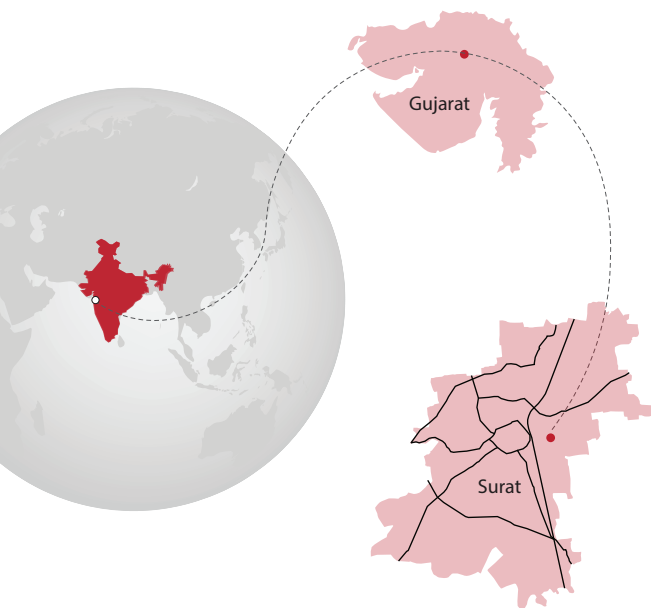




City Information Note

Surat

EV Readiness



City overview

Surat is one of the most dynamic cities in the state of Gujarat. It is also known as 'The Silk City', 'The Diamond City', 'The Green City' and is one of the cleanest cities in India. A major trading centre in the past, Surat continues to attract people who come in search of business opportunities and jobs from around the country.

Demographics



Population

44.68 Lakhs (MC)
48.05 Lakhs (UA)



Area

326.52 sq. km.

