

Transport Department
Room 3926
39/F Immigration Tower
7 Gloucester Road, Wan Chai
Hong Kong

18 March 2016

Dear Sir/Madam

Submission on the Electronic Road Pricing Pilot Scheme (in Central and Adjacent Areas)

Views from

Business Environment Council Limited 商界環保協會有限公司

Over the last two decades, Business Environment Council Limited 商界環保協會有限公司 (“BEC”) has taken a leading role in advocating the business case for environmental excellence in Hong Kong. Our members are committed to actively engaging with the HKSAR Government (“the Government”) on a range of issues relating to the environment and sustainability.

BEC is an independent charitable membership organisation comprised of approximately 200 member companies ranging from major holding companies to small and medium-sized enterprises in Hong Kong. Views expressed in this submission are those of BEC, and are based on consultation with our members, but may not necessarily be the same as the position of each individual member.

Summary

BEC welcomes the Electronic Road Pricing (“ERP”) Pilot Scheme. It has in its 2016 CE Policy Address submission and previous policy address submissions asked the Government to consider measures such as ERP, to address hotspots of traffic congestion and roadside emissions in Hong Kong. We recognise the substantial body of evidence as to the benefits of ERP in terms of air quality, carbon emissions and addressing congestion. We recognise the local benefits in the form of enhancing the liveability of a city and its resource and economic efficiency, through reduced fuel usage and reduced, more consistent, commuting times.

Our detailed replies to the questions posed in the consultation are set out below. In order to address the damaging health impacts arising from air pollution, and ensure Hong Kong plays its part in reducing damaging GHG emissions, we ask the Government to:

- (a) Swiftly introduce the pilot in Central, with a view to its introduction for the long term and to enable consideration of electronic road pricing in other congestion affected areas.
- (b) Explore measures to strengthen the anticipated beneficial impact of ERP travel times of those who may currently drive in or through the area. These measures may include reviewing public bus routes, park and ride provision possibly at out of town MTR stations, introducing electronic information regarding parking space availability in the district, private block-based shuttle buses where they do not duplicate public transport



routes, better walking routes, and additional escalators/elevators. Government should consider ring-fencing revenue for improving the transport network and enhancing transparency as to how these funds are spent.

- (c) Introduce supporting measures to back up this scheme, including more rigorous enforcement of penalties for parking offences and enforcement of banned traffic manoeuvres, such as illegal turns and illegal stopping in yellow box junctions, as well as measures to discourage loading and unloading of commercial vehicles in peak hours. These supporting measures will complement the ERP scheme by ensuring a smoother flow of traffic.

Our Reasons for Supporting the Pilot Scheme

Hong Kong's transport infrastructure system is one of the best in the world with around 90% of journeys¹ carried out using the public transport system, which is comfortable and efficient. In some areas, such as Central and the Mid-levels, Hong Kong also has innovative transport systems, namely raised walkways and escalators. This allows for the efficient movement of people within a high density city where the value of land is one of the highest in the world which means a high opportunity cost of roadspace.

However, in recent years, the number of private vehicles has increased substantially, at a rate of approximately 8% a year². There are also about 120, 000 heavy goods vehicles (including trucks, and coaches) in Hong Kong which though smaller in number emit the highest proportion of emissions. Franchised buses and taxis are also large contributors of emissions³.

We note that the Government's studies show that traffic⁴ makes a substantial contribution to emissions of the most harmful pollutants: 27% of NOX emissions, 20% of particulate matter (PM10s), 23% fine particulate matter (PM2.5s). In addition, ozone levels have increased in recent years⁵. It appears that at least in part these high ozone levels are related to traffic as ozone is formed from a reaction between NOx emissions and VOCs, a process which increases with more sunlight and higher temperatures⁶.

The health impacts of poor air quality are well-recognised by the WHO, and the Hedley Index in Hong Kong shows that on average in the past 10 years, we have had 3,097 premature deaths and 209,728 hospital bed days per year⁷.

