# HOW CITIES ARE DRIVING THE FUTURE WE WANT: city progress towards meeting Green and Healthy Streets Declaration commitments



Since October 2017, C40 cities from around the world have made an ambitious commitment to buy only zeroemission buses from 2025 and ensure a major area of their city is zero emission by 2030.

Signatory cities describe in their own words<sup>\*</sup> what they are doing now to act on this commitment and create the future we want.

Auckland Copenhagen Heidelberg London Los Angeles Medellín Mexico City Milan Oslo Oxford

Paris Quito Rotterdam Santiago Seattle Seoul Vancouver

\*Cities will publicly report on progress annually after signing the declaration. These cities have voluntarily reported in advance of the first 2020 reporting deadline. Cities listed in italics are non-C40 cities.

Since signing the Green and Healthy Streets Declaration in 2017, Auckland Transport has worked diligently to create New Zealand's first ever Low Emission Bus Roadmap. This Roadmap, which was endorsed by the Board in December 2018, presents the baseline for transition of the Auckland bus fleet, with key milestones in 2020, 2025 and 2040. This Roadmap takes into consideration relevant policy frameworks, technology and innovation, financial impacts, infrastructure challenges and strategic options. All of Auckland's public transport buses are privately owned, so Auckland Transport has procured two electric buses which are being leased to operators to get them comfortable with the technology. Auckland Transport has also partnered with another e-bus manufacturer and is trailing their technology with one of the bus operators and has committed to procuring three hydrogen fuel cell buses.

The proposed Zero Emissions Area (ZEA) for Auckland is being progressed as a significant component of the ongoing refresh of Auckland's City Centre Masterplan (CCMP). The refresh will include an innovative traffic circulation concept known as Access for Everyone (A4E) which intends to deliver a ZEA by 2030. A4E introduces a new traffic circulation system where private vehicles would access city centre zones from the city's edge. It organises the city centre into nine low-traffic neighbourhoods, including a core pedestrian-priority zone; the ZEA. A4E makes space for current and proposed public transport investment (including electric buses), addressing the rapidly increasing numbers of workers, residents and visitors in central Auckland and making streets more inclusive.

In the short term, A4E is commencing in October 2019, with small pilot projects to inform and refine our planning. 2024 will see completion of Auckland's City Rail Link, the biggest construction project in New Zealand, which is currently being constructed through the city centre. A transition plan for coordinating this work with other major infrastructure projects, our new bus network rollout, major international events and a \$10bn+ programme of private construction is being developed. This plan will consider how we can implement an initial Low Emission Area (LEA) by 2024 on our way towards a full ZEA by 2030.





Since signing the Green and Healthy Streets Declaration in 2017, the City of Copenhagen has decided to change the entire bus fleet to zero emission buses by 2025. This will be done by setting functional demands for zero emission in all present and forthcoming tenders for bus operation. By December 2019, 15% of all bus operation will be based on zero emission buses.

The City of Copenhagen has worked with the regional public transport authority, Movia, to develop a systematic approach to implement urban fast chargers in tender documents and in the city's work to permit new bus charging infrastructures at end stations simultaneously.

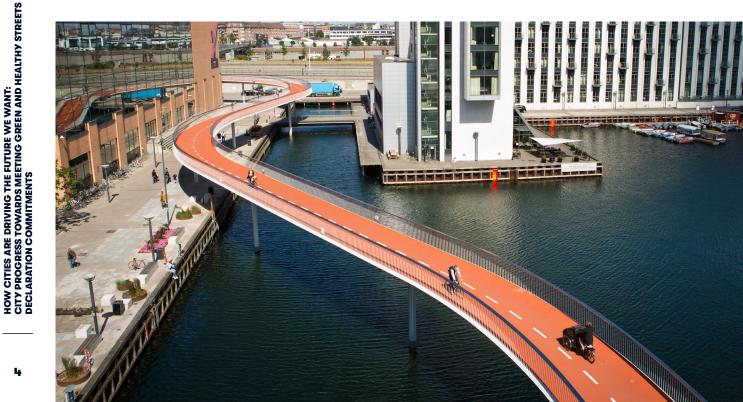
The present low emission zone will be strengthened in July 2020 and restrict access for polluting vehicles, allowing euro 5 buses and trucks and euro 4 vans. These demands will be further strengthened in 2022 and 2025. By 2025 only

euro 6 vans, trucks and buses will be allowed in Copenhagen. The City of Copenhagen will work with the new national government to implement corresponding demands for passenger cars and to implement a zero-emission zone in an area of Copenhagen by 2030.

