SDG7 Energy Compact of Surat Smart City, Gujarat, India
A next Decade Action Agenda to advance SDG7 on sustainable energy for all, in line with the goals of the Paris Agreement on Climate Change

SECTION 1: AMBITION

1.1. Ambitionsto achieve SDG7 by 2030. *[Please select all that apply, and make sure to state the **baseline** of each target]*
(Member States targets could be based on their NDCs, energy policies, national five-year plans etc. targets for companies/organizations could be based on their corporate strategy)

☐**7.1.**By 2030, ensure universal access to affordable, reliable, and modern energy services.	Target(s):N/A Time frame: Baseline: Context for the ambition(s):
☐**7.2.** By 2030, increase substantially the share of renewable energy in the global energy mix.	**Target 7.2.1.:**25 per cent of total requirement of Surat City (including Smart City + Pan City) to be come from renewable sources of energy **Time frame**: 2030 **Baseline**: 2011 (up from 3 MW biogas and 3 MW wind) **Context for the ambition:** • In 2011, As part of National Solar Mission, Government of India had selected Surat as solar city along with 60 cities across the country. As per guidelines of the program, Surat Municipal Corporation had developed Solar City Master Plan which had been approved by MNRE in 2013. As per targets set in Solar City Master Plan, Surat City had to opt 10 per cent energy requirement of Surat city from renewable energy sources. • To shoulder the targets of National Solar Mission as well as Solar City Program, Surat Municipal Corporation have played a role of Nodal Agency and With SMC's facilitation, total 155 MW of Rooftop Solar Power Plants have been installed on more than 33,000 individual houses and 98 MW capacity of Wind Power plants have been installed by various industries in the Surat city till date. Through all efforts, presently, **Surat City is using 10.69 per cent energy from renewable sources against total city energy requirement.**
	Target 7.2.2: 50 per cent of total requirement of Surat Municipal Corporation to be come from renewable sources of energy

		Time frame: 2030 **Baseline**: 2011 (up from 3 MW biogas and 3 MW wind) **Context for the ambition:** • Surat Municipal Corporation is continuously looking towards energy efficiency and use of renewable energy sources for reducing electricity consumption and thus reducing dependency on use of conventional fuels/ sources. These steps also help in protecting environment as well. • Way back in 2001, SMC created dedicated "Energy Efficiency Cell" to monitor every unit to be consumed as well as to explore the possibilities adopt Energy Efficiency Measures and Renewable Energy Measures. • Keeping aforesaid motive in mind, SMC had made efforts towards becoming a “Solar City” and consequently became “Solar City” in year 2011. Solar City Master Plan had been approved in year 2013 wherein EE & RE targets were set for installation of Renewable Sources for Municipal Services. • Presently, total electricity requirement of entire Surat Municipal Corporation is 288.27 GWh / annum. Till date, SMC has installed 32.4 MW Wind Power Plants, 7 MW Solar Power Plants and 5.35 MW Biogas Power Plants which generates 81.56 GWh/annum green energy which caters **28.29 per cent**need of electricity of entire requirement of Surat Municipal Corporation through Renewable sources of energy.
		Target 7.2.3: Installation of 11.5 MW Capacity of Municipal Solid Waste to Energy Generation Plant **Time frame:**2026 **Baseline**: 2022 **Context for the ambition:** • Utilising the Refuse Derived Fuel having calorific value of more than 1500 kcal • Sustainable approach to convert the Refused Derived Fuel into Electricity • Advanced Air Pollution Control system for monitoring and control of pollutants during emission
		Target 7.2.4: Convert existing 741 Euro 4 City Buses into E-bus by 2025 and add 1000E-buses in Public Transport by 2030 **Time frame:**2030 **Baseline:** 2019 (From 0 buses in 2019) **Context for the ambition:** • As on today, 741 of Euro - 4 City buses and 39 of Electric Vehicles are placed in the Public City Transport in City of Surat. • We have made visionary plan to adopt Green Public Transport Services and therefore we have planned to replace all existing 741 Euro - 4 City buses into Electrical buses by year 2025.

	• By end of this year, we are going to add total 300 of electrical buses with Electric Charging Stations into Public Transport, currently 39 of electrical buses made operational. • By 2030, SMC aims to add another 1000 of e-buses with Electric Charging Stations into public city transport to shoulder the vision of Green Public City Transport in the city of Surat.
☐**7.3.** By 2030, double the global rate of improvement in energy efficiency.	**Target 7.3.1:**Replacement of all existing conventional streetlights into Energy Efficiency LED streetlights as part of Street Lighting National Programme**.** **Time frame:** 2023 **Baseline:** 2018 (Programme was started in 2018) **Context for the ambition:** • Hon'ble Prime Minister on 5 January 2015 launched Street Lighting National Program (SLNP) to replace conventional streetlights with smart and energy efficient LED streetlights across India. • As part of Smart City Mission, Surat Municipal Corporation has planned to convert all conventional streetlights of Surat City into Energy Efficiency LED streetlights by 2022. • Presently, 1,36,279 of streetlights are installed in the city. • We began our journey of adopting/replacement of LED streetlights in 2018. Till date, 1,09,837 of streetlights have been converted into LED streetlights. • Remaining 26,442 of conventional Street lights have been planned to replace latest by 2023. • Also, SMC have also placed policy that new street lighting system will have only LEDs streetlights only in the city of Surat.
☐**7.a.** By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.	Target(s): N/A Time frame: Baseline: Context for the ambition(s):
☐**7.b.** By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked	Target(s): N/A Time frame: Baseline: Context for the ambition(s):