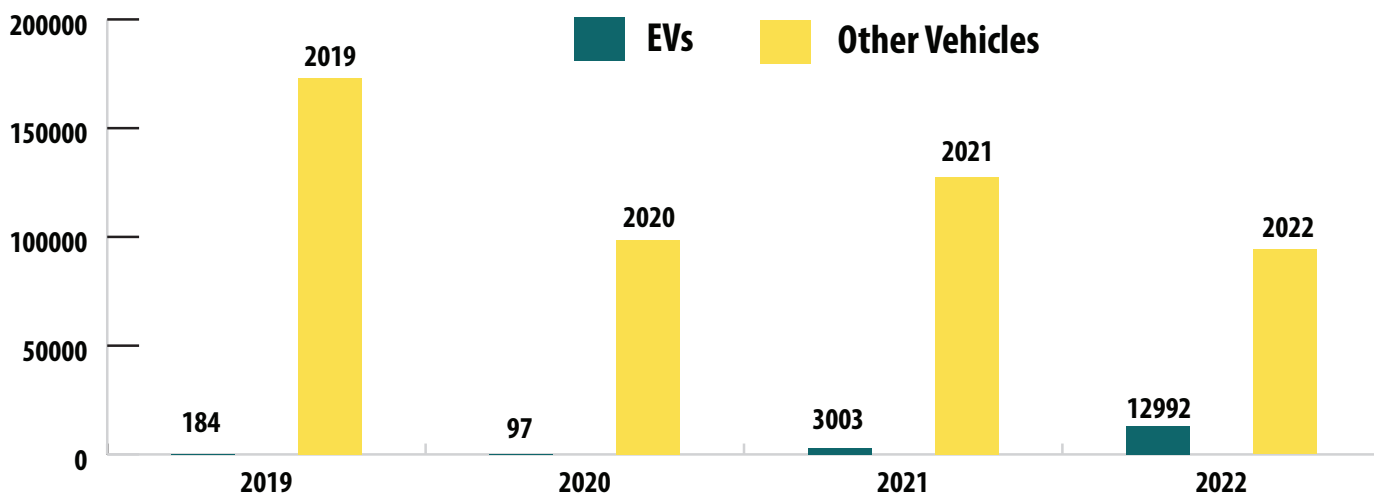


City Type

Tier-II

Vehicles Registered*

The share of EVs in the total registered vehicles in the year 2019 was 0.1%, which increased to more than 12% in 2022, illustrating the very high adoption of EVs, specially after the notification of the Surat EV policy in 2021. Two wheelers comprised almost 75% of the vehicles registered in 2022. The registration trend of EVs vs other vehicles from 2019 to 2022 is illustrated below:



*Information source: VAHAN Dashboard, accessed on 30 September, 2022

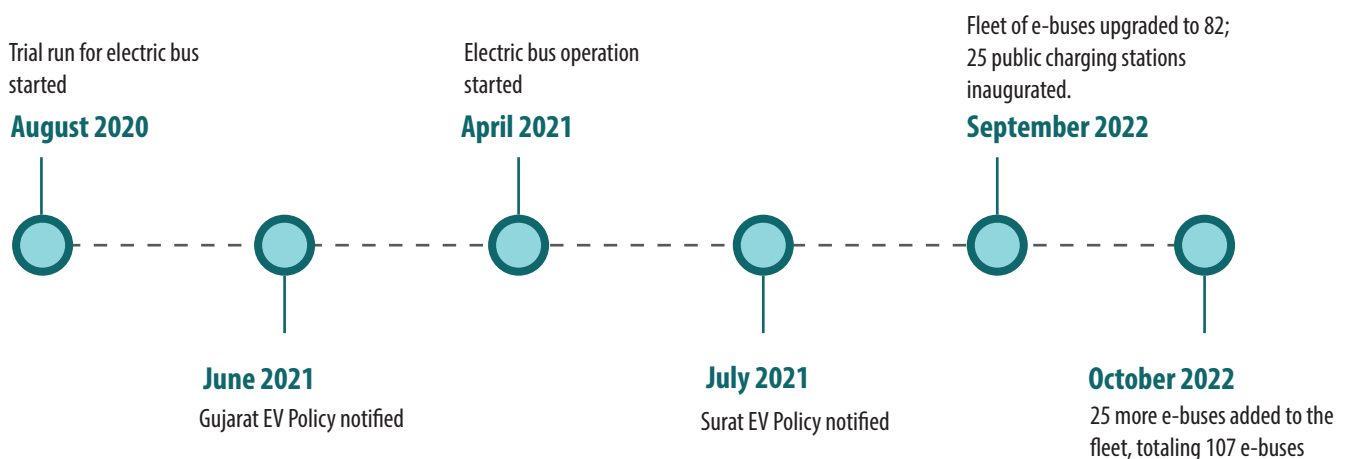
This documentation is a part of the ICLEI South Asia's initiative 'Support Indian cities to take leadership on EVs'. Ten cities including Coimbatore, Gangtok, Kochi, Lakshadweep, Meerut, Nagpur, Panaji, Rajkot, Shimla and Surat were visited and the status of EV transition (till September 2022) was documented.

Background

The electric mobility revolution is gaining momentum in Indian cities and is being promoted by the central government through various incentives to reduce the country's reliance on fossil fuels and to reduce Greenhouse Gas (GHG) emissions from the transport sector. Indian cities are also aiming to integrate sustainable and low emission alternatives in urban transport. But long-term actions are required for mass adoption of e-mobility in Indian cities. ICLEI South Asia embarked on an initiative to “Support Indian Cities in Taking Leadership on Electric Vehicles (EV)” to aid the cities in identifying priority interventions and to take necessary steps towards an accelerated transition to EVs.

