

Responses to Feedback and Suggestions on Carbon Efficiency in the Transport Sector (June 2015)

This document was prepared by the Ministry of Transport (MOT), the Land Transport Authority (LTA) and the National Climate Change Secretariat (NCCS).

S/N	Suggestion	Response
Public Transport (MRT & Buses)		
1	<p>Improve service quality of buses and trains to encourage public transport use, in areas such as:</p> <ul style="list-style-type: none"> • Increased frequency • Reduced crowding • Improved reliability • Introduction of express services (which may involve building additional tracks for trains) 	<p>Since 2012, the Bus Service Enhancement Programme (BSEP) has provided commuters with better connectivity, more comfortable journeys and improved waiting time. As of end-March 2015, 590 additional buses have been deployed on the roads under the programme, and this number will reach 1,000 by 2017. About 160 bus services have been improved by expanding bus capacity and improving bus arrival frequency. For example, the peak period frequency of SMRT bus service 920 has improved from 14-16 minutes to 9-10 minutes currently. In June 2015, the frequency will be further improved to no more than eight minutes during the peak periods. To improve the capacity of SMRT bus service 972, the entire fleet was converted to double-decker buses and seven additional buses have been added.</p> <p>New bus routes have also been introduced. In addition, LTA has introduced 10 City Direct Services (CDS), with another 12 in the pipeline, which provide another option for commuters to travel to and from the Central Business District during peak periods. The CDS have limited stops and use expressways to provide commuters journey times comparable to feeder-rail travel to the city.</p> <p>In addition to public bus services, private bus operators run non-basic bus services, such as the Express / FastForward and Premium Bus Services (PBS) that offer commuters a faster travel option to selected destinations, albeit at higher fares. LTA will continue to encourage the introduction of such services by private bus operators.</p> <p>At the same time, LTA has been working with the public transport operators (PTOs) to improve train frequencies. 13 new trains were deployed for the North-South and East-West Lines (NSEWL) in 2014. This, together with the increase in the number of train trips, has improved train frequencies to no more than five minutes for the NSEWL and the North East Line (NEL), and no more than seven minutes for the Circle Line (CCL). From 2015 to 2019, 99 more new trains will be added to the NSEWL, NEL and CCL, which will expand our overall train fleet by 50% and further reduce the wait time for commuters. The signalling systems for the NSEWL are also being upgraded to enable the trains to run at even shorter intervals of 100 to 110 seconds from 2016 for the North-South Line and from 2018 for the East-West Line. The option of an express service for the Cross-Island Line (CRL) is being studied.</p> <p>Train service reliability has generally improved since the formation of the LTA-SMRT and LTA-SBST Joint Teams in 2012. The rate of train withdrawals per 100,000 train-km for the NSEWL has more than halved from 3.3 in 2012 to 1.1 in 2014, while the rate of delays lasting more than five minutes per 100,000 train-km for the NSEWL has fallen from 1.6 in 2012 to 1.3 in 2014, an improvement of close to about 20%. Similar improvements in reliability have taken place on the NEL and CCL. Notwithstanding this, there is still room for improvement, and LTA continues to work</p>