An important part of developing a Zero Emission Area is the infrastructure support outside and inside the area. An extensive network of bike track, bike lanes, and zero emission public transport to make bicycling and Public Transport the obviously means of zero emission transport to and from the area is essential. Copenhagen is continually developing further dedicated bicycle infrastructure citywide and a new metro circle line is being inaugurated 29 September 2019.

**On track with delivery** plan to meet declaration commitments? AS

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Since Heidelberg signed the Green & Healthy Streets Declaration in 2018, the city has installed a new bus line with three battery electric buses in operation, connecting the historic "Altstadt" with the main station. Heidelberg is exploring the opportunity to introduce hydrogen fuel cell buses into services as soon as possible as well. The city has also been working on a "Green City Logistics" concept, which intends to simplify and improve the efficiency of freight and create a green last mile within the historic "Altstadt". In the historic "Altstadt" and in "Weststadt, cars have been reduced. Moreover, there are several conceptual approaches, which affect the demilitarized conversion areas like "Hospital" and "Patrick-Henry-Village". Even though these areas are not Zero Emission yet, the city has an operating low emission zone, the "Umweltzone".

Heidelberg, Ludwigshafen and Mannheim have developed, and are currently implementing, the "Green City Masterplan". The Masterplan holds various innovations and regulations to guarantee sustainable mobility development and reduce pollution - both carbon dioxide and nitrogen dioxide. Some of the goals for Heidelberg include the extension of emission free public transportation and the installation of bike freeways, which connect suburban districts with the central parts of Heidelberg. In addition, the municipal fleet is being electrified with both battery electric vehicles (BEV) and fuel cell vehicles (FCEV). New city fleet vehicles will be replaced step by step with non-fossil fuel alternatives.





Since signing the Green & Healthy Streets Declaration, London set a requirement that all new double decker buses are hybrid or zero emission. This is challenging given 75 per cent of the fleet needs to be double decker and the market is in its infancy. However, London is making great progress in this area, operating one of Europe's largest electric bus fleets with 240 by the end of 2019, including London's first double fully-electric double decker routes. The rollout of electric buses forms part of our strategy to deliver a zero emission bus fleet by 2037 at the very latest.

Since 2018, all newly licensed black taxis must be zero emission capable. There are currently over 2,000 range-extended electric taxis operating in London and a fully electric model will be licensed this year. From 2020, zero emission capable requirements will be phased in for new private hire vehicles. Our strategy is for all of London's taxi and private hire vehicles to be zero emission capable by 2033. The Mayor has also launched an 'Electric Vehicle (EV) Infrastructure taskforce' and published a Delivery Plan this year – the first of its kind by any city –with input from over 140 organisations. By August 2019, London had delivered over 200 rapid charge points, one of the largest urban rapid charging networks.

In April 2019, London launched the world's first Ultra Low Emission Zone (ULEZ), operating 24 hours, 7 days a week in central London. The ULEZ standards will be introduced London-wide for buses, coaches and HGVs in October 2020 (1,580km2) and the central London ULEZ will be expanded to an area the size of 381km2 in October 2021. This is a precursor to the Mayor's aim of introducing a zero emission area in central London by 2025.





The City of Los Angeles has been making progress on its commitment to have a 100% zero emission bus fleet by 2030. The regional transit authority, LA Metro, also committed to this goal. The functional reality of meeting this 2030 target means that the City of LA and LA Metro will only be procuring zero emission buses moving forward.

LA Department of Transportation (LADOT) has four electric buses currently in operation in its fleet. LA Metro has none in operation. Both agencies have ordered more buses and are designing the electrification of their bus depots. LA Metro is currently building out four bus charging facilities that will support the complete electrification of the Orange Line – a BRT line running in the San Fernando Valley. LADOT is working with the local utility to bring power to support electrification of three bus depots that will support the 150+ electric buses to be procured over the next two years.

