

Electric Vehicle/Low Carbon Strategy

Proposal Prepared for: HITRANS, 7 Ardross Terrace, Inverness, IV3 5NQ



Your ref
Our ref PRO-1711-HIT-A



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URBANFORESIGHT.ORG

31 July 2017

Dear Neil,

We are delighted to have the opportunity to tender for this project.

Urban Foresight is recognised as one of the world's leading electric vehicle strategy consultancies. We can offer an unrivalled understanding of low carbon transport policy in Scotland and practical experience of the challenges and opportunities for EVs in the HITRANS area. This makes us uniquely well positioned to deliver a truly outstanding EV strategy and action plan.

We hope this proposal conveys our enthusiasm for this fantastic project and our desire to work with HITRANS to realise the full potential of this work.

A handwritten signature in black ink that reads 'David Beeton'.

Dr David Beeton
Founder & Managing Director | Urban Foresight Limited

THE TEAM

Urban Foresight® is an award-winning consultancy that has globally recognised expertise in developing strategies and action plans for electric and low carbon vehicles. Our highly experienced and knowledgeable team have delivered many similar projects and bring a track record of working in the HITRANS area.

Staff who will be involved in undertaking the project

David Beeton will act as Project Director, providing strategic direction and will oversee all work.



"Globally recognised expert in strategies and business models for electric and low carbon vehicles"

Dr David Beeton, Founder & Managing Director

David is a strategist and an internationally recognised expert in opportunities to harness the potential of technology to create innovative solutions for smart and sustainable communities.

David is Director of E-cosse, Transport Scotland's national partnership to advance electric vehicles. He is also Chair of the Electromobility initiative of the European Innovation Partnership on Smart Cities and Communities, and has led two global task forces for the International Energy Agency on electric vehicle strategies and business models.

He holds a PhD in Technology Strategy from the University of Cambridge, two Masters degrees in Engineering and an MBA.

Relevant projects:

- HITRANS Low Carbon Transport Plan
- E-cosse
- Orkney's Electric Future
- Switched On Scotland Roadmap
- Good Practice Policy Guide: Local Measures to Promote Adoption of Low Emission Vehicles
- EV Strategies for Central Asian Region

David will be supported by **Andy Willis**, who will be day-to-day contact for HITRANS and responsible for managing the project and successfully completing all deliverables.



"An experienced transport engineer with expertise in analysis, policy and planning for electric vehicles"

Andrew Willis, Head of UK Projects

Andy is an experienced transport engineer and planner who has held leadership positions in the private and public sectors. Andy brings significant experience in the planning, design and delivery of active mode, public transport operations and infrastructure.

Andy has successfully delivered policy, planning and technical projects across a breadth of disciplines. This includes work for Highland Council to identify the configuration, specification and cost of a series of electric vehicle charging hubs.

Prior to joining Urban Foresight, Andy was a Regional Director of Transport for a global engineering consultancy and Executive Director of Queensland Department of Roads and Transport.

Andy has an MEng in Civil Engineering and Management from University of Birmingham.

Relevant projects:

- Inverness Low Carbon Travel and Transport Hubs Feasibility Study
- Business Models for Go Ultra Low Filling Stations
- Specification of Rapid Charging Clusters
- Global Review of Infrastructure Strategies
- Using Procurement to Incentivise EV Uptake
- Dundee Electric Taxi Bid to OLEV
- Switched On Scotland Updated Action Plan

Andy will be supported in delivering this project by **Callum White** and a wider team of consultants that bring considerable experience of delivering highly relevant projects.



"Skilled researcher and analyst with expertise in the integration of EVs and renewables"

Callum White, Project Specialist

Callum holds an MSc in Renewable Energy Enterprise and Management from Newcastle University and a BSc (Hons) in Environmental Science from Bournemouth University. He has accumulated a wealth of knowledge spanning across the sectors of energy, environment, business and electric vehicles and promotes innovative sustainable development solutions wherever possible.

