress is difficult without a full set of indicators or a baseline (due later this year), but our review and engagement, along with WG's first annual report,

suggest some progress is being made:

- *WT1: Sustainable Travel Centres*  
WG has committed investment for five Sustainable Travel Centres (STCs; Cardiff, Aberystwyth, Carmarthen, Haverfordwest, Mon a Menai). Results from the first of these (Cardiff) are promising: e.g., 7% reduction in car commuting; 16% increase in cycling. However, STC funding is principally infrastructure focused, so measures that could benefit public health (e.g., OY Bike scheme), are small-scale and short-term.
- *WT2: Smarter Choices*  
The Climate Change Engagement Strategy is taking forward some behaviour change aspects of the CCS; four regional transport consortia are working with employers on sustainable travel plans; and some Pathfinder and Sustainable Living Framework projects are addressing travel behaviours. Improved public transport information has also been implemented via Traveline Cymru. However, challenges include rural transport (e.g., untapped potential for car-sharing) and addressing transport demand within spatial planning (e.g., travel planning by developers), as well as the need to evaluate and upscale good practice. Some stakeholders felt delivery, but also monitoring/evaluation, of transport behaviour initiatives are patchy.
- *WT3: Travel planning and provision of personalised travel information*  
A four-year Personalised Travel Planning scheme has been initiated in Cardiff (to 63,000 households) with later roll-out to other STCs; some organisations have adopted travel plans (see above); but several stakeholders felt that employers could do more to address employees', customers' and suppliers' travel choices.
- *WT4: Developing a series of strategic modal interchanges*  
Modal interchanges are being developed (e.g., in Fishguard); and intermodal transport is being facilitated via the multi-modal Wales Transport Entitlement Card pilot.
- *WT5: Promotion of eco-driving:*  
WG fund Energy Saving Trust's (EST) Consumer Transport Advice Programme to provide eco-driving advice (via phone, outreach events, etc.) for individuals; some bus driver eco-driving training is also being implemented. Although the Programme is on track to achieve its target for 2011-12 to make contact with 5,000 individuals, several stakeholders felt this area has significant untapped potential, particularly for rural populations with fewer alternatives to driving.
- *WT6: Promotion and support for walking and cycling:*  
Building on the 2009 Walking and Cycling Action Plan for Wales, funding is provided via the Safe Routes in Communities Scheme and Regional Transport Consortia (e.g., Valleys Cycle Way; Vale of Glamorgan Bike Train; Aberbeeg Community Link), although this is being cut. WG have nevertheless committed to introducing an Active Travel Bill that makes it a legal duty for Welsh local authorities to provide cycle routes.
- *WT7: Investment in rail services:*  
Improvements to services and to stations (via the Wales Station Improvement Programme) have helped increase passenger numbers in SE Wales. Proposals to electrify Cardiff-London and South Wales Valleys lines are also encouraging. However, the North Wales coast line remains under-utilised and is in need of upgrading (including electrification). Resilience to climate impacts is also a concern given the significant amount of coastal track. Stakeholders noted that rail expansion will remain limited as long as the all-Wales rail franchise is let on a no-growth basis. There is an opportunity when drawing up the new franchise to explicitly write in carbon reduction and modal shift into the contract.
- *WT8: Investment in buses:*  
WG provides significant support via concessionary fares, Bus Services Operators Grant and Local Transport Services Grant, TrawsCymru, Community Transport (e.g., Bwcabus) and Bus Quality Partnerships; but Bus Services Operators Grant and Local Transport Services Grant are being cut. Such cuts at short notice are problematic since industry requires certainty of investment. Furthermore, there is no use of alternative fuels within Welsh bus fleets (unlike in England and Scotland, where the Green Bus Fund supports investment).
- *WT9: Improving traffic management on the strategic road network:*  
Some roads have implemented variable speed limits, notably the M4 corridor around Newport, which has cut

emissions and improved safety. However, UK government proposals to increase motorway speed limits to 80 mph would increase carbon emissions.