This initiative included several interactions and discussions with the city stakeholders during visits to 10 project cities - Coimbatore, Gangtok, Kochi, Lakshadweep, Meerut, Nagpur, Panaji, Rajkot, Shimla and Surat. Consultations were held with major stakeholders impacting the EV transition in cities, such as advisory groups, industry experts including the advocacy group, charging infrastructure developers, vehicle technology/OEMs and financial institutions. As part of the initiative, the ICLEI South Asia team visited Surat on 2nd and 3rd August 2022 to interact with the stakeholders, understand the existing EV transition situation in the city, as well as the challenges and opportunities and to suggest a way forward for the city.

EV related developments in Surat



Key stakeholders

The stakeholders in Surat that are related to the EV transition and with whom interactions were held during city visit are as follows:









	Stakeholders	Roles
State Government stakeholder	Dakshin Gujarat Vij Company Ltd.(DGVCL)	<ul style="list-style-type: none"> Approvals for electricity connections Tariff for charging EVs
City Government stakeholder	Surat Municipal Corporation (SMC)	<ul style="list-style-type: none"> Land owner- Providing land for charging infrastructure Floating tender for development of charging infrastructure.
	Surat SitiLink Limited (SSL)	<ul style="list-style-type: none"> Bus operation and maintenance Floating tender for procuring E-buses. Finalising tariff of E-buses
	Surat Urban Development Authority (SUDA)	<ul style="list-style-type: none"> Policies related to building Building plan approvals
	RTO Surat	<ul style="list-style-type: none"> Registration of vehicles Prioritisation of EVs through single window clearance.
Others	Torrent Power	<ul style="list-style-type: none"> Approvals for electricity connections Tariff for charging EVs Generation, transmission and distribution of power
	Vehicle Technology/ OEMs	<ul style="list-style-type: none"> Manufacture and supply of EVs and thair parts Addressing consumer grievances related to EVs
	Builders Association	<ul style="list-style-type: none"> Ensure implementation of recommendations proposed in GDCR for EV-ready buildings
	NGOs	<ul style="list-style-type: none"> Cater to the technical trainings and capacity building needs of officials involved in the EV transition

State EV Policy

Gujarat Electric Vehicle Policy 2021

City EV Actions

Surat Electric Vehicle Policy 2021 is the first city-level EV policy. It envisages developing Surat as a leading EV smart city in the country and its provisions are summed below:

 <p>Objective to facilitate adoption of atleast 20% of the target number of EVs in the state EV Policy; promote EV charging infrastructure in the city; mandate adoption of EVs by government offices; promote RE, create awareness, create employment and protect environment</p>	 <p>Tenure - 01 June 2022 to 30 June 2025</p>
 <p>Target of registering 40300 EVs till the end of policy tenure including 300 e-buses, and to develop 500 public charging stations</p>	 <p>SMC will reimburse 100% of environmental improvement charges for the first 3 years</p>
 <p>Exemption of 100% vehicle tax for EV registered vehicles (exemption of 75%, 50% and 25% from 2nd to the 4th Year)</p>	 <p>Subsidized rate of electricity for charging EVs</p>
 <p>SMC aims to adopt EVs in a phased manner</p> <p>Benefits to SMC employees who shift to EVs</p>	 <p>An EV Policy Managing Committee will be formed within SMC to review and update the policy, and decide the locations for charging stations.</p> <p>An EV Policy Implementing & Interpretation Committee will be formed to resolve any dispute</p>