Relevant projects:

- Low Carbon Strategy Input for HITRANS RTS.
- E-cosse
- Orkney's Electric Future
- Switched On Scotland Roadmap Review
- EVs and Energy Systems

Our team is based in Newcastle upon Tyne, which is just over an hour from Edinburgh and within easy reach of Inverness. We will also be opening a new office in Dundee in Summer 2017. Full CVs are in Appendix A.

Relevant Projects

This section demonstrates our team's extensive experience of developing and delivering highly similar projects related to each of the key requirements stated in your invitation to tender.

Extensive experience across the EV Industry both from the vehicle supply side for each mode as well as the associated charging infrastructure:

- Urban Foresight runs the **Electric Mobility initiative of the European Innovation Partnership for Smart Cities and Communities** which connects all relevant actors in the EV sector to create the world's largest marketplace for innovative EV technologies and business models. This includes activities related to fleets, buses, car clubs and freight.

E-cosse (2012-present)

Run by Urban Foresight, on behalf of Transport Scotland, E-cosse is a multi-stakeholder public-private partnership to advance electric vehicle adoption in Scotland as part of a sustainable transport system and a smart energy grid. This includes promotional activities, problem solving, dissemination of best practice and supporting the development of government strategies and policies.

Leadership and innovation in terms of both a technology and policy perspective:

- Our award-winning [EV City Casebook](#) highlights world changing ideas that will shape the future of electric vehicles, profiling 50 big ideas with the potential to dramatically increase EV adoption.
- We were commissioned by Transport Scotland to develop a [National Policy Framework for Local Incentives](#), which identified the measures that could be taken by local authorities to promote EVs.

Switched On Scotland: A Roadmap to Widespread Adoption of Plug-in Vehicles (2012-13/2016-17)

Transport Scotland commissioned Urban Foresight to develop an [EV roadmap](#). Urban Foresight designed a process to engage over 120 stakeholders from over 80 different organisations. Four strategy workshops explored the needs and challenges faced by different stakeholders and developed consensus on priorities. The roadmap was published in 2013. It was positively received and generated a significant media interest around the world. It has also given Transport Scotland a clear guide on the action needed to advance EV adoption.

The recent [roadmap review](#) and [updated action plan](#), which were also drafted by Urban Foresight, reflect on the rapid evolution of the EV industry and identify further actions and opportunities to drive increased adoption of EVs.

High degree of knowledge of the opportunities and constraints faced in implementing an EV strategy in rural and island communities:

- Urban Foresight worked closely with Robert Gordon University and HITRANS to develop the successful [G-Patra](#) proposal which secured €3.9 million for a European project focused on enhancing the capacity of authorities to reduce CO₂ from personal transport in remote, rural and island areas.
- Our [Low Carbon Transport Plan for HITRANS](#) considered opportunities for decarbonisation across modes, including buses, taxis, car clubs and ferries. It also provided advice on the policy landscape, emerging technologies and business models as part of the refresh of the Regional Transport Strategy.

Orkney's Electric Future (2015)

Orkney Islands Council commissioned Urban Foresight to undertake a comprehensive feasibility study on how promotion of EVs could be linked to opportunities offered by Orkney's high renewable energy generation, smart grid, and tourism. A programme of interviews, workshops and analysis informed uptake scenarios for EVs, and prescribed infrastructure requirements and recommended sites. We also assessed the feasibility of electrifying different bus routes, considering range, duty cycles and charging schedules. The outcome of this work was a definition of the scope and costs involved in a full project and the feasibility of such a project.

