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Report to Partnership Meeting 23 June 2017

RESEARCH AND STRATEGY DELIVERY

Smart Islands Transport Opportunities

Purpose of Report

To introduce the opportunity Islands offer as Transport Living Labs for the development of SMART projects. This will reflect on the potential for similar work in our Islands as the pioneering “Scotland’s 8th City – The SMART City’ work being led by Scottish Cities Alliance.

Why SMART Islands?

Our Islands offer a host of opportunities to develop and test Data and Technology solutions across a range of challenges to support an agenda of social inclusion and sustainability. In common with the 8th City vision this would enable our islands to become more livable and resilient through the use of data and digital technology and the services that residents and businesses alike can access. Projects could have a focus on data, Smart infrastructure, Smart communities, and Smart services, across a range of areas including transport but also Energy, Health and Waste.

Testing SMART solutions and technology offers a more closed environment to assess results and the potential to deliver a critical mass of new services within that closed environment. For example, to move the full public service bus fleet within Orkney Mainland and the connected South Isles to a fully electric fleet would be achieved by introducing 10 new buses. Linking a range of new services and plugging gaps can also see Mobility as a Service (MaaS) delivered quickly maximizing existing transport service provision with cost effective new investment to plug gaps. The MaaS solution can then be fully understood and measured within the Island living lab.

A range of SMART Islands projects are suggested below and many of these would be transferable among our island communities.

Electric Vehicles

As society moves towards a future that will see alternative fuel vehicles increasingly their presence on our roads replacing internal combustion our islands offer potential to showcase the benefits of the technology. Orkney already boasts the highest per capita EV ownership of all Scotland’s Councils and a strategy for further increased use of EVs set out by the Orkney Islands Council led “Orkney’s Electric Future’ plan there is potential to build on the success in Orkney to showcase how Scotland can provide international leadership on the transition to alternative fuel vehicles.

Opportunities in Orkney include:

- Build on the Electric low floor bus purchased by OIC for the Kirkwall Airport service by introducing 10 more EV buses to make the Orkney public service bus fleet all electric.
- Introduce a new electric car club in Orkney with the initial base being Kirkwall Airport.
- Introduce electric car hire.
- Introduce a pilot EV taxi on the Kirkwall Airport service.

The projects listed above are actively being investigated by HITRANS and OIC.

There is scope to introduce a similar range of solution in other Scottish Islands and because of lower populations in some islands the transition to all electric for taxis, buses, car clubs etc can be achieved with fewer vehicles.

Hydrogen Fuel

Comhairle nan Eilean Siar have established the Outer Hebrides Local Energy Hub (OHLEH) project to develop the potential of the Western Isles Hydrogen Project establishment of Hydrogen generation facilities at the Creed Park Waste Management facility in Stornoway. In 2016, a successful funding application to the Local Energy Challenge Fund secured grant funding of £605k to develop the current phase of the OHLEH project. The funding will be used for the installation of hygienisation/pasteurisation equipment to allow the Creed Anaerobic Digestion (AD) plant to accept fish waste, an upgrade to the existing hydrogen electrolyser to allow the capture of oxygen gas and a hydrogen Fuel Cell unit which can be used to provide power to remote locations by using hydrogen gas. It also includes the cost of converting a Refuse Collection Vehicle (RCV) to allow it to run on hydrogen and diesel, which can be provided from the existing Creed Park hydrogen refueller.

This project offers a platform to scale up the use of hydrogen generated from clean wind energy in dual fuel vehicles providing very low fuel costs. With the Comhairle running a further four RCVs collecting similar loads (organic waste) and the municipally owned Busaichean na Comhairle there is a real opportunity to test the benefits Hydrogen can offer as an alternative fuel in a rural area where travel range make electric a more limited alternative.

Integrated SMART Tickets (Saltire reaching Oyster potential)

The multi modal nature of travel to, from and within our islands make them an excellent opportunity to test and expand the scope of smart card ticketing products to deliver Oyster card travel through the Saltire Card providing an excellent test of the potential in a Scotland in miniature approach. Multi modal smart ticketing opportunities include:

Orkney Internal Smart Pass – to be available on bus, ferry and internal air services. To achieve this the Orkney Internal Ferries would need to have ITSO compliant smart card readers / ticket machines. Bus and Rail are already on ITSO compliant equipment. Most bus services are operated by Stagecoach so there would be no need for multi bus operator interoperability.

Western Isles Smart Pass – this could be introduced by island group (Lewis / Harris, Uists, Barra) and would test multi bus operator interoperability. Interchangeable ticketing is already a condition of Comhairle nan Eilean Siar bus contracts so it would be relatively straightforward to move this to a Smart Card solution that provided a more fair and transparent system of reimbursement to operators.
Shetland Internal Smart Pass - available on bus, rail and internal ferry.