Positive measures have been introduced by the Government to reduce the pollution flowing from traffic, such as subsidies for cleaner buses, subsidies for replacing pre-Euro 4 diesel commercial vehicles, and introducing LPG for taxis. Nevertheless pollution levels remain high⁸, and the Government takes the view that NOx emission reductions from this shift will not be sufficient to meet the targets⁹. This is particularly the case for congested streets, and in areas

¹ Lam, W. (2003). Advanced Modeling for Transit Operations and Service Planning. Elsevier publishing. ISBN 0-08-044206. Speech by the Commissioner of Transport, 2010 (http://www.td.gov.hk/en/publications_and_press_releases/speeches/20101211/index.html)

² "Transport, Communications and Tourism" Census and Statistics Department. Retrieved June 2015. <http://www.statistics.gov.hk/pub/B10100022015MM06B0100.pdf>

³ As above. See Clean Air Plan 2013 for numbers and impacts. http://www.enb.gov.hk/en/files/New_Air_Plan_en.pdf

⁴ Hong Kong Environmental Protection Department (2014), *Hong Kong Air Pollutant Emission Inventory*, http://www.epd.gov.hk/epd/english/environmentinhk/air/data/emission_inve.html

⁵ <http://news.cleartheair.org.hk/?p=9099>

⁶ <http://www3.epa.gov/airquality/ozonepollution/basic.html>;

⁷ Source: <http://hedleyindex.sph.hku.hk/>

⁸ <http://www.aqhi.gov.hk/en/annual-aqi/latest-annual-aqi.html>

⁹ Clean Air Plan, p.18.



like Central, Causeway Bay and Mong Kok, made worse by canyon type streets and limited air movement¹⁰.

There is evidence from many countries to support the introduction of ERP on the grounds of a cleaner environment which brings health and well-being benefits as well as in reducing the carbon footprint of a city. The International Council on Clean Transportation report¹¹ (2010) cites evidence to show:

- London: the introduction of the congestion charge in 2003 reduced CO₂ emissions by 15 -20% and Particulate Matter (PMs) and Nitrogen Oxides (NO_x) by 10%¹².
- Singapore: traffic into the city fell by 45% after the introduction of the city-wide scheme in 1975 (overhauled in 1998 to introduce an electronic system, leading to a further fall by 20%).
- Stockholm: led to a 20% reduction in traffic and a reduction of CO₂ by 15%.

As stated in the ERP Pilot Consultation document, the recent feasibility study carried out for Hong Kong¹³ also shows substantial benefits. The 3rd study (as set out in the Consultation Document) shows benefits including:

- Vehicle kilometres in the zone forecast to reduce by 2-17%
- Vehicle hours forecast to reduce by 5-36%
- Average travel time for vehicles (in the zone) forecast to decrease by 2-25%
- Estimated net economic benefit of ERP resulting from journey time saving and lower vehicle operating cost: \$2 billion/ year.

In the light of this BEC's overall view is that this ERP pilot is an important step forward in terms of improving the liveability and efficiency of Hong Kong. Liveability is regarded as important for business success not only in terms of attracting talent and business to the city, but in avoiding loss of productivity as a result of ill-health. A healthier population also reduces the burden of health costs for the city.

The most desirable approach is therefore considered to be that which brings health benefits through a cleaner environment, as well as a lower carbon footprint for the city. We therefore emphasize the importance of the ERP being designed to achieve a cleaner environment to obtain the health benefits of improved air quality. Addressing congestion will reduce pollution through reducing the idling time and slow movement of vehicles, especially trucks and buses. The latter have higher overall emissions but low emissions per passenger. To ensure that people have sufficient alternative routes, we would like to see the system supported by improved alternative means of travel, including better pedestrian and cycling facilities (which also bring health benefits), enhancement of bus provision, and consideration of other measures such as park and ride schemes for out of town areas.

¹⁰ See Civic Exchange, PM 2.5 Pollution along the Tramway (2015)

¹¹ http://www.theicct.org/sites/default/files/publications/congestion_apr10.pdf

¹² Source: BBC article <http://www.bbc.com/news/uk-england-london-21451245> 2003-2013: Traffic levels decreased by 10.2%; Approximately 70,000 fewer vehicles are on the streets every day.

¹³ Hong Kong Transportation Department. (2015). Feasibility Study on Electronic Road Pricing. http://www.td.gov.hk/filemanager/en/content_524/erp_eng.pdf



Consultation Questions

Question 1: Do you have any views on how the boundary of the Central District ERP Pilot Scheme should be drawn up, and what are your reasons?