The Zero Emission Area "(ZEA)" in Los Angeles is not defined yet, as Los Angeles does not have the same natural city center that may lend itself to this type of project. While a number of locations are being looked at and considered, the City has brought on consultants to help create a fully implementable roadmap by 2021 that will ensure our ability to successfully implement the ZEA. Through the process of creating the roadmap, we will develop a rubric and parameters that help define potential zones and what a ZEA is, undertake extensive stakeholder outreach and on the around efforts to gauge interest in the defined areas, engage with the political stakeholders, and finally define the steps, actions and milestones that will lead to a fully realized ZEA. The City attended C40's 2018 ZEA workshop in Seattle and gathered a lot of insight into how other US and international cities are approaching the topic.





Since signing the Declaration of Green & Healthy Streets in 2018, the City of Medellín has worked with the regional transit authority to issue a tender for 65 new electric buses, which will arrive in 2019. We hosted the C40 Zero-Emission Area workshop in 2019 and are working to develop the concept for our proposed zero-emission areas of the city and the appropriate policies to promote this. We are also piloting different zero-emission zone approaches throughout the city, concentrating efforts in the city center. While designing the zero-emission area, we implemented an ambitious strategy for walking

and cycling (with dedicated cycle lanes that will now cover 125 kilometers in 2019) and the center with the implementation of 15 green corridors. In order to make the transition to cleaner vehicles, we have an expansion of the rapid charging network throughout the city, implemented 20 chargers to 2019. Our greatest commitment is to continue being an innovative center to reach emissions transport zero.



Mexico City's Government has an enormous commitment to achieve a healthier environment and become a carbon neutral city. As the city faces environmental challenges such as air quality problems, we aim to accelerate the transition towards sustainable urban mobility by decreasing emissions from the transportation sector by 30% in 2024.

To reach these goals we will Integrate different transportation systems in the city and we will promote walking, cycling and clean public transportation. In addition, we will implement travel-demand management strategies; we are looking to Improve our current infrastructure and transportation services to increase equitable accessibility, reduce commuting time, improve travel experience on sustainable transportation modes, and make freight transit more efficient. A Master Plan is under development for improvements to the trolleybus system, including possible expansion of the network with new corridors, in addition to the development of new business models for fleet renewal. The city has already procured 30 trolleybuses since signing the declaration, and by 2024, we are planning to procure 500 trolleybuses all together

Besides mass transportation systems (BRT and Trolley), we plan to count on 100 km dedicated lanes for public transportation use; and Protect commuters by providing inclusive, safe and high quality infrastructure and transportation services. Our ambitious Cycling Strategy aims to double the use of cycling as a mode of transportation by up to 3% of all trips by 2024. To achieve this goal, we seek to build 600 km of road cycling infrastructure in addition to the existing 100 km. We will also increase our solid educational and enforcement campaigns and extend our bike-sharing system to reach up to 10,000 bicycles by 2024.

Mexico City's administration is setting-up plans for the development of an integrated e-mobility strategy. As well as the design of an energy efficiency map to achieve energy efficiency in buildings. The biggest challenges so far, in the introduction of the use of renewable energies, energy efficiency and e-mobility have been the acquisition of energy consumption data and the selection of the most suitable technologies.





Since the signature of the Green & Healthy Streets Declaration in 2018, the City of Milan has carried out several actions in order to achieve its goals. First, in November 2018, the City of Milan approved the Sustainable Urban Mobility Plan (SUMP) with the aim to reshape the city's overall mobility over the following 10 years. In February 2019 Milan further limited city access for petrol and diesel vehicles by introducing the largest Limited Traffic Zone in Italy and one of the largest Low Emission Zone in Europe. The latter, called "Area B covers an area of 128 square kilometers (approximately 70% of the entire municipal territory), affects 95% of the city's resident population (almost 1.4 million inhabitants). On 1st October 2019, Euro 4 diesel vehicles will also be banned (these have been banned from the central "Area C" since 2017). Gradual bans for other classes of passenger and freight vehicles will follow until 2030, when all diesel vehicles will be banned from Milan. "Area B" is part of a definite, progressive and gradual set of rules to reduce particulate matter and improve urban quality in Milan.

From 2020 ATM (Azienda Trasporti Milanesi), which manages public transport in the Lombard capital and in 46 provincial towns, will start buying only and exclusively electric buses, five years ahead of the commitment taken by the Mayor of Milan at the Together 4 **Climate Summit in** Paris in the framework of the C40 Cities network. At the end of 2030, diesel buses will disappear from the fleet of ATM, which will be composed of 1,200 electric buses. In addition to this, all depots will be restructured, and three innovative structures will be built from scratch. By 2030, the ATM vehicles will reduce the diesel consumption by 30 million litres/year and the CO2 production will decrease by nearly 75k tons/year. These milestones will make Milan one of the first cities in Italy and Europe to provide a full electric public transport service.