Sound knowledge of both capital and revenue costs associated with implementing the strategy and a strong understanding of the models for delivery, operation and maintenance of the infrastructure:

- Urban Foresight was commissioned by Croatia’s national electricity company (HEP Group) to develop a business case and investment appraisal for a national network of EV charging infrastructure.
- Urban Foresight was commissioned by the International Energy Agency to lead a global research project into innovative **electric mobility business models**, covering buses, taxis, buses and infrastructure.
- The **Scottish Cities Alliance** commissioned Urban Foresight to map the funding and financing mechanisms available to local authorities to support infrastructure and innovation projects.
- Urban Foresight was commissioned by six local authorities (including **The Highland Council**) and one university to develop **feasibility studies for low carbon transport and travel hubs**. These projects included stakeholder engagement to determine infrastructure requirements, outline designs and costing for hubs including EV charging facilities, cycle hire and e-bikes, active travel promotion and car club vehicles.

Go Ultra Low Filling Stations (2016/17)

Urban Foresight was commissioned by the North East Combined Authority (NECA) to provide expert advice on business models for two EV filling stations in Newcastle and Sunderland, and a series of rapid charging clusters across the wider region. The study considered the value for money across the design, installation, operation and disposal of the assets offered by different business models, and how operating contracts should be set-up to facilitate sustainable operation and encourage future investment. This included guidance on State Aid compliance and use of European funding. It also assessed business models to stimulate demand for EVs amongst individuals and private businesses.

Urban Foresight advised on the potential to design the filling stations to accommodate innovative technologies such as energy storage, renewables, wireless and bi-directional charging. We were also recently awarded a further contract by NECA to make recommendations on the sites and technical procurement specification for the rapid charger clusters.

Management Plan

The composition of our team is explained on page 1 of this proposal, which also demonstrates our credentials as highly experienced and qualified project managers. Our Project Manager for this contract, Andrew Willis, will be the primary contact for HITRANS to facilitate easy and consistent communications.

At the inception meeting, Urban Foresight and HITRANS will agree the communication protocols for this project. This will include key project management documents (e.g. Gantt Chart), reporting mechanisms and use of online resources to share information and documentation. Mechanisms to escalate and address risks and changes will also be identified and agreed.

We can also offer to establish a dedicated SharePoint site to enable HITRANS and any nominated partners to easily access and share project materials.

SUMMARY OF ADDED VALUE:

- Extensive experience across EV industry, across modes and associated charging infrastructure.
- High calibre team with relevant experience that demonstrates leadership and innovation in policy and technology.
- Unrivalled knowledge of EV/ low carbon policy in Scotland and expertise in developing EV strategies.
- Track record of successfully delivering EV projects for key stakeholders including HITRANS, The Highland Council, Orkney Islands Council and Transport Scotland.
- Knowledge of HITRANS area and expertise in the application of EVs in rural and island locations.
- Sound knowledge of the capital and revenue costs to implement the strategy and potential sources of funding.
- Strong understanding of problems and opportunities for delivery, operation and maintenance of infrastructure.
- Expertise in the actions that can be taken at the local and regional level to promote EV uptake.
- Experienced project managers with a clear and tested methodology to satisfy all requirements of this project.
- Track record of business-focused market research, producing high quality and visually appealing reports.

PROJECT PLAN

Our Understanding of Your Requirements

To support the roll out of EVs and charging infrastructure within the HITRANS area there is a need for an overarching strategy and action plan. This will build on the Regional Transport Strategy and a number of important low carbon policies and plans, including the National Transport Strategy, Climate Change (Scotland Act) of 2009, Scotland's Draft Climate Change Plan, Cleaner Air for Scotland, Switched On Scotland and its subsequent review and updated action plan. It will also build on progress to date in the region, including notable developments related to electric cars and buses in Orkney and Inverness.

The table below summarises the key tasks identified in the invitation to tender (ITT) and examples of strategies to deliver these requirements.