		<p>closely with the two rail operators on a comprehensive maintenance regime to pre-empt potential faults and continually upgrade our rail infrastructure for greater reliability.</p>
2	<p>Increase availability of public transport options given that some areas are still not well serviced, or require too many transfers</p>	<p>The train network will be doubled to about 360km by 2030 to provide commuters with more travel options and better connectivity. LTA will open a new section of rail line almost every year from 2016 until 2025.</p> <p>Stage 1 of the Downtown Line (DTL) opened in December 2013. Stages 2 and 3 will open by 1Q2016 and 2017 respectively. When the DTL is fully open, residents in Bedok, Bukit Panjang, Bukit Timah and Tampines will have a much faster and more convenient means to get to the city.</p> <p>Commuters on the NSEWL will also experience greater connectivity with new extensions. The NSL extension to Marina South Pier opened in 2014, and the Tuas Extension will open in 2016. From 2019, the Thomson-East Coast Line will open progressively in stages, providing great convenience for commuters living in the north and east to travel to the city area.</p> <p>Under the BSEP, LTA will introduce 80 new bus routes between 2012 and 2017. As of end-March 2015, 38 new routes have already been introduced. This has improved public transport connectivity especially for new residential and commercial developments.</p>
3	<p>Reduce cost of public transport</p>	<p>The Public Transport Council (PTC) tracks the affordability of public transport fares through the Public Transport Affordability Indicator, which measures the proportion of income that a typical lower-middle income family (in the second quintile of the household income distribution) spends on public transport in a year. The proportion of their household income spent on public transport has declined steadily, from 3.2% in 2003 to 2.2% in 2013. In short, our bus and train fares have become even more affordable over the years.</p> <p>Our bus and train fares are also generally cheaper than those in many other major cities. For instance, the average bus fare (across all journey types, including concessions) is S\$1.33 in Singapore compared to S\$0.96-S\$1.88 in Hong Kong. A similar bus trip would cost S\$2.97 in London and S\$3.28 in New York. Our rail fare is S\$1.33-S\$1.58 compared to S\$1.05-S\$1.59 in Hong Kong. A similar ride on London and New York's rail systems would cost S\$3.28 to S\$6.56 and S\$3.28 respectively.</p> <p>[Note: Fare figures updated as at end-2014.]</p>
4	<p>Increase number of full-day bus lanes</p>	<p>180 km of normal bus lanes, 23km of full-day bus lanes, and the Mandatory Give Way to Buses scheme at 322 locations have been implemented as at end-2014. LTA has also implemented bus hubs, which are expanded bus stops that can accommodate multiple buses at once and allow more commuters to board and alight at the same time, which in turn reduces waiting times for passengers, relieves traffic congestion and improves overall journey times for commuters.</p>

		LTA will be implementing more of such measures to ensure that buses are given priority on the roads and bus journeys are smooth.
5	Increase incentives for off-peak travel, such as better work hour flexibility (or working from home)	<p>MOT and LTA have introduced various travel demand management measures over the past few years. These include Free Pre-Peak Travel which enables commuters to travel for free if they exit 18 designated city stations before 7.45am and up to 50 cents off their train fare if they exit between 7.45am and 8am.</p> <p>Since the introduction of Free Pre-Peak Travel in June 2013, the number of commuters during the morning peak period has decreased by 7% to 8%. Based on the number of commuters exiting from designated stations, the ratio of morning peak travel (from 8am to 9am) to pre-peak travel (from 7am to 8am) has decreased to 2.1% from 2.7%, resulting in more evenly distributed morning rail ridership.</p> <p>LTA also introduced the Travel Smart Rewards Programme, which rewards commuters for travelling during off-peak hours across the entire public transport network. For example, under this programme, every month, one lucky participant wins \$1,500 and can amongst other things use it to purchase an Adult Monthly Travel Pass every month for up to a year. (The Adult Monthly Travel Pass allows for unlimited travel on basic fare buses and train services.) There are more than 250,000 participants in the programme today, since its launch in January 2012.</p> <p>To encourage employers to support off-peak public transport travel, and other sustainable and healthy modes of travel such as cycling and walking, LTA launched the Travel Smart Network in July 2014 (expanded from the earlier Travel Smart pilot) to encourage organisations to create supportive environments for flexi-travel, and thereby reduce the demand for peak hour travel. These organisations can tap on the Travel Smart Consultancy Voucher and Travel Smart Grant to develop their own action plans and measures to encourage flexi-travel.</p> <p>In July 2015, LTA will launch a new off-peak pass (at two-thirds the price of a normal monthly travel pass) for adults, senior citizens and persons with disabilities, to further encourage off-peak travel.</p>
6	Increase publicly-run school buses to reduce private ownership of cars to send children to schools	School bus services are provided by private bus operators. They are coordinated and contracted by individual schools as a form of assistance to parents who are looking for such transport arrangements for their children. All MOE primary schools, for instance, provide such assistance in school bus services.
7	Demonstrate evidence that public transport is faster than driving for various routes	LTA tracks the ratio of public transport journey speeds to private transport journey speeds and will look for opportunities to show such evidence.
8	Introduce diesel-hybrid or electric buses, or even electric trams, to	In view of the significantly higher cost and unproven reliability of such buses in our local climate, we are not adopting diesel hybrid buses on a large scale for now. LTA will continue to monitor the situation and in particular the prices of such buses, and find opportunities to carry out further trials.