developing countries, in accordance with their respective programs of support.	

1.2. Other ambitions in support of SDG7 by 2030 and net-zero emissions by 2050. ***[Please describe below e.g., coal phase out or reforming fossil fuel subsidies etc.]***

Target 1.2.1: 20 per cent of all new vehicle registrations by 2030 will be electric vehicle and bring about a material improvement in Surat City's environment by bringing down emissions from the transport sector

Time frame: Target year 2030

Baseline: Base year 2011

Context for the ambition:

- As on Aug - 2021, Surat alone witnessed the registration of 33,58,308 of vehicles of different categories out of which the two-wheeler segment has a major of 26,16,346 followed by private car whose share stood at 4,56,787.
- It has been observed more than 10 per cent growth annually in the vehicle's registrations in city of Surat.
- The shift to electric vehicles is being driven by a need to reduce air pollution, reduction in India's oil import bill and to increase energy security of the country. The thrust for electric vehicles goes hand in hand with India's efforts to expand renewable energy capacities. In addition, Gujarat has the highest adoption of battery operated two wheelers in the country, whichmakes it an ideal proposition for industries to invest in EVs. Now to make Gujarat a manufacturing hub for electrical vehicles and ancillary equipment in the country as well as early adoption of EVs in the state of Gujarat, Gujarat Government have launched "Gujarat State Electrical Vehicle Policy - 2021"
- As part of Smart City Program and Solar City Program, Surat City aims to be the **"First EV smart City"** in the country by early adoption of EVs in the State of Gujarat by providing adequate impetus and support for adoption of Battery EVs and setting up of related charging infrastructures. Therefore, in due course of time Surat will launched "Surat City Electrical Vehicle Policy-2021" with the aims to facilitate adoption of **at least 20 per cent EVs** in the target set (i.e., total 40,000 of EVs) in State EV Policy by 2024-25 and to adopt 20 per cent of all new vehicles in city of Surat have been targeted to be achieve by 2030

Target 1.2.2: Reduction of Green House Gas emissions by 50per cent as compared to present statusof 692.76 Kt/year (SO2, NOx, CO, and NMVOC) through Integrated Solid Waste Management in Surat City.

Time frame: Continuous with base year 2016 up to 2030.

Context for the ambition:

- Smart Solid Waste Management System to monitor entire activity from primary collection, secondary transportation, and disposal
- 100per cent Waste Treatment through Centralised Waste Management Plant
- Adopted strategy of refusing plastic bags and promotion of Cotton Bags by involving Self Help Groups
- Slowly transacting to Zero Landfill Concept.

Target 1.2.3: Reduction of 50 % of Ambient Air Emission from 2017-18 level (PM_{BY} = 256) in Surat City by 2030.
Time frame: Continuous with base year 2017 up to 2030.

Context for the ambition:

- Implementation of Emission Trading Scheme (first of it's kind in the world) in Industries of Surat City.
- Up gradation of Air Pollution Control Device in the Industries of Surat City.
- Rigorous monitoring of Air emission for industries will be developed.

SECTION 2: ACTIONS TO ACHIEVE THE AMBITION

2.1. Please addat least one key action for each of the elaborated ambition(s) from section 1.*[Please add rows as needed].*