Question 2: Do you think some neighbouring areas of Central, say some parts of Admiralty or Sheung Wan, should be covered in the Central District ERP Pilot Scheme? If so, which areas?

BEC takes the view that the boundary of the ERP Zone should be around areas of high levels of congestion, but be sufficiently wide to avoid the unintended adverse consequences of higher levels of traffic and pressure on parking facilities in neighbouring areas. The risk of commuters parking or being dropped off on the edge of the zone and walking into the centre of town, shifting congestion and pollution rather than reducing it needs to be minimised. The ease of availability of alternative transport in the wider region will mean that ease of travel remains good. So our view is that the boundaries should be broader than the narrow Central District, covering Sheung Wan and Admiralty too, to create a buffer zone between this central business district and less congested areas.

Question 3: Do you prefer an area-based or cordon-based charging mechanisms for the Central District ERP Pilot Scheme. Why?

A cordon-based mechanism is preferred because of its inherent flexibility, allowing for charging by road segment, direction of travel, and time-of-use. It is considered fairer and more optimal as it takes into account the distance travelled within the zone, and will deter unnecessary circulation of vehicles.

Question 4: Do you agree that ERP charges for the Central District ERP pilot scheme should be imposed throughout the hours in a day when the traffic flow is high in the charging area?

We agree. We consider that the charges should apply throughout each working day – around 7am - 8pm - and on Saturday because of the higher levels of vehicular movement over those periods of time.

Question 5: Do you agree that Sundays and public holidays should be excluded from the ERP charges for the Central District ERP pilot scheme? Do you have any other views on the charging period?

We agree that it is best not to charge at the moment on Sundays and public holidays. However extending the ERP to Sundays should be considered in due course as a way of adding to the appeal of the Central area to shoppers and other visitors, and improving air quality for residents in the area. It is recognised that part of Central is already a pedestrianised zone on Sundays¹⁴, and introducing charging for Sundays could be a way of reducing traffic and gradually extending this pedestrianisation.

¹⁴ http://www.td.gov.hk/en/transport_in_hong_kong/pedestrianisation/pedestrianisation/central_/index.html



Question 6: Which charging approach do you prefer for the Central District ERP pilot scheme - a unified charge for all vehicles, differential charges based on vehicle sizes (i.e. larger vehicles to be charged more), or differential charges based on vehicle carrying capacity (i.e. vehicles with higher carrying capacity to be charged at lower levels)?

We recommend that at this stage the system is kept simple with a unified charge, focusing on reducing congestion. We recognize that there are arguments in favour of concessions for low emission vehicles, which we would be happy to consider in more detail, with the view that the priority at the outset needs to be addressing congestion which itself leads to higher levels of pollution as well as longer travel times. Exceptions at this stage should however be made for emergency vehicles and franchised buses and other buses on fixed routes with agreed schedules of service, as well as trams.

Question 7: Do you have any suggestion on the range of ERP charges which you believe could induce motorists to adjust their travel behaviour when (a) ERP charge is levied on a per day basis; or (b) ERP charge is levied on a per pass basis (charging at each and every charging point)?

We are not in a position to provide figures, but we stress the importance of charges being sufficiently high to change behaviour and the need to keep these charges under review to ensure they continue to have this impact. We recognise the relevance of charging rates in other cities, but also take the view that the optimum rate will vary from city to city. A modelling exercise would be useful to identify the optimum level.

It is noted that costs in other cities are as follows:

- London: HKD 140/day
- Singapore: HKD 3-66 per pass
- Gothenburg: HKD 8-20 per pass, capped at HKD 55 per day.

As indicated earlier, we also take the view that a per pass approach is the better approach in terms of congestion and enhancement of our local environment.

Question 8: Do you support providing exemption/concession to vehicles other than emergency vehicles for the Central District ERP pilot scheme? If so, what are the type(s) of vehicles and why do you choose them?