Other islands including Arran, Bute, Mull and Islay have a single dominant bus operator in each area and it would be straightforward to promote Smart Card bus tickets on these islands in a similar approach to the 2016 introduction of smart cards by rural Highland bus operator Shiel Buses.

Intelligent Transport Systems

Intelligent Transport Systems are an increasingly important part of how we relate to transport. This is the case for road users who are becoming increasingly reliant on real time information on journeys and in the event of disruption that can be relayed via traditional media, in car sat nav or in advance of travel through the Traffic Scotland suite of services. For passengers (in car or by other modes) this extends increasingly to accessing information by smart phone. In our island areas this is very evident whenever we travel off island where the CalMac traffic light alert system or the HIAL website flight information system is a regular aid to travel. The island transport user is therefore a sophisticated traveler and regular discussion at ferry user group meetings focuses on optimizing the quality of in journey real time travel information. The impact of misinformation or a lack of up to the second information on journeys to and from islands can be severe if it leads to missed connections. Therefore, work on achieving leading ITS provision in our islands can provide transferable excellence for services that operate in larger settlements (bus services) and could add significant value for services where the impact of incorrect information could be severe (ferry and air). The island proofing of travel information could bring real benefits and push innovation to the fore in our transport services.

Mobility as a Service (MaaS)

Mobility as a Service (MaaS) is a term that has emerged to describe a move away from personally owned modes of transport with this being replaced by mobility solutions that are consumed as a service with payment sharing much in approach with mobile phone contracts or pay as you go services. MaaS provides new opportunities to improve customer travel choice and support greater efficiency in how our transport services are provided. MaaS, as a concept, is broader in scope than seeking to improve just one aspect of our travel experience, such as ticketing or journey planning information.

The Transport Systems Catapult has defined MaaS as using a digital interface to source and manage the provision of a transport related service(s) which meets the mobility requirements of a customer. This definition seeks to encapsulate the vision of a MaaS Provider offering their customer, any type of travel experience using any type of transport service, public or private. Innovation is expected to lead to new MaaS offers for the consumer; market conditions will shape which are made available.

Global interest in MaaS is growing and the leaders in the field are largely in the private sector following their established models to pursue market led opportunities. This means the initial focus is on large urban settlements as evidenced by Uber now having a presence in Scotland and that presence starting first in Glasgow then expanding to Edinburgh.

With the potential for several transport innovations to be tested in our islands there is also potential to provide global innovation by bringing together a number of mobility solutions in a packaged mobility service. Within an island setting the lack of a commercial critical mass means that demand for a suite of travel solutions is not just greater but there is already market acceptance for this type of approach that lends itself particularly well to the principles of MaaS. Where the option of return travel by public transport is not an option due to sparse service provision people often opt for the private car as the solution. However, a package of options that would enable bus travel in one direction supplemented by car club or taxi for part of the journey or the return leg and onward travel by a different mode (air or ferry) mean that the ability to consume several different options for the same journey would be particularly valuable in rural and island areas where frequency and choice is limited so the sum of the parts is much greater for it.

HITRANS became the first public sector body to join the MaaS Scotland Alliance and early discussions with the MaaS Scotland programme manager have focussed on developing opportunities in the Inverness City Region Area (linked to the 8th City Project) and in Orkney where OIC have expressed interest in a MaaS project and there is a range of services that lend themselves to being packaged collectively.

HITRANS are keen to look at new opportunities for MaaS would welcome the opportunity to develop opportunities across all our island communities. To this end a HI-travel brand has been developed that can bring together a number of services including car share, car hire, car club, bus, ferry and air services. HI-travel has focussed on travel information initially and under this brand HITRANS now produces public transport information across all five of our partner Council areas.

CONCLUSIONS

The Mobility as a Service banner would enable several solutions to be tested and proven within an island living lab. There would be real value in recognising the opportunity our islands and their sophisticated travel needs offer. Island proofing our travel needs can mean testing innovation that if linked to academic research and industry research and development could foster opportunities for innovation within Scottish industry. Transport Scotland, Councils and Regional Transport Partnerships can play an important enabling role in supporting the Smart Islands agenda and if similar opportunities to the Smart City ERDF funding opportunity could be found this could offer a very high positive impact.

RISK REGISTER

RTS Delivery

Impact - Positive

Comment – The report sets out a number of areas that the Partnership can develop within our RTS.

Policy

Impact - Positive

Financial

Impact – Positive

Budget line and value – This item reports sets out a number of areas where new third party funding could be identified.

Equality

Impact – Positive

Recommendations

1. Members are asked to note the report.

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