Target 7.2.1:25 per cent of total requirement of Surat City (including Smart City + Pan City) to come from renewable sources of energy Action Plan*:* • Surat Municipal Corporation (SMC) will facilitate the citizens as well as Industrial consumers for creating awareness about the benefits of Wind and Solar Plant. • SMC shall make collaboration with banks / financial institutes for providing soft loans for the installation of solar plants. • SMC will organise several capacity-building programmes	*2011-12 to 2029-30*
Target 7.2.2: 50 per cent of total requirement of Surat Municipal Corporation to come from renewable sources of energy Action Plan*:* • Surat Municipal Corporation will prepare the roadmap soon. • SMC will spare green funds for installation of RE projects for captive consumption. • Currently, electricity requirement of SMC is 278 GWH / annum which will be 376 GWH / annum in the year 2030. Keeping in future requirement, SMC has planned to increase existing capacity of Wind Power Plant from 32.4 MW to 45 MW of Wind Power Plants and existing solar plant installed capacity from 07 MW to 54 MW of Solar Power Plants to cater 50 % energy requirement from the renewable energy sources	*2011-12 to 2029-30*
Target 7.2.3: Installation of 11.5 MW Capacity of Municipal Solid Waste to Energy Generation Plant Action Plan*:* • Generation of 11.5 MW electricity by from RDF generated by processing 1200 to 1400 TPD Waste.	*2022-23 to 2025-26*
Target 7.2.4: Replace existing 741 of Euro 4 City Buses into E-bus by 2025 and additional 1000 of E-buses to be placed into Public Transport by 2030*.* Action Plan*:* • In due course of time Surat will launched "Surat City Electrical Vehicle Policy-2021" with the aims to facilitate adoption of at least 20 % EVs in the target set (i.e. total 40,000 Nos of EVs) in State EV Policy by 2024-25 and to adopt 20 % of all new vehicles in city of Surat have been targeted to be achieve by 2030. • SMC will prepare the detailed roadmap to achieve the target.	*2019-20 to 2029-30*
Target 7.3.1: Replacement of all existing Conventional Street lights into Energy Efficiency LED Street lights as part of Street Lighting National Program Action Plan*:* • Surat Municipal Corporation has signed MOU With EESL, India for conversion of conventional Street light with Energy Efficient LED streetlights. • SMC Will prepare the detail roadmap for the same. • SMC have also placed policy that new street lighting system will have only LEDs streetlights only in the city of Surat.	*2018-19 to 2022-23*
Target 1.2.1: 20 per cent of all new vehicle registrations by 2030 will be electric vehicle	*2011-12 to 2029-*

	Action Plan: • In due course of time Surat will launched "Surat City Electrical Vehicle Policy-2021" with the aimto facilitate adoption of at least 20 % EVs in the target set (i.e., total 40,000 Nos of EVs) in State EV Policy by 2024-25 and to adopt 20 % of all new vehicles in city of Surat have been targeted to be achieve by 2030. • SMC will organise several capacity building programs	*30*
	Target 1.2.2: Reduction of Green House Gas emissions by 50 per cent as compared to present status of692.76 Kt/year (SO2, NOx, CO, and NMVOC) through Integrated Solid Waste Management in Surat City. Action Plan*:* • Establishing 8 Nos. of Mechanised Recovery Facilities. • Establishment of around 200 nos. of Decentralised Organic Converter Machines • Centralised Bio methanation plant and Vermi Compost Plant at wholesale markets of vegetables/fruits and flowers. • Establishment of Centralised Waste Management Park for integrated waste handling and pollution abatement • Bio methanation and Incineration plant for collection, treatment and processing of offal waste including small and big dead animals. • Utilizing plastic waste for road making, Textile Material from Plastic PET bottles, which is used in textile industry for weaving process. • Planning to establish Central Sale store for recycle product recovered from the Municipal Solid Waste. • SMC is organising "Samvedana – Khushi no Pitaro" Campaign with objective to collect unused items from citizens which they usually discard as waste and collected items were distributed to needy. • Establishing more Food ATMs for needy people take benefit of the excess food. • Utensils Banks concept is operationalised to minimize the use of disposable products in religious/social occasions and to make city Single Use Plastic Free. • Utilizing recovered materials from C&D waste treatment plant in the permissible construction work thereby reducing load on Natural Resources. • Use of Scrap for creation of Sculpture which are placed at the designated location around city. • Transformation of ~40 Hectares of Dumping Site into Ecological Park for enhancement of Green Cover and Recreational Spaces.	*2016-17 to 2029-30*
	Target 1.2.3: Reduction of 50 % of Ambient Air Emission from 2017-18 level (PM_{BY} = 256) in Surat City by 2030. Action Plan*:* • City level Air Action plan has been prepared for the city.	

SECTION 3: OUTCOMES

3.1. Please add at least one measurable and time-based outcome for **each** of the actions from section 2. *[Please add rows as needed].*

Outcome	*Date*
Target 7.2.1:25 per cent of total requirement of Surat City (including Smart City + Pan City) to come from renewable sources ofenergy Outcome*:* Additional renewable generation capacity to increase the renewable energy supply from 10.69 per cent to 25 per cent against total city energy requirement will increase energy efficiency,reduce the use of conventional sources of energy, reduce the greenhouse gas emissions, improve the health of the population, and increase the domestic manufacturing capacity. Impact – SDGs: SDG 3: Good health and well-being |SDG 7: Affordable and clean energy | SDG 8: Decent work and economic growth | SDG 11: Sustainable cities and communities	*2030*
Target 7.2.2: 50 per cent of total requirement of Surat Municipal Corporation to come from renewable sources of energy Outcome*:* Additional renewable energy capacity to increase the renewable energy supply from 28.29 per cent to 50 per cent of the requirement will increase the	*2030*