- **WT10: Supporting the freight industry to reduce emissions:**  
WG support modal shift from road to rail through the Freight Facilities Grants; and Carbon Trust is working with industry to reduce freight emissions (e.g., via G-volution vehicle technology); but there remains a reluctance of operators to switch to rail, and increasing trends in road freight transport. There is also under-capacity within rail infrastructure to support modal shift in freight, as highlighted by WG's Enterprise & Business Committee.
- **WT11: Alternative fuels infrastructure:**  
Funded by a WG Sustainable Travel Centres grant, Carmarthenshire County Council and Pembrokeshire County Council have included electric vehicles within their pool car fleet; Sustainable Travel Centres grant also funded the Pembrokeshire County Council "Little Green Bus" which runs on recycled vegetable oil and is funding a biomass study in North Wales; Carmarthenshire urban residents free parking for LPG/electric vehicles; Glamorgan University has installed hydrogen refuelling infrastructure; Welsh universities have expertise in hydrogen, electric and biofuel vehicles; Wales Green Automotive Agenda is exploring alternative technologies; the Low-Carbon Vehicle Cluster supports collaboration; some companies have committed to running on low-carbon fuels; Chargemaster and Nissan are installing a network of electric charging posts; but challenges include infrastructure/geography; failure to get Plugged in Places funding; and no formal WG support/funding.
- **Adaptation (DPA Actions 1 and 15: Build consideration of climate change impacts into WG business planning (including developing Sectoral Adaptation Plans); and Review resilience of the transport infrastructure to the effects of climate change and develop a programme to address risks (including reviewing major road infrastructure resilience; understanding vulnerability of road network to climate change impacts; and developing climate change adaptation strategy for transport):**  
Progress has been made towards developing health and natural environment adaptation plans but work has yet to begin on plans covering infrastructure, communities and business. Since transport cuts across these areas, developing a sector-wide adaptation strategy for transport (as per Action 15) remains vital. Progress is being made by WG, LAs and other organisations to assess risks and vulnerabilities in transport; e.g., Flintshire LA workshop on rail infrastructure; Network Rail, Highways Agency, Trinity House, Cardiff Airport and MCA have all produced Reporting Power reports on climate change impacts and adaptation for Defra; Gwynedd through the Changing Places Changing Climate project identified road transport infrastructure as a key risk and have initiated some work on this.

In addition to progress being made against the CCS actions, three other areas with significant implications for transport emissions warrant attention:

- **Low-emission and efficient vehicles:**  
The UK Climate Change Committee report for WG highlights that new car emissions are better in Wales in 2010 than the rest of the UK, largely driven by EU emissions standards. Consumer advice on cleaner cars is provided by EST; Ford's Bridgend plant has invested in 'EcoBoost' technologies which reduce engine emissions by 15%; and G-volution technology has been installed in some fleets. However there is significant untapped potential for vehicle emissions standards and public-private innovation schemes to drive down carbon reductions in the transport sector.
- **ICT:**  
There is huge potential to reduce emissions by promoting alternatives to travel, including ICT. Examples of current initiatives include Telecentres, Welsh Video Network, and British Gas and BT home working schemes. Superfast broadband is being delivered via the Digital Wales Strategy, although emissions and resilience implications need to be considered.
- **Aviation and Shipping:**  
Emissions from aviation and shipping are not included within the Welsh 3% target. While they account for a very small proportion of total transport emissions, this proportion is growing. We welcome the inclusion of air

emission in the EU ETS, and EU efforts to similarly address emissions from shipping. Nevertheless, it is critical that WG's progress on sustainable land-based transport is matched, as far as possible, by efforts to decarbonise aviation and shipping.