	reduce carbon emissions and pollutants	
9	Regulate temperatures in public buses to reduce energy used for air-conditioning	Temperatures on buses are maintained at an appropriate level to balance energy consumption and commuter comfort.
10	Use technology to determine if buses/trains are overcrowded and deploy more resources 'on demand'	Technology in the form of fare-card data when commuters tap in and out when travelling on trains/buses, is already being used to track crowdedness and to assess where and when we should deploy more trains/buses when planning improvements or new routes. Today, commuters can also use the MyTransport.Sg app to view, in real-time, the level of crowdedness of individual buses.
11	Increase use of renewable energy, e.g. through installing solar panels on top of bus stops and train stations, or even on roadways.	LTA is studying the technical feasibility and cost of installing solar panels at above-ground rail and bus depots. Currently, LTA is seeking bids for deploying solar panels on the rooftop of two new train depots, Tuas and Gali Batu, by 2016.
Green Vehicles/Cars		
12	<p>Electric Vehicles (EVs) should be introduced and will be feasible in the in the long run, as:</p> <ul style="list-style-type: none"> Distance per trip is short in Singapore High rises and carparks can easily accommodate charging points. <p>Singapore has opportunity to be a showcase for EV deployment. This could be achieved through:</p> <ul style="list-style-type: none"> Lower COE/road tax COE/ERP/petrol tax income should be channelled to constructing infrastructure or subsidising for EVs More trials could be done in Singapore 	<p>The Government's ultimate goal is to encourage much more use of public transport and reduce reliance on private vehicles. This will be even more environmentally friendly than EVs.</p> <p>That said, the Government has put in place schemes to encourage a switch to greener modes of private transport. Those who wish to purchase EVs can benefit from the recently enhanced Carbon Emissions-based Vehicle Scheme (CEVS), under which low carbon emission vehicles stand to enjoy significant rebates of up to \$30,000 off the Additional Registration Fee (ARF).</p> <p>In addition, there is an ongoing EV test bed programme. LTA and EDB issued a Request for Information (RFI) in December 2014 to invite proposals for the trial of an EV car-sharing programme in Singapore under Phase 2 of the test bed. The submission period has ended, and the proposals are currently being evaluated by LTA and EDB. The results of the RFI will be announced by the end of 2015.</p> <p>LTA is also developing an electro-mobility roadmap (funded by the Energy National Innovation Challenge programme). Under this initiative, the Energy Research Institute@NTU (ERI@N) will identify and prioritise R&D focus areas to lower costs and to help bridge existing technical gaps (for example, in terms of EV charging standards and management of charging infrastructure).</p>

	<ul style="list-style-type: none"> Leasing at prices comparable to conventional vehicles <p>Other EV related suggestions include:</p> <ul style="list-style-type: none"> Solar panels on rooftops could be used to charge EVs EVs to be used in a grid storage system <p>However, some challenges highlighted include the lack of charging points in HDB estates. Low-cost or free charging should be available in public car parks and malls.</p> <p>Note: Many comments were received on introducing more rebates/tax incentives to equalise the cost of running a green vehicle with a conventional one. Respondents also noted that EVs are only very green if electricity is generated from green sources.</p>	<p>[Update: In June 2016, LTA and EDB announced BlueSG, a nation-wide car-sharing programme with a fleet of 1,000 EVs, and 2,000 charging points, of which 20 per cent will be available for public use. This will be launched by mid-2017, and EVs will be deployed in every single Housing & Development Board (HDB) town by 2020.]</p>
13	<p>Encourage car sharing, which is an attractive option to reduce vehicle-miles-travelled, congestion, fuel consumption and carbon emissions. Many cars are driven alone without passengers. Human resource departments could encourage car-pooling. A website/app could also be used to coordinate car-pooling.</p>	<p>Our longer term objective is for public transport to become the choice mode of transport for Singaporeans. Car-sharing can complement this by providing Singaporeans with access to the use of a car when needed, without having to own one.</p> <p>Membership of the two main car-sharing operators in Singapore, Car Club and Whizz Car, has increased by 8% over the past year to about 9,000 members. LTA is working with other agencies to set aside a larger number of parking lots for car-sharing in more accessible locations.</p>