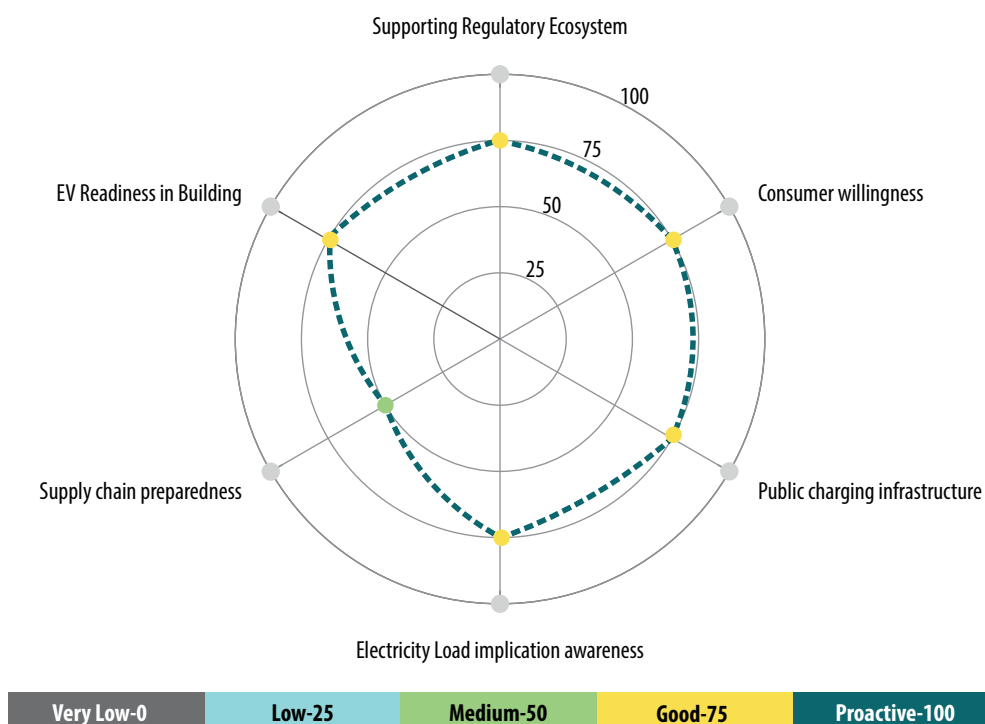
Status- City EV Actions

This information was collected through interactions and discussions with government and private stakeholders related to EVs during the city visit.

<h3>Policy and Advocacy</h3> <ul style="list-style-type: none"> State-level Policy- Yes City-level Policy- Yes Initiatives- Yes 	<h3>Charging Infrastructure</h3> <ul style="list-style-type: none"> Public charging stations- Yes Public transport charging depot- Yes
<h3>Financial Incentives</h3> <p>State level - Yes</p> <ul style="list-style-type: none"> Charging infrastructure - 25% capital subsidy for first 250 commercial public stations (investment up to 10 lakhs) EV buyer - Subsidy as per FAME-II scheme <p>City level- Yes</p> <ul style="list-style-type: none"> Charging infrastructure - Land from SMC-PPP mode, 100% rebate in Environment Improvement Tax, EV buyer - Exemption of 100% vehicle tax for EV registered vehicles (75%, 50% and 25% exemption from 2nd to 4th Year) 100% rebate in Environment Improvement Tax, Free parking in SMC parking areas 	<h3>Vehicle Technology - Supply chain</h3> <ul style="list-style-type: none"> Delay in delivery of E-buses Issue of electricity load management during peak hours required due to rise in electricity demand for EV charging Lack of charging infrastructure on highways Lack of locally manufactured spare parts Limited availability of service stations (after purchase of EV) Lack of awareness related to EV technology







City Readiness

Surat city's EV readiness was synthesized after the parameters impacting the EV transition were assigned scores. **Twenty-five parameters were listed under 6 categories**, which are supporting regulatory ecosystem, supply chain preparedness, consumer willingness*, public charging infrastructure, EV readiness in buildings and electricity load implication awareness. The scoring of the city was based on the information collected during city visits. The readiness of the city was assessed as follows:



*Consumer willingness has been rated on the basis of the responses of dealers of EV and discussions with the city government officials.