*National Transport Plan (NTP):* Most CCS emissions reduction measures and one adaptation action (reviewing the resilience of the motorway and trunk road infrastructure) were originally incorporated into the NTP. However, the December 2011 NTP reprioritisation resulted in some emissions reduction measures being deferred to later years (e.g. improvements in the provision of safer walking and cycling routes) and others being dropped or deferred beyond 2014 (e.g. many of the actions related to freight). Similarly the reprioritisation has resulted in there being no adaptation actions in the programme to 2015. NTP actions do not explicitly include measures to promote teleworking, which could cut emissions. Improved access to super-fast broadband is being addressed separately by the Digital Wales strategy.

Overall, there remains a *gap between strategy and delivery* in a number of areas and a need for *greater engagement, evaluation and use of evidence; coordination across sectors, scales, organisations, and disciplines; sufficient and coordinated resourcing; and embedding of climate change within planning.*

## Priority Actions

Translating the principles for sustainable transport policy outlined earlier into concrete solutions to accelerate progress, leads us to the following priority actions:

### 1. Reduce travel demand by exploiting ICT and next generation broadband

- a. A significant gap in the current CCS and NTP is the 'avoid' element of the transport hierarchy (which should be considered before modal shift and improved efficiency). There is not only a strong business case for considering alternatives to travel (i.e., by reducing costs for individuals and businesses) but also economic opportunities associated with developing the ICT sector and future-proofing infrastructure. **Alternatives to travel** should be given much greater attention within transport and spatial planning and behaviour change programmes.
- b. WG should also ensure that development of next generation of broadband across Wales, and in particular the **Digital Wales Strategy**, is undertaken in a way that makes the most of emission reduction opportunities, as well as maximising economic and social benefits (including digital inclusion).

### 2. Advance integrated spatial and regional approaches as a long-term key action

- a. As noted in our annual report, there is no doubt that a low-carbon region or city-region approach can offer an effective framework for low-carbon, resilient development, and we advocate this regional approach be applied across Wales which is sensitive to respective rural and urban issues. An **Integrated Spatial Plan** would link land use priorities and spatial priorities with an effective form of governance to manage that and then filter through to the LDPs. Currently there is a mosaic of different local development plans, working at different speeds, for different local authorities and which are not properly coordinated.
- b. For the **Cardiff city-region**, sustainable planning to become a 'One Planet City' includes both infrastructural (Valley line electrification, bus station redevelopment, etc.) and softer measures (personal travel planning, Cardiff car club, etc.) to encourage modal shift. However, less attention has been given to the 'improve' and 'avoid' elements of the sustainable transport hierarchy. There is an opportunity to learn from other European cities and achieve a truly integrated, sustainable transport system that offers economic, social and environmental benefits, while also meeting the European goal of no conventionally-fuels within cities by 2050.
- c. Although planning policy and guidance acknowledge the sustainable transport hierarchy, this must be translated into practice. For example, new developments should include **travel plans** that ensure alternatives to transport and public/active modes are prioritised over private transport; and employment support should be conditional on travel planning.
- d. There are also a number of opportunities to consider integrated approaches in **planning reforms**. As noted in our annual report, the current review of planning for the Planning Bill needs to build in climate change and in particular adaptation and give a view as to its practical delivery within the LDP and its regional dimension.

Similarly, the current WelTAG review should ensure weightings for different impacts reflect strategic priorities, including emission reduction. The same applies to the current Wales Infrastructure Investment Plan consultation: It is essential that schemes that address carbon reduction are a key part of the programme.

