Section 1. Context

1. How does your proposal demonstrate delivery of the 2050 Ambition?

Sustainability is a key theme which runs through much of the Southend 2050 vision. This includes sustainability of infrastructure and resources, and wider sustainability of health and wellbeing. In taking steps to ensure that people in Southend have a wide choice of transport options, we need to consider population trends in preferred transport modes. Use of electrical vehicles and plug-in hybrid electric vehicles is increasing at a national level and transfer of use from combustion engines to electric engines is an element of the national target for reducing net carbon emissions. We need to ensure that Southend has an infrastructure in place that facilitates their use for residents and visitors who are planning to transfer or who have already done so.

Additionally, the contribution of petrol and diesel powered vehicles to air pollution is well understood and significant. Within the Borough, we have an air quality action zone which has a central government agreed action plan for reduction of air pollution. Accelerating the move from petrol/diesel vehicles to electric vehicles would provide a significant part of efforts to do this. Poor air quality is a significant risk to health. There is robust evidence that air pollution is a major risk factor for cardio-vascular disease, respiratory disease, and some cancers. We know that air pollution is responsible for between 100 and 120 deaths in Southend-on-Sea each year.

Additional provision of electrical vehicle charging points (EVCPs) is required to facilitate our residents and visitors in switching to electrical vehicles.

This approach is linked very clearly to the Connected and Smart and Safe and Well outcomes.

We expect, from the budget previously agreed and as yet unspent, to provide 15-20 additional fast charging points. This would add to the charging points currently in operation in the Borough. These are located in the following areas:

As at March 2019, there were 239 plug-in electric vehicles registered in the Borough. We have 6 dual (can charge two vehicles at once) EV charging points that are available to be used by the public, these are located:
- Seaways car park (fast)
- Warrior Square car park (fast)
- London Road on-street (fast)
- London Road on-street (rapid – only rapid in the Borough). Cost £33,000 to install and was located next to its energy source.
There are 4 dual (can charge two vehicles at once) E-car car club charging points which are located in areas identified below but are not available as public charge points:

- Civic Centre
- Short Street car park
- London road on-street
- Hamlet Court Road car park

This proposal also brings together the current plan to provide 80-100 charging points from lamp posts in the borough and two Innovate UK projects testing and demonstrating the business case for rapid expansion of public charge points.

In addition, this merged proposal will develop consumer engagement about the benefits of electrical vehicles and promotion of the ZapMap app to alleviate concern over locating available charging points.

2. What evidence have you got that this approach will deliver of the outcome?

New registrations of ultra-low emission vehicles (ULEVs) in the UK have rapidly grown over the last two years. During January to March 2016, 11,755 new ULEV were registered for the first time in the UK, an increase of 31% on one year before and 508% on two years previously. Department for Transport (DfT) research suggests that a lack of charging points was the largest single impediment in the way of even greater growth in registration and use of electrical or hybrid vehicles. Around half of respondents to the DfT survey reported lack/number of charging points as the primary determining factor in switching to electrical vehicles.

Another identified barrier is the proportion of households that do not have off-street parking estimated at 35% nationally and 42% in London. In Southend, the estimated proportion of people without off-street parking and thus effectively locked out of the EV market is between 50-60%. All of the proposed actions are aimed at this large proportion of households in Southend.

Public Health England has developed an Air Pollution Tool to calculate the impact on health through changes to air quality. Diesel/petrol powered road vehicles contribute to a quarter of all NO2 emissions in Southend and we know that reducing the amount of NO2 in Southend’s air will reduce the number of hospital admissions for conditions such as asthma, COPD, and cardiac disease.

The Council is currently receiving requests from residents for an increase to the current 15 charging points and the following schemes have been identified to assist and enhance electric charging availability.

- VPACH – IUK project to demonstrate the Virgin Business Model. Virgin Media will install power supplies wherever they install broadband cable which can provide direct energy to the charging points. For the Southend scheme it includes a demonstration which will install Solar PV, batteries and EV charge points in 50 car park spaces with the capital and maintenance being paid for through solar and charging revenue with EV charging rates being set at a level below those available at domestic household’s home charging. This also supports the Safe and Well outcome through promoting the use of car parks at night for charging best value, and increased footfall in Council car parks. Southend’s funding is £88,688.00 which is 100% funded by IUK. Capital funding (£250k) will be provided by Virgin who will retain revenue or by the Council or on a shared basis. The individual options will be presented to the Investment Committee who will be able to choose from proposals offered – if Council investment is required, the capital will be provided from existing Solar PV budgets.
- NetX – IUK project to demonstrate a new EV charger extender which will allow one charger to be shared by 3 cars (and 6 in the future). This project also provides some funding towards the expansion of the car club.

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1 Department of Transport. 2016. Public attitudes towards electric vehicles. Statistical release (Sept 2016)
3. What are the measures of impact, success and how will you embed learning?

We will measure use/demand for the EVCP quantitatively locally and evaluate public awareness and perception of their use and availability through qualitative survey methods. We will also benchmark against other local authorities nationally for rate of cars/number of EVCPs to measure our rate of provision against statistical neighbours. Until a larger proportion of the full traffic load within the borough and potentially decrease the number of petrol/diesel vehicles has decreased, it will not be practical to measure impact on air quality and health outcomes. But this measurement would be undertaken once a critical mass has been achieved.

Once the new business models have been proven, the NetX device will lower the cost per point by 60% while the VPACH model will allow EV points to be deployed paid for by solar revenues breaking the link between the uncertain growth of EV charging and the cost of deployment of EV chargers.

