



Capacity Building for Low Carbon and Climate Resilient City Development in India (CapaCITIES)

Basket of Solution (BoS)

Performance Assessment and Best Practices for Climate Resilient City Development in India

City Name of City

Year 2020

Status Draft

Version 3.2.6
Dezember 2020



Implementation Agency



Context

The CapaCITIES project, financed by the Swiss Development Cooperation SDC, intends to enhance capacities at multiple levels of governance to mainstream climate resilience into the urban development paradigm in India.

The **Simplified ClimateResilientCITIES Methodology** is a tailor made process for Local Governments (LGs), providing step by step guidance to prepare, implement and monitor Climate Resilient City Action Plans, to support LGs in their endeavour to move towards climate resilient development.

LGs could choose to initiate climate action by adopting a simplified 3-phase, 5-step process, defined by the **Simplified ClimateResilientCITIES Methodology**. This methodology is based on a pre-defined set of comprehensive climate actions that are presented in the **Basket of Solutions** tool (Tool 4 of the methodology). It is envisaged that the simplified methodology would support the city in preparing a quick climate action plan within 3 months that is to be implemented over the next years, with detailed annual action plans.

The **Basket of Solutions** tool consists of a set of 38 climate actions, across 9 areas/sectors. Each climate action is further graded into 4 categories. Each of the grades addresses a critical step in the implementation of the entire climate action, starting from planning to design to implementation and monitoring coordinated with the necessary political decisions. Grade 4 corresponds to the full implementation and monitoring of the selected climate action. The **Basket of Solutions** also indicates, for each climate action, the relevant evidentiary documentation that would need to be recorded during the course of executing the climate action. This documentation could then be used for monitoring, reporting and also verification of climate performance in subsequent years. The **Basket of Solutions** is designed to support the LGs in:

- Conducting an initial assessment with evaluation of climate performance, vis-à-vis the 38 climate actions included in the tool.
- Annual monitoring of the defined climate action plan
- Developing future CRCAPs, post implementation of the city's first Climate Resilient City Action Plan.

The **Basket of Solutions** allows cities the flexibility to choose relevant climate actions and define the action plan accordingly. As a monitoring tool, the city can benchmark itself against its own targeted performance. For each of the 4 grades for each climate action, scores are assigned and based on the achievement of targeted grade, at the end of each annual review the city, a consolidated score is assigned to the city. The grades are designed to help a city evaluate itself on climate action.

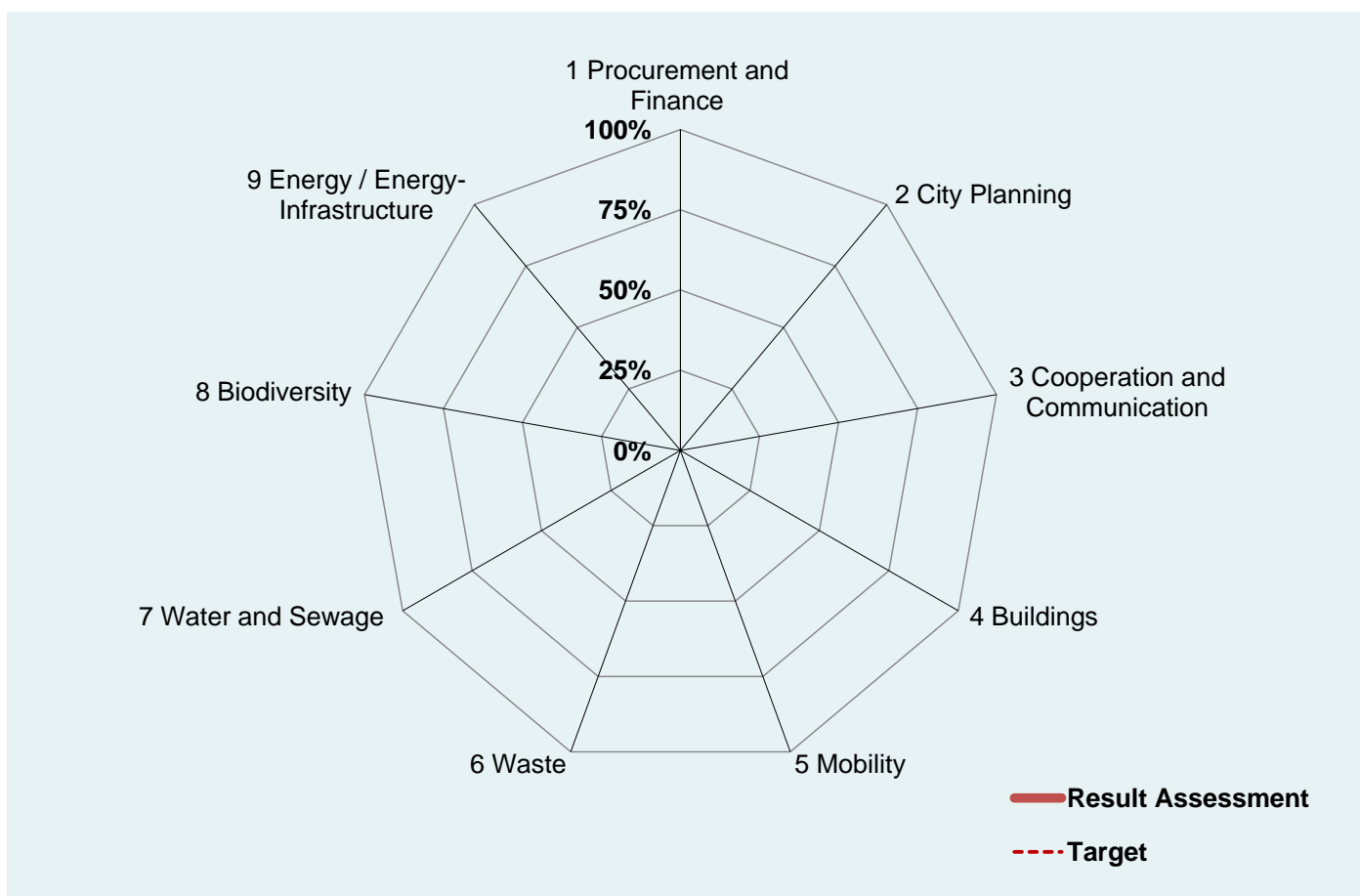
38 climate actions are proposed in the BoS, corresponding to 9 topics, which are listed below:

- I. Procurement and Finance (2 topics)
- II. City Planning (4 topics)
- III. Cooperation and Communication (3 topics)
- IV. Buildings (5 topics)
- V. Mobility (9 topics)
- VI. Waste (4 topics)
- VII. Water and Sewage (6 topics)
- VIII. Urban Biodiversity (2 topics)
- IX. Energy/Energy-Infrastructure (3 topics)

Pre-defined climate actions included in the **Basket of Solutions** also consider and are in sync with the indicators included in the Climate Smart City Assessment Framework and the Livability Index, initiated and implemented by the Ministry of Housing and Urban Affairs, Government of India. The development of the Climate Resilient City Action Plan is furthermore supported by the integrated examples of best practice.

Assesment Overview

Area	Baseline Performance Assessment		Approved Targeted Goal (Year)	
	Grade	Result	Grade	Target
1 Procurement and Finance	0.00	0%	0.00	0%
2 City Planning	0.00	0%	0.00	0%
3 Cooperation and Communication	0.00	0%	0.00	0%
4 Buildings	0.00	0%	0.00	0%
5 Mobility	0.00	0%	0.00	0%
6 Waste	0.00	0%	0.00	0%
7 Water and Sewage	0.00	0%	0.00	0%
8 Biodiversity	0.00	0%	0.00	0%
9 Energy / Energy-Infrastructure	0.00	0%	0.00	0%
Overall	0.00	0%	0%	0%



Climate Assessment & Evaluation Results

	Grade		Average grade	Target
1 Procurement and Finance			0.00	0.00
1.1 Procurement Guidelines and Bylaws	0			0
1.2 Climate Finance	0			0
2 City Planning			0.00	0.00
2.1 Energy Profile and GHG Emission Inventory	0			0
2.2 Climate Change Vulnerability and Risk Assessment	0			0
2.3 Disaster Resilience	0			0
2.4 Climate Resilient Urban Planning	0			0
3 Cooperation and Communication			0.00	0.00
3.1 Education/Research Institutions and NGOs	0			0
3.2 Public organisations	0			0
3.3 Private Sector	0			0
4 Buildings			0.00	0.00
4.1 Energy Mangement in Municipal Corporation Owned Existing Buildings	0			0
4.2 Green Buildings: Municipality owned buildings and social housing schemes	0			0
4.3 Energy Management in existing Private Buildings	0			0
4.4 Implementation of Green Building Standards in Private buildings	0			0
4.5 Dissemination of Best Examples (Public Buildings and Social Housing)	0			0
5 Mobility			0.00	0.00
5.1 Mobility Planning	0			0
5.2 Non Motorised Transport	0			0
5.3 Public Transport	0			0
5.4 Intermediate Public Transport	0			0
5.5 E-Mobility	0			0
5.6 Urban Freight Movement	0			0
5.7 Intelligent Traffic and Transport System	0			0
5.8 Pollution Management	0			0
5.9 Parking	0			0
6 Waste			0.00	0.00
6.1 Solid Waste Management Action Plan/ Strategies	0			0
6.2 Waste Collection Systems	0			0
6.3 Waste Recycling and Processing	0			0
6.4 Disposal	0			0
7 Water and Sewage			0.00	0.00
7.1 Overall Water Resource Management Strategy	0			0
7.2 Water Treatment and Distribution System	0			0
7.3 Storm Water Management	0			0
7.4 Sewage Management	0			0
7.5 Waste Water Recycle and Reuse	0			0
7.6 Faecal Sludge/ Septage Management	0			0
8 Biodiversity			0.00	0.00
8.1 Local Biodiversity Strategy Action Plan and Implementation	0			0
8.2 Natural areas in the city	0			0
9 Energy / Energy-Infrastructure			0.00	0.00
9.1 Public Lighting	0			0
9.2 City electrical energy derived from renewable sources	0			0
9.3 District Energy Systems for Cooling	0			0
Overall	Maximum Points: 152	0	0.00	0
		0%		0%

Area 1: Procurement and Finance

1.1 Procurement Guidelines and Bylaws

Goal Procurement of appliances and other supplies for municipal corporation considers climate mitigation and adaptation aspects.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Procurement guidelines or bylaws for appliances and supplies (i.e. appliances, vehicles, papers, building material, machines, other essentials etc.) which address climate resilience aspects are available at state level and are being followed by the municipal corporation.	City is preparing local procurement guidelines or bylaws that consider climate resilience aspects for procurement of appliances and supplies for municipal corporation's own use (i.e. appliances, vehicles, papers, building material, machines, other essentials etc.).	Local procurement guidelines or bylaws that consider climate resilience aspects for procurement of appliances and supplies for municipal corporation's own use (i.e. appliances, vehicles, papers, building material, machines, other essentials etc.) are prepared.	Local procurement guidelines and bylaws that consider climate resilience are approved by the city council, which are being followed and monitored by municipal corporation.

Assesment Guidance			
Copy of state procurement guidelines addressing climate resilience aspects for procurement can be shown	Letter from Municipal Commissioner/ relevant authority for preparing local procurement guidelines or bylaws addressing climate resilience during procurement of appliances and essentials for municipal corporation own use (i.e. appliances, vehicules, papers, building material, machines, other essesntials etc.)	Copy of local procurement guidelines and bylaws addressing climate resilience during procurement of appliances and essentials for municipal corporation own use	1. Approval from city council for local procurement guidelines and bylaws addressing climate resilience are approved by city council can be shown (1/2 marks) 2. Document on impact monitoring can be shown (1/2 mark)

Actual assesement	Initial assesement	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

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Related climate smart city indicators (CSCAF)	Level	Score

Area 1: Procurement and Finance

1.2 Climate Finance

Goal Implementation of large scale interventions elaborated in the Climate Resilient City Action Plan are financially sustainable. The possibilities of the national/ international climate finance schemes/ programs/ markets are used to finance local projects.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Technical and financial evaluation of identified climate projects is in progress.	Detailed bankable project report is prepared.	City has systematically approached shortlisted national/ international climate finance schemes/ programs/ markets based on bankable project reports for implementation.	City has implemented at least one large scale (> 100 Million INR) climate project through private/public finance .

Assesment Guidance			
Initial study report on potential can be shown	Detailed bankable project report including technical assessment and financial model, including identified financial sources can be shown	Report/ analysis of approach to evaluate and shortlisting financial institutions can be shown	Details/ document of project implementation along with letter from city authority/ relevant governing body can be shown

Actual assesment	Initial assesment	Target
Grade 	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice	links
<ul style="list-style-type: none"> - Stakeholder Engagement in Preparing Investment Plans for the Climate Investment Funds Case Studies from Asia - Ahmedabad issues municipal bonds to implement green projects - Climate finance for cities - Public-Private Partnerships for Climate Finance 	<ul style="list-style-type: none"> https://www.adb.org/sites/default/files/publications/2020/06/20200613-Climate-Finance-for-Cities.pdf https://cdkn.org/wp-content/uploads/2020/06/Climate-Finance-for-Cities.pdf https://www.odi.org/sites/odi.org.uk/files/odi-asset/data-files/2020/06/20200613-Climate-Finance-for-Cities.pdf https://norden.diva-portal.org/smash/get/diva2:1511111/FULLTEXT01

Related climate smart city indicators (CSCAF)	Level	Score

Area 2: City Planning

2.1 Energy Profile and GHG Emission Inventory

Goal Energy profile and emission inventories are established and periodically updated.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Decision to develop an energy profile and GHG emissions inventory is taken, tasks are defined and communicated to various departments, data collection to prepare energy profile is in progress.	Sectorwise energy profile prepared for the city (5 year time series with base year not older than 7 years), preparation of GHG emissions inventory in progress.	GHG emissions inventory (GPC compliant) for all sectors including all energy sources is developed (5 year time series with base year not older than 7 years), energy and GHG emission forecasting is in progress.	Energy and GHG emission forecasting in line with energy profile and GHG emission inventory for business as usual scenario developed, covers population projection and service demand assessment.

Assesment Guidance			
Letter from commissioner / office order regarding tasks allotted to prepare GHG emission inventory can be shown	Detailed sectorwise energy profile report can be shown Note: Energy profile includes conventional energy consumption from all sectors i.e. residential buildings; commercial and institutional buildings; manufacturing industry and construction; agriculture, forestry and fishing activities; waste (liquid and solid waste); transportation; facilities (i.e. water, drainage, public transportation, public lighting etc.) <i>(1/2 mark if energy profile doesn't include all the</i>	Detailed GHG emission inventory report can be shown Note: GHG emission inventory shall be GPC compliant and includes GHG emissions from all sectors i.e. residential buildings; commercial and institutional buildings; manufacturing industry and construction; agriculture, forestry and fishing activities; waste (liquid and solid waste); transportation; facilities (i.e. water, drainage, public transportation, public lighting etc.)	Combined energy profile and GHG emission inventory report along with forecasting can be shown Note: Energy and GHG emission forecasting for BAU scenario should consider service demand assessment based on population projection (1/2 mark if energy profile and GHG emission inventory don't include all the sectors as mentioned)

Actual assesment	Initial assesment	Target
Grade	0	
Explanatory statements		
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Sources for Validation		
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Recommendations / possible next steps		
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Good Solutions - best practice		
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Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2_4.2 Indicator 5: City Climate Action Plan		

Area 2: City Planning

2.2 Climate Change Vulnerability and Risk Assessment

Goal Vulnerability of fragile urban systems to climate change risks are identified and assessed.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Decision to prepare vulnerability and risk assessment is taken, analysis of baseline situation and identification of fragile urban systems initiated.	Baseline situation analysis completed and fragile urban systems identified. Climate risk assessment initiated based on fragility of urban systems, likelihood and consequence. Risk scoring provided based on risk status.	Climate risk assessment completed. Vulnerable areas and hotspots identified for fragile urban systems; actors are identified and adaptive capacity analysed.	Detailed vulnerability and risk assessment report prepared, which includes information on fragile urban systems, vulnerability hotspots mapping and risk status.

Assesment Guidance			
Letter from commissioner/ office order on decision to prepare vulnerability and risk assessment	Report on baseline situation and fragile system analysis can be shown	Report on climate risk assessment including baseline fragility of urban system, likelihood and consequences of risks can be shown	Detailed vulnerability and risk assessment report can be shown Note: Vulnerability and risk assessment include an analysis of fragile urban systems; climate risk assessment depending on fragility of sectors, likelihood, consequence, risk status; identification of vulnerable areas and hotspots of fragile urban systems; actors analysis and adaptive capacity of actors

Actual assesment	Initial assesment	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice	links
- Framework_for_Climate_Change_Vulnerability_Assessments_-_GIZ_2014	https://www.adaptationcommunity.net/publications/1065711ED.pdf
- Climate Risk Assessment Framework in India - GIZ & NIDM	https://nidm.gov.in/PDF/pubs/GIZ_NIDM_Cli
- Climate Resilient Urban Development: Vulnerability Profiles of 20 Indian Cities (MoHUA & IRADe)	https://irade.org/Climate_Resilient_Urban_De
- Vulnerability profiling of Cities_A framework for climate-resilient urban development	https://pubs.iied.org/pdfs/1065711ED.pdf

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2_4.2 Indicator 5: City Climate Action Plan		

Area 2: City Planning

2.3 Disaster Resilience

Goal A disaster risk reduction strategy and emergency management plan covering all relevant risks is prepared and considered in city planning. Based on the strategy, relevant measures are planned and implemented.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	The disaster management plan at district level is available. City level disaster risk reduction plan, also addressing those risks influenced by climate change (flooding, cyclones/storms, heat waves, droughts), is being prepared based on city level loss and damage information as per NDMA guideline and community participation, vetted by state disaster management authority.	City level disaster risk reduction plan is prepared and institutionalised. A dedicated disaster management cell/ emergency operation center within Urban Local Body (ULB) is established.	An Emergency Management Plan is prepared that includes a helpline, weather forecasting, and early warning systems linked to Integrated Command and Control Centers (ICCC) for regular monitoring and managing emergency situation, post disaster relief systems.	Disaster Risk Reduction and Emergency Management Plans are in place and are being implemented with regular updation mechanisms. Trained task force or volunteers for disaster response are in place (periodic conduct of annual mock drills), mainstreaming disaster risk reduction mandates in bylaws or departmental plans within ULB.

Assesment Guidance			
1. District disaster management plan along with state disaster management authority letter can be shown (1/2 mark) 2. Letter from commissioner/mayor can be shown on preparation of city level disaster management plan (1/2 mark)	Office order/ notification for establishing city level disaster management cell or emergency operation center along with detailed roles and responsibility as per disaster risk reduction plan can be shown	1. Emergency management plan (not older than 10 years) with clear role and responsibility and helpline number (1/3 mark) 2. Weather forecasting and early warning systems are regularly monitored, tested and functional through Integrated Command and Control Centers (ICCC) (1/3 mark) 3. Periodic updation/ calibration in place (1/3 mark)	1. Training plan/ periodic mock drill schedule (including targeted stakeholders) exists and minutes/ short documentation of last training/ mock drill (including numbers and types of stakeholders participated) not older than 2 years (1/2 mark) 2. Notification/ office order for detailed role and responsibility of each department and task forces for disaster responses (1/2 mark)

Actual assesement	Initial assesement	Target
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Sources for Validation		
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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Heat action plans_Scaling up Indias ambition to protect the climate-vulnerable	https://cdkn.org/wp-content/uploads/2017/11/
- CLIMATE RESILIENT DISASTER RISK MANAGEMENT_Best Practices Case Studies Compendium	https://www.researchgate.net/publication/331
- Towards Integrated Disaster Risk Management_Case Studies and Trends from Asia	https://www.researchgate.net/publication/321
- Challenges in creating a disaster resilient built environment	https://reader.elsevier.com/reader/sd/pii/S22

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.2 Indicator 4: Disaster Resilience		

Area 2: City Planning

2.4 Climate Resilient Urban Planning

Goal City Master Plan/Local Area Plan address urban environmental concerns and ensure climate resilient infrastructure planning.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Preparation/Updation of city master plan/ local area plan is in progress, focusing on climate resilient and urban environment aspects.	City Master Plan/ Local Area Plan includes detailed strategy for climate resilient infrastructure as well as rejuvenation and conservation of urban environment based on an assessment of several environmental aspects such as the terrain and topography of the city, water bodies and natural drainage pattern, open areas, green spaces, wind direction and ambient air	Funds/ municipal budget is allocated for implementation of the actions of the City Master Plan/Local Area Plan.	Implementation of the strategy for climate resilient infrastructure as well as rejuvenation and conservation of urban environment is initiated and implementation ongoing as per city master plan/ local area plan.

Assesment Guidance			
Office order to prepare or update city master plan/ local area plan focusing on climate resilient and urban environment aspects can be shown	City master plan/ local area plan including detailed strategy for rejuvenation and conservation of urban environment aspects can be shown	Budget allocation to implement strategies for rejuvenation and conservation of urban environment can be shown	Proof of implementation of strategies/ status report can be shown

Actual assesement	Initial assesement	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

- Planning Climate Resilient Coastal Cities_Learnings from Panaji and Visakhapatnam India <https://www.researchgate.net/publication/271>
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Related climate smart city indicators (CSCAF)

CSCAF v2.0_4.2 Indicator 3: Rejuvenation and Conservation of Urban Environment (water bodies, open spaces and built-up area)

Level **Score**

Area 3: Cooperation and Communication

3.1 Education/Research Institutions and NGOs

Goal City cooperates and communicates with education / research institutions, NGOs and relevant stakeholders to receive support on analysis / research on key climate related issues for critical sectors, seek recommendations on climate actions and creates public awareness and capacity building for implementation of climate actions.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	City has identified and listed potential educational/ research institutes, NGOs and relevant stakeholders based on areas of expertise.	Analysis and research on identified climate issues is initiated, completed and recommendations provided.	City has developed communication strategies for public awareness and capacity building with support from identified institutions/ NGOs for implementation of climate resilient actions.	Recommendations from local research are considered in development/implementation of climate resilient interventions Systematic approach for knowledge dissemination and capacity building is institutionalised and implemented and impact of programmes is monitored.

Assesment Guidance				
List of potential educational/ research institutes, NGOs and relevant stakeholders including their areas of expertise and contact information can be shown	1. List of identified issues along with information of potential institutions/ NGOs for selected critical sectors for research/ analysis, awareness and capacity building (1/2 mark) 2. Analysis/ research report along with recommendations from institute/ NGO (1/2 mark)	Copy of communication strategies with institutions/ NGOs for public awareness and capacity building	1. Proof of recommendations from local research are considered in development/implementation of climate resilient interventions (1/2 mark) 2. Document on institutionalising systematic approach for knowledge dissemination and capacity building along with impact monitoring (1/2 mark)	

Actual assesment	Initial assesment	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

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Related climate smart city indicators (CSCAF)	Level	Score

Area 3: Cooperation and Communication

3.2 Public organisations

Goal City cooperates and communicates with public institutions like various levels of government or semi-government agencies/ organisations/ departments (especially engaged in utility services) for integrated planning to address climate related issues at planning stage.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Representatives from public institutions (especially engaged in utility services) are part of city's climate core team and are engaged in regular planning process.	Communication strategies are available to coordinate with various public organisations for integrated planning approach.	Periodic communication between public organisations and city government is on-going to discuss future planning, recommendations are provided and followed.	City is following systematic approach for integrated planning. Knowledge dissemination and capacity building are institutionalised and impacts monitored.

Assesment Guidance				
	List of city core team with representatives from public institutions, various levels of government or semi-government agencies/ organisations/ departments (especially engaged in utility services) along with detailed role and responsibilities and contact details can be shown	Documentation of communication strategies with public organisations can be shown (Note - Communication strategies shall include various organisations involved, role and responsibility, schedule of periodic meetings and various means for periodic updates and coordination)	Minutes of meeting between public organisations and city government can be shown (Note - Minutes should include agenda of meeting, representatives, discussions, key decisions taken)	1. Documentation on methodology and approach with various public organisations for integrated planning and its impact 2. Documentation on knowledge dissemination and capacity building activities by city or public organisations for integrated planning through meetings/ workshop

Actual assesement		Initial assesement	Target
Grade		0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

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Related climate smart city indicators (CSCAF)	Level	Score

Area 3: Cooperation and Communication

3.3 Private Sector

Goal City cooperates and communicates with the private sector (commercial and industrial entities) on climate issues; implementation, monitoring and reporting of climate resilient interventions, awareness and capacity building including benefits of implementing climate resilient interventions and related government schemes

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	City has identified and prioritised climate resilient interventions for cooperation with private sector and a draft private sector cooperation strategy is under development.	Communication and cooperation strategies for private sector is prepared and approved by city council. Budget and personal resources are allocated for cooperation.	Communication and cooperation strategies for private sector are implemented. Periodic meetings, knowledge dissemination and capacity building initiatives are conducted for identified climate resilient interventions.	Impact of implemented strategies is visible, private sector is coordinating, supporting and implementing climate resilient interventions. Concrete on ground results are monitored and reported.

Assesment Guidance				
1. List of identified areas/sectors for cooperation with private sector (1/2 mark) 2. Draft private sector cooperation strategy document (1/2 mark) Note: This includes commercial units, industries, builders, service providers, other operators	1. Detailed communication and coordination strategy document along with city council approval/ approval from commissioner or relevent authority (1/2 mark) 2. Budget document with special mention on communication strategies and allocation of personal resources for implementation including role and responsibility (1/2 mark)	Proof of implementation of strategies for identified climate resilient interventions for critical sectors (i.e. Waste water reuse, energy efficiency and renewable energy in Industries and commercial establishments, promotion of green buildings, circular economy, solid waste management etc.) Note - It should include number of meetings held, numbers and diversity of representatives, agenda and minutes of meetings, key decisions and recommendations. copy of knowledge	Documentation of impact of implemented strategies including monitoring and reporting can be shown (i.e. 15MLD waste water is being reused by industries or 20m3 biogas is being utilised by hotel industries or 5TPD C&D waste is being reused by building sector etc.)	

Actual assesment	Initial assesment	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

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Related climate smart city indicators (CSCAF)	Level	Score

Area 4: Buildings

4.1 Energy Mangement in Municipal Corporation Owned Existing Buildings

Version 3.2.5

<p>Goal The energy consumption and GHG-emissions are known or energy auditing is done for municipality owned buildings. Energy Efficiency (EE), Renewable Energy (RE), and low carbon measures are implemented. Impacts are monitored and reported.</p>				
Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Energy auditing is done for existing municipal corporation owned buildings or energy consumption profile and GHG emissions profile for municipal buildings is prepared.	Potential EE and RE interventions are identified and prioritised.	Budget is secured for implementation of prioritised energy efficiency and renewable energy interventions.	Prioritised EE and RE interventions are implemented in more than 50% of buildings and impacts are monitored.
Assesment Guidance				
1. List of Municipal Corporation owned buildings can be shown 2. Energy consumption and GHG emission profile of municipal corporation own buildings can be shown (should not be older than 3 years) 3. Energy audit report can be shown (should not be older than 3 years) Note - 1/2 marks shall be provided if energy consumption and GHG emission profile is available and includes only upto 50% of all municipal corporation own buildings or energy	1. Detailed list of EE and RE interventions identified for municipal corporation owned buildings along with its potential and costing can be shown 2. Detailed list of prioritised EE and RE interventions to be implemented in current financial year along with its potential and costing can be shown	1. Budget allocation for prioritised EE and RE interventions to be implemented for municipal buildings in current financial year can be shown	1. List of total EE and RE interventions implemented against all prioritised EE and RE interventions (as per step 2) along with scale, impact and monitoring report can be shown (Note - 1 mark if implementation is completed in more than 50% of buildings)	
Actual assesment			Initial assesment	Target
Grade			0	
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Recommendations / possible next steps				
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Good Solutions - best practice				
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- Case Study of an Energy Efficient Commercial Building_Validating Design Intent & Energy Simulation Results with Monitor			https://www.beepindia.org/wp-content/uploac	
- Saving Money and Energy_Case Study of the Energy-Efficiency Retrofit of the Godrej Bhavan Building in Mumbai			https://www.nrdc.org/sites/default/files/energ	
- Energy efficient buildings – a business case for India			https://www.adelphi.de/en/system/files/media	
- Implementing Energy Efficiency in Buildings			https://www.undp.org/content/dam/india/docs	
Related climate smart city indicators (CSCAF)				
CSCAF v2.0 4.1 Indicator 5: Promotion of green buildings			Level	Score
CSCAF v2.0 Indicator 6 Green Building Adoption				

Area 4: Buildings

4.2 Green Buildings: Municipality owned buildings and social housing schemes

Goal Municipality owned buildings and social housing schemes receive green building certification (GRIHA/IGBC etc).

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Green building standards for municipality owned buildings/ social housing (for new buildings or building rehabilitation) are prepared considering National Building Codes (NBC 2016) and/or Energy Conservation Building Codes (ECBC 2017) and approved by Municipal Corporation.	Green building plans for identified municipality owned buildings and/ or social housing schemes are prepared and construction initiated. Optional: The City could submit the plans along with required documents to IGBC/ GRIHA/ BEE for green rating precertification. Precertification rating is awarded.	Application for green building certification i.e. Griha, LEED, IGBC etc. is made for constructed/ renovated municipality owned buildings and/or social housing projects that adhere to the green building plans.	Atleast 10% built up area out of total built up area of municipality owned buildings and social housing schemes in current financial year have received green building certificate.

Assesment Guidance			
1. Green building standards for municipality owned buildings/ social housing for new buildings or building rehabilitation plan (for old buildings) can be shown (1/2 mark) 2. Letter from municipal commissioner/ notification from authority on approval of green building standards (1/2 mark) Note: Building should follow development control rules and general building requirements; fire and life safety requirements; stipulations regarding	1. Municipality owned buildings/ social housing for new buildings or building rehabilitation plan (for old buildings) can be shown along with proof of construction (1/2 mark) 2. Precertification awarded by green rating agency for proposed plan can be shown (1/2 mark)	1. Details of municipal buildings/ social housing schemes applied to the green rating agency i.e. GRIHA, IGBC, LEED etc. can be provided, acknowledgement from the green rating agency/ receipt of application fees paid can be shown (1/2 mark) 2. If city has received precertification for some municipal building/ social housing plan (as per Grade 2), Implementation status report submitted to green rating agency can be produced (1/2 mark)	1. Green building rating certification can be shown for buildings applied after construction and final certification can be shown for the buildings for which precertification during planning is received 2. On relevant department letterhead, provide below mentioned information with green building certificates a. Built up area (sq.ft) of total municipal buildings constructed

Actual assesment	Initial assesment	Target
Grade []	0	
Explanatory statements - - - - - -		
Sources for Validation - - - - -		links
Recommendations / possible next steps - - - -		

Good Solutions - best practice	links
- Mainstreaming Sustainable Social Housing in India	https://www.devalit.org/images/L2_ProjectPdf/2018/11/18/MSHHI.pdf
- Contextualizing green building rating systems: Case study of Hong Kong	https://pdfslide.net/download/link/contextualizing-green-building-rating-systems-case-study-of-hong-kong/
- Assessment of Green Practices in Residential Buildings: A Survey-Based Empirical Study of Residents in Kazakhstan	https://core.ac.uk/download/pdf/214479229.pdf
- GREENING INDIAN CITIES THROUGH EFFICIENT BUILDINGS	https://smartnet.niua.org/csc/assets/pdf/Rep-16032018.pdf

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0 4.1 Indicator 5: Promotion of green buildings		
CSCAF v2.0 Indicator 6 Green Building Adoption		

Area 4: Buildings

4.3 Energy Management in existing Private Buildings

Goal Enhanced by a municipal program, new and existing private buildings comply with highest standards of energy efficiency and renewable energy generation. (Private buildings include all buildings owned by private persons, firms / corporate entities).

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Municipal corporation adopts an energy efficiency and renewable energy program to advise private sector and program guidance is prepared, including technical aspects (in line with provisions of all applicable national/state programmes and any local level schemes) and financial incentives (including award/ reward schemes to motivate private builders).	1. Communication strategies are prepared to disseminate information on the programme. 2. Information, Education, Communication (IEC) activities conducted to promote program and advise private building owners	Energy efficiency and renewable energy programme is under implementation.	Impact of the program is being monitored and documented by city, which includes information on numbers of existing private buildings benefitted from the city programme on energy efficiency and renewable energy.

Assesment Guidance			
1. Letter from commissioner/ relevent authority to adopt an energy efficiency and renewable energy related program (1/2 marks) 2. Official letter/ notification along with Copy of program guidance document, including technical aspects (in line with provisions of all applicable national/state programmes and any local level schemes) and financial incentives (including award/ reward schemes to motivate private builders) (1/2 marks)	1. Documentation on communication strategies with potential stakeholders to disseminate information on the programme (1/3 marks) 2. Details of local web-based platform created to guide and register properties availing the scheme (screenshot of website can be shown) (1/3 marks) 3. Details of Information, Education, Communication (IEC) activities conducted to advise private building owners and details of advertisements published (1/3 marks)	Proof of implementation of energy efficiency and renewable energy programme (including number of training programs or IEC activities/ meetings/ data records etc.)	Documentation of impact of the program can be submitted (including information on numbers of existing private buildings benefitted from state/ national schemes on energy efficiency and renewable energy)

Actual assesment	Initial assesment	Target
Grade 0	0	
Explanatory statements		
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Sources for Validation		
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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Energy Efficient Passive Building_ A Case Study of SODHA BERS COMPLEX	https://www.researchgate.net/publication/310
- Case Study Of An Energy Efficient Commercial Building_ Validating Design Intent & Energy Simulation Results With Monit	https://www.beepindia.org/wp-content/uploac
- ENERGY EFFICIENCY IN INDIAN BUILDINGS_ THE AUROVILLE EXPERIENCE	https://www.researchgate.net/publication/331
- Representative designs of energy_efficient buildings in India	http://www.seedenr.com/documents/Repres

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0 _4.1 Indicator 5: Promotion of Green Building		
CSCAF v2.0 Indicator 6 Green Building Adoption		

Area 4: Buildings

4.4 Implementation of Green Building Standards in Private buildings

Version 3.2.5

Goal The City encourages the design and construction of new private buildings as per green building norms defined in the ECBC and BEE and as per other related local policy/guidelines (bye-laws/green building policy). A high percentage of buildings fulfill the achievements of green building ratings.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Preparation of green building norms for inclusion in the City's Development Control Regulations - this could include provisions from: 1. Latest National Building Codes (NBC 2016) 2. Energy Conservation Building Codes (ECBC 2017) (commercial & residential) 3. Other green building ratings such as GRIHA or LEED	1. Preparation of a scheme for implementing the green building norms including: A. Incentives for implementation of green building norms B. Process for private owners to register buildings, implement norms and seek compliance approval through a prescribed verification system 2. Formation of Green building	Green building cell/ Green building committee is functional and monitoring the implementation of green building scheme. Green building certificates are collected from private builders for record and monitoring.	More than 10% built up area completed during current financial year follows green building norms.

Assesment Guidance			
1. Copy of approved General Development Control Regulation (GDCR) can be shown marking inclusion of latest National Building Codes (NBC 2016) and/or Energy Conservation Building Codes (ECBC 2017) (commercial & residential)	1. Copy of city level scheme for implementation of green building norms (including incentives, procedure and IEC for private builder) (1/3 mark) 2. Notification of green building cell or green building committee issued by municipal corporation, including clear role and responsibility (1/3 mark) 3. Proof of promotional activities, knowledge dissemination and awareness generation by green building committee/ green building cell (1/3 marks)	1. Notification/ government order/ circular on promotional schemes, rewards and penalties for compliance for green standards (1/2 mark) 2. Collected green building certificates for monitoring can be shown (1/2 mark)	1. List of total buildings having green building certification in city 2. On relevent department letterhead, provide below mentioned information with green building certificates a. Built up area (sq.ft) of total municipal buildings constructed b. Built up area (sq.ft) of total municipal buildings certified with green rating

Actual assesment	Initial assesment	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

- Green Luxury_A Case Study of Two Green Hotels
- Green Economic Development with Renewable Energy Industries
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links

<http://www.collegepublishing.us/jgb/samples/>

<https://www.irena.org/-/media/Files/IRENA/A>

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0 _4.1 Indicator 5: Promotion of Green Building		

Area 4: Buildings

4.5 Dissemination of Best Examples (Public Buildings and Social Housing)

Version 3.2.5

Goal Examples of best practice are realised and communicated; visits and campaigns for different target groups (architects, investors, owners, facility managers, households etc.) are regularly executed.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Decision for evaluation and reporting of good example building project is taken by city. City has started coordination with local architects/ engineers/ builders.	Green and energy efficient buildings are identified and listed. Analysis of green and energy efficient buildings is in progress by the city or reputed organisations.	Number of green and energy efficient buildings along with interventions implemented is known by the city, impacts are reported.	Good examples of green and energy efficient buildings are regularly communicated and recognised. Visits of targeted groups are realised.

Assesment Guidance			
1. Letter from municipal commissioner/ relevant authority on decision for evaluation and reporting of good example building project in the city (1/2 mark) 2. Communication and coordination with local architects/ engineers/ builders i.e. minutes of meeting (1/2 mark)	Documentation of Green and energy efficient buildings including list of identified buildings and analysis	Details of green and energy efficient buildings (including interventions implemented and impacts)	Documentation on communications i.e. case studies or providing platform to private builders to communicate and showcase good examples of green and energy efficient buildings along with recognition by city to motivate them

Actual assesment	Initial assesment	Target
Grade	0	
Explanatory statements		
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Sources for Validation		
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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Green Building Interventions for Social Housing	https://unhabitat.org/green-building-interventi
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Related climate smart city indicators (CSCAF)	Level	Score

Area 5: Transport and Mobility

5.1 Mobility Planning

Goal Transport planning is integrated with city master plan, which addresses mitigation and adaptation measures. Comprehensive Mobility Plan (CMP) / Comprehensive Traffic and Transport Plan (CTTP)/ Low Carbon Mobility Plan (LCMP) as per tool kit from MoHUA is elaborated which includes pollution management including monitoring air and noise pollutions and addresses related provisions of the elaborated clean air action plan.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Decision to update comprehensive transport and mobility plan (i.e. CMP, LCMP, CTTP) is taken.	Comprehensive transport and mobility plan (i.e. CMP, LCMP, CTTP, in sync with relevant master plan considerations is prepared and followed (not older than 5 years).	Annual work plans are delineated for implementation of the CMP/LCMP/ CTTP along with identification of budgets, implementation frameworks, (business models) and revenues.	Budget is allocated by Municipal Corporation to implement actions/ interventions identified in mobility plans, monitoring framework is prepared and implementation started.

Assesment Guidance			
Letter from municipal commissioner/ authority on decision to update comprehensive transport and mobility plan (i.e. CMP, LCMP, CTTP)	Copy of comprehensive transport and mobility plan (CMP, CTTP etc.) along with copy of master plan (not older than 5 years)	Copy of detailed annual work plan on mobility including financial resources, implementation framework and sources of revenues can be shown	1. Letter from city authority mentioning budget allocation for proposed interventions as per mobility plans along with implementation status and monitoring can be shown. 2. Copy of municipal budget including budget allocation can be shown

Actual assesement	Initial assesement	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

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Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.3 Indicator 1: Low Carbon Mobility		

Area 5: Transport and Mobility

5.2 Non Motorised Transport

Goal Share of non motorised transport (NMT) (including walking, bicycle use, cycle rickshaws and handcarts) is increased and relevant infrastructure network is provided as per city master plan/CMP/CTTP/LCMP to address transport related problems i.e. congestion, noise, air pollution and GHG emissions.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Existing NMT network in the city is known. NMT infrastructure network plan is well defined as compared to total road network in LCMP/CMP/CTTP in-line with city master plan. Annual work plans are defined. List of proposed NMT routes to be implemented during next financial year is prepared based on priorities.	Annual budget is secured for implementation of prioritised NMT infrastructure based on annual work plan for respective year. NMT infrastructure is being implemented and promoted to provide comfort, safety and ease of usability as per city master plan/CMP/CTTP/LCMP.	Existing NMT routes and NMT activities are monitored and reported (including information on pedestrianisation and use of cycles). Use of newly constructed NMT infrastructure is monitored to indicate an increase in modal share of NMT.	More than 75% projects out of total projects proposed as per annual work plan are implemented.

Assessment Guidance			
1. Details of existing NMT network (length, width etc.) and categorywise total road length (1/3 marks) 2. Copy of NMT infrastructure network plan as per LCMP/ CMP/CTTP/ Master plan (1/3 marks) 3. List of prioritised proposed NMT routes for next financial year (1/3 marks) Note: NMT network plan addresses dedicated footpaths and cycle lanes (maintained/demarketed/dedicated	1. Budget provision for NMT implementation with letter from respective department including length of proposed NMT (1/3 marks) 2. Details of NMT infrastructure implemented (length of dedicated pedestrian tracks with and without shade, length of cycle track with and without shade including cycle parking space, cycle sharing scheme) (1/3 marks) 3. Documentation on steps taken to promote the use of NMT including rewards (i.e. dedicated programs in city i.e. Rahniri happy street	1. Copy of survey report on modal share done in last 5 years (1/2 marks) 2. Monitoring and reporting sheet including information on pedestrianisation and use of cycles (1/2 marks)	1. Total NMT coverage proposed in the city annual work plan and budget document for respective year as per grade 2 (including length in km and width in m) along with promotional activities can be shown 2. Total NMT implemented in current year (including length in km and width in m) along with promotional activities can be shown

Actual assessment	Initial assessment	Target
Grade	0	
Explanatory statements		
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Sources for Validation		
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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Walkable and Bikeable Cities; lessons from Seol and Singalora	https://seoulsolution.kr/sites/default/files/gettcf/11/C:/Users/Mukesh/Downloads/GIZ_SUT
- Non-motorised transport policy in India	https://smartnet.niua.org/sites/default/files/re
- NMT guidance document in India	https://centers.ibs.re.kr/html/living_en/transp
- Bicycle Transport Policy in Korea	

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.3 Indicator 4: Percentage of coverage of Non-Motorized Transport network (pedestrian and bicycle) in the city		

Area 5: Transport and Mobility

5.3 Public Transport

Goal Public transport (PT) constitutes a high and increasing share of all passenger transport modes and contributes to reducing greenhouse gas emissions and air pollution.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Feasibility study/ strategy/ action plan for public transport is prepared (if available, not more than 3 years old) and budget is allocated for implementation of public transportation system.	Tendering process is completed and implementation of public transport system is in progress.	A public transport system exists in the city being integrated with last mile connectivity. Fleet size of Public Transport per 1,000 people is >=0.6.	Low carbon (based on CNG, LPG, Hybrid, Biofuels, Electric) public transport system exists in the city. Ridership is increasing. Level of service is evaluated and measured regularly. Integrated Ticket Management System (ITMS) of PT, IPT, NMT etc. is in place.

Assesment Guidance				
1. Public transport feasibility study report (not more than 3 years old) (1/2 marks) 2. Budget provision for implementation of PT (1/2 marks) Note: PT includes buses, metro, suburban rail coach, Ferries etc.	1. Proof of tender procedure completed (i.e. tender awarded document) 2. Implementation status report Note: Tendering procedure completed (1/2 marks), if tender procedure is completed and Implementation in progress (1 mark)	1. Total number of fleet sizes (PT vehicles) available per 1000 people can be shown with proof (i.e. letter from authority) Formula = total number of fleet sizes*1000/total population (please consider 1 metro or train coach or Ferry = 3 Buses) 2. Proof of total number of public transportation vehicles (buses, metro, suburban rail coach, Ferries etc.) and total number of low carbon vehicles (based on CNG, LPG, Hybrid, Biofuels, Electric)	1. Analysis based on user data/ ticketing information for PT, IPT, NMT can be shown (ridership information can be shared) 2. Proof of integrated ticket management system (various modes i.e. PT, IPT, NMT) Note: 1/2 marks if Ridership and level of services is evaluated and increased, 1/2 marks for ITMS	

Actual assesment	Initial assesment	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice	links
- Low Carbon Mobility in India and the Challenges of Social Inclusion Bus Rapid Transit Case Studies in India	https://unepdtu.org/wp-content/uploads/2019
- Shenzhen Intelligent Transport System	https://www.infinova.com/pdf/case-studies/SI
- Sustainable Urban Transport Indicators_Case of Mega Cities of India	http://informaticsjournals.com/index.php/sdm
- Intelligent Transport System and Its Planning Issues A Case Study Of Public Transportation Of Mysore City	https://www.academia.edu/9986930/INTELLI

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.3 Indicator 3: Public Transport		

Area 5: Transport and Mobility

5.4 Intermediate Public Transport

Goal Intermediate Public Transport (IPT) is highly energy efficient, climate friendly and complements the existing public transport system.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Various modes of IPT in the city are known and documented. IPT planning is integrated with city master plan/ CMP/ CTTTP/ LCMP and is planned to complement existing/ proposed PT system. An updated Low Carbon IPT plan (if required) is prepared.	An IPT policy is prepared which includes type of IPT vehicles (electric and/or clean fuel such as CNG) the tariff structure, designated routes, maintenance and repair norms, IPT infrastructure including dedicated parking spaces etc. IPT Policy is approved by City council.	Infrastructure, planning and policy level IPT interventions are prioritised in annual action plan and budget is allocated for implementation. Implementation is in progress.	IPT interventions are implemented - IPT is running on designated routes and well integrated with PT system, IPT stations, parking etc. IPT is being managed by city or private operator in coordination with city to provide first and last mile connectivity to existing PT. Routewise total number of existing

Assesment Guidance			
1. Details of various modes of IPT in the city can be shown(1/3 marks) 2. City master plan/ CMP/ CTTTP/ LCMP document with integrated IPT planning can be shown (1/3 marks) 3. Low carbon IPT plan can be shown (1/3 marks)	1. Copy of City IPT policy (1/2 marks) 2. City council resolution for approval of IPT policy (1/2 marks)	1. Copy of annual IPT action plan along with list of prioritised actions (1/3 marks) 2. Budget document with provision for implementation of IPT interventions (1/3 marks) 3. Implementation status report or proof of implementation progress (1/3 marks)	1. IPT passenger travel information by city through integrated ticket management system can be shown (1/3 marks) 2. Documentation including O&M / contract with private operator (1/3 marks) 3. Routewise types and total number of low carbon (CNG, Biofuel, electric etc.) IPT vehicles and routewise types and total number of IPT Vehicles (1/3 marks if share of low carbon IPT vehicles are >10%)

Actual assesment	Initial assesment	Target
Grade	0	

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

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Related climate smart city indicators (CSCAF)	Level	Score

Area 5: Transport and Mobility

5.5 E-Mobility

Goal Electric Mobility is being promoted in the city and a shift from fossil fuel to electric vehicles is ensured.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	The city has decided to develop and initiates development of a roadmap/strategy for electric mobility deployment and preparation of city electric mobility policy/ plan inline with state and national action plans is in progress.	The city level electric mobility policy/ plan is prepared inline with the roadmap and state and national action plans. The plan addresses electric mobility infrastructure including charging system, involvement of other stakeholders including electricity department, maximum use of renewable energy, awareness and promotions.	The policy/ plan is approved by City Council or relevant authority. Appropriate budget is allocated for implementation.	Interventions proposed under electric mobility action plan/ policy are being implemented, Climate benefits in terms of GHG emissions reductions are being monitored and reported.

Assesment Guidance			
Letter from commissioner/ relevent authority for preparation of city electric mobility policy/ plan inline with state and national action plan	Copy of city level electric mobility policy/ plan integrating electric mobility infrastructure including charging system, involvement of other stakeholders including electricity department, maximum use of renewable energy, awareness and promotions etc.	1. City council resolution/ approval from relevant authority for E-mobility policy/ plan (1/2 marks) 2. Copy of budget with allocation for implementation (1/2 marks) Documentation on the strategies for E-mobility, including electric cars, e-bikes, e-bicycles, charging infrastructure, renewable energy sources, awarness and promotions	Documentation of implemented strategies/ interventions and promotional activities including impact assessment

Actual assesement	Initial assesement	Target
Grade 	0	

Explanatory statements

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Recommendations / possible next steps

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Good Solutions - best practice	links
- Eco mobility in one of India's leading Smart Cities	http://old.iclei.org/fileadmin/PUBLICATIONS/
- Creating a world class culture of ecomobility	http://old.iclei.org/fileadmin/PUBLICATIONS/
- Opportunities and Scope for Electric Vehicles in India	https://www.researchgate.net/publication/335
- Innovation Outlook Smart Charging For Electric Vehicles	https://irena.org/-/media/Files/IRENA/Agency

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.3 Indicator 1: Clean Technologies Shared Vehicles		

Area 5: Transport and Mobility

5.6 Urban Freight Movement

Goal Urban freight movement is highly energy efficient and climate friendly.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Urban freight movement related records are maintained by the city . The City practices restricted entry on certain routes and/or time slots.	Urban Freight Management Plan/ strategies is prepared by the city, including mapping of freight activities along with routes, emission due to freight activities, challenges, parking areas, restricted areas, timings, type of vehicles allowed, distribution hubs/ consolidation points etc.	Budget is allocated for strategies proposed under urban freight management plan/ strategies, implementation in progress.	Monitoring and reporting of impact of the implemented strategies/ interventions, including records on emissions reduction.

Assesment Guidance				
1. Documentation or records on number of urban freight movement or letter from municipal Commissioner/ relevent authority mentioning number of urban freight movements (1/2 marks) 2. Notification by authority for restricting entries on certain routes and/or time slots (1/2 marks)	Copy of urban freight management plan/ strategies incorporating mapping of freight activities along with routes, emission due to freight activities, challenges, parking areas, restricted areas, timings, type of vehicles allowed, distribution hubs/ consolidation points etc.	Proof of budget allocation to implement strategies proposed urban freight movement action plan i.e. City promotes state and center programs on subsidy for small electric load carrages; city promotes energy efficient and climate friendly transport by incentives such as cheaper parking, easy registration etc.	Documentation of monitoring and reporting of impacts due to implementation of strategies	

Actual assesment	Initial assesment	Target
Grade 	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice	links
- China_Green_Freight_Briefing_20181022	https://theicct.org/sites/default/files/publicatio
- A Case Study of the Delhi-Mumbai Dedicated Freight Corridor	https://wedocs.unep.org/bitstream/handle/20
- Urban Freight and Logistics_The State of Practices in India	http://www.indiaenvironmentportal.org.in/files
- Developing a Sustainable Urban Freight Plan_a review of good practices	www.smartfreightcentre.org/pdf/Developing-a

Related climate smart city indicators (CSCAF)	Level	Score

Area 5: Transport and Mobility

5.7 Intelligent Traffic and Transport System

Goal Information technology based systems to manage traffic contribute to the planned low carbon targets and pollution reduction. (synchronised signals, passenger information systems on bus stops, stations, GPRS on public vehicles, computerised traffic management system, integrated ticketing system allowing modal changes etc.)

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	City has a specific plan for using information and technology for improving peoples mobility as well as reducing the traffic congestion as prioritised in master plan/ LCMP.	A city transport committee/authority is in place that involves officials from various stakeholder departments for making transport decisions.	A pilot is implemented that focuses on use of information technology for traffic management, developed online applications, awareness amongst users to use online applications through various platforms, and related decision making.	A citywide scale up and use of information technology based systems to manage traffic is proposed with funding allocations; the contribution to low carbon targets and pollution reduction are assured.

Assesment Guidance				
	Plan for using information and technology for traffic and transport can be shown	Notification of formation on transport committee or authority for transport decisions	Documentation of pilot project implemented related to traffic and transport management through information and technology along with monitoring of impacts	Proof of citywide implementation of traffic and transport related interventions through information technology

Actual assesement	Initial assesement	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

- Shenzhen Intelligent Transport System
- Analysis of a Transportation System with Correlated Network
- Intelligent Transit Management System (ITMS) Surat
-

links

<https://www.infinova.com/pdf/case-studies/SI>
<https://www.researchgate.net/publication/316>
<https://smartnet.niua.org/sites/default/files/res>

Related climate smart city indicators (CSCAF)	Level	Score

Area 5: Transport and Mobility

5.8 Pollution Management

Goal Pollution reduction (air and noise) from transport is successfully managed, air quality is good and further improving. The pollution reduction strategy includes measurements of primary pollutants (SO2 NOX PM2.5 PM10) and reduction measures as switches to electric mobility or alternative fuels; pollution reduction action plans are coordinated with energy policy, climate policy and traffic policy

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Pollution levels are known and recorded.	Analysis of air pollution levels for various locations is being practiced by city. Budget is allocated to prepare clean air action plan. Preparation of clean air action plan is in progress.	A clean air action plan, with short and long term goals is prepared and approved by authority, including measures to reduce level of pollution over next 5 years. Annual implementation plan is prepared for prioritised actions and budget is allocated for implementation.	More than 50% prioritised actions identified in annual action plan is implemented. Implementation of the Clean Air Action Plan is assured in phasewise manner.

Assesment Guidance			
1. Record of pollution levels along with details of stations	1. Report on air pollution analysis for various locations (1/2 marks) 2. Budget document along with provision to prepare clean air action plan and progress status of clean air action plan (1/2 marks)	1. Copy of Clean Air Action Plan along with letter from relevent authority on approval (1/3 marks) 2. Copy of annual implementation plan including list of prioritised actions (1/3 marks) 3. Proof of allocation of budget for implementation of prioritised actions (1/3 marks)	1. List of identified actions in annual action plan with implementation status and proof of implementation can be shown (1/2 marks) 2. Report on implementation status of Clean Air Action Plan is assured in phasewise manner can be shown (1/2 marks)

Actual assesment	Initial assesment	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Good Solutions - best practice

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Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.3 Indicator 4: Level of Air Pollution		
CSCAF v2.0_4.3 Indicator 5: Clean Air Action Plan (Planning and Implementation)		

Area 5: Transport and Mobility

5.9 Parking

Goal Parking policy optimally supports low carbon and air pollution reduction targets.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Parking demand and status of availability of parking are known.	Parking is priced in the city in some or all locations.	Parking policy is prepared which includes minimum parking prices (private and public, on street and of street) are defined with an aim to promote public transport and car rental, share/pool. Modal changes (Park & ride) are optimally supported to reduce traffic, congestion and pollution.	Parking policy is under implementation.

Assesment Guidance				
	Detailed analysis report on parking demand management and current status can be shown	Documentation of authorised parking locations along with pricing can be shown	Notification on minimum parking prices to promote public transport and reduce traffic congestion and pollution can be shown	Copy of parking policy can be shown

Actual assesment	Initial assesment	Target
Grade	0	

Explanatory statements

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Sources for Validation

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links

Recommendations / possible next steps

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Good Solutions - best practice

- How to Manage Urban Indias Parking Needs <https://www.cseindia.org/pamp-ering-parking>
- On-street-parking-management <http://transferproject.org/wp-content/uploads/>
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Related climate smart city indicators (CSCAF)	Level	Score

Area 6: Waste

6.1 Solid Waste Management Action Plan/ Strategies

Goal City has a holistic solid waste management plan in place and implements a SWM system that adopts Reduce, Reuse, and Recycle principles and minimises environmental impacts.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Development of Holistic Solid Waste Management Action Plan in progress. Waste quantification and characterisation report is prepared.	Holistic solid waste management plan is prepared. Short term and long term goals are defined. Specific actions addressing collection, transport and processing and/or treatment and disposal are specified and costed.		0 Holistic Solid Waste Management Action Plan is approved by the city and budget is allocated for implementation

Assesment Guidance				
1. Letter from commissioner/ relevant authority on preparation of holistic solid waste management action plan (1/2 marks) 2. Report on waste quantification and characterisation (1/2 marks)	Copy of holistic solid waste management plan can be submitted with detailed strategies/ interventions for effective waste management Note: SWM Action Plan shall incorporate standard operating procedures/ protocols for waste collection, transfer and treatment, including institutional framework for coordination with various government departments, agencies, medical facilities/ hospitals to find out effective way of waste management and treatment during		0	1. Council approval / Approval from relevent authority for Holistic Solid Waste Management Action Plan (1/2 marks) 2. Budget document with provision for implementation of prioritised actions as per SWM Action Plan (1/2 marks)

Actual assesement	Initial assesement	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice	links
- An Almanac of waste management in urban India 2020	https://pi.niua.org/sites/default/files/769.pdf
- SWM Practice in urban India 2019	https://smartnet.niua.org/
- Urban SWM in Indian Cities	https://www.niua.org/pearl/sites/default/files/t
- Waste to Resource A Waste Management Handbook	http://cbs.teriin.org/pdf/Waste_Management

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.5 Indicator 1: Waste minimization initiatives undertaken by the City		

Area 6: Waste

6.2 Waste Collection Systems

Goal Energy efficient waste collection system for all fractions of waste is implemented.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Segregated waste collection infrastructure including collection and transfer vehicles (MSW - dry and wet waste) is available partially in the city as per holistic solid waste management strategy. City is receiving 50% of total MSW generated in segregated (dry and wet waste) fractions.	Segregated MSW (dry and wet)/ e-waste/ plastic waste/ C&D waste collection infrastructure is planned for whole city as per holistic SWM strategy (including waste transfer stations), budget is allocated and work in progress.	Segregated MSW (wet and dry)/ ewaste/ plastic waste/ C&D waste collection systems are in place covering up to 75% of all generators (collection may be by municipal staff or contracted staff).	Multi-way segregated waste collection systems (including MSW segregation, plastic waste, e-waste, C&D) are in place and managed in sync with recycling/waste processing plants. The system covers more than 95% of total generated waste in city area. Collection may be by municipal staff or contracted staff.

Assesment Guidance				
1. Information on solid waste collection vehicles including fraction wise capacity of waste collection (registration number, type of vehicle, capacity of vehicle) 2. Fraction wise weigh bridge data (including registration number, type of vehicle and capacity received) at waste facilities can be shown 3. Information on total solid waste generation (MT/ day) Note: 1/2 marks for segregated waste collection	Budget document with clear allocations for MSW (dry and wet)/ e-waste/ plastic waste/ C&D waste collection infrastructure Note - For this point grades should be further divided into 4 parts (1/4 marks each) - if only segregated MSW infrastructure is proposed under budget (1/4 marks) + plastic waste related infrastructure is proposed under budget along with segregated MSW (1/4 marks)+ C&D waste related infrastructure is proposed under budget	Weigh bridge information can be provided for segregated MSW and plastic waste; details and weight of ewaste collection bins; details of dedicated C&D waste collection vehicles along with capacity and waste disposed at dedicated C&D waste disposal location can be provided Note - For this point grades should be further divided into 4 parts (1/4 marks each) - if only segregated MSW is being collected (1/4 marks) + plastic waste collected along with segregated	Weigh bridge information can be provided for segregated MSW and plastic waste; details and weight of ewaste collection bins (collected and handed over to approved ewaste processing facility); details of dedicated C&D waste collection vehicles along with capacity and waste disposed at dedicated C&D waste disposal location can be provided Note - For this point grades should be further divided into 4 parts (1/4 marks each) - if only	

Actual assesment	Initial assesment	Target
Grade	0	
Explanatory statements		
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Sources for Validation		links
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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Closing The Loop_Pune India Case Study	https://www.unescap.org/sites/default/files/Closing The Loop_Pune India Case Study
- Data Driven D2D waste collection in Ahmedabad	https://smartnet.niua.org/sites/default/files/res/D2D waste collection in Ahmedabad
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Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.5 Indicator 1: Waste minimization initiatives undertaken by the City		

Area 6: Waste

6.3 Waste Recycling and Processing

Goal Optimal processing of segregated waste fractions are implemented inline with principles of reduce, reuse, recycle, material recovery, energy recovery, and disposal.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Holistic Waste Management Plan is prepared for waste treatment plants to cover all generated waste (dry and wet/ plastic waste/ C&D waste) and installation of plants is in progress in phase-wise manner.	Waste treatment/ processing plants treat more than 50% of city's waste (MSW - wet and dry). Waste treatment facilities are planned as per holistic solid waste management action plan.	Apart from treating dry and wet waste at city level, city is also implementing plastic waste management plants, construction & demolation (C&D) waste processing, disposal and management of dead animals etc.	95% of total generated waste (dry/wet, C&D and plastic waste) is being processed/ treated by the city. Efficiency of processing is monitored and reported.

Assesment Guidance			
1. Copy of Holistic Waste Management Plan including waste treatment plants to cover all generated waste (dry and wet/ plastic waste/ C&D waste) (1/2 mark) 2. Status report on installation of plants in phase-wise manner (1/2 mark)	1. Information on waste treatment/ processing facilities proposed in the city, including type of treatment, waste treated and use of end products 2. Weigh bridge records for waste input, output (product-compost/ electricity) and rejects from processing facility for MSW (dry-wet) of last 6 month 3. Proof of total waste generation in the city <i>Note: 1/2 marks if city treats/ recycles more than</i>	1. Information on plastic waste management/ processing, C&D waste processing, disposal and management of dead animals 2. Weigh bridge records for waste input, output for plastic waste and C&D waste, including rejects from processing facility of last 6 month <i>Note: 1/4 marks if city only treats dry and wet waste, 1/4 marks for implementation of plastic waste management plant, 1/4 marks for Construction & Demolation (C&D) waste</i>	1. Information on waste treatment/ processing facilities (dry/wet, C&D and plastic waste) in the city, including type of treatment, waste treated and use of end products 2. Weigh bridge records for waste input, output (product-compost/ electricity) and rejects from all processing facilities of last 6 month 3. Proof of total waste generation in the city 4. Processing plant efficiency report can be shown

Actual assesment	Initial assesment	Target
Grade	0	
Explanatory statements		
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Sources for Validation		
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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Swachh Bharat Mission Solid Waste Management Field Visit Manual 2018	https://pi.niua.org/sites/default/files/746.pdf
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Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.5 Indicator 2: Extent of dry waste recovered & recycled		

Area 6: Waste

6.4 Disposal

Goal Disposal is handled in controlled/sanitary landfills

- Landfills are separated for inert waste (mixed waste minimised or treated otherwise)
- Landfill gas is used or burned, biominig is in place, where relevant
- Water quality management, drainage and all other environmental considerations are integrated into the landfill plan

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Dumpsite closure/ biominig* and construction of scientific landfill site are planned for all waste that is generated. *Possibility of biominig is to be ascertained after confirmation of absence of heavy metals and other hazardous chemicals in the waste.	Old Dumpsite closure is completed including methane recovery (where landfillgas present) or biominig* is completed. Budget is secured for landfill site construction (only for inert waste). *Possibility of biominig is to be ascertained after confirmation of absence of heavy metals and other hazardous chemicals in the waste.	Scientific landfill (for inert waste) is being constructed.	Only inert waste is being dumped to landfill, records of inert/waste disposed in the landfill is available and monitored periodically. Dumpsites are closed/ biominig.

Assesment Guidance			
1. Concept for biominig* and initial study report (1/3 marks) 2. Feasibility/ technical report on scientific closure of dumpsite/ landfill (1/3 marks) 3. Technical study report for construction of new scientific landfill or Documentation of existing scientific landfill site along with designs (1/3 marks) *Possibility of biominig is to be ascertained after confirmation of absence of heavy metals and	1. Dumpsite closure report along with methane recovery potential can be shown (1/3 marks) 2. Biominig* complation report can be shown (1/3 marks) 3. Budget document with provision of landfill site construction (only for inert waste) (1/3 marks) *Possibility of biominig is to be ascertained after confirmation of absence of heavy metals and other hazardous chemicals in the waste	Implementation status report of scientific landfill site construction can be shown	Landfill records of last 6 months can be shown

Actual assesment	Initial assesment	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

- Indore's Swachh Turnaround: Recycling 50% of its Plastic Waste <http://3rwastefoundation.org/nproject/indores>
- Delhi's overflowing landfill gets a Waste to Energy plant by IJ &FS <http://3rwastefoundation.org/nproject/delhis-c>
- Ghazipur-Landfill-Rehabilitation-Report_SCS-Engineers <https://ccacoalition.org/sites/default/files/reso>
-

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.5 Indicator 1: Waste minimization initiatives undertaken by the City		
CSCAF v2.0_4.5 Indicator 3: Construction & Demolition (C&D) waste management		

Area 7: Water and Sewage

7.1 Overall Water Resource Management Strategy

Goal An overall water resource management strategy is in place, addressing:

- surface and ground water resource management, in terms of both water quantity and quality,
- management of surface water to mitigate climate risks like floods and droughts and
- water treatment and potable water quality management - to meet current and future water demand

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Water resource management strategy and action plan is prepared, considering climate resilience aspects and addressing current and future water demand, source assessment, management and augmentation, water treatment and potable water quality management. The plan is prepared considering provisions of the city master plan. Short term and long term strategies	Budget is secured for implementation of annual action plan and implementation is underway.	Some of the prioritised interventions such as water source protection, ground water recharge systems, ground water quality protection and water treatment interventions are implemented which comprehensively address climate co-benefits of water resource management.	The short term plan for water resource management is implemented in its entirety and interventions are monitored for impact. Long term plan implementation is underway.

Assesment Guidance				
Copy of water resource management strategy and action plan along with short and long term strategies with cost estimations (including climate resilience aspects; current and future water demand; source assessment, management and augmentation; water treatment and potable water quality management) can be shown. Note: 1/4 marks if water resource management strategy and action plan addresses current and future water demand; 1/4 marks for source	1. Provision in budget for implementation of proposed interventions/ strategies as per water resource management strategy and action plan	Proof of implementation or status report for interventions/ strategies as per water resource management strategy and action plan i.e. water source protection, ground water recharge systems, ground water quality protection and water treatment interventions etc.	1. Monitoring report along with impact assessment for implemented interventions as per short term plan for water resource management (1/2 marks) 2. Progress status report/ letter from relevant authority for implementation of long term plan (1/2 marks)	

Actual assesment	Initial assesment	Target
Grade	0	
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Sources for Validation		
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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Think-Blue-Effective-Water-Management	http://www.spml.co.in/Download/Reports/Thi
- Water Demand Management in Rajkot, Gujarat	https://www.unescap.org/sites/default/files/In
- Urban Water Supply and Sanitation in India	https://ihs.co.in/knowledge-gateway/wp-cont
-	

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.4 Indicator 1: Water Resources Assessment and Management		

Area 7: Water and Sewage

7.2 Water Treatment and Distribution System

Goal City is providing sufficient water to every household with minimal energy use and water losses.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Coverage of water supply connections in city is >70 % and per capita water supply of >120 Litres Per Capita per Day (LPCD) to 130 LPCD.	<p>City has prepared an energy audit report for water pumping stations and water treatment plants (not older than 5 years).</p> <p>A Non-Revenue Water (NRW) analysis is conducted.</p> <p>An action plan is prepared, which includes strategies to reduce water losses and energy consumption</p>	Annual budget is secured to implement strategies (i.e. identify and legalize illegal water connections, penalties, awareness, reduce the leakages and replacement of waste supply network , energy efficiency and renewable energy etc.) and interventions in phase-wise manner (including future requirement), implementation is in progress.	<p>Impacts of implemented interventions are monitored, situation of water distribution system in city is improved in base year as compared with last year.</p> <p>Coverage of water supply connections in city is >95% with NRW of =<20% and per capita water supply of >130 LPCD</p>

Assesment Guidance				
1. Proof total HHs with water supply connections and total no. of HHs in the city (i.e.details of water taxes along with water connection)	2. Document on total water produced and put into transmission and distribution network (SCADA report), water received/ sold (based on thumb rule calculations) can be shown	Water supply coverage formula = Total HHs with water supply connections/ Total HHs in city *100%	1. Energy auditing for all water pumping stations and water treatment plants including strategies to reduce energy consumption and use of renewable energy (not older than 5 years) (1/2 mark)	2. NRW analysis and study report for transmission and distribution network including strategies to reduce water losses (not older than 5 years) (1/2 mark)
			1. Budget document with an allocation for implementation of strategies/ interventions, including future requirement (1/2 mark)	2. Implementation status report (1/2 mark)
			1. Report on monitoring and impact of implemented interventions	
			2. Letter from relevent authority on improving water situation in the city as compared to last year assessment can be shown (will not applicable for first assessment)	
			Note: Coverage of water supply connection is increased by 1 to 5% (1/3 mark), NRW reduced by 1 to 5% (1/3 mark) and per capita water supply is increased by 5 to 15LPCD but not	

Actual assesment	Initial assesment	Target
Grade	0	
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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Energy and Water Efficiency in Municipal Water Supply and Wastewater Treatment	https://www.gwp.org/globalassets/global/tool
- SMART WATER MANAGEMENT Case study report	https://www.iwra.org/wp-content/uploads/201
- Water sector audit enables efficient use of water and energy resources in Nagpur	http://old.iclei.org/fileadmin/PUBLICATIONS/
-	

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.4 Indicator 5: Energy-efficient water supply system		

Area 7: Water and Sewage

7.3 Storm Water Management

Goal The City is addressing storm water management to augment water resources (surface and ground) and reduce urban flooding impact.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Storm water drainage network covers more than 50% of city area.	Storm water management plan is prepared for the city, considering information on annual rainfall, water hydrology, flood prone areas, flood risk assessment and hotspots. The plan addresses water augmentation and ground water recharge potential to reduce flooding impact; annual action plans are well defined.	Annual budget is allocated for implementation of strategies/ interventions in phase wise manner.	Short term storm water management actions are implemented and monitoring framework is prepared. Covergae of storm water drainage network exceeds 80% of the city area.

Assesment Guidance			
1. Documentation on existing storm water drainage network coverage (including total length of network and area covered) can be shown	1. Storm water management plan can be shown Note: 1/4 marks if storm water management plan incorporates annual rainfall, water hydrology; 1/4 marks for flood prone areas, flood risk assessment and hotspots; 1/4 marks for addressing water augmentation and ground water recharge potential to reduce flooding impact and 1/4 mark if annual action plans are well defined	1. Budget document with an allocation for implementation of strategies/ interventions 2. Implementation status report along with photographs	1. Proof of implementation (i.e. project completion certificate to contractor or photographs etc.) of short term actions identified under storm water management along with monitoring framework can be shown (1/2 marks) 2. Proof of existing storm water drainage network coverage (including total length of network and area covered) can be shown (1/2 marks if coverage is more than 80%)

Actual assesment	Initial assesment	Target
Grade 0	0	
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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Urban Stormwater Management Model and Tools for Designing Stormwater Management of Green Infrastructure Practice	https://iopscience.iop.org/article/10.1088/175
- Urban Sustainable Stormwater Management Described from a Governance Perspective – Challenges and Interdependence	https://core.ac.uk/download/pdf/242106232.r
- Unflooding Asia the Green Cities Way	https://www.adb.org/sites/default/files/publica
- Storm-water management in low-income countries	https://repository.lboro.ac.uk/articles/journal%

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.4 Indicator 4: Flood/ water stagnation risk management		

Area 7: Water and Sewage

7.4 Sewage Management

Goal An overall sewage management strategy is in place for effective and efficient wastewater management including collection, treatment, reuse, and discharge, also mitigating climate change related risks and health hazards due to contamination
 - City has high coverage of effective and efficient sewage collection network and effective treatment with no leakages and minimal energy consumption.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	A sewage management strategy and action plan with annual targets is prepared and considers present and future waste water generation, collection and coverage of sewerage network, efficacy of existing treatment plants and requirement of new STPs, reuse and disposal etc., including fecal sludge management, as per CPHEEO norms.	City has prepared an energy audit report for wastewater pumping stations and wastewater treatment plants (not older than 5 years). Budget is allocated for replacement of all energy inefficient pumps with energy efficient sewage pumps and use of renewable energy. Annual budget is secured to	Annual action plan is implemented and a monitoring framework is prepared, implemented actions are monitored. Coverage of sewage collection network in city is >70%, with 15% to 20% septic tanks in city. More than 70% of total sewage generated in city is being treated	- Coverage of wastewater collection network in city is 100% and no septic tanks with minimal health and climate risk from water contamination. - More than 90% of total generated sewage is being treated efficiently and disposed as per CPCB standards.

Assesment Guidance			
Copy of sewage management strategy and action plan along with annual targets (1/4 marks)	1. Energy audit report for wastewater pumping stations and wastewater treatment plants (not older than 5 years) (1/4 marks) 2. Budget allocation for replacement of all energy inefficient pumps with energy efficient sewage pumps and use of renewable energy can be shown (1/3 marks) 3. Budget allocation to implement sewage management strategy and action plan (1/3 marks)	1. Report on existing total coverage of sewage network services (total number of households with sewage collection services or using septic tanks) (1/4 marks if sewage network is >70%) 2. Proof of total wastewater generated and treated in city (1/4 marks if >= 70% of total sewage is being treated) 3. Efficacy of existing sewage treatment plant can be shown (with daily inlet outlet information) (1/4 marks if efficacy is more than 75%)	1. Project completion certification for replacement of old pumps with energy efficient pumps (1/4 marks) 2. Report on existing total coverage of sewage network services (total number of households with sewage collection services and using septic tanks) (1/4 marks if 100% wastewater collection network and no septic tanks) 3. Documentation of wastewater generated in city and treatment (1/4 marks if >90% sewage is being treated as per CPCB standards)

Actual assesment	Initial assesment	Target
Grade	0	
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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Circular-Economy-Pathways-for Municipal Waste Water In India	https://www.2030wrg.org/wp-content/uploads/2020/05/Circular-Economy-Pathways-for-Municipal-Waste-Water-In-India.pdf
- A RAPID ASSESSMENT OF SEPTAGE MANAGEMENT IN ASIA Policies and Practies in India, Indonesia, Malaysia, the F	https://www.researchgate.net/publication/286111111
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Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.4 Indicator 6: Energy-efficient wastewater management system		
CSCAF v2.0_4.4 Indicator 3: Wastewater Recycle and Reuse		

Area 7: Water and Sewage

7.5 Waste Water Recycle and Reuse

Goal Reuse of treated waste water is optimised with assured high quality standards.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	City has developed strategies to reuse treated wastewater for various permissible usages based on type of wastewater treatments (secondary/tertiary).	Stakeholders are identified and meetings are held to reuse treated waste water, pricing policy is in preparation to sell treated waste water (i.e. construction activities, industries, gardening etc.).	Socially acceptable pricing policy to sell treated waste water is developed, more than 30% of treated waste water is reused.	City has mandated the reuse of treated wastewater, while addressing quality aspects and standards. More than 80% of total treated water is reused.

Assesment Guidance				
	Treated wastewater reuse strategies document along with approval from city government, incorporating various permissible usages and identified stakeholders	1. Information of identified stakeholders along with minutes of last meeting can be shown 2. Letter from city government intending to prepare pricing policy to sell treated waste water	1. Pricing policy to sell treated wastewater can be shown 2. Record of reuse of treated waste water (STP outlet information and selling to stakeholders) can be shown	1. Office order on mandate to reuse treated waste water can be shown. 2. Record of reuse of treated waste water (STP outlet information and selling to stakeholders) can be shown

Actual assesment	Initial assesment	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice	links
<ul style="list-style-type: none"> - Recycling and Reuse of Treated Wastewater in Urban India - pwc-closing-the-water-loop-reuse-of-treated-wastewater-in-urban-india - OFID-Wastewater-report-2018 - 	<ul style="list-style-type: none"> https://wle.cqjar.org/recycling-and-reuse-trea https://www.pwc.in/assets/pdfs/publications/ https://reliefweb.int/sites/reliefweb.int/files/res

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.4 Indicator 3: Wastewater Recycle and Reuse		

Area 7: Water and Sewage

7.6 Faecal Sludge/ Septage Management

Goal Faecal Sludge/ sludge and Septage is safely managed in city through collection, conveyance, treatment and disposal/ reuse of faecal sludge and septage from onsite sanitation systems such as pit latrines, septic tanks, etc.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Faecal sludge or septage management is being done by city through authorised agency for collection and transport. Sufficient number of mechanised suction emptier machines are available with authorised agency for desludging of a septic tank/ pit latrine.	Quantity of faecal sludge or septage collected by authorised agency is known and being transported in a safe manner, in contained manner, by the agency.	A treatment facility is available in the city to treat faecal sludge/septage with resource recovery (methane, reuse of treated wastewater, manure/ soil conditioner, etc.).	The final residual product from the faecal sludge management plant and the wastewater treatment plants is either safely recycled or used or disposed safely in compliance with all pollution and quality standards.

Assesment Guidance				
	1. Letter from municipal commissioner/ relevent authority can be shown along with provision for sludge management or Office order for authorised agency to manage faecal sludge or septage management (1/2 mark) 2. List of dedicated vehicles and machinaries with authorised agency for desludging of a septic tank/ pit latrine and transfer (1/2 mark)	Document on quantity of faecal sludge or septage being managed by authorised agency (including collection and transportation), approved by city government	Documentation on faecal sludge/ septage treatment including dedicated sewage treatment plant for treatment and resource recovery, including information on methane recovered, treated wastewater reused, use of manure/ soil conditioner etc.	Document on total residual product generated, recycled/reused or disposed safely in the surrounding environment that is comply with all pollution and quality standards. Weigh bridge information at disposal can be submitted.

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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Faecal Sludge Managment Landscape in South Asia	https://www.wateraidindia.in/sites/g/files/jkxo
- Decentralized Wastewater and Faecal Sludge Management: Case Studies from India	https://www.adb.org/sites/default/files/publica
- an-assessment-of-faecal-sludge-management-policies-and-programmes at the National and Select State Levels 2017	https://www.wateraidindia.in/publications/an-
- Cities Biodiversity and Governance_Perspectives and Challenges of the Implementation of the Convention on Biological D	https://i.unu.edu/media/fourworld.unu.edu-jpl/

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0 4.4 Indicator 3: Wastewater Recycle and Reuse		

Area 8: Urban Biodiversity

8.1 Local Biodiversity Strategy Action Plan and Implementation

Goal Biodiversity conservation is ensured by preparing a Local Biodiversity Strategy Action Plan and allocating appropriate budgetary resources to implement relevant initiatives

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	The City takes a decision to prepare and initiates preparation of a Local Biodiversity Strategy Action Plan. City has created the requisite institutional set up and established City Level Biodiversity Management Committee.	Baseline biodiversity assessment (including baseline city biodiversity index for flora, fauna and ecosystem services) is developed by the City. People's Biodiversity Register (based on the Biological Diversity Act, 2002) is prepared by the City.	Detailed Local Biodiversity Strategy Action Plan is prepared by the City with an Identification of measures to increase biodiversity and with an aim to contribute to National Biodiversity Targets. Budgetary resources are allotted for implementation of annual action plans.	Annual action plans are implemented and results monitored over the implementation period and beyond, as relevant. City Biodiversity Index is calculated every five years.

Assesment Guidance			
1. Letter from municipal commissioner/ authority on decision to prepare and initiates preparation of a Local Biodiversity Strategy Action Plan (1/2 mark) 2. Notification on City Level Biodiversity Management Committee (1/2 mark)	1. Copy of baseline biodiversity assessment report (including baseline city biodiversity index for flora, fauna and ecosystem services) (1/2 mark) 2. Copy of People's Biodiversity Register (based on the Biological Diversity Act, 2002) (1/2 mark)	1. Copy of detailed Local Biodiversity Strategy Action Plan (1/2 mark) 2. Budget allocation for implementation of annual action plans (1/2 mark)	1. Implementation status report along with monitoring aspects (1/2 mark) 2. Document of City Biodiversity Index calculated every five years (1/2 mark)

Actual assesment	Initial assesment	Target
Grade 	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice	links
- Planning for the Future of Urban Biodiversity_A Global Review of City-Scale Initiatives	https://academic.oup.com/bioscience/article/
- Cities Biodiversity and Governance_Perspectives and Challenges of the Implementation of the Convention on Biological D	https://www.researchgate.net/publication/259
- City-Wide Public Space Strategies A Compendium of Inspiring Practices	https://unhabitat.org/sites/default/files/2020/0
- Recommendations for Urban Biodiversity Conservation in the Context of Landscape Preference in Singapore	https://digitalcommons.lmu.edu/cgi/viewcont

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2 4.2 Indicator 3 Urban Biodiversity		

Area 8: Urban Biodiversity

8.2 Natural areas in the city

Goal Natural areas cover a relevant part of the city, resulting in an improvement in biodiversity, local climate and air quality.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Existing natural areas are known and calculated. Available natural area in city is >0.1 ha to 0.3 ha per 1000 persons	Available natural area in city is >0.3 ha to 0.6 ha per 1000 persons	Available natural area in city is >0.6 ha to 0.9 ha per 1000 persons	Available natural area in city is >0.9 ha per 1000 persons

Assesment Guidance				
A report/ document/ letter with total natural protected areas (in sq. km) in base year, endorsed by the city government will be used for validation.		0	0	0
Formula = Total area of parks and protected natural areas /1000 persons				
Note: Possible sources of data on natural areas include City Corporations, Urban Planning or Development Authority, Remote Sensing Centre				

Actual assesment	Initial assesment	Target
Grade	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice	links
- Guidelines on urban and peri-urban forestry	http://www.environnement.gouv.qc.ca/biodiv/
- Cities Biodiversity and Governance_Perspectives and Challenges of the Implementation of the Convention on Biological D	https://www.researchgate.net/publication/259
- Quality Green Space Supporting Health Wellbeing and Biodiversity_A Literature Review	https://www.healthyactivebydesign.com.au/in
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Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.2 Indicator 6: Urban Biodiversity		

Area 9: Energy / Energy-Infrastructure

9.1 Public Lighting

Goal Energy Efficient Street Lighting is implemented.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	City has plans for converting all High Pressure Sodium Vapour Lamps (HPSV) and other public lighting to Light Emitting Diode (LED) based lighting. Detailed feasibility study is in progress.	Detailed feasibility including technical and financial aspects is completed, report is approved by city council, agreement with ESCO or other contractors is signed, implementation in progress.	Energy efficient streetlighting is under implementation through ESCO (energy service company) or city/state funding, more than 50% of total street lights are installed. Monitoring, verification and reporting system is in place.	More than 90% Energy Efficient street lighting is implemented covering all public lighting (as possible).

Assesment Guidance				
Letter from commissioner/ relevant authority or agreement with ESCo for initial study can be shown	1. Detailed technical and financial feasibility report 2. Council approval on detailed report and agreement with ESCO or other contractors for implementation can be shown	Implementation status report including total number of existing street lighting replaced with LED and wattage information can be shown along with monitoring of impact (1 mark if 50% of total street lights are installed)	Implementation status report including total number of existing street lighting replaced with LED and wattage information can be shown along with monitoring of impact (1 mark if 90% of total street lights are installed)	

Actual assesement	Initial assesement	Target
Grade	0	
Explanatory statements		
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Sources for Validation		
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Recommendations / possible next steps		
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Good Solutions - best practice	links
- Republic of India Energy-Efficient Urban Street Lighting	https://openknowledge.worldbank.org/bitstream/handle/10985/12447/2/978147184231402.pdf
- Energy Efficient Street Lighting	https://beeindia.gov.in/sites/default/files/ctoolkit.pdf
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Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.1 Indicator 4: Energy efficient street lighting in the city		

Area 9: Energy / Energy-Infrastructure

9.2 City electrical energy derived from renewable sources

Version 3.2.5

Goal Encourage the cities to shift from conventional energy generated by using fossil fuels to cleaner energy from renewable energy sources

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	Less than 5% of the city electricity demand is from renewable energy	More than 5% to <10% of the city electricity demand is from renewable energy	More than 10% to =<25% of the city electricity demand is from renewable energy	More than 25% of the city electricity demand is from renewable energy

Assesment Guidance			
1. Proof of total electricity consumption (in kWh) within the city 2. Proof of total renewable energy generated (in kWh) with in the city from all grid connected renewable energy sources 3. Total renewable energy generated (in kWh) from all grid connected renewable energy sources out side the city but supplied to the city Note: (Total electrical energy generated (in kWh) from all grid connected renewable energy	1. Proof of total electricity consumption (in kWh) within the city 2. Proof of total renewable energy generated (in kWh) with in the city from all grid connected renewable energy sources 3. Total renewable energy generated (in kWh) from all grid connected renewable energy sources out side the city but supplied to the city	1. Proof of total electricity consumption (in kWh) within the city 2. Proof of total renewable energy generated (in kWh) with in the city from all grid connected renewable energy sources 3. Total renewable energy generated (in kWh) from all grid connected renewable energy sources out side the city but supplied to the city	1. Proof of total electricity consumption (in kWh) within the city 2. Proof of total renewable energy generated (in kWh) with in the city from all grid connected renewable energy sources 3. Total renewable energy generated (in kWh) from all grid connected renewable energy sources out side the city but supplied to the city

Actual assesment	Initial assesment	Target
Grade 	0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

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links

Related climate smart city indicators (CSCAF)	Level	Score
CSCAF v2.0_4.1 Indicator 2: Total Electrical Energy in the City Derived from renewable sources		

Area 9: Energy / Energy-Infrastructure

9.3 District Energy Systems for Cooling

Goal City plans and implements district cooling systems in identified areas.

Grades				
0	1 First steps	2 Good	3 Very good	4 Excellent
no significant steps	An identification of the district cooling potential in the city is made, including existing and future cooling demand.	Pre-feasibility studies for district cooling are completed and locations for implementation are identified.	Detailed plans for implementation are drawn, financing is secured and implementation started.	Implementation of district cooling systems is on-going and covers 10% of total cooling demand.

Assesment Guidance				
	Report on potential of district cooling system can be provided .	Pre-feasibility study report including feasible size and load of district cooling systems can be provided.	1. Technical and financial DPR 2. Allocation in municipal budget or negotiations with private party on PPP model 3. Implementation status report	Information on implementation status report along with operational coverage of district cooling system in the city with respect to cooling demand can be provided.

Actual assesement		Initial assesement	Target
Grade		0	

Explanatory statements

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Sources for Validation

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Recommendations / possible next steps

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Good Solutions - best practice

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links

Related climate smart city indicators (CSCAF)	Level	Score