### 3. Ensure consistency and progress through sustainable transport visions, targets and indicators

- a. At the all-Wales level and through a process of stakeholder engagement, we recommend that WG lead on developing a high-level, ambitious **vision of sustainable transport** for 2050 which is consistent with (or exceeds) the national 3% per annum emission reduction target (and 80% 2050 target) and addresses adaptation to climate impacts. There are certain actions which also need to be taken at WG level, such as explicitly writing in carbon reduction objectives to bus and rail franchise contracts, and a need to provide a climate steer and coordination for regional consortia. It may be appropriate to develop this high-level vision and joined-up governance on sustainable transport through the Sustainable Development Bill.
- b. Translating the sustainable transport hierarchy into practice can also be achieved through appropriate **indicators and targets**. In developing the CCS indicators, we stress the need to consider the 'avoid' and 'improve' elements of the transport hierarchy (as well as modal 'shift'). As well as indicators for bus/rail/cycle use, additional appropriate indicators could include: total passenger kms (to assess demand), uptake of efficient and alternative fuel vehicles, use of ICT alternatives, car-sharing uptake, and fuel spend (to assess eco-driving). These indicators should be accompanied by appropriate targets which reflect key milestones from Welsh, UK and EU policy. This will help us achieve the long-term targets set, including the 80% reduction in greenhouse gas emissions by 2050.

### 4. Encourage and enable behaviour change in both urban and rural contexts

- a. Stakeholders we consulted support a range of 'carrot and stick' measures to behaviour change, including, economic, infrastructural, social marketing, and community measures (e.g., road user charging, car share lanes, travel planning, car share schemes, priority parking for low-emission vehicles). Behaviour change programmes should form part of broader strategy of integrated spatial and transport planning to ensure joined-up transport and planning policies which include **infrastructural as well as soft measures to foster and lock in behaviour change**.
- b. Furthermore, this should reflect essential differences between urban and rural contexts, as well as between different user groups. For example, given the need for rural communities and many other transport users (e.g., disabled, night-workers) to use private transport, WG should support and **upscale car share and eco-driving programmes**. Users are also differentiated by their access to information, with many in Wales still without Internet or mobile phone access. At the same time as working to achieve digital inclusion, conventional **information formats** (e.g., paper-based timetables) must still be available.

### 5. Show leadership and reward best practice

- a. Stakeholders also stressed the importance of behaviour change at the organisational level, as well as amongst households. Here, public sector employers, SD Charter signatories, and anchor companies are well-placed to show leadership in sustainable transport. In particular, there is a key role for the **public sector to exemplify action as employers** through travel planning, flexible working, low-carbon (e.g., EV) fleets, tele-conferencing, and so on.
- b. There is also a need to **recognise, share and award best practice** in sustainable transport. This could include the Commission recognising good practice through an award in the future similar to the Welsh Government workplace Travel Plan award scheme launched at Dyfed Powys police Headquarters in 2011, as well as WG providing stronger support and guidance for employers on reducing transport-related emissions.

### 6. Promote learning, evaluation, and stakeholder engagement

- a. Our review indicated that policy evaluation is an area for improvement. We recommend that WG should **monitor and evaluate behaviour change programmes** (both in terms of climate impacts, but also other social, economic and environment benefits and disbenefits), and take on board the 'lessons-learned', disseminate learning and further develop a wider transport behaviour change programme.
- b. A particular issue warranting further research is the **North-South airlink** which currently receives support from

WG. While we recognise an economic argument for the airlink, research should assess the full range of benefits and the implications for climate change.

- c. The process of developing this paper also made clear the range of available **expertise** within Wales on sustainable transport and behaviour change, as well as the enthusiasm amongst **diverse stakeholder groups** for driving forward the sustainable transport agenda (including, but not limited to Sustainable Transport Cymru - a coalition of 25 organisations from the private, public and voluntary sectors). WG could make better use of this expertise and the willingness of stakeholders to help deliver change within Wales through more regular and substantive stakeholder engagement, as well as closer links with the Commission.

## 7. Embed adaptation considerations within transport decisions

- a. Embedding understanding of longer-term changes in vulnerabilities and risks to transport systems should be addressed through the **Sectoral Adaptation Plans**, particularly the Infrastructure Plan. Supported by the Commission's adaptation sub-committee, this should identify risks and opportunities for the transport sector, analyse current policy response, identify gaps and barriers, put in place a programme for embedding climate change throughout the sector, and evaluate this programme. Critically, this understanding should filter through to transport and spatial planning, ensuring that adaptation is embedded within regional/city plans (see action 1).
- b. A key concern highlighted by stakeholders includes a lack of **capacity and skills** in addressing climate change, particularly adaptation, within transport. This is partly linked to job cuts in the public sector and a culture of risk aversion, but also in relation to adaptation due to a continued use of current weather data rather than long-term climate projections. WG should support key initiatives in this area, such as the UKCIP ARC project, as well ensure co-ordination, expert input, and stakeholder engagement is mainstreamed in the whole sector in order to build capacity.