Requirements Stated in ITT	Example Strategies
Collect comprehensive baseline information on the current charging network and upcoming improvements that are in the pipeline.	<ul style="list-style-type: none"> Review all relevant maps and databases, including Zap Map and National Chargepoint Registry, EV Association of Scotland. Engage with funding providers, including Transport Scotland, EST and local authorities. Engage charge point suppliers, installers and back office operators.
Identify priority programme for developing the charging network that considers future development of EV vehicle and charging technology and EV usage.	<ul style="list-style-type: none"> Review market growth forecasts, trip data, local plans and developments that might influence uptake. Develop uptake scenarios with associated infrastructure requirements. Develop phased programme that considers local demand/priorities/opportunities and can evolve to meet growing numbers of EVs.
Identify current funding opportunities to expand the network.	<ul style="list-style-type: none"> Engage with Transport Scotland, OLEV, HITRANS, HIE and local authorities and potentially private investors.
Consider current and proposed charging regimes with the HITRANS area and elsewhere to help identify best practice for the area going forward.	<ul style="list-style-type: none"> Review charge point usage data. Review data on vehicle movements in HITRANS area. Identify examples of best practice from Scotland and overseas.
Review existing operation and maintenance of EV charging network and consider how this is best provided for across the different local authorities in the HITRANS area.	<ul style="list-style-type: none"> Review data on charge point faults and downtime. Speak to local authorities to confirm current arrangements and any specific issues/challenges. Identify examples of best practice from Scotland and overseas.
Review existing best practice for EV provision in the development planning framework and guidelines for new development.	<ul style="list-style-type: none"> Review development planning framework. Identify examples of best practice from Scotland and overseas.
Identify potential grid issues by working with electricity network operator SSE.	<ul style="list-style-type: none"> Engage with SSE to understand current and expected future demands on the electricity network and the implications and resultant costs of installing additional charging infrastructure.
Identify opportunities for utilising renewable electricity to support growth of charging network.	<ul style="list-style-type: none"> Review different opportunities to integrate EV charging with renewable energy, including enabling technologies such as energy storage and microrenewables. Identify the potential for these systems to support infrastructure in isolated locations which would require expensive grid connections.
Develop best practice for the design and layout of new charging infrastructure both within new developments and domestic environments but also within existing public space, car parks and on street.	<ul style="list-style-type: none"> Provide expert advice on site selection, installation, site selection, location within a site, layout, signage, markings and accessibility. Review best practice and identify limitations in existing charging infrastructure estate. Consider needs and challenges associated with different users.
Develop a plan for the promotion and marketing of EVs within the region.	<ul style="list-style-type: none"> Identify messages, communications channels and different audiences to enable effective and targeted marketing.

Consider opportunities for encouraging the roll out of EV vehicles in the following areas; car clubs, local taxis, local bus services, local authority/private pool fleets, etc.	<ul style="list-style-type: none"> Engage with different operators/user groups to understand potential demand/opportunities. Identify specific support/challenges associated with different users. Consider the economic/environmental benefits offered by different applications of EVs (to help prioritise business cases and funding).
Help establish an Electric Vehicle forum where issues and opportunities relating to the development of the network and infrastructure can be raised/discussed.	<ul style="list-style-type: none"> Identify all relevant stakeholders. Help to define purpose/remit of forum to attract right people and make recommendations on how the forum should be structured. Review the potential to develop a programme of events and use social media tools to connect people.
Develop a prioritised action plan.	<ul style="list-style-type: none"> Work with all relevant stakeholders to build consensus on the key actions and allocate responsibilities for delivery. Provide expert recommendations on the actions that are required/will have the greatest impact. Consider the cost, timescales/sequence and risks associated with different actions.

The outcome of this work will be an EV strategy and action plan for the HITRANS area that is tailored where appropriate for the needs of individual local authority areas. This will include recommendations and a prioritised action plan for supporting the roll out of EVs in the HITRANS area including the deployment, operation and maintenance of EV infrastructure, public and private vehicle usage and their promotion and marketing.

The approach that we will take to compile the strategy is summarised in Figure 1 and explained below.