#### Zero-Emission Buses

Oslo's, and Ruter's, ambition is to offer fossil-free public transport by 2020, and for all public transport to be entirely emissions free in 2028. This is the target for the fleet in total. Ruter does not procure the buses means of transport themselves but procures the public transport services for the City of Oslo. Ruter plans, coordinates, orders and markets public transport for the City of Oslo and the region.

#### Zero-Emission Area

Oslo's Climate and Energy strategy express Oslo's target to be a zeroemitting city by 2030. The car free liveability program is a part of a strategy for developing a zero-emission area in the central business district. Oslo's Agency for Climate has submitted to the City Government a science-based report on how Oslo can reach its climate target. The report points to mobility, particularly in freight and services, and waste management, as priority areas to address. Although Oslo is currently on a downward trajectory in reducing emissions, new policies and more effective measures, especially in commercial transport, are needed.

<u>Car-free liveability programme</u> The car-free liveability program is making the city greener and is securing space for people and activities in the city centre. This includes the development of pedestrian streets as systems and networks, rather than isolated 'islands' in the area zoning plan that was politically adopted in June 2019. There will be areas that are regulated as pedestrian areas and square, some that are dedicated public transport and some for multiple-use.



Since signing the Green & Healthy Streets Declaration in 2018, Oxford City Council has worked closely with Oxford's taxi trade, bus companies, and businesses, as well as a wide range of stakeholders, to announce the latest version of the world's first Zero Emission Zone, requiring our Black Cab fleet to be zero emission capable by 2025, upgrade our buses to Euro 6 engines then electric, and restrict polluting vehicles in the city centre from 2020. We have sourced significant sums of money to install different types of electric vehicle charging infrastructure technology,

retrofit 115 local buses to Euro 6 standard, incentivise Black Cab drivers to convert to electric taxis, and encourage electric vehicle uptake, as well as modal shifts to walking and cycling. We have declared a climate emergency, set the goal of becoming a zero-carbon council by 2030, and announced the UK's first citizens' assembly to deal with climate change, which will convene from September 2019, ahead of setting a budget with ambitious climate change measures.

On track with delivery plan to meet declaration commitments?



HOW CITIES ARE DRIVING THE FUTURE WE WANT: CITY PROGRESS TOWARDS MEETING GREEN AND HEALTHY STREETS DECLARATION COMMITMENTS

On 15th January 2017, Paris established the first Low Emissions Zone (Zone de Circulation Restreinte - ZCR) in France. The scheme limits access to central Paris for the most polluting vehicles by means of Crit'Air stickers which indicate the level of pollution emitted by vehicles. The categories of vehicles authorised to travel will change in several stages (2017, 2019, 2021-2022), to ensure the progressive implementation of the scheme until the Zero Diesel in Paris target is attained in 2024. The low emission zone in the Grand Paris Metropolis was implemented on the 1st of July 2019 (but not with the same level of restrictions as the zone in Paris), and we will continue to work with the Grand Paris Metropolis so that in 2024, we have attained the same level of restrictions. The City of Paris has set itself the target of phasing out petrol-powered mobility by 2030.

75 new electric buses will arrive in 2019. RATP intend to order 800 electric buses by 2024 to replace existing diesel buses. Urban Logistics Sites will be developed in Paris between now and 2030 to create a network of logistics sites situated at the heart of the city, as close as possible to the final customers, and enabling a reduction in the number of vehicles on the road and the use of clean or active models for the final delivery miles.

A major structural East-West and North-South network – the Express Bike Network (Réseau Express Vélo – REVe) is being developed. A new Vélib cycle share scheme was launched in January 2018, and eventually 30% of these bikes will be electrically assisted.



Since signing the Green & Healthy Streets Declaration, the city of Quito has worked in a coordinated matter with the relevant municipal institutions in order to move forward towards our commitments and to achieve the target of promoting the use of clean technologies in public transport.