energy efficiency and reduce the city's electricity bill. This will reduce the use of conventional sources of energy, reduce the greenhouse gas emissions, and improve the health of the employees. Impact – SDGs*:* SDG 3: Good health and well-being |SDG 7: Affordable and clean energy | SDG 8: Decent work and economic growth | SDG 11: Sustainable cities and communities	
Target 7.2.3: Installation of 11.5 MW Capacity of Municipal Solid Waste to Energy Generation Plant Outcome*:*Additional capacity of waste to energy generation plants will increase the use of circular economy principles in the city, increase the resource efficiency, and reduce landfilling significantly. Impact – SDGs*:* SDG 7: Affordable and clean energy | SDG 11: Sustainable cities and communities | SDG 12: Responsible consumption and production	*2026*
Target 7.2.4: Replace existing 741 Nos of Euro 4 City Buses into E-bus by 2025 and additional 1000 Nos of E-buses to be placed into Public Transport by 2030 Outcome*:* Increased adoption of electric vehicles and the related infrastructure will reduce greenhouse gas emissions, air and noise pollution, and reduce the dependency on fossil fuels. This will increase the demand for sustainable mobility solutions and improve the health of the population. Impact – SDGs:SDG 7: Affordable and clean energy | SDG 11: Sustainable cities and communities| SDG 12: Responsible consumption and production	*2030*
Target 7.3.1: Replacement of all existing Conventional Street lights into Energy Efficiency LED Street lights as part of Street Lighting National Program Outcome*:* Increased adoption of LED Streetlights will lead to increased energy efficiency, considerably lower carbon emissions and vast financial savings for the city. Impact – SDGs:SDG 7: Affordable and clean energy | SDG 11: Sustainable cities and communities	*2023*
Target 1.2.1: 20 per cent of all new vehicle registrations by 2030 will be electric vehicle Outcome: Adoption electric vehicle and related infrastructure will bring about a material improvement in Surat City's environment by bringing down emissions from the transport sector, reduce the dependency on fossil fuels, and improve the health of the population. Impact – SDGs*:* SDG 7: Affordable and clean energy | SDG 9: Industry, Innovation, and Infrastructure | SDG 12: Responsible consumption and production	*2030*
Target 1.2.2: Reduction of Green House Gas emissions by 50 per cent as compared to present statusof 692.76 Kt/year (SO2, NOx, CO, and NMVOC) through Integrated Solid Waste Management in Surat City. Outcome*:* Additional solid waste management capacity will reduce greenhouse gas emissions by 50 per cent, increase resource efficiency, boost circular economy, reduce landfilling, increase employment,and improve the health of the population. Impact – SDGs*:* SDG 3: Good health and well-being | SDG 6: Clean water and sanitation | SDG 7: Affordable and clean energy| SDG 11: Sustainable cities and communities | SDG 12: Responsible consumption and production	*2030*
Target 1.2.3: Reduction of 50 % of Ambient Air Emission from 2017-18 level (PM_{BY} = 256) in Surat City by 2030. Outcome*:* It will help to improve Air Quality Index of Surat City. Impact – SDGs*:* SDG 3: Good health and well-being | SDG 6: Clean water and sanitation | SDG 7: Affordable and clean energy| SDG 11: Sustainable cities and communities | SDG 12: Responsible consumption and production	

SECTION 4: REQUIRED RESOURCES AND SUPPORT

4.1. Please specify required finance and investments for **each** of the actions in section 2.

Description of action (please specify for which ambition from Section 1) **Target 7.2.1:**25 per cent of total requirement of Surat City (including Smart City + Pan City) to come from renewable sources ofenergy Finance/investments**:** Cost to be covered by individual and industry owners TechnicalSupport: Surat Municipal Corporation will arrange technical support and arrange IEC activities to create awareness
Description of action (please specify for which ambition from Section 1) **Target 7.2.2:**50 per cent of total requirement of Surat Municipal Corporation to come from renewable sources of energy

Finance/investments: INR 300 Crore (USD 40.7 million) is required for installation of proposed capacity of solar plant and wind plant to achieve the ambitious target
Description of action (please specify for which ambition from Section 1) **Target 7.2.3:**Installation of 11.5 MW Capacity of Municipal Solid Waste to Energy Generation Plant Finance/investments: Project will be carried out through DBFOO (Design, Build, Finance, Own & Operate) basis for 25 years. Surat Municipal Corporation will provide the land to the developer at minimum rent / zero rent to develop the project
Description of action (please specify for which ambition from Section 1) **Target 7.2.4:**Replace existing 741 of Euro 4 City Buses into E-bus by 2025 and additional 1000 of E-buses to be placed into Public Transport by 2030 Finance/investments: INR 6000 Crore (USD 814 Million) is required to achieve the ambitious target.
Description of action (please specify for which ambition from Section 1) **Target 7.3.1:**Replacement of all existing Conventional Street lights into Energy Efficiency LED Street lights as part of Street Lighting National Program Finance/investments: No capital investment is required, saving will be shared with the investor i.e. EESL, India for entire project
Description of action (please specify for which ambition from Section 1) **Target 1.2.1:** 20 per cent of all new vehicle registrations by 2030 will be electric vehicle Finance/investments: Cost to be covered by individual and industry owners TechnicalSupport: Surat Municipal Corporation will arrange technical support and arrange IEC activities to create awareness
Description of action (please specify for which ambition from Section 1) **Target 1.2.2:**Reduction of Green House Gas emissions by 50 per cent as compared to present statusof 692.76 Kt/year (SO2, NOx, CO, and NMVOC) through Integrated Solid Waste Management in Surat City. Finance/investments: Entireproject DPR for integrated Solid Waste Management is worth INR 700 Crores (USD 95 Million) the said finance to be incorporated in schemes like Swachh Bharat Mission, 15th Finance Commission and various other incentives from CSR/CER fund, as well from International Organisations.
Description of action (please specify for which ambition from Section 1) **Target 1.2.3:** Reduction of 50 % of Ambient Air Emission from 2017-18 level (PM_{BY} = 256) in Surat City by 2030. Finance/investments: Rs 131 Cr / Annum revenue expenses will be required for the entire project and the said finance to be incorporated in schemes like Swachh Bharat Mission, 15th Finance Commission and various other incentives from CSR/CER fund, as well from International Organisations.
Note- Need resources and support for Section 6 – Monitoring and Reporting. Description of action as follows: **Section 6.1:** City Energy Dashboard Technical Support: Technical support from an experienced consultant is required Finance/investments: INR 1 Crore (USD 0.135 Million) fund is required for this initiative

4.2. [For countries only] In case support is required for the actions in section 2, please select from below and describe the required support and specify for which action.
[Examples of support for Member States could include Access to low-cost affordable debt through strategic de-risking instruments, capacity building in data collection; development of integrated energy plans and energy transition pathways; technical assistance, etc.]

☐Financing	*Description*
☐ In-Kind contribution	*Description*
☐ Technical Support	*Description*

☐ Other/Please specify	*Description*

SECTION 5: IMPACT

5.1. Countries planned for implementation including number of people potentially impacted.

India| Entire Surat City population of nearly 63 Lakh (6.3 million) people will be impacted through various interventions.

5.2. Alignment with the 2030 Agenda for Sustainable Development – Please describe how **each**of the actions from section 2impact advancing the SDGs by 2030.

Target 7.2.1:25 per cent of total requirement of Surat City (including Smart City + Pan City) to come from renewable sources ofenergy

Alignment with 2030 Agenda*:*

- SDG 7 – Affordableand clean energy: Additional renewable capacity will ensure access to affordable, reliable, and modern energy services to all citizens (Target 7.1); reduce the use of conventional sources of energy,increase substantially the share of renewable energy in the global energy mix (Target 7.2); and improve the rate of energy efficiency (Target 7.3); reduce the greenhouse gas emissions
- SDG 3 – Goodhealth and well-being: Renewable sources of energy will reduce illnesses and deaths from hazardous chemicals and pollution (Target 3.9) and improve the health of the population
- SDG 8– Decent work and economic growth: reliable supply of renewable sources of energy will improve the resource efficiency in production and consumption (Target 8.4), increase the domestic manufacturing capacityand sustain the domestic per capita income in accordance to national circumstances (Target 8.1)
- SDG 11 – Sustainable cities and communities: Additional renewable sources of energy will reduce the fossil fuel dependency, greenhouse gas emission, air and noise pollution and reduce the adverse per capita environmental impact of city (Target 11.6)

Target 7.2.2: 50 per cent of total requirement of Surat Municipal Corporation to come from renewable sources of energy

Alignment with 2030 Agenda*:*

- SDG 7 – Affordableand clean energy: Additional renewable capacity will ensure access to affordable, reliable, and modern energy services to all citizens (Target 7.1); reduce the use of conventional sources of energy,increase substantially the share of renewable energy in the global energy mix (Target 7.2); and improve the rate of energy efficiency (Target 7.3); and reduce the greenhouse gas emissions.
- SDG 3 – Goodhealth and well-being: Renewable sources of energy will reduce illnesses and deaths from hazardous chemicals and pollution (Target 3.9) and improve the health of the population
- SDG 8– Decent work and economic growth: reliable supply of renewable sources of energy will improve the resource efficiency in production and consumption (Target 8.4), increase the domestic manufacturing capacity and sustain the domestic per capita income in accordance to national circumstances (Target 8.1)
- SDG 11 – Sustainable cities and communities: Additional renewable sources of energy will reduce the fossil fuel dependency, greenhouse gas emission, air and noise pollution and reduce the adverse per capita environmental impact of city (Target 11.6)

Target 7.2.3: Installation of 11.5 MW Capacity of Municipal Solid Waste to Energy Generation Plant

Alignment with 2030 Agenda:

- SDG 7 – Affordableand clean energy:*Additional capacity of waste to energy generation plants will provide modern energy services to all citizens (Target 7.1)*
- SDG 11 – Sustainable cities and communities: *Additional capacity of waste to energy generation plants will reduce landfills, increase sustainable urbanisation and human settlement management (Target 11.3), and* reduce the adverse per capita environmental impact of city (Target 11.6).
- SDG 12 – Responsible consumption and production: Solid waste to energy plants will ensure sustainable management and efficient use of natural resources (Target 12.2), substantially reduce waste generation through reuse (Target 12.5) and this will lead to increase in efficient public waste procurement practices (Target 12.7)

Target 7.2.4: Replace existing 741 Nos of Euro 4 City Buses into E-bus by 2025 and additional 1000 Nos of E-buses to be placed into Public Transport by 2030

Alignment with 2030 Agenda:

- SDG 7 – Affordableand clean energy:*additional fleet of e-busses will substantially increase the share of renewable energy in the global mix (Target 7.2)*
- SDG 9 – Industry, Innovation, and Infrastructure: increased adoption of e-busses and related infrastructure will ensure quality, reliable, sustainable and resilient infrastructure focusing on affordable and equitable access for all (Target 9.1)
- SDG 12 – Responsible consumption and production: adoption of a fleet of e-busses will ensure sustainable management and efficient use of natural resources (Target 12.2) and encourage public procurement practices that are sustainable in accordance with national policies (Target 12.7)

Target 7.3.1: Replacement of all existing Conventional Street lights into Energy Efficiency LED Street lights as part of Street Lighting National Program

Alignment with 2030 Agenda:

- SDG 7 – Affordableand clean energy:*Highly efficient LED streetlights will provide modern energy services to all citizens (Target 7.1)*
- SDG 11 – Sustainable cities and communities: *Energy efficiency through LED streetlights will ensure sustainable urbanisation and human settlement management (Target 11.3) and*reduce the carbon emissions and the per capita environmental impact of city (Target 11.6).

Target 1.2.1: 20 per cent of all new vehicle registrations by 2030 will be electric vehicle

Alignment with 2030 Agenda:

- SDG 7 – Affordableand clean energy:*additional fleet of e-busses will substantially increase the share of renewable energy in the global mix (Target 7.2)*
- SDG 9 – Industry, Innovation, and Infrastructure: increased adoption of e-busses and related infrastructure will ensure quality, reliable, sustainable, and resilient infrastructure focusing on affordable and equitable access for all (Target 9.1)
- SDG 12 – Responsible consumption and production: adoption of a fleet of e-busses will ensure sustainable management and efficient use of natural resources (Target 12.2) and encourage public procurement practices that are sustainable in accordance with national policies (Target 12.7)

Target 1.2.2: Reduction of Green House Gas emissions by 50 per cent as compared to present status of 692.76 Kt/year (SO2, NOx, CO, and NMVOC) through Integrated Solid Waste Management in Surat City

Alignment with 2030 Agenda:

- SDG 3 – Good health and well-being: Solid waste management will reduce number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination (Target 3.9)
- SDG 6 – Clean water and sanitation: Additional capacity of solid waste management will prevent contamination of water bodies and improve water quality by reducing pollution, eliminating dumping, and minimizing release of hazardous chemicals and materials, substantially increasing recycling and safe reuse (Target 6.3)

- SDG 7 – Affordable and clean energy: Additional capacity of waste to energy generation plants will increase renewable energy share in the global energy mix (Target 7.2)
- SDG 11 – Sustainable cities and communities: Additional capacity of waste management will increase sustainable urbanisation and human settlement management (Target 11.3), and reduce environmental impacts of cities, particularly municipal and other waste management (Target 11.6).
- SDG 12 – Responsible consumption and production: Solid waste management plants will ensure sustainable management and efficient use of natural resources (Target 12.2), promote 3Rs to reduce waste generation (Target 12.5) and this will lead to increase in efficient public waste procurement practices (Target 12.7).

Target 1.2.3: Reduction of 50 % of Ambient Air Emission from 2017-18 level (PM_{BY} = 256) in Surat City by 2030.

Alignment with 2030 Agenda:

- SDG 3 – Good health and well-being: Solid waste management will reduce number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination (Target 3.9)
- SDG 6 – Clean water and sanitation: Additional capacity of solid waste management will prevent contamination of water bodies and improve water quality by reducing pollution, eliminating dumping, and minimizing release of hazardous chemicals and materials, substantially increasing recycling and safe reuse (Target 6.3)
- SDG 7 – Affordable and clean energy: Additional capacity of waste to energy generation plants will increase renewable energy share in the global energy mix (Target 7.2)
- SDG 11 – Sustainable cities and communities: Additional capacity of waste management will increase sustainable urbanisation and human settlement management (Target 11.3), and reduce environmental impacts of cities, particularly municipal and other waste management (Target 11.6).
- SDG 12 – Responsible consumption and production: Solid waste management plants will ensure sustainable management and efficient use of natural resources (Target 12.2), promote 3Rs to reduce waste generation (Target 12.5) and this will lead to increase in efficient public waste procurement practices (Target 12.7).

5.3. Alignment with Paris Agreement and net-zero by 2050 - Please describe how **<u>each</u>** of the actionsfrom section 2align with the Paris Agreement and national NDCs (if applicable) and support the net-zero emissions by 2050.

[up to 500 words, please upload supporting strategy documents as needed]

Target 7.2.1:25 per cent of total requirement of Surat City (including Smart City + Pan City) to come from renewable sources ofenergy

Alignment with Paris Agreement and net-zero by 2050*:* This target support India's NDC to have 40% share of non-fossil-fuel based installed power generation capacity by 2030

Target 7.2.2: 50 per cent of total requirement of Surat Municipal Corporation to come from renewable sources of energy

Alignment with Paris Agreement and net-zero by 2050*:*

This target support India's NDC to have 40% share of non-fossil-fuel based installed power generation capacity by 2030

Target 7.2.3: Installation of 11.5 MW Capacity of Municipal Solid Waste to Energy Generation Plant

Alignment with Paris Agreement and net-zero by 2050:This target supports India's NDC to have 40% share of non-fossil-fuel based installed power generation capacity by 2030 and to reduce the emissions intensity of GDP by 33%–35% by 2030 below 2005 levels

Target 7.2.4: Replace existing 741 Nos of Euro 4 City Buses into E-bus by 2025 and additional 1000 Nos of E-buses to be placed into Public Transport by 2030

Alignment with Paris Agreement and net-zero by 2050:This target supports India's NDC to reduce the emissions intensity of GDP by 33%–35% by 2030 below 2005 levels

Target 7.3.1: Replacement of all existing Conventional Street lights into Energy Efficiency LED Street lights as part of Street Lighting National Program

Alignment with Paris Agreement and net-zero by 2050:This target supports India's NDC to have 40% share of non-fossil-fuel based installed power generation capacity by 2030
Target 1.2.1: 20 per cent of all new vehicle registrations by 2030 will be electric vehicle Alignment with Paris Agreement and net-zero by 2050:This target supports India's NDC to reduce the emissions intensity of GDP by 33%–35% by 2030 below 2005 levels
Target 1.2.2: Reduction of Green House Gas emissions by 50 per cent as compared to present status of 692.76 Kt/year (SO2, NOx, CO, and NMVOC) through Integrated Solid Waste Management in Surat City Alignment with Paris Agreement and net-zero by 2050:This target supports India's NDC to reduce the emissions intensity of GDP by 33%–35% by 2030 below 2005 levels
Target 1.2.3: Reduction of 50 % of Air Ambient Emission from 2017-18 level (PM_{BY} = 256) in Surat City by 2030. Alignment with Paris Agreement and net-zero by 2050:This target supports India's NDC to reduce the emissions intensity of GDP by 33%–35% by 2030 below 2005 levels

SECTION 6: MONITORING AND REPORTING

6.1. Please describe how you intend to track the progress of the proposed outcomes in section 3. Please also describe if you intend to use other existing reporting frameworks to track progress on the proposed outcomes.

For all targets (7.2.1 to 1.2.2)

Monitoring and Reporting Methodology: **City Energy Dashboard**

Time frame: Start year 2022, Target Year 2024

Context for the ambition:

- Surat city had been selected among 100 cities to be developed as smart city by Government of India due to various achievements, initiatives, and all-inclusive approach. Government had also approved the Surat Smart City Proposal to develop Surat as Smart City.
- City Energy Dashboard shows several metrics by which energy use in the city is measured and tracked. These metrics are used to measure progress towards the goals of the Energy Compacts. The datais dynamic and is updated as utility bills are received.

Dashboard will have following indicators:

- Total electricity requirement of Surat City,
- No of electricity consumers,
- City Electricity demand,
- Renewable Energy Plants i.e. solar, wind, bio gas etc installation data,
- Renewable energy generation of city

- per cent Share of RE into total electricity requirement of Surat City
- Electrical vehicles data
- Public / Private Charging Station database
- per cent Share of RE installed capacity of City
- And many others

SECTION 7: GUIDING PRINCIPLES CHECK LIST

Please use the checklist below to validate that the proposed Energy Compact is aligned with the guiding principles.

I.Stepping up ambition and accelerating action - Increase contribution of and accelerate the implementation of the SDG7 targets in support of the 2030 Agenda for Sustainable Development for Paris Agreement

I. 1.Does the Energy Compact strengthen and/or add a target, commitment, policy, action related to SDG7 and its linkages to the other SDGs that results in a higher cumulative impact compared to existing frameworks?