We support exemptions for emergency vehicles, franchised buses and other buses on fixed routes with agreed schedules of service, and trams. We recognise that there may be other categories of vehicles for which concessions may be justified. We trust that the government will develop a policy on concessions which takes into account relevant considerations whilst keeping exceptions to a minimum so as to ensure the ERP is not undermined and rendered largely ineffectual.

Question 9: DSRC technology requires the installation of an IVU in each vehicle entering the charging area for ERP payment, while ANPR technology captures the license number plate of a vehicle every time when it enters/leaves/circulates in the charging area. On the whole, would you say that ANPR or DSRC is a more preferable technology for the Central District ERP pilot scheme?

We do not have a strong view on this but take the view that the criteria used in deciding on the best approach should include: cost of installation as well as operation and maintenance (over



its life cycle); flexibility in terms of future changes to zone boundaries; compatibility with smart technologies; and ease of use for the driver (to address reluctance by vehicle owners to accept a new system).

Question 10: Do you have any concern over the protection of privacy in the Central District ERP pilot scheme? What are your concern(s) and how do you think it/they could be addressed?

In the light of regulations protecting personal data, this is not considered to be a significant issue.

Question 11: What indicators do you think we should use to evaluate the effectiveness of Central District ERP pilot scheme?

We would like to see the inclusion of vehicle travel speeds, volume of traffic and also the use of air quality indicators (NOx, Ozone, PMs, and also carbon).

Question 12: Do you agree that the charging level shall be reviewed regularly and adjusted where necessary in order to maintain the effectiveness of the Central District ERP pilot scheme?

Yes, we take the view that this needs to be reviewed regularly to ensure that the system continues to impact in the longer term on behaviour.

Question 13 - Do you have any suggestions on measures which could probably complement the implementation of the Central District ERP pilot scheme?

We support complementary measures along the following lines, which will help ensure public acceptance of the system as well as optimise the benefits in terms of a cleaner healthier environment.

(a) Adequate alternative transport arrangements:

- Bus provision will need to be reviewed to address changes in need, and additional bus priority lanes considered to enhance the passenger experience, and further provision of private block-based shuttle buses but continuing to reflect the current position of not permitting shuttle buses that duplicate existing provision;
- Improved walking and cycling facilities, such as additional escalator/lift systems in the Central to Mid-level area, traveller systems, as well as cycling provision, possibly along the harbourfront. Cycling provision is now becoming more common in Asian as well as European cities and proposals to improve the harbourfront offers some opportunities¹⁵.

(b) Review parking policy and provision to ensure that this is supportive of policy on reducing congestion, which should include (without being limited to) working to improve Park and Ride systems in outlying areas eg in New Territories, South side of HK Island (as this is where some of the commuters will be coming from) and cycle parking close to or at out of town MTR stations.

¹⁵ <http://www.japantimes.co.jp/news/2014/11/06/national/tokyo-aims-promote-cycling-means-transport-ahead-olympics/#.VqGfLmlodU>;
<https://www.ura.gov.sg/uol/master-plan/View-Master-Plan/master-plan-2014/master-plan/Key-focuses/transport/Transport>



- (c) Install additional electric vehicle chargers in car parks to enable the switch to lower emission vehicles.
- (d) Introduce measures to discourage loading and unloading of commercial vehicles in the area in peak hours.
- (e) Introduce electronic information regarding parking space availability in the area to reduce unnecessary traffic movement in the area
- (f) Rigorous enforcement of parking restrictions in Central and neighbouring areas.
- (g) Ring-fence revenue, at least initially, for improvements to transport and ensure transparency in spend, so that there is a clear awareness of the benefits of the scheme. This approach when taken in London enabling considerable improvement in the bus network supporting public acceptance of the scheme.
- (h) A good programme of communications to explain the benefits to people – from road safety to air quality, and health benefits from a more comfortable pedestrian experience.
- (i) Monitoring of vehicle movements with reference to vehicle type and size, but also specifically in relation to taxis which provide an important service for business people in particular, in order to assess impact and inform improvements.

Conclusion

Thank you for considering and taking on board our policy submission. If there are any questions or concerns in regard to the content, please contact our Chief Executive Officer, Mrs Christine Cheung on christinecheung@bec.org.hk .

Yours sincerely,



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cc Mrs Christine Cheung, CEO, Business Environment Council Limited