Regarding the intention to introduce zero emission buses in the municipal bus fleet, the city of Quito in 2018 applied for the C40 Cities Finance Facility and was awarded with the technical assistance to structure a financially feasible project to significantly reduce emissions from the public transport sector in the city. The project has two components: 1) Transition to electric buses in the ECOVIA trunk corridor, 2) Extension of the Central Trolleybus Corridor. The technical assistance started in June 2019 and will last for the next two years. Furthermore, Quito has presented an Ordinance the makes it mandatory a progressive change of diesel buses to other cleaner technologies in all public buses in the city. The Ordinance is currently under review for an approval by the Municipal Council. If approved it is expected that by 2040, 100% of buses that circulate in the city will be using zero emission technologies. It is important to mention, that all these initiatives as well as the Zero Emission Area (ZEA) are strongly related with the first Metro Line in Quito, which will be active by the end of 2019.

On the other hand, the Secretary of Environment, Secretary of Mobility and the Institute of Patrimony has several workshops in 2018 in order to define a zero emissions area within the Quito City Centre within the framework of the Historical Centre Special Plan. As part of this Plan, the city of Quito has closed two main roads in the main square and transform them to pedestrian roads.

In this sense, the city of Quito promoted the vertical integration for financing climate action, that called national governments to integrate city plans and projects within their NDC Investment Plans. Given that transport is one of the highest GHG emissions sources in the LatAm Region, a possible first flagship demonstration initiative for this Call to Action was to focus on financing zero emission fleets and mobility measures in the unique historic centres of LatAm Cities. Preserving and climate proofing these vital heritage sites, emblems of Latin America cultural roots and ancestral heroic gestures, is an important element of delivering a sustainable and resilient planet for future generations. Starting from historical centers is a first step of great impact and confidence for cities, showing that they can become low emission communities and implement concrete mitigation and adaptation responses, with monitoring strategies for emission reduction indicators and thus enhanced direct financing.



Building on the Urban Mobility Plan, adopted in 2017 by the City Council of Rotterdam, we are drawing up an ambitious Rotterdam Mobility Approach and Zero Emission program. These plans aim to making mobility in the city more sustainable by influencing behaviour (demand for movements), spatial planning and street design (modal shift) and clean technologies (electric driving). Together with the regional transit authority (MRDH) a public transport concession has been tendered, including electrification of the bus fleet. The first 55 buses become electric in 2019 and the entire bus fleet will be zero emission by 2030. Contracted transport for schoolchildren and disabled, commissioned by the municipality was also issued into concession in 2018 and will be entirely zero emission in 2025.

Together with the stakeholders in city logistics (i.e. shippers, transport service providers and shops), we are working on a step-by-step plan for Zero Emission City Distribution, which will lead to a first zero emission zone for freight transport in 2025. A first zero emission street for trucks is already in use ('s-Gravendijkwal). In 2019 we will start piloting different approaches to reducing traffic on this street. We continue to make our municipal fleet of duty vehicles zero emission, in 2019 the first two full-electric garbage truck are put into use. And we continue to expand our EV charging network across the city. At this moment the network consists of 2000+ charging points.

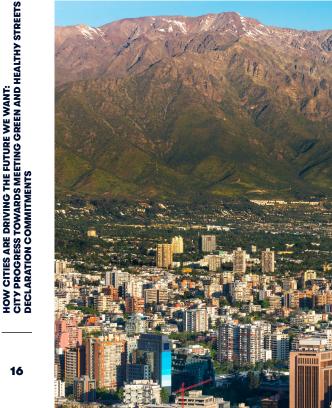


Since signing the Green & Healthy Streets Declaration, the Metropolitan Region of Santiago has worked closely with transport operators and utilities to transform the city bus fleet, as well as municipal vehicles. Through the alliance of operators and utility companies, new innovative business models have been established which have allowed Santiago to finance the procurement of electric buses, along with the necessary charging infrastructure facilities, the latter thanks to a public private agreement subscribed by the Regional Government. Following the city's initial delivery in December 2018 of 100 electric buses, the city has worked to rapidly electrify further vehicles within the fleet. With more than 200 electric buses in service on the city's roads, Santiago is currently operating the largest electric bus fleet in the world outside of China, with a further 180 electric buses expected to be introduced into operation by the end of the year. Additionally, Santiago

continues to demonstrate further action in this field, as by 2020, the city plans to introduce 2.000 electric buses into the city, thereby completing the electrification on 30% of the public transportation bus fleet.