☒Yes ☐No

I.2. Does the Energy Compact increase the geographical and/or sectoral coverage of SDG7 related efforts? ☒Yes ☐No

I.3. Does the Energy Compact consider inclusion of key priority issues towards achieving SDG7 by 2030 and the net-zero emission goal of the Paris Agreement by 2050 - as defied by latest global analysis and data including the outcome of the Technical Working Groups?☒Yes ☐No

II. Alignment with the 2030 agenda on Sustainable Development Goals – Ensure coherence and alignment with SDG implementation plans and strategies by 2030 as well as national development plans and priorities.

II.1. Has the Energy Compact considered enabling actions of SDG7 to reach the other sustainable development goals by 2030? ☒Yes ☐No

II.2. Does the Energy Compact align with national, sectoral, and/or sub-national sustainable development strategies/plans, including SDG implementation plans/roadmaps?☒Yes ☐No

II.3. Has the Energy Compact considered a timeframe in line with the Decade of Action? ☒Yes ☐No

III. Alignment with Paris Agreement and net-zero by 2050 - Ensure coherence and alignment with the Nationally Determined Contributions, long term net zero emission strategies.

III.1. Has the Energy Compact considered a timeframe in line with the net-zero goal of the Paris Agreement by 2050? ☐Yes ☐NoN/A India does not have a net-zero target.

III.2. Has the Energy Compact considered energy-related targets and information in the updated/enhanced NDCs? ☒Yes ☐No

III.3. Has the Energy Compact considered alignment with reaching the net-zero emissions goal set by many countries by 2050? ☐Yes ☐NoN/A India does not have a net-zero target.

IV. Leaving no one behind, strengthening inclusion, interlinkages, and synergies - Enabling the achievement of SDGs and just transition by reflecting interlinkages with other SDGs.

IV.1. Does the Energy Compact include socio-economic impacts of measures being considered? ☒Yes ☐No

IV.2. Does the Energy Compact identify steps towards an inclusive, just energy transition? ☒Yes ☐No

IV.3. Does the Energy Compact consider measures that address the needs of the most vulnerable groups (e.g. those impacted the most by energy transitions, lack of energy access)? ☒Yes ☐No

V. Feasibility and Robustness - Commitments and measures are technically sound, feasible, and verifiable based a set of objectives with specific performance indicators, baselines, targets and data sources as needed.

V.1. Is the information included in the Energy Compact based on updated quality data and sectoral assessments, with clear and transparent methodologies related to the proposed measures? ☒Yes ☐No

V.2. Has the Energy Compact considered inclusion of a set of SMART (specific, measurable, achievable, resource-based and time based) objectives? ☒Yes ☐No

V.3. Has the Energy Compact considered issues related to means of implementation to ensure feasibility of measures proposed (e.g. cost and financing strategy, technical assistant needs and partnerships, policy and regulatory gaps, data and technology)? ☒Yes ☐No

SECTION 8: ENERGY COMPACT GENERAL INFORMATION

8.1. Title/name of the Energy Compact

Energy Compact for Surat, Gujarat, India

8.2. Lead entity name (for joint Energy Compacts please list all parties and include, in parenthesis, its entity type, using entity type from below)

Surat Municipal Corporation

8.3. Lead entity type

☐ Government ☒ Local/Regional Government ☐ Multilateral body /Intergovernmental Organization

☐ Non-Governmental Organization (NGO) ☐ Civil Society organization/Youth ☐ Academic Institution /Scientific Community

☐ Private Sector ☐ Philanthropic Organization ☐Other relevant actor

8.4. Contact Information

Mr. Chaitanya Bhatt, Chief Executive Officer & General Manager (IT), SSCDL and Deputy Municipal Commissioner(C), Surat Municipal Corporation: ceo@suratsmartcity.com | Tel: (+91) 9724345008
CC.
Mr. K H Khatwani, Additional City Engineer (Ele. & Mech.), Surat Municipal Corporation (SMC): ace.khk@suratmunicipal.org | Tel.: (+91) 9724345206

8.5. Please select the geographical coverage of the Energy Compact

☐Africa ☒Asia and Pacific ☐Europe ☐Latin America and Caribbean ☐North America ☐West Asia ☐Global

8.6. Please select the Energy Compact thematic focus area(s)

☐ Energy Access ☒ Energy Transition ☐ Enabling SDGs through inclusive just Energy Transitions ☐ Innovation, Technology and Data ☐ Finance and Investment.

SECTION 9: ADDITIONAL INFORMATION (IF REQUIRED)

Please provide additional website link(s) on your Energy Compact, which may contain relevant key documents, photos, short video clips etc.
https://www.suratsmartcity.com/
https://www.suratmunicipal.gov.in/