EVC13 Liana Cipcigan, Professor, Cardiff University, Electric Vehicle Centre of Excellence

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Senedd Cymru | Welsh Parliament

Pwyllgor Newid Hinsawdd, yr Amgylchedd a Seilwaith | Climate Change, Environment and Infrastructure Committee

Gwefru cerbydau trydan | Electric vehicle charging

Ymateb gan Yr Athro Liana Cipcigan, Prifysgol Caerdydd| Evidence from Professor Liana Cipcigan, Cardiff University

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1. What are your views on the Action Plan?

We agree with the Action Plan in bridging the gaps in charging infrastructure provision in Wales. The Action Plan is recognising the urgency for action considering that the current charging infrastructure in Wales is still not fit for purpose lacking behind the rest of UK. However, the action plan is lacking granularity for more targeted and specific actions required to accelerating the rollout of charging infrastructure in the next 3 years to achieve the vision that 'by 2025, all users of electric cars and vans in Wales are confident that they can access electric vehicle charging infrastructure when and where they need it.'

2. What are your views on progress made against Action 1: Charging infrastructure?

According to HM Government "Taking charge: the electric vehicle infrastructure strategy" "today a driver is never more than 25 miles away from a rapid charge point anywhere along England's motorways and major A roads."

For translating this achievement in Wales, a more targeted approach is required based on an analysis where the charging infrastructure is needed, and the charging infrastructure rollout should speed up significantly. For example, offering strategically different charging options across a range of locations for creating flexibility for businesses and private drivers. Roll out of charging infrastructure should be aligned with current and future demand with the right mix of different charging speeds to accommodate all vehicles including private cars, taxis, delivery vans, commercial fleets individual needs. Domestic charging, including that for households lacking off-road parking, is important to ensure equality of access.

Therefore, clear sub-actions with associated deadlines could support the overall KPI delivery. For example, setting sub-actions for local authorities to plan charge points installation where needed and provide suitable tools and expertise to assist them in achieving these plans.

The timescale for such urgent action is "roughly around 10 years" not aligned with the overall goal 'by 2025, all users of electric cars and vans in Wales are confident that they can access electric vehicle charging infrastructure when and where they need it.'

3. What are your views on progress made against Action 2: Optimisation of energy provision?

We agree with the action plan recognising that the charging infrastructure provision should be integrated in smart energy systems, bringing together electricity and transport systems in a whole system approach. The grid is evolving to incorporate the significant load from electric vehicles charging and at the same time is benefiting from innovation in services that EVs can offer to the grid.

But innovation is not limited only to technologies, it also covers institutions, business models, policy designs, regulations, and behaviours therefore our suggestion is to include in the delivery partners for example aggregators, energy community, ancillary services providers.

4. What are your views on progress made against Action 3: Enhanced rapid charging provision?

We agree with the strategy planned to deliver Action 3, based on strategic spatial planning exercise and with the delivery timeline of 5 years.

Good progress was made considering the opening of Rhyl 36 vehicle capacity charging hub, the second largest charging hub in UK, incorporating a mix of fast and rapid chargers opened for public use. This charging facility is offered to local users who have no access to off street parking and is offering rapid charging for local taxi drivers.

What are your views on progress made against Action 4: Welsh quality standards?

We agree with the strategy planned to deliver Action 4, the delivery timeline, and the Welsh focus.

What are your views on progress made against Action 5: Regulatory facilitation?

The strategy rightly identified the promotion of renewable energy generation and storage integration with charging infrastructure and the sustainable design that includes green infrastructure.

We agree with the need of interoperable payment for accessibility of the charging infrastructure across the country for predicted mature EV market scenario.

However, as the charging infrastructure, electricity grid and EVs market is evolving regular updates of regulatory aspects are required to be aligned with this dynamic trend.

What are your views on progress made against Action 6: Partnership and collaboration?

We do not have a comment on the progress.

What are your views on progress made against Action 7: Increase public awareness?

There is a wide variation on public awareness of EVs and the associated infrastructure rollout. More targeted campaign in raising awareness is required, particularly to ensure equity of access to information in disadvantage areas with low income for supporting such communities with the transition to 2030.

The spatial distribution of charge points needs to ensure inclusion for disadvantaged communities and maintain the right balance between commercial and social considerations. Raising awareness regarding other transport options like public transport or car sharing schemes are important in the case when EVs ownership and access to charging infrastructure is challenging.

The delivery partners of this action will need to be selected with right communication skills for sending the right message and educate all communities in relation to infrastructure provision for avoiding transport poverty.

What are your views on progress made against Action 8: Encourage investment opportunity and innovation?

We would like to see more engagement and partnership with universities in providing innovative solutions and expert advice. As members of standardisation bodies, task forces, national and international organisations, government working groups we are in a position to provide support in selecting the right strategies and technologies to deliver the electric vehicle charging roll out since the market and technology diversify and continue to innovate.

The universities are significantly contributing to skills provision and training. There is a significant demand on the expertise and human resources in areas serving the emobility ecosystem. It is well recognised the existence of skills deficit in this sector. Therefore, support for skills provision and employment within the EVs value chain is essential. To develop these new technologies, deploy and maintain them critical skills are required, for not only who are joining the workforce, but also for current employers whose roles will be disrupted by new business models along the emobility supply chain. The workforce will need to scale-up and there is a need to reskill workers to fill the shortage of personnel qualified to work on EVs supply chain to support the transition from ICE to EVs.

Widespread of EVs adoption will require workers trained in new skills: EVs design including batteries, charging infrastructure, servicing EVs, safety issues, power electronics, e-mobility service integrators, grid interfaces and control to list only few. But a workforce with the right skills is hard to find especially when multi-skills workers with mechanical, electrical, computing and electronics skills should be required. Building the workforce of the future with multi-skilled engineers is a challenging task.

Workforce programmes for current workforce as well as new areas of specialisation with the focus on EVs and charging infrastructure are required to deliver the ambitions agenda of decarbonisation of transport. These skills should be developed in advance due to the employment potential from the supply chain for electric transportation.

What are your views on progress made against Action 9: Create synergies?

This action is very important because the grid will need to evolve to incorporate the significant additional demand from road transport electrification. Developing large transport hubs powered by solar farms and storage energy balancing units, as proposed by CENIN in Bridgend and Parc Dyffryn, is offering sustainable solutions for charging electric vehicles from renewables.

In delivery partners it is recommended to be included/consulted renewable generators and storage developers as well as local energy communities.

What are your views on the strategy ?

Overall, we agree with the urgency of the action plan and delivery strategy.

However, we will welcome more granularity for these actions and more ambition targets for infrastructure provision as well as setting sub-tasks with specific timeline for better monitoring of KPI.

Do you have any other points you wish to raise within the scope of this inquiry?