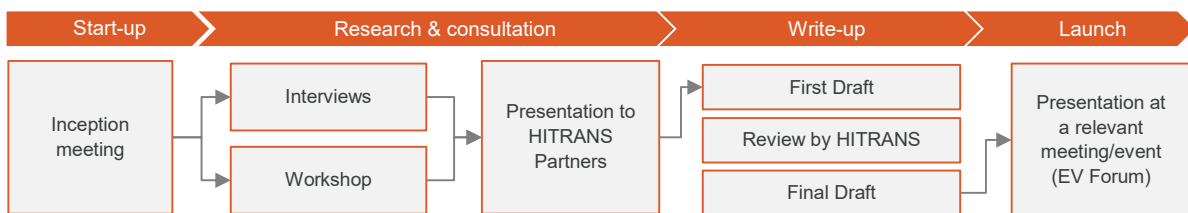


Figure 1: Our approach

Inception Meeting

The project will commence with an inception meeting in Inverness at which we will discuss:

- Vision and priorities for the EV strategy and action plan, including strategic context and progress to date.
- Key stakeholders and contacts.
- Methodology, programme and key dates.

Urban Foresight will update on complementary work that we have undertaken, explaining lessons learned, key findings and sources of information that we can access to ensure the successful delivery of this project.

OUTPUTS: <ul style="list-style-type: none"> • Face-to-face inception meeting and follow-up note. • Confirmation of project plan including key dates and milestones.
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Desk Study

We will undertake a comprehensive desk study to collate all relevant information for this project. This will focus on the following thematic strands:

- **Charging infrastructure:** baseline information on the current charging network, charge point use, good practice case studies.

- **Demand:** reviewing trip data, EV sales data/forecasts and generating outlooks on demand for EV infrastructure across the HITRANS area.
- **Funding:** sources of funding and financing mechanisms that provide opportunities to expand the network.

This analysis will build on previous work that we have done in the HITRANS area, our expert knowledge of relevant data sources (including full access to ChargePlace Scotland data), library of industry reports and extensive network of contacts across Scotland and the wider EV sector.

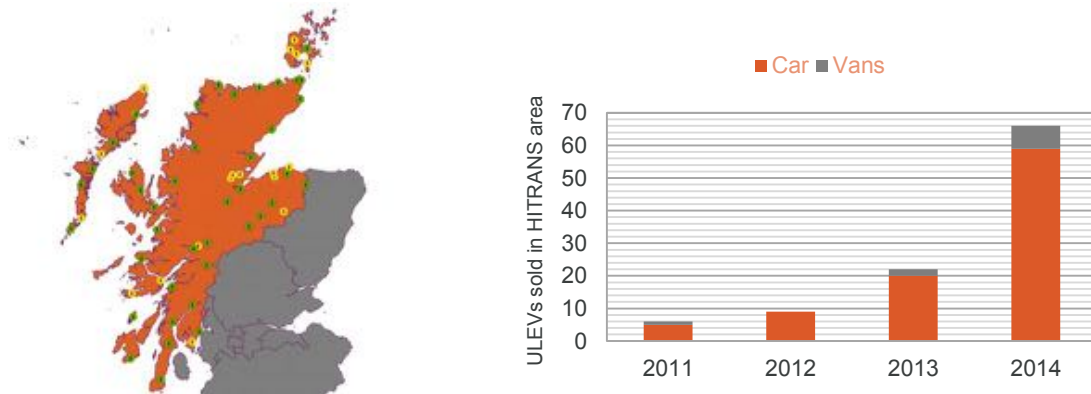


Figure 2: Analysis by Urban Foresight for HITRANS Low Carbon Transport Plan

OUTPUTS: • Research to inform workshop, case studies, strategy and action plan.

Interviews

We will engage with key stakeholders in either face-to-face or telephone interviews. This will include:

- Transport Scotland
- HITRANS
- Local authorities
- Highlands and Islands Enterprise (HIE)
- Electric vehicle providers
- Electric vehicle charging infrastructure providers
- Internal and external operators of EV's including bike, bus, taxi, car hire, car club, freight and logistics as well as private.