## 8. Develop a strategic investment strategy and exploit funding opportunities

- a. Wales faces a major resourcing issue if it is to meet its ambitions to develop a low-carbon, resilient network that supports social and economic development. WG should set in place a clear **investment strategy** by March 2013 to increase the certainty and scale of funds available for promoting sustainable travel and behaviour change. The strategy should involve assessment of climate impacts and resilience. In addition, longer-term (3-5 year) investment commitments need to be made to provide greater **certainty** to LAs and RTCs to facilitate strategic investment of funds. Cardiff City Region planning needs to more effectively and strategically prioritise action and allow for planning investments over the medium (five-year) term.
- b. Furthermore, we recommend creating opportunities (e.g., via the SD Bill) to **pool budgets** so as to drive forward ambitious and holistic climate change solutions in transport (e.g., as in Bike It! Scheme; or piggybacking on planned infrastructure investments to make them resilient); considering **less conventional sources** of funding (e.g., large scale financing by local authorities to invest in infrastructure); and **leveraging EU funding** via Structural Funds (as well as influencing priorities for the next round of ESF, for 2014-2020). Indeed, structural funds for transport solutions have been underused in Wales compared to the rest of Europe; hence this presents a real opportunity for progress. Consistent with the importance of transport for economic health, WG should explore whether East Wales could qualify for assistance as a More Prosperous Region, in addition to continuation of support to the Less Developed Regions of Welsh Wales and the Valleys. Electrification of the Swansea to London line could potentially be pursued through the Connecting Europe Facility, relating to the creation of Trans-European Networks, if not ESF funds.

## 9. Invest in green technologies to drive innovation in Wales

- a. There are significant economic opportunities associated with research, development and innovation for low-carbon transport. Despite forming a key component of the CCS, little progress has been made towards promoting new transport technologies. New markets need to be stimulated for both vehicle technologies (e.g., electric vehicles) and modes of transport (e.g., car clubs), and support must be provided for this. Examples of **funding initiatives** include the new TSB-funded Catapult centres of excellence in transport and future cities, and the science strategy's Sêr Cymru. Furthermore, as evidenced by Ford's EcoBoost technology, there is an

opportunity for private and publicly pump-primed innovation.

- b. Again, the public sector and SD signatories can provide leadership by **converting fleet vehicles** to alternative technologies.
- c. In view of European recommendations for phasing out conventionally-fuelled vehicles in cities, we urge WG to lead by example in prioritising investment in electric vehicles in the public sector, for example through **incentivising electric and hydrogen vehicles** through priority parking and/or reduced congestion charging, and development of a Welsh Green Bus Fund (based on Scottish and English models).

#### **10. Achieve resilient, low-carbon freight**

Resilient freight systems need to be developed which are both environmentally and economically sustainable. Current WG support for freight modal shift includes Freight Facilities Grants, but many other actions initially proposed in the NTP have been dropped or deferred. Increasing trends in road freight transport need to be addressed with commensurate action. The G-volution fuel technology is a good example, but efforts need to be upscaled and greater attention given to the 'shift' element of the transport hierarchy.

#### **Moving Forward**

We look forward to working closely with WG and transport stakeholders to help achieve climate change and sustainability objectives within transport, including taking forward the actions proposed above. The Commission's transport sub-group will continue to monitor and review progress, and will follow up on this position paper with targeted reviews and advice (e.g., on ICT, alternative fuels), as well as continuing to engage with stakeholders interested in advancing the sustainable transport agenda.