	Note: Other respondents suggested that car sharing may not be so successful given the challenging logistics.	Besides car-sharing, LTA has instituted a framework in March 2015 to allow private cars to be used for car-pooling, subject to certain conditions to ensure that the drivers are not providing the service for profit but in the context of it being incidental to the purpose of the driver's trip. There are already local third-party websites such as sharetransport.sg which allow commuters to find and offer car-pooling rides.
14	Introduce tax system based on distance travelled. This could utilise satellite-based technology	Under the upcoming satellite-based ERP system which will replace the existing ERP system by the end of this decade, LTA will be able to calibrate how much to charge motorists based on the actual distance travelled on congested roads.
15	Introduce car-free zones or areas that are bus and taxi only, e.g. in high density/congested areas on work days	LTA will continue to work closely with URA and STB to identify areas where car-free zones could be implemented, where such zones could encourage more vibrant street life while maintaining acceptable traffic conditions and accessibility. Temporary car-free zones have already been implemented at Club Street, Ann Siang Road, Circular Road and Haji Lane. There are further plans to introduce more car-free zones, such as in Kampong Glam and Little India, to create a safer walking environment for pedestrians.
16	Increase COE prices on cars to encourage public transport, and reduce COE prices on buses to reduce fares	COE prices are determined by changes in demand and supply in the market. LTA will continue to ensure that public transport remains affordable.
17	Build large, free carparks near major train and bus hubs. These could be park & ride carparks with lots that can be booked.	Today, there is an existing Park and Ride scheme that allows motorists to park at designated car parks near MRT stations, bus interchanges and bus shelters at discounted season parking rates. Four new Park and Ride sites have been launched, along the Circle Line at Stadium, Telok Blangah and Farrer Road stations, adding to the existing 41 designated car parks. Typically, areas around our public transport nodes (e.g. MRT stations, LRT stations and bus interchanges) are planned for more intensive mixed-use developments to provide residents with greater connectivity. This makes it more convenient for residents to access the public transport network.
18	Biofuels such as biodiesel and ethanol could be introduced in Singapore	Biofuels such as biodiesel are already allowed as long as they meet fuel standards. Vehicles using biofuels must meet prevailing vehicle emissions standards. For example, The Westin Singapore and Ikea use biodiesel produced from recycled cooking oil in their luxury limousine fleet and delivery vehicles respectively. Increased biofuel use could result in lower carbon emissions. LTA and relevant agencies will continue to study this.
19	Introduce priority lanes for green vehicles	As road space is limited, we will continue to allocate priority lanes to buses, which require the least amount of road space per passenger, and are even more environmentally friendly in terms of average carbon emissions per passenger compared to green private transport.

20	Encourage dealers to bring in more hybrid/electric vehicles	Hybrid/electric vehicles can benefit from the enhanced Carbon Emissions-based Vehicle Scheme (CEVS), under which low carbon emission vehicles stand to enjoy significant rebates of up to \$30,000 off the Additional Registration Fee (ARF).
21	Focus on reducing emissions from commercial vehicles, which are currently less regulated than private vehicles (e.g. many smoky commercial vehicles). For example, engine idling results in unnecessary emissions	Under the Early Turnover Scheme (ETS) introduced in April 2013, owners of older diesel Category C vehicles (goods vehicles and buses which are of pre-Euro or Euro I emissions standards) are incentivised to replace their vehicles with new, cleaner models. From August 2015, the ETS will be expanded to include owners of Cat C diesel vehicles with Euro II/III emissions standards. LTA is also working with NTU on a collaborative study on transport energy efficiency. The scope of this study includes understanding companies' practices and requirements for eco-driving. The findings from this study will help identify suitable measures, such as incentives for fleet operators, to encourage a change in driving behaviour.
Cycling		
22	<p>Introduce bike lanes, e.g.:</p> <ul style="list-style-type: none"> • Priority lane for bicycles (that cars can still use but must give way) • Off-road lanes within mature towns • Expand pedestrian paths to accommodate single lane cycling where possible 	<p>Road space is limited, and LTA has prioritised dedicated lanes for buses, which are a much more space-efficient form of transport than private transport. On-road cycling lanes, which have to be sited in the leftmost lane, would affect the movement of buses and also expose cyclists to the dangers of motorised traffic.</p> <p>LTA's priority is therefore to build a comprehensive network of off-road cycling paths that separate cyclists from motorised vehicles, which will provide a safer environment for all cyclists regardless of skill level and age.</p> <p>By 2030, every HDB town will have a cycling path network. Cycling path networks have in fact already been completed in three towns (Pasir Ris, Tampines and Sembawang) and three more in Yishun, Changi-Simei and Taman Jurong will be completed later this year. By 2018, Ang Mo Kio will be a model walking and cycling town with enhanced infrastructure such as elevated walking and cycling paths over roads and a linear park underneath the MRT viaduct. These intra-town paths will be integrated with park connectors to form an island-wide cycling network over 700km long by 2030. Some inter-town cycling routes will also be built.</p> <p>Given Singapore's limited land, it is not possible to build dedicated cycling paths everywhere. There will be situations where pedestrians and cyclists need to cross paths or share space. Having clear rules and norms to guide behaviour will help in this regard. LTA will embark on public consultations later this year in an effort to build a consensus on such a framework of rules and norms.</p>
23	Build bike friendly facilities such as shower facilities at work to accommodate workers who cycle to work, bicycle parking areas near blocks that are further from MRT	<p>12,000 bicycle parking lots are being built across all MRT stations, with plans for another 11,000 lots at upcoming MRT stations.</p> <p>Mandatory standards for bicycle parking provision will be introduced for private developments and community facilities.</p>