This process will also benefit from our extensive network of contacts in these organisations. As part of the close working with HITRANS to deliver this contract, we will also agree the most appropriate people to engage with, making sure that all key stakeholders are suitably involved in this process and helping to build buy-in and ownership of any recommendations that are made.

OUTPUTS: • A minimum of 10 interviews (a combination of face-to-face and telephone discussions).

Workshop

The workshop will provide an important opportunity to collect insights to inform the strategy and to build consensus on priorities and recommendations. The scope and participants will be agreed with HITRANS. We will also consider the opportunity to use this as a basis to establish the foundations for an EV forum, where issues and opportunities related to the development of the network and infrastructure can be raised/discussed. We will prepare a short note and agenda to assist HITRANS in recruiting relevant participants.

There are a number of ways to structure the workshop and Urban Foresight can offer a variety of tools and techniques to maximise the quality and quantity of insights generated. This will be defined in the planning stage and will in part be governed by the amount of time available for the workshop (e.g. half day/full day),

number of people involved in the workshop and the scope and objectives agreed with HITRANS. The Urban Foresight team includes very experienced workshop facilitators who can make the day engaging, thought provoking, positive, consensual and constructive. An example agenda is shown in Appendix A.

Urban Foresight has a track record of successfully organising and running workshops in Inverness. We are also currently working with Transport Scotland and Energy Saving Trust to organise an electric vehicle event that will take place in Inverness in September. This event will give a briefing on the updated Switched On Scotland Action Plan and wider support and activity related to EVs.

- OUTPUTS:**
- Materials to recruit individuals to a workshop.
 - A facilitated strategy workshop (we will run a further workshop if it is agreed necessary at no additional cost).

Drafting the Strategy and Action Plan

The final document structure will be informed by the workshops and interviews and agreed with HITRANS. From our experience of preparing similar reports, we anticipate that it will likely include:

- A consensus vision statement that captures the ambition of all relevant stakeholders.
- Recommendations related to the deployment, operation of EV infrastructure, public and private vehicle usage and their promotion (tailored to needs of local authorities where appropriate).
- Case studies showing achievements to date and what is possible.
- Details and justification for a range of actions that could/should be taken.
- Outline cost and funding plan, detailing potential funding sources and partners.
- A structure for monitoring delivery including recommendations for a structure to support implementation.

We would advocate taking a business case approach so that the plan is robust and comprehensive. We also suggest using visual tools and frameworks to clearly communicate important ideas.

The draft strategy will be issued to HITRANS and any feedback would be incorporated into a final draft.

- OUTPUTS:**
- Draft EV Strategy and Action Plan.
 - Final EV Strategy and Action Plan.

Presentation of EV Strategy and Action Plan and a Launch Event/Webinar

We note that the changes to the proposed timeline during the procurement process will mean that the project will not be as advanced as initially planned at the time of the scheduled presentation to the HITRANS Partnership in Inverness on 12/13th September. We would therefore suggest that it is used to present emerging findings and gain feedback on the overall approach.

Given the importance of promoting the strategy and gaining commitment to its actions once it is finalised, we would offer to present the strategy at a launch event in Inverness or in a webinar at no extra charge. We anticipate that this will provide the basis of an EV Forum to facilitate the sharing of best practice and providing an interface between infrastructure providers and EV users. In running the E-cosse partnership, we have organised and facilitated EV forums for Transport Scotland since 2012.

We will prepare visually appealing PowerPoint presentations for these events which we will make available to HITRANS and its partners for their own use.

- OUTPUTS:**
- Presentation to HITRANS partners in Inverness.
 - Presentation at a launch event (EV Forum) in Inverness or virtual webinar at no additional cost.
 - Visually appealing powerpoint slides (potentially designed to match HITRANS style template).