Section 2. Aims, Objectives & Collaboration

4. What are the key aims and objectives of the proposal?

The aim of this proposal is to contribute to improved air quality for Southend-on-Sea and consequent improved health and wellbeing for residents. This will also facilitate a step change in emissions reduction targeting the 29% of CO2 emissions attributable to the transport sector. As a net-zero emissions target in Southend is progressed the new business models tested will allow the mass rollout of chargers and take up of EVs at a much lower risk and cost than would otherwise be seen.

The objectives are to facilitate and encourage the increased uptake of electrical or hybrid road vehicles as a proportion of the full traffic load within the borough and potentially decrease the number of petrol/diesel vehicles on the road. This does not contradict other proposals seeking to decrease the overall reliance on motorised road vehicles as it does not seek to increase the overall number of vehicles.
29% of CO2 emissions come from transport. Increasing the use of EV will assist in lowering this.

5. Who else have you involved in discussions and how have the helped to shape the proposal?

Primary engagement for this proposal has been with the following people/groups:

Andrew Barnes
Elizabeth Georgeu
Davinia Farthing
Elo Knight
Neil Hoskins
Jeremy Martin
Sharon Harrington
Ian Diley
Kevin Waters
Southend-on-Sea Air Quality Steering Group
Virgin Media/SMS Plc
Electric Blue Ltd

This proposal links both the Connected and Smart and Safe and Well Outcome where similar proposal were put forward and with a “continue” action from CMT. Development work has previously taken place related to provision of EVCPs and this continues.

6. What are the links and dependencies with the other outcome proposals?

The links from the Connected and Smart proposal for electric charging through increasing the choice of transport options through facilitating electric vehicle charging and the expansion of electric charging points in the Safe and Well (Green City) agenda were identified at CMT and these proposals have now been merged under the Safe and Well agenda into one clear proposal.

The proposal also links with two further proposals made in CS2: that of providing an active travel planning service for schools and other major destinations, and of developing and adopting local plan policies which support people having a wide choice of travel options. The three proposals within CS2 are designed to provide a progression from Council provision of infrastructure, to support for individuals to make behaviour changes, to requirements on private business to build sustainable transport choice into its planning and provision.

There is further linkage to proposals for across CS3 (Smart, clean and green travel).

7. Who are the partners (or potential partners) and how to you envisage their role(s) in collaborating to delivering the proposal to achieve the outcome?

There are a number of partner organisations and schemes for which there is potential to build on this proposal to further enhance EVCP infrastructure in the Borough:

- NetX Leading partners in the project are: EB Charging Ltd – chargepoint operator, feasibility studies for fleets. Hangar19 Ltd – charge point solutions developer. Brighton and Hove Council will be testing the NetX points on streetlights.
- V2Street - Upside Energy Ltd, Imperial College, EDF, Loughborough University, UKPN, E-Car Club
- OLEV The primary project partner is Electric Blue who will carry out a telematics study and taxi consultation to create a heat map with potential charger locations with the partner for installations to be identified through procurement via a framework – expected to be Electric Blue.
8. What potential challenges do you anticipate in respect of a) implementing this proposal, b) caused by this proposal once implemented?

Access to charging points may provide the following challenges:

- Access to charging points is a challenge in Southend because there is a larger proportion of households with no access to off street parking. Around 50% of houses and flats have no car parking and more than 60% of housing has no electricity access for parking which is why schemes are being developed to address this challenge.
- It has currently been established that there will be no change in parking charges, however if this changes an agreement on financial charging will need to be made.
- Whilst it is not currently planned to reserve spaces, reserving spaces is very expensive and lowers car park revenue and reduces available parking.
- There is already public concern with respect to reserved spaces for EV and
  - This will increase as the number of spaces increases.
  - Currently EV owners can only park free when charging but we cannot identify this so this is unenforceable. EV’s only generate revenue when charging. If we allow cars to stay when not charging, the revenue fails to pay for the costs so we can’t easily install more. If we cannot get cars off the spaces, we cannot control this.
- Is there potential inequality in requiring electrical vehicles-only park in these spaces when electrically powered vehicles are currently more expensive than petrol/diesel?
- There are electrical grid constraints on new connections and charging at peak times which is one of the purposes of the VPACH business model test as the energy for the charging will be generated and stored being distributed as export only when required and grid capacity is available.
- Long term, for grid reasons, we want every EV that is not being driven to be connected because the batteries will massively lower grid costs. Imperial College estimates this as being potentially work £500-1,000 per vehicle per year to the grid (they may make that available for part of it). This is only possible with truly ubiquitous charge point strategy.
- Planning permission will be required for the VPACH deployment of solar PV in the identified car parks

Section 3. Social Value

9. How could the proposal deliver social value - in terms of the local community, businesses, economy and environment and what will the specific impact and benefits be?

Contribution towards improved air quality will benefit all communities within the Borough but particularly those living adjacent to Southend’s major road routes. This is where air quality is at its poorest and where health effects are most keenly felt. Prevalence of long term conditions is highest in areas of higher deprivation and these are frequently coterminous with major road routes.

This work will provide new low cost business models for the mass rollout or EV points whilst breaking the link between uncertain growth of EV charging revenue and deployment costs allowing for a real ubiquitous EV charging infrastructure. The work on V2G will provide further revenue and as regulations are developed, this is expected to massively lower costs to the grid.

10. What is the perceived impact the proposal will have on groups with ‘protected characteristics’?

Residents at each end of the age spectrum are more vulnerable to health effects of poor air quality and any successful intervention to improve air quality will provide additional positive benefits to these groups.

11. What is the proposal’s potential direct or indirect impact on the wider community?

These are explored above.