	stations, e.g. convert carpark lots to bicycle parking areas This could be encouraged through the Green Mark scheme for building developers	<p>To support cycling within HDB towns, starting from the Build-to-Order Sales Launch in January 2014, there will on average be one bicycle rack for every six dwelling units to cater to demand.</p> <p>For existing public housing estates, HDB will provide bicycle racks at commercial clusters and the main entrances of new common greens and neighbourhood parks. Town Councils can also install more bicycle parking facilities under the Neighbourhood Renewal Programme (NRP).</p>
24	Encourage personal mobility devices (e-scooters, e-bikes) by allowing these to be carried on buses and trains at all times. Additionally, introduce designated carriage for foldable bicycles on trains at all times	<p>During peak hours, trains and buses carry many commuters. Bicycles, including folding bikes, and other equally large personal mobility devices, would add to the crowding and impede passenger movements. Hence bicycles and other large personal mobility devices (as well as other large-sized objects) are not allowed on trains and buses during peak hours.</p> <p>Foldable bicycles that are within the allowable size can be brought onto trains and buses during non-peak hours.</p> <p>Bearing in mind the impact on the travel experience of other passengers, especially during peak periods, LTA will review if it is possible to extend the periods when these bicycles are allowed on board trains and buses.</p> <p>[Update: From 1 December 2016, foldable bicycles and personal mobility devices like e-scooters will be allowed on board buses and trains at all hours of the day, as part of a six-month trial by LTA to encourage more people to use public transport. These devices have to be within the size criteria of 120cm x 70cm x 40cm.]</p>
25	Introduce bike sharing system, e.g. in the CBD	LTA plans to introduce a bicycle-sharing pilot in Jurong Lake District, the Marina Bay city centre, Tampines and Pasir Ris, subject to interest from potential service providers.
26	Introduce safe cycling public campaigns, e.g. through physical education lessons, by volunteer cycling marshals, and through sponsored defensive cycling classes. Dealing with cyclists could be included in driving test	LTA plans to consult the public on establishing a set of rules and code of conduct on cycling, and the use of personal mobility devices. LTA will also be launching in due course an intensive and extensive public education campaign to instil awareness of the updated rules and norms.
Taxis		
27	Encourage taxi companies to use efficient vehicles	LTA introduced the Carbon Emissions-based Vehicle Scheme (CEVS) in January 2013 to encourage the purchase of vehicles with low carbon emissions. The take-up rate has been encouraging, with the percentage of taxis in rebate bands reaching 98%. This means that almost all taxis registered last year had the desired low levels of carbon emissions.