The city is already working on an accelerated transition to EVs through implementation of the EV policy, improving the existing EV operations in the city, encouraging and sensitising the users through awareness sessions, and by improving the understanding for grid readiness. The observations from the city readiness assessment are:

	The existing regulatory ecosystems at the city level and the state level are robust. The city officials are aware and acknowledge the importance of a planned process for transitioning to EVs and of including all stakeholders in decision making process. Implementation of these policies and initiatives requires focus.
	Consumers are aware about EV performance and technology and are willing to transition from ICE vehicles to EVs. Awareness sessions and EV expos are organised in Surat to sensitise the public.
	Public charging stations (PCS) are being developed in commercial spaces; land is being allotted by SMC for EV users. 25 PCS have been inaugurated and 25 more are under construction.
	The city officials and the officials of Torrent Power are well aware about the expected load implications and the additional power infrastructure required for setting up charging stations and the roles and actions to be taken.
	The Supply chain preparedness will improve with improvement in technology for EVs and also development of local EV repair shops
	The officials are aware and willing to integrate provisions on EV charging and parking in the building byelaws

Observations

The Surat Municipal Corporation has included 107 e-buses as a part of its intra-city bus operations. Private EVs are increasing in number at a fast pace in the city. SMC is also willing to transition its municipal fleet to EVs in a phased manner along with other actions that need to be taken for EV adoption.

The key challenges identified after visiting the city and interacting with the stakeholders are as follows:



Lack of charging infrastructure on highways



Lack of electricity grid readiness



Lack of awareness related to EV charging locations



Lack of a mandate for integrating EV charging points in multistoried buildings



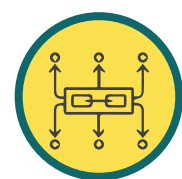
Location of charging depot for e-buses on the city periphery will increase the dead km.