In July 2019, following the attendance at C40's Zero Emission Area workshop, Santiago is working on developing the concept for our proposed zero emission area of the city and the appropriate policies to advance this. The Metropolitan Region will also build on our ambitious walking and cycling strategy, creating green spaces within the city, expanding the cycling network and promoting transportation alternatives at a low cost, besides adding bicycle parking areas for short and long terms.





Seattle is currently engaged in a variety of transportation-related carbon reduction strategies, initiatives and programs that align with Green and Healthy Streets, such as Seattle's Congestion Pricing Study, Electric Charging in the Public Right-of-Way (EVCROW), Drive Clean Seattle (transitioning vehicles to electricity), Bicycle Master Plan Implementation and Bike share programs. Additional programs also include the city's strong transportation demand management program, PMP (Pedestrian Master Plan) implementation and the electrification of City's fleet. Seattle is also collaborating with King County Metro and the STBD (Seattle Transportation Benefit District), as well as with the University of Washington's Urban Freight Lab on more efficient ways to deliver goods including cargo e-bikes, and the forthcoming e-scooter pilot. Seattle can build on our existing green transportation programs, and planned projects, in considering where and how to plan for and locate a zero emission area. In addition, we are developing a Green and Healthy Streets memo to solicit the Mayor's guidance on how to move forward in creating a Zero Emission Area (ZEA) in Seattle.

Metro King County operates most of the buses in Seattle and is moving towards a zero-emission fleet. They are a separate entity from the City and have made a commitment to achieve carbon neutral transit.

"King County is taking action to confront climate change, and Metro is playing a major role by reducing transportation-related greenhouse gas emissions. Metro was a national leader in adopting diesel-electric hybrid buses, and recently deployed a new fleet of zero-emission electric trolley buses.

Now Metro is taking the next step and transitioning to a zero-emission vehicle fleet powered by renewable energy. This commitment is based on a successful test of three batteryelectric buses and an in-depth feasibility analysis. Assuming that battery bus technology evolves to meet our transit system's needs, Metro will purchase only zeroemission buses starting in 2020. The transition to a zero-emission fleet could be completed as early as 2034, or by 2040 at the latest."





Since signing the Green & Healthy Streets Declaration in 2018, the City of Seoul is working toward its target of deploying 2,720 electric buses by 2025 to improve the air quality and the quality of bus services. Twentynine electric buses were deployed in 2018, and the number is expected to grow to 100 by the end of this year. We have been working with the central government to expand hydrogen fuelling stations with the view of deploying 287 hydrogen fuel cell buses by 2025. We have had a Low Emissions Zone in place since 2012 to limit old heavy diesel vehicles from entering Seoul. Additionally, we designated the city centre (16.7 km2 as Green Transport Zone to ban dirty vehicles, both gasoline and diesel, within the area. The ban took into effect on July 1 2019. We will build on our ambitious walking and cycling strategy with dedicated cycle lanes now covering 916 kilometres and 25,000 public bikes already deployed.

On track with delivery plan to meet declaration commitments?

Yes



The Vancouver Council recently declared a Climate Emergency and directed staff to accelerate a number of actions related to this, including a rapid transition to electric and other zero emission vehicles. As part of Big Moves, the City of Vancouver is committed to working towards transitioning to having 50% of the kilometres driven on Vancouver's roads are by zero emission cars, trucks and buses by 2030. The City will be relying on zero emission zones that discourage and eventually consider banning polluting vehicles from specific areas or corridors. To learn more about Zero Emission Areas (ZEAs) in particular, we have participated in C40 webinars and learning opportunities as well as undertaking our own research into other cities objectives, tools and outcomes in this area. We have also researched the relationship to air quality monitoring and have made connections with relevant academic institutions that we may be able to partner with in this emerging area. The key next step will be to engage residents and businesses on ZEAs and identify areas of the City where these approaches can be explored.

In October 2018, TransLink, Metro Vancouver's regional transportation provider approved two environmental sustainability targets - 80% reduction of GHG emissions by 2050 and to utilize 100% renewable energy in all operations (fleet and facilities) also by 2050. TransLink is currently developing an electrification roadmap to transition its 1.400+ bus fleet to low carbon propulsion beginning in the mid-2020's. In addition, TransLink has procured four battery electric buses and two on-route charging stations to test the interoperability between four different manufacturers. The buses will be in revenue service in Metro Vancouver early fall 2019.

On track with delivery plan to meet declaration commitments?

Noting that we are limiting ourselves to an area or a corridor in terms of potential implementation until after we do a first round of public engagement.