28	Introduce taxi-sharing to address peak-hour taxi availability and reduce the number of trips	Taxi companies and third-party taxi booking service providers are already free to explore taxi-sharing initiatives.
29	Taxis to park when not hired instead of driving around looking for customers (apps to be used by passengers to indicate when taxis are needed)	<p>About 20% of taxi trips are made by bookings, and the remaining 80% are hailed on the streets. In short, the majority of commuters still prefer to hail a taxi on the street.</p> <p>LTA released the Taxi-Taxi@SG app in December 2014 to improve the supply-demand matching of taxi services. The app allows street-hail commuters to know if there are available taxis in their vicinity, and also to broadcast their location so that taxi drivers may know where there is a high demand for taxis and hence head there to reduce empty cruising.</p>
Other		
30	Better education on how to drive more efficiently, e.g. for bus and taxi drivers who use their brakes excessively	<p>Today, trainee bus drivers have to complete the Workforce Skills Qualifications (WSQ) Certificate in Bus Operations (Service Route Operations) before they can undergo on-the-job training and be deployed for revenue service. This WSQ Certificate provides trainee bus drivers with the necessary knowledge and skills to operate a bus safely and proficiently. The public bus industry, in partnership with the Employment and Employability Institute (e2i), will also be launching a Bus Professionals Training Centre in July 2015. The centre will serve as a centralised training institute to better coordinate upskilling efforts in the public bus industry.</p> <p>Also, SMRT has introduced a telematics system that tracks bus captains' driving behaviour real-time and alerts drivers when they exceed the speed limit, accelerate or brake too abruptly, and change lanes or take a turn too sharply.</p> <p>The Taxi Driver's Vocational Licence (TDVL) training and refresher courses comprise modules such as road safety, locating destinations and route planning. Besides the TDVL courses, all six taxi companies have their own orientation courses for drivers.</p> <p>From early 2015, SMRT requires its new taxi drivers to pass a practical driving test before they are allowed to drive on the roads. The test assesses drivers' ability to drive safely and defensively, as well as their knowledge of the features of the taxi models that they are renting. This in-house practical assessment is a first amongst taxi companies in Singapore.</p> <p>In December 2014, e2i also launched a \$2.5 million training fund to equip 4,000 taxi drivers with service skills and safe driving habits.</p>
31	Green transportation modes should be promoted proactively, i.e. the direct consequences/benefits	Singapore is working towards becoming a cycling-friendly city. As announced in LTA's Land Transport Master Plan 2013, every HDB town will be equipped with an off-road cycling path network to key amenities and transport nodes within the town by 2030. The cycling path networks in Tampines, Sembawang and Pasir Ris have already been

	<p>should be explained. Similarly, polluting vehicles should be demonized. This could be done through media campaigns. 'Green transport' could be a status symbol instead of cars</p>	<p>completed, and similar networks in Yishun, Changi-Simei and Taman Jurong will be completed this year. In addition, by 2018, we will fit Ang Mo Kio with even better cycling infrastructure, such as weather-protected cycling paths and elevated paths for a smoother, faster, and more comfortable ride that bypasses road traffic. To facilitate cycling as an option for first- and last-mile travel, LTA has built some 12,000 bicycle parking lots across all MRT stations in Singapore, and plans to add another 11,000 lots at new stations on the Downtown, East-West and Thomson-East Coast Lines.</p> <p>LTA will be setting up a new Active Mobility Unit and be the lead agency for both walking- and cycling-related policies and programmes. It will be the central planner for walking and cycling routes, and ensure that our education efforts and the enforcement of cycling rules and norms are coherent and coordinated.</p> <p>LTA will look into publicity efforts to encourage people to choose eco-friendly mobility options.</p>
32	<p>Integrate residential and commercial/industrial areas. Cars and motorbikes could then be replaced by personal mobility devices</p>	<p>Developing integrated mixed-use developments to bring jobs and amenities closer to homes is in line with the Government's planning strategies. This reduces the need for people to make long journeys for residents' daily activities (e.g. getting to work/school). The Government will continue to plan more mixed use districts that are supported by sustainable modes of public transport, which includes cycling and walking.</p>
33	<p>LED Street Lighting is more efficient, and can be combined with smart controls to reduce the amount of lighting on empty roads (or late at night)</p>	<p>All new pedestrian overhead bridges are already fitted with sensor-based LED lighting. Existing street lighting will be retrofitted with LEDs as and when they are due for replacement.</p>
34	<p>Install escalators in public areas with high human traffic (similar to those in Hong Kong)</p>	<p>LTA will look into this suggestion.</p>
35	<p>Rebates could be provided for companies that provide shuttle buses to reduce private car use</p>	<p>LTA will look into measures to encourage reduced private car use.</p>
36	<p>Allocate funds for green transport R&D</p>	<p>The National Research Foundation (NRF) has several funding programmes for research and development in green transport and other sustainable modes of transport. One such example is the electro-mobility roadmap that is being jointly developed by LTA, NCCS and NRF and funded under NRF's Energy National Innovation Challenge.</p>