Lack of electricity demand assessment to plan priority actions for EV adoption



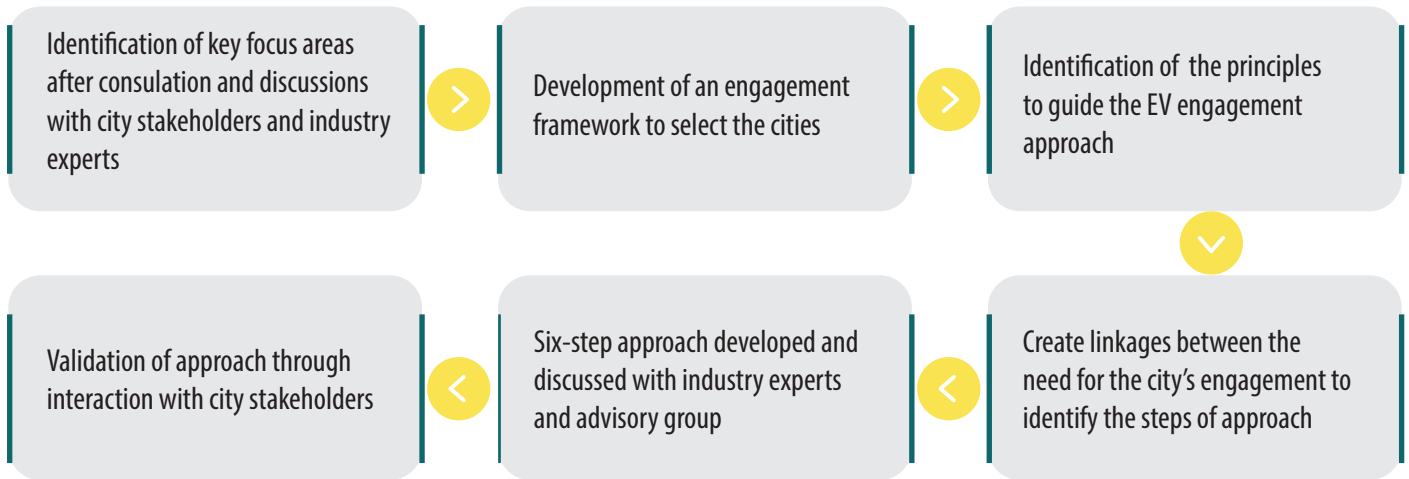
Delay in delivery of e-buses



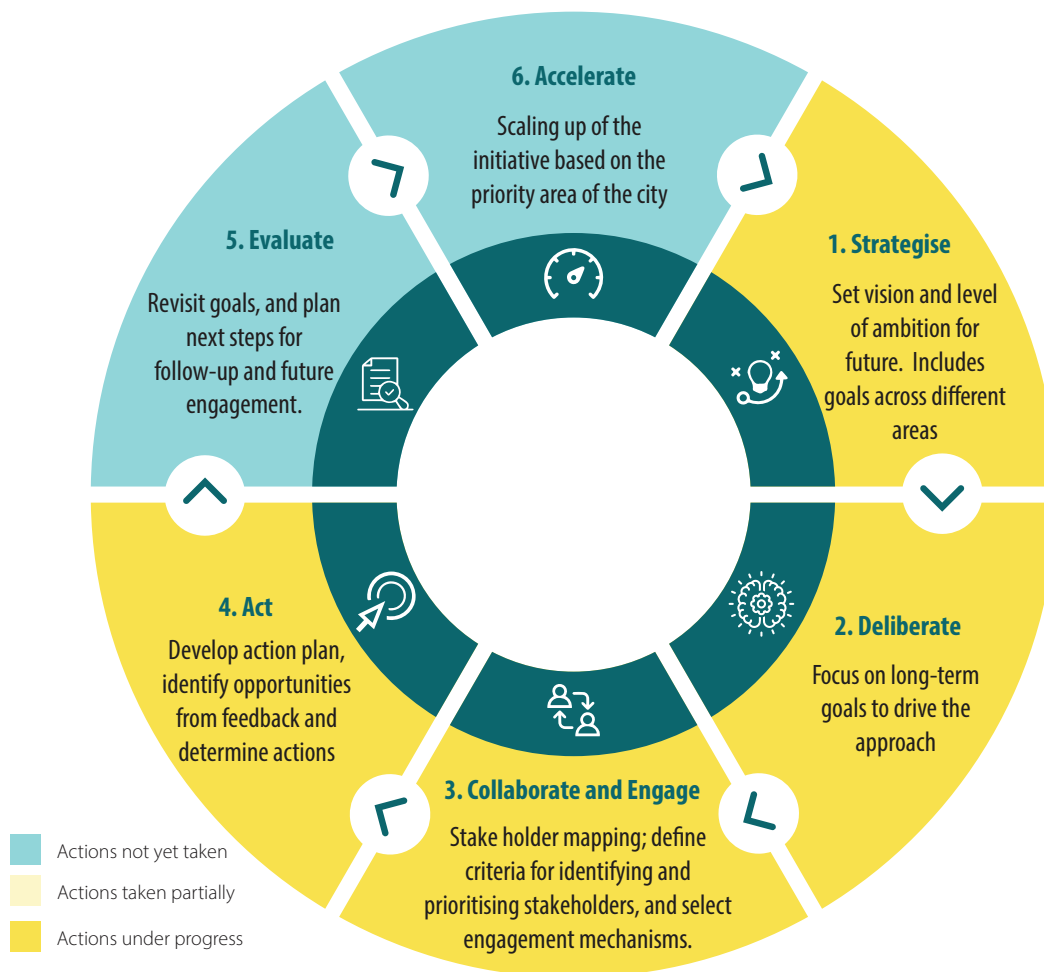
Lack of local service stations and local manufacturing of EV parts

Approach

The following steps involving discussion and consultation with city stakeholders, industry experts and the advisory group were taken to develop the six-step approach:



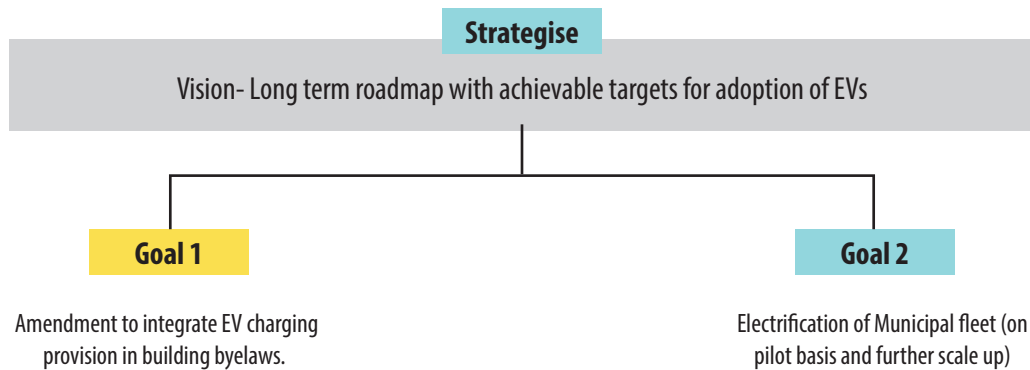
The six-step approach that Surat should preferably follow to address the challenges identified above are as follows:



As per discussions, Surat city has taken advanced steps in EV adoption and is currently focusing on the steps of 'STRATEGISE', 'DELIBERATE', 'COLLABORATE & ENGAGE', and partially on 'ACT'. SMC has already notified its EV policy that envisages developing the city as a leading EV smart city in the country with a clear set of targets and objectives. Discussions are underway for various goals (related to EV infrastructure development, electrification of SMC fleet, government vehicles, corporate vehicles as well as private vehicles) for which they are collaborating and engaging with other government and private stakeholders to take actions on ground.

Recommendations

The Surat EV policy mentions the formation of the EV Policy Managing Committee and EV Policy Implementing & Interpretation Committee for leading the EV-related actions. Further, the amendment in the GDCR to integrate EV charging provision in buildings and electrification of the government fleet,* are detailed as per the 6-step approach recommended for Surat:



Goal 1 - Amendment to integrate EV charging provision in building byelaws.				
Deliberate	Collaborate and Engage	Act	Evaluate	Accelerate
Proposed amendments in the General Development Control Regulations (GDCR)	<ul style="list-style-type: none"> SMC DGVCL/Torrent Power SUDA Architect/Builder's Association 	<ul style="list-style-type: none"> Guideline document with recommendations to be incorporated in GDCR with long term vision. Incentives like fast-track approval for EV-ready/capable buildings Projections and analysis to understand the percentage of EV parking space required. Incorporate requirement of power outlets capable of providing EV charging for 100% residential parking space Provision for additional electricity load for EV charging EV charging ready spaces for 20% of parking spaces in new buildings Requirement of NoC from DGVCL/Torrent Power(grid readiness, load calculations), Chief Electricity Inspector (standards and electrical safety) and Fire Inspector (fire safety) during approval of building plans stage 	<ul style="list-style-type: none"> Reserving 5% of the space for the charging of 2 wheelers and 2.5% for 4 wheelers in multistoried housing complexes 	<ul style="list-style-type: none"> Increasing the percentage of reserved parking for EVs in multistoried residential building as per the demand
Retrofitting in existing building to integrate provision of EV charging	<ul style="list-style-type: none"> SMC DGVCL/Torrent Power SUDA Architect/Builder/ Contractor 	<ul style="list-style-type: none"> Analysis of existing building type, use, demand Guideline for design considerations, design solutions for charging infrastructure, accessibility, approvals and tariff for charging Provision for additional electricity load for EV charging Requirement of NoC from the DGVCL/Torrent Power, CEI and fire inspector for retrofitting 	<ul style="list-style-type: none"> Reserving 5% of the space for the charging of 2 wheelers and 2.5% for 4 wheelers in multistoried housing complexes 	<ul style="list-style-type: none"> Retrofitting existing buildings to EV-ready as per demand, specially multistoried residential building and office buildings

*These two recommendations are suggested on the basis of the analysis of city readiness, challenges and opportunities and the priority actions indicated by the city during interaction with the stakeholders

Goal 2 - Electrification of Municipal fleet (on pilot basis and further scale up)

Deliberate	Collaborate and Engage	Act	Evaluate	Accelerate
Existing municipal fleet size	<ul style="list-style-type: none"> ● SMC ● Other Government offices ● Third party consultant 	<ul style="list-style-type: none"> ● Existing fleet size and age of vehicles ● Expected demand for EVs, charging infrastructure and electricity ● Feasibility study for each fleet type to understand the financial resources required and usage feasibility ● Encourage procurement of electric municipal fleet for all the new vehicles 	<ul style="list-style-type: none"> ● Impact of transitioning from ICE to EVs ● Increase in willingness of government department/offices to transition to EVs 	<ul style="list-style-type: none"> ● Encourage transition to EVs through shift to EVs for new purchase ● Staff training and capacity building of operator/driver of municipal fleet
Supporting infrastructure and approvals (if required)	<ul style="list-style-type: none"> ● SMC ● DGVCL/Torrent Power ● Charge Point Developer and Operators (CPOs) and E-Mobility Service Provider (e-MSPs) 	<ul style="list-style-type: none"> ● Finalise the location for charging in the office premises ● Approvals from Torrent Power/DGVCL ● Additional power infrastructure required (if any) and attached financial obligations ● Encourage/ skill development for local repair shops for EVs 	<ul style="list-style-type: none"> ● Charging stations developed as per demand and functioning 	<ul style="list-style-type: none"> ● Setting up more charging stations as per the demand ● Encouraging authorised local repair shops for EVs
Demand aggregation for bulk purchase	<ul style="list-style-type: none"> ● SMC ● OEMs ● NBFC ● DGVCL/Torrent Power ● other government departments including SSL, SUDA, SSCDL and others 	<ul style="list-style-type: none"> ● Develop an action plan/ strategy for scaling up the pilot of electrification of municipal fleet ● Projected increase in electricity demand, charging infrastructure ● Grid readiness ● Programs to encourage government offices to transition to EVs ● Training and capacity building for operators/ drivers of municipal fleet. 	<ul style="list-style-type: none"> ● Transition of 30% of municipal fleet to EVs in 5 years 	<ul style="list-style-type: none"> ● Scaling up the adoption of EVs for all the government use vehicles

Way Forward

Long-term planning with a prioritised set of targets will be useful in making an aggressive push towards EVs in Surat:



Amendment in GDCR to integrate EV charging provision in multistoried buildings



Electrification of Corporate and other office fleet



Develop local service centres for EVs



Developing database of EV demand and transition for conscious future actions for acceleration of EV adoption



Awareness programme to sensitise public and government officials about EVs, and charging stations



Improve grid readiness



Finalising location for charging infrastructure on highways



Planned operation of existing e-bus fleet through data-driven scheduling of buses to improve reliability

Acknowledgement

ICLEI South Asia would like to express its sincere gratitude to the officials from Surat Municipal Corporation (SMC), Torrent Power, Surat SITIlink (SSL), Surat Urban Development Authority (SUDA), RTO Surat, and OEMs in Surat for their insights and guidance. The inputs from the Advisory Group members were crucial in finalizing the document.

Disclaimer

This document includes preliminary recommendations and the way forward, based on interactions, fieldwork and background research. A detailed report, with recommendations, has been developed for Surat.

For more information, please contact:

ICLEI - Local Governments for Sustainability, South Asia

C-3 Lower Ground Floor, Green Park Extension, New Delhi 110 016

Tel: +91-11-4974 7200, Fax: +91-11-4974 7201, Email: iclei-southasia@iclei.org