Covenant of Mayors in Sub-Saharan Africa
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Author: ICLEI Africa
The full SEACAP Toolbox is found here: https://comssa.org/
CoM SSA
SEACAP Toolbox

2.7: Setting Mitigation Targets

This chapter is one component of the SEACAP Toolbox for the full Toolbox, please visit: https://comssa.org/

What you will learn in this chapter:
• What are mitigation targets?
• What purpose do they serve?
• Explaining the different types of targets
• Things to keep in mind while setting targets

This chapter has been designed for Local Government Officials and partners completing a SEACAP
What emissions targets are (and where they fit in)

Source: Joint Research Centre. How to develop a Sustainable Energy Access and Climate Action Plan.
“Targets” and “Goals” are often used interchangeably.
What makes a target

• Requires a base year and target year GHG inventory
• Can apply to overall emissions profile or subset, disaggregated by gas/scope/sector
Not just about emissions

Other metrics assessing co-benefits:
  access to sustainable energy, employment creation, air quality, savings, etc.

Public perception

Source: Afrobarometer. Policy Paper 60: Change ahead: Experience and awareness of climate change in Africa

Why are the targets useful?

• Local contribution to global mitigation and national targets
• Leadership, political pragmatism, technical functions of sector-specific role in broader targets
• Identify specific sources and incentivise solutions

Source: C40 Cities. Twitter feed.
Different types of targets

- Base-year emissions
- Base-year intensity
- Fixed level
- Baseline scenario
Emissions target types: Base year emissions

Absolute reduction relative to base year

E.g. 30% reduction of emissions relative to the base year.

Source: WRI, C40, ICLEI. Global Protocol for Community-Scale Greenhouse Gas Emission Inventories
Emissions target types: Base year intensity

Emissions intensity is the average emissions per unit of another indicator, e.g. emissions/person, emissions/dollar spent in the year, emissions/kWh consumed. It tries to explain what the carbon footprint is for each resident in the city or for the occurrence of a particular activity in a given year.

Reduction in emissions intensity (emissions per capita/unit GDP/energy consumption)
Emissions target types: fixed-level

Reduction to an absolute level

E.g. carbon neutrality: net zero carbon dioxide emissions. This is where emissions are reduced to a level where it no longer adds to the stock in the atmosphere.
Emissions target types: baseline scenario

Percentage reduction from business-as-usual
Technically complex
Drivers of emissions: economic / population growth
Emissions target types: baseline scenario

Source: City of Cape Town. Energy2040.
### Emissions target types: summary

<table>
<thead>
<tr>
<th>Goal type</th>
<th>Example</th>
<th>Minimum inventory need</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base year emissions goals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Single-year goal</strong></td>
<td>London (UK): By 2025 60% GHG emissions reduction on 1990 levels</td>
<td>Inventory for 1990 and 2025</td>
</tr>
<tr>
<td><strong>Fixed level goals</strong></td>
<td>Carbon-neutral is another type of fixed level goal type. Melbourne (Australia) set a target to achieve zero net carbon emissions by 2020, and plans to achieve the goal through internal reductions and purchasing offsets.</td>
<td>Inventory for 2020. In the case of Melbourne, current inventory required to determine quantity of offsets necessary to cover remainder of emissions, as well as GHG inventory in 2020.</td>
</tr>
<tr>
<td><strong>Base year intensity goals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Per capita goal</strong></td>
<td>Belo Horizonte (Brazil): 20% GHG emissions reduction per capita until 2030 from 2007 levels</td>
<td>Inventory for 2007 and 2030</td>
</tr>
<tr>
<td><strong>Per GDP goal</strong></td>
<td>China is the major country adopting GHG emissions reduction per unit of GDP goal for cities. For example, Beijing: 17% reduction per unit of GDP in 2015 from 2010 levels.</td>
<td>Inventory for 2010 and 2015</td>
</tr>
<tr>
<td><strong>Baseline scenario goals</strong></td>
<td>Singapore pledged to reduce GHG emissions to 16% below business-as-usual (BAU) levels by 2020 if a legally binding global agreement on GHG reductions is made. In the meantime, Singapore started implementing measures to reduce emissions by 7% to 11% of 2020 BAU levels.</td>
<td>Inventory for 2020 and a projected BAU inventory for 2020</td>
</tr>
</tbody>
</table>

Source: WRI, C40, ICLEI. Global Protocol for Community-Scale Greenhouse Gas Emission Inventories
Important aspects of targets when deciding which type of targets to use

- KPI’s
- Principles
- Scope
- Tools
- Participation
## Important aspects of targets

### KPI’s

<table>
<thead>
<tr>
<th>Water consumption per inhabitant/year</th>
<th>Solid waste generated per inhabitant/year</th>
<th>Carbon emission per inhabitant/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>51 100 l</td>
<td>102 kg</td>
<td>4.25 tCO₂e</td>
</tr>
</tbody>
</table>

### Tier 2: Outcome indicators related to emissions drivers

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Target</th>
<th>Baseline</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>Carbon emissions (tCO₂-eq) per unit of Economic GVA (Gross Value Added)</td>
<td>None set</td>
<td>130.1 tCO₂-eq/ per unit of GVA (2012)</td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>Households using electricity for lighting (% of total)</td>
<td>Target: 100% (2025)</td>
<td>Baseline: 50.2% (2011)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LED streetlights (% of total)</td>
<td>None set</td>
<td>No data yet available*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proportion of renewables to total primary electricity supply (%)</td>
<td>None set</td>
<td>No data yet available*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community electricity consumption (GJ) (excluding municipal operations)</td>
<td>None set</td>
<td>2 247 378</td>
<td></td>
</tr>
<tr>
<td>Spatial</td>
<td>Change in modal split between private &amp; public transport use</td>
<td>None set</td>
<td>No data yet available*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change in average residential density per square kilometre, within &amp; without the urban edge (Dwelling units per hectare)</td>
<td>None set</td>
<td>No data yet available*</td>
<td></td>
</tr>
<tr>
<td>Ecological</td>
<td>Change in hectares of ecological infrastructure under</td>
<td>None set</td>
<td>No data yet available*</td>
<td></td>
</tr>
</tbody>
</table>

## Important aspects of targets

### KPI’s

### Table 20. Access to Energy indicators - Electricity

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Related Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>Percentage of population or households in having access to electricity (grid/off-grid) [%]</td>
</tr>
<tr>
<td>SC2</td>
<td>Number of hours per day of available electricity [h/day]</td>
</tr>
<tr>
<td>SC3</td>
<td>Average number of electricity interruptions per day [n/year]</td>
</tr>
<tr>
<td>SC4</td>
<td>Number of days without electricity per year [n/year]</td>
</tr>
<tr>
<td>SU5</td>
<td>Percentage of electricity from RES [%]</td>
</tr>
<tr>
<td>SU6</td>
<td>Number of mini-grids and stand-alone systems [n³]</td>
</tr>
<tr>
<td>SU7</td>
<td>Laws and regulations in place for mini-grids/stands-alone systems [+/-]</td>
</tr>
<tr>
<td>AF8</td>
<td>Percentage of population able to pay for electricity [%] or willingness to pay</td>
</tr>
<tr>
<td>AF9</td>
<td>Percentage of expenditure of Public Buildings for electricity [%]</td>
</tr>
<tr>
<td>AF10</td>
<td>Financial and regulatory incentives for renewable energy in place [+/-]</td>
</tr>
</tbody>
</table>

### Table 21. Access to Energy indicators - Clean cooking

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Related Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>Percentage of population/households with clean cooking access [%]</td>
</tr>
<tr>
<td>SC2</td>
<td>Percentage of population/households relying on the traditional use of biomass for cooking [%]</td>
</tr>
<tr>
<td>SC3</td>
<td>Percentage of population/households relying on LPG or other sources [%]</td>
</tr>
<tr>
<td>SC4</td>
<td>Availability of resources: time and distance to gather fuelwood [h and km]</td>
</tr>
<tr>
<td>SU5</td>
<td>Number of improved cook stoves used [n³]</td>
</tr>
<tr>
<td>SU6</td>
<td>Sustainable charcoal production [Y/N]</td>
</tr>
<tr>
<td>SU7</td>
<td>Awareness and/or Education programmes in place [Y/N]</td>
</tr>
<tr>
<td>AF8</td>
<td>Financial and regulatory incentives or subsidy mechanisms in place [Y/N]</td>
</tr>
<tr>
<td>AF9</td>
<td>Percentage of population able to pay (or willingness to pay) for the transition to clean cooking [%].</td>
</tr>
</tbody>
</table>

Source: Joint Research Centre. How to develop a Sustainable Energy Access and Climate Action Plan.
Important aspects of targets

Mitigation goal standard:
- Relevance
- Completeness
- Consistency
- Transparency
- Accuracy

Source: TactusTherapy. It’s a Goal!
Important aspects of targets
GHG’s

Greenhouse gases (GHG) and their sources

- The global warming potential (GWP) of each GHG is measured using the equation $Tg \cdot CO_2\cdot Eq$.
- Each gas’s GWP is measured against the reference gas, CO$_2$.
- CO$_2$ is measured in 1 trillion metric tons. 1 metric ton is 1000 kilograms = average weight of a female giraffe.

Source: Green and Growing. What Are Greenhouse Gases, Main Sources and Climate Impact?
Important aspects of targets

Tools

ClearPath

COMPACT of MAYORS

CURB Tool
Climate Action for Urban Sustainability

CLEAN ENERGY EMISSION REDUCTION TOOL
Important aspects of targets

Changing baseline inventory
Data collection systems
Conditionalities
Base year targets work better for under-capacitated cities
  Assess the institutional, human and technical capacity available
Participatory processes

Projections

Forums, surveys

Data accuracy and accountability


How to set targets

Targets must be set based on the local context and availability of data.

Given the requirements for the above target types and their suitability for different baselines, cities will be able to determine which one is most useful, and realistic.

However, the target (in terms of proportional contribution to the national-scale) MUST be at least as ambitious as the Nationally Determined Contribution. The extent to which emissions are either reduced or limited needs to exceed that of the national emissions targets on a proportional basis.
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The next chapter is JRC Reporting Template: Mitigation Actions
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