ANTALYA SUSTAINABLE ENERGY AND CLIMATE CHANGE ACTION PLAN (SECAP)

REPORT OF THE WORKSHOP ON DATA RESOURCES AND ROAD MAP FOR CALCULATING THE GREENHOUSE GAS EMISSIONS

JULY 23, 2020, Antalya

ANTALYA METROPOLITAN MUNICIPALITY

CONTENTS

1. INTRODUCTION

This is the report of the "Workshop on Data Resources and Road Map for Calculating the Greenhouse Gas Emissions" organized by Antalya Metropolitan Municipality, on July 23, 2020, within the context of MAtchUP Smart City Project where experts participated. The aim of the worksop was to create a roadmap to prepare the "Antalya Sustainable Energy and Climate Change Action Plan (SECAP)" required by the Covenant of Mayors of which our Municipality is a member. Antalya Metropolitan Municipality is the first municipality in Turkey prepared the Sustainable Energy Action Plan in 2012, who adopted fighting climate change as its sustainability policy.

HORIZON 2020 SMART CITIES AND COMMUNITIES (SCC-1-2017)

MAtchUP Project

MAtchUP Project aims to strengthen mechanisms of urban planning and decision making in the field of defining and implementation of sustainable city changing strategies, and to include smart city elements into the long term planning strategies. It aims to implement large scale model implementations on smart cities by working integratedly in energy, transportation, informatics, and social fields. It involves trying and verifying innovative work models in order for these implementations to be extended in the European scale and to enlarge this scale.

- 3 Lighthouse Cities (Antalya-Valencia-Dresden),
- 4 Follower Cities (Ostend-Herzliya-Skopje-Kerava),
- 42 different actions (Energy-Mobility-IoT&ICT-Citizens),
- 28 project partners in total from 8 countries,
- 18 M€ total budget,
- 60 months of project period (October 2017 – October 2022)
- Turkish Partners: Antalya Metropolitan Municipality, Antepe, Demir Enerji, Sampaş, Akdeniz University and Taysim
- Energy Actions, Sustainable Transportation Actions, Smart City Platform, Non-Technical Actions

The implementations to be carried out within the scope of the project are not unrelated implementations whose effects are isolated from one another, but they support one another and their common deliverables are highlighted.

EU COVENANT OF MAYORS

The Global Covenant of Mayors for Climate & Energy (GCoM), of which Antalya Metropolitan Municipality is also a signatory, is the world's largest alliance of cities and local governments with a shared the long-term vision of promoting and supporting voluntary action to combat climate change and move to a low emission, climate-resilient future.

Through the GCoM, cities and local governments are voluntarily committing to fight climate change, mirroring the commitments their national governments have set to ensure the goals of the Paris Agreement are met. It is a commitment to not only take bold local action but to also work side-by side with peers around the world to share innovative solutions that enable mayors to do more, faster. GCoM cities connect and exchange knowledge and ideas, supported by relevant regional stakeholders. (https://www.eumayors.eu/en/)

The European Covenant of Mayors is the largest urban climate and energy initiative in the world, covering 10,171 cities and regions from 60 countries. Cities and regions that signed the contract, share their long-term vision of creating decarbonised and resilient zones that provide sustainable and low-cost energy to everyone. These cities and regions voluntarily contribute to this vision by achieving the targets set at the regional or national level regarding irrigation, adaptation and access to energy, and prepare Climate & Energy Action Plans that are subject to surveillance. The cities and regions, that signed the covenant, encourage cities to work with regions, states and central governments.

GLOBAL COVENANT OF MAYORS FOR CLIMATE & ENERGY

The Global Covenant of Mayors for Climate & Energy formally brings together the European Union's Covenant of Mayors and the Compact of Mayors – the world's two primary initiatives of cities and local governments – to advance the city-level transition to low emission and climate-resilient economy, and to demonstrate the global impact of local action.

This is a powerful and historic response to climate change from cities around the world. GCoM is the largest global alliance for city climate leadership, built upon the commitment of over 10,000 cities and local governments. These cities hail from 6 continents and 138 countries. In total, they represent more than 800 million people. By 2030, Global Covenant cities and local governments could account for 2.3 billion tons CO2e of annual emissions reduction, matching yearly passenger road emissions from the U.S., China, France, Mexico, Russia, and Argentina combined. Increasingly, cities and local governments across the globe are heeding the call to act. With nations working towards the goals of the Paris Climate Agreement, the cities' involvement could not be more urgent.

The cities and partners of the Global Covenant of Mayors for Climate & Energy share a long-term vision of supporting voluntary action to combat climate change. Together, we're working towards a resilient and low-emission society.

Local governments committed to GCoM pledge to implement policies and undertake measures to: (i) reduce/limit greenhouse gas emissions, (ii) prepare for the impacts of climate change, (iii) increase access to sustainable energy, and (iv) track progress toward these objectives. In order to ensure solid climate action planning, implementation and monitoring phases, as well as streamline measurement and reporting procedures, a set of new global recommendations were developed with the intention to be flexible to meet specific local or regional circumstances while also allowing for global aggregation and comparison of data. Together, the GCoM movement will be able to showcase achievements and track progress transparently – and thus advocate with cities and city networks in the various regions and nations for better multilevel governance of climate and energy issues with decision-makers at all levels of government, and for improved technical and financial support. A common reporting language of the Global Covenant of Mayors will unite local voices and raise the bar, also for other climate stakeholders. (www.globalcovenantofmayors.org)

SUSTAINABLE ENERGY AND CLIMATE CHANGE ACTION PLAN (SECAP)

It is quite important to contribute to the national efforts to fight global climate change at the local level. For this reason, the preparation of Sustainable Energy and Climate Change Action Plan of Antalya has a great importance. Reducing the greenhouse gas emissions according to the target by carrying out the actions of the plan will not only be a local effort, but will also support reducing the total greenhouse gas emissions of Turkey. The plan which will be a benchmark for fighting the climate change of Antalya will be a source and a road map for the experts and authorities of the Metropolitan Municipality and representatives of other related institutions.

Only 14 of 30 Metropolitan Municipalities of Turkey have an inventory for greenhouse gas. Along with this, 9 of these municipalities have Reducing Greenhouse Gas Goal and Action Plan, and 5 of them have prepared an Adaptation Action Plan.

Local Climate Change Action Plan – Current Status of Municipalities

-Those who do not have an Inventory for Greenhouse Gas; Adana, Ankara, Aydın, Balıkesir, Diyarbakır, Eskişehir, Konya, Malatya, Manisa, Mardin, Mersin, Ordu, Samsun, Şanlıurfa, Tekirdağ, Van.

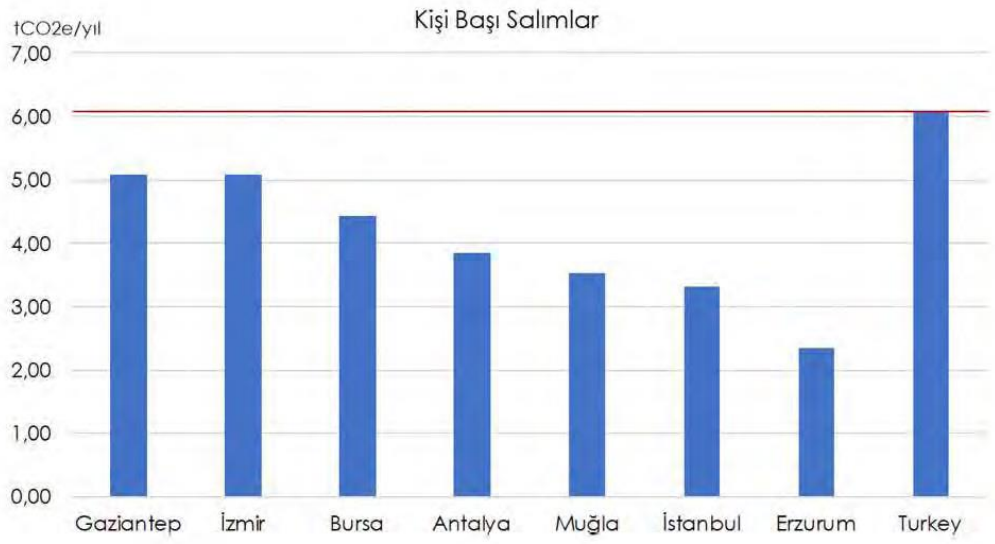
-Those who have an Inventory for Greenhouse Gas; Erzurum, Kayseri, Muğla, Sakarya, Trabzon.

-Those who have an Inventory for Greenhouse Gas and Reducing Greenhouse Gas Goal and Action Plan; Antalya, Gaziantep, Kahramanmaraş.

-Those who have an Inventory for Greenhouse Gas, Reducing Greenhouse Gas Goal and Action Plan, and Adaptation Action Plan; Bursa, Denizli, İstanbul, İzmir, Kocaeli, Hatay.

GOALS OF TURKEY

Turkey presented its INDC to United Nations Framework Convention on Climate Change Secretariat in 2015 in the process of the Paris Agreement. In the case of Turkey's membership, with its national contribution, Turkey guarantees to reduce the greenhouse gas emissions by 21% in 2030 according to BAU. According to these, it has been estimated to have 1.175 million tons CO2 in the case of none precautions are taken, and 929 million tons in CO2 in the case of the defined precautions are taken in the amount of emissions of Turkey in 2030.



Emissions per capita for the Municipalities with the Inventory of Greenhouse Gas (REC Türkiye, 2018)

In order to reach this goal, Turkey guarantees to increase its capacity to produce electricity energy from solar and wind energies to 10GW and 16 GW respectively by 2030, to use all its hydroelectric capacity, to activate 1 nuclear plant, and to decrease the loss in electricity production and network to 15%.

Reduction goals:

• **Antalya:** 23% reduction of total emissions in 2020 compared to the level in 2012

• **Bursa:** 20% reduction of emissions per capita in 2030 compared to the level in 2012

• **Gaziantep:** 20% reduction of total emissions in 2023 compared to the estimated number for 2023

• **İstanbul:** 33% reduction of emissions per capita in 2030 compared to the level in 2012

• **Kocaeli:** 31% reduction of total emissions in 2030 compared to the estimated number for 2030

2. CONTENT OF THE WORKSHOP

In the workshop where the local authorities and some shareholders of the city took place, within the framework of Sustainable Energy and Climate Change Action Plan of Antalya, what to do to adapt the effects of the climate change was discussed by explaining the calculations of the inventory for the greenhouse gas and the reduction in CO2 emissions by the years of 2030-2050.

Specific Goals for the Workshop:

- Gathering Antalya Metropolitan Municipality, public institutions, civil society organisations, local authorities, and all related individuals and groups together and giving them an environment of collaboration on adaptation studies for climate change,
- Comparing the data of 2012 and 2018 from the studies under Sustainable Energy Action Plan (SEAP) of Antalya,
- Stating the current status of Antalya in terms of climate adaptation strategies,
- Explaining Global Warming, Cities, and Climate Change and within this context discussing their effects specifically in Antalya,
- Defining the goals of reduction of and adaptation to climate change in Antalya,
- In order to prepare Greenhouse Gas and Carbon Footprint Inventory reports, defining the priorities of reduction and adaptation, gathering data, and planning processes to carry out the studies.
- Ensuring the integration of SECAP with the strategies for decreasing the climate change and increasing the quality of life, and the strategies oriented to decrease carbon emission directly.

3. PROJECT TEAM

This workshop was designed and planned by the project team.

ANTALYA METROPOLITAN MUNICIPALITY MAtchUP PROJECT TEAM	DEMİR ENERJİ
Dr. Elif ÖZGÜR ÖZBEK	Ömer AKYÜREK
Ali Burak YAVUZ	Caner DEMİR
Emine YİĞİT	
Ceren OĞUZ	
Neşe ÖZÇANDIR	

4. PARTICIPANTS

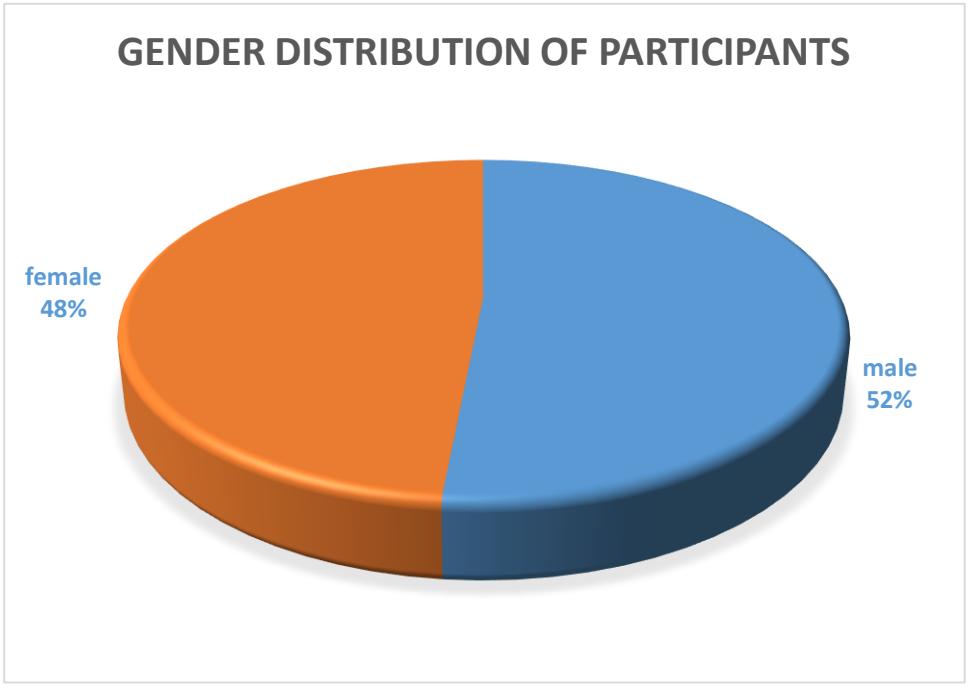
33 people participated in the workshop held within the context of the MAtchUP project conducted by Antalya Metropolitan Municipality in order to prepare a Sustainable Energy and Climate Change Action Plan for Antalya (SECAP). The 33 participants are as follows:

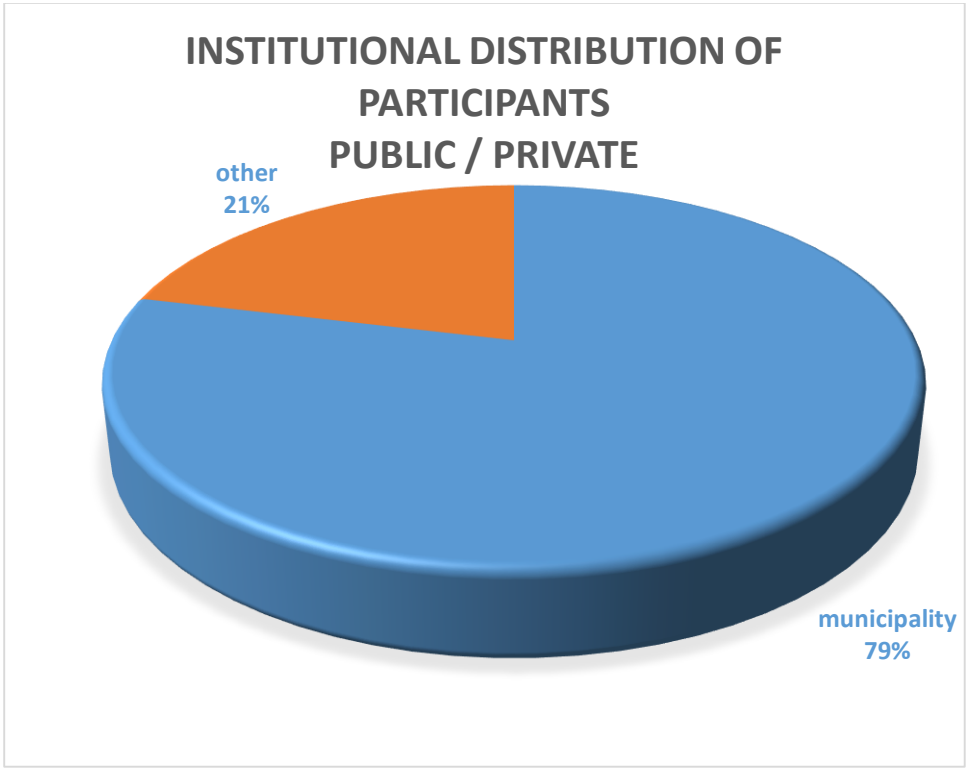
July 23, 2020, Antalya Metropolitan Municipality

ANTALYA METROPOLITAN MUNICIPALITY 2020 SECAP WORKSHOP PARTICIPANT LIST

No	NAME-SURNAME	GENDER	INSTITUTION	E-MAIL
1.	Adnan ÖZÇELİK	Male	Antalya City Council	adozçelik@hotmail.com
2.	Ahmet TEZEL	Male	ABB. Directorate of Waste Management and Operation	atezel@gmail.com
3.	Ali Burak YAVUZ	Male	MAtchUP Project	abyavuz16@gmail.com.tr
4.	Arif KÜNAR	Male	VENESCO	akunar@gmail.com
5.	Büşra ÖZGÜN	Female	ABB- Department of Information processing	btuncer@antalya.bel.tr
6.	Caner DEMİR	Male	Demir ENERJİ	cdemir@demirenerji.com
7.	Ceren OĞUZ	Female	MAtchUP Project	ceren.oguz@matchupantalya.org
8.	Elif ÖZGÜR ÖZBEK	Female	ABB Department of Foreign Affairs.	e80ozgur@yahoo.com
9.	Elif SARI	Female	Directorate of Climate Change and Clean Energy	elifsar76@gmail.com
10	Emine H. TURHAN	Female	Antalya Metropolitan Municipality	ehturhan@antalya.bel.tr
11.	Emine YİĞİT	Female	MAtchUP Project	emineyigit86@hotmail.com
12.	Engin BEYDOĞAN	Male	ABB- Department of Transportation Planning & Railway System	enginbeydogan@gmail.com
13.	Fulya Edibe HALICILAR	Female	ABB. Directorate of Waste Management and Operation	fesendur@antalya.bel.tr
14.	Gamze UYSAL İNCE	Female	ABB Department of Fire Brigade	gamzeuysal007@hotmail.com
15.	Gonca DÜLGER BEDELOĞLU	Female	ProjeX Solar	gonca@projexsolar.com
16.	Güray DOĞAN	Male	Antalya City Council -Akdeniz University	guraydogan@gmail.com
17.	Hatice Gür KILIÇ	Female	ABB Department of Transportation Planning & Railway System	haticegürkilic@gmail.com
18.	İsa KURT	Male	ABB- Department of Transportation Planning & Railway System	muhendisa@hotmail.com
19.	Mehmet DOĞAN	Male	ABB- Department of Information Processing	mehmetdogan@antalya.bel.tr
20.	Melike KİREÇCİBAŞI	Female	Directorate of Climate Change and Clean Energy	mkireccibası@antalya.bel.tr
21.	Merve KESKİN	Female	ABB- Directorate of Investments	mervekeskin@msn.com
22.	Metin Mutlu AYDIN	Male	TAYSİM PROJE	metinmutluaydin@gmail.com
23.	Neşe ÖZÇANDIR	Female	MAtchUP Project	nese.candir07@gmail.com
24.	Nur EDREMİT	Female	ANTALYA METROPOLITAN MUNICIPALITY	nuredremit07@hotmail.com
25.	Ömer AKYÜREK	Male	Demir ENERJİ	oakyurek@demirenerji.com
26.	Özden AKKAYA	Female	Antalya Metropolitan Municipality	ozdenakkaya@hotmail.com
27.	Ramazan ÖĞREN	Male	ASAT	ramazan.ogren@asat.gov.tr
28.	Semra ENGİN	Female	TAYSİM PROJE	semraengin@taysim.com

29.	Serdar KARPUZ	Male	ABB- Directorate of Investments	serdar.karpuz@gmail.com
30.	Serkan SERTER	Male	ASAT	serkanserter7@gmail.com
31.	Ş. Engin DENİZ	Male	ABB Department of Fire Brigade	sedeniz@antalya.bel.tr
32.	Taylan ENGİN	Male	TAYSİM PROJE	taylan.engin@gmail.com
33.	Yüksel GÜZEL	Male	MAtchUP Project - Department of Parks and Gardens	hakanyg@hotmail.com


GENDER DISTRIBUTION OF PARTICIPANTS
female
48%
male
52%


INSTITUTIONAL DISTRIBUTION OF PARTICIPANTS
PUBLIC / PRIVATE
other
21%
municipality
79%

5. PROGRAM

ANTALYA METROPOLITAN MUNICIPALITY SECAP WORKSHOP

23th OF JULY 2020 - ANTALYA METROPOLITAN MUNICIPALITY BUILDING

14.00-14.15	**Registration**
14.15-14.30	**Introduction speech** **Dr. Elif ÖZGÜR ÖZBEK** Antalya Metropolitan Municipality Director of European Union Relations and Projects
14.30-16.00	**HORIZON 2020 SMART CITIES & COMMUNITIES (SCC-1-2017) MAtchUP Project, Greenhouse Gas Emissions Inventory Study of Antalya** **Ömer AKYÜREK** Demir ENERJİ – Electrical Engineer
16.00-16.30	**Global Warming, Cities and Climate Change** **Caner DEMİR** Demir ENERJİ – Mechanical Engineer
16.30-17-00	**Inventory Preparation and Sustainable Energy Action Plan** **Gonca AKGÜL** Demir ENERJİ – Urban Planner
17.00-17.30	**General Evaluation and Closing**

Note: You can access the presentations on project website.

http://www.matchupantalya.org/

6. ROAD MAP

Local authorities that participated in the Global Covenant of Mayors for Climate & Energy guarantee to carry out policies and precautions in order to:

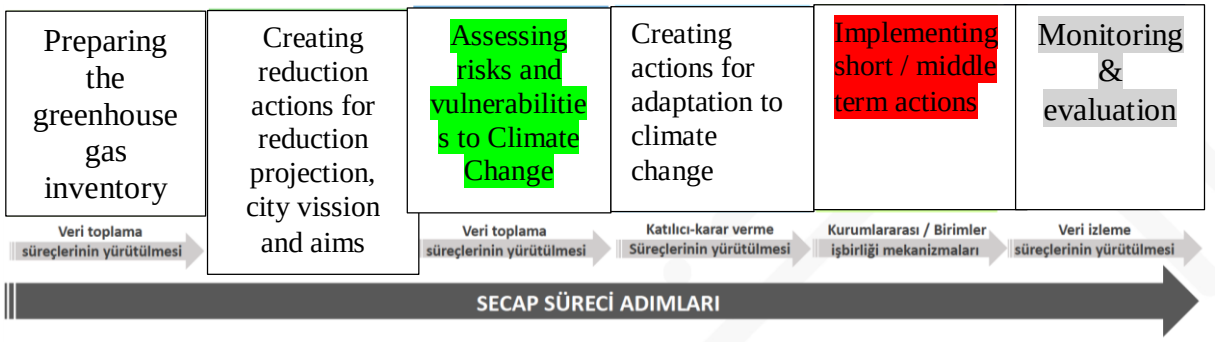
(i) reduce/limit the greenhouse gas emission,

(ii) get prepared to the effects of climate change,

(iii) increase the access to the sustainable energy, and

(iv) follow the progress on these goals.

STEPS OF SECAP



General Principles for Sustainable Energy and Climate Change Action Plan for Antalya (SECAP) defined according to the Global Covenant of Mayors for Climate & Energy:

The reporting framework allows **flexibility** to suit differentiated local circumstances and needs, such as: (i) the use of different methodologies under the IPCC framework, (ii) varied access to necessary and quality data, (iii) recognizing that local governments of smaller communities may have less capacity, and (iv) relevance to all geographical locations.

- The reporting framework allows for **consistency with national and/or sub-national requirements** for local governments within their own national contexts. It is also designed specifically to consider the UNFCCC's framework for reporting under the Paris Agreement (work in progress on enhanced framework) and, as such, ensure overall consistency with the IPCC framework.
- Greenhouse gas (GHG) emissions inventories, risk and vulnerability assessments, target(s) and goal(s), identifying hazards, climate and energy access plans should be **relevant to the local and regional situation**, reflecting the specific activities, capacity and regulatory context of the local government.

● The proposed framework allows for the **continuation of the reporting requirements** by current European Covenant- and Compact-committed cities and local governments.

● Local governments may develop **joint GHG inventories, targets, and/or action plans** with the neighbouring community(ies).

● Local governments **shall** report in a way that enables meaningful comparison and aggregation with other cities.

ANTALYA GREENHOUSE GAS EMISSIONS INVENTORY STUDY

The processes to be considered while preparing an inventory and sustainable energy action plan are as follows;

- Creating a working group
- Determining a budget
- Determining the inventory limit
- Determination of emission sources and scope,
- Determination of the base year
- Data collecting
- Calculation
- Determining the mitigation target
- Determination of mitigation strategies
- Reporting of Emissions - creating a monitoring tracking system.

At the stage of preparing a sustainable energy action plan, first of all, it is necessary to search for available data sources and to form teams to determine the detailed examination network, and to determine the necessary budget for the action plan stages. In the action plan process, the starting point and target should be determined for comparison and follow-up purpose. In this process, the things to be done to reach the desired goal should be determined, the progress points according to the starting point should be reported regularly and the monitoring tracking system should be determined.

In the process of determining the inventory boundaries, first of all, the determination of harmful gases (methane, carbon dioxide, nitrous oxide, sulfur hexafluoride, etc.) and the indirect effects of these gases on the carbon footprint should be determined. After determining the gases that indirectly affect the carbon footprint, it is necessary to determine the parameters that directly affect the carbon footprint. In this context, the points where the energy sector is used (buildings, transportation, heating-cooling systems, agriculture, etc.) usage purposes and usage amounts should be determined.

After the process of determining the inventory boundaries, the data of the current situation should be collected. In this context, it is necessary to collect data according to the consumption amounts of the parameters that directly affect the carbon footprint, such as electricity consumption, fuel consumption (natural gas, LPG, fuel oil, coal, etc.), water consumption, and the carbon footprint should be calculated in line with these data. After the parameters that directly affect the carbon footprint are calculated, the total carbon footprint amount is found by calculating the parameters that indirectly affect the carbon footprint.

For example, the amount of carbon footprint in a city;

Scope 1: Direct emissions

- Energy consumption in buildings (residential, commercial, energy production - excluding electricity)
- Energy consumption in industry (excluding electricity), fuels used in electricity consumption for own consumption
- Urban fuel, autogas consumption
- Livestock - enteric fermentation
- Agriculture - fertilizer management
- Solid waste

- Waste water facilities

Scope 2: Energy indirect emissions

- Electricity consumption (residential, commercial, industry, agriculture, street lighting)

Scope 3: Other indirect emissions

- Airport, Bus Station resources

After determining all parameters, carbon footprint is determined in 3 scopes and the effects of the parameters are determined. After determining the carbon footprint of all parameters, the total carbon footprint and the amount of carbon footprint per person can be calculated.

During the action plan process, a target point should be created after data collection and calculation and the points to be done in order to reach the target point should be determined. It is necessary to determine the time to reach the desired goal, to determine the points that should be done by individuals and institutions within the specified period. In the process of reducing the carbon footprint, the necessary strategies should be determined to reduce the carbon footprint according to these reduction options. In this regard, a sustainable energy action plan is prepared as a result of researching, taking action, reporting and monitoring all the projections of the city, transportation plans, renewable energy resources management, action plans for buildings, high energy consumption points, and monitoring.

SEAP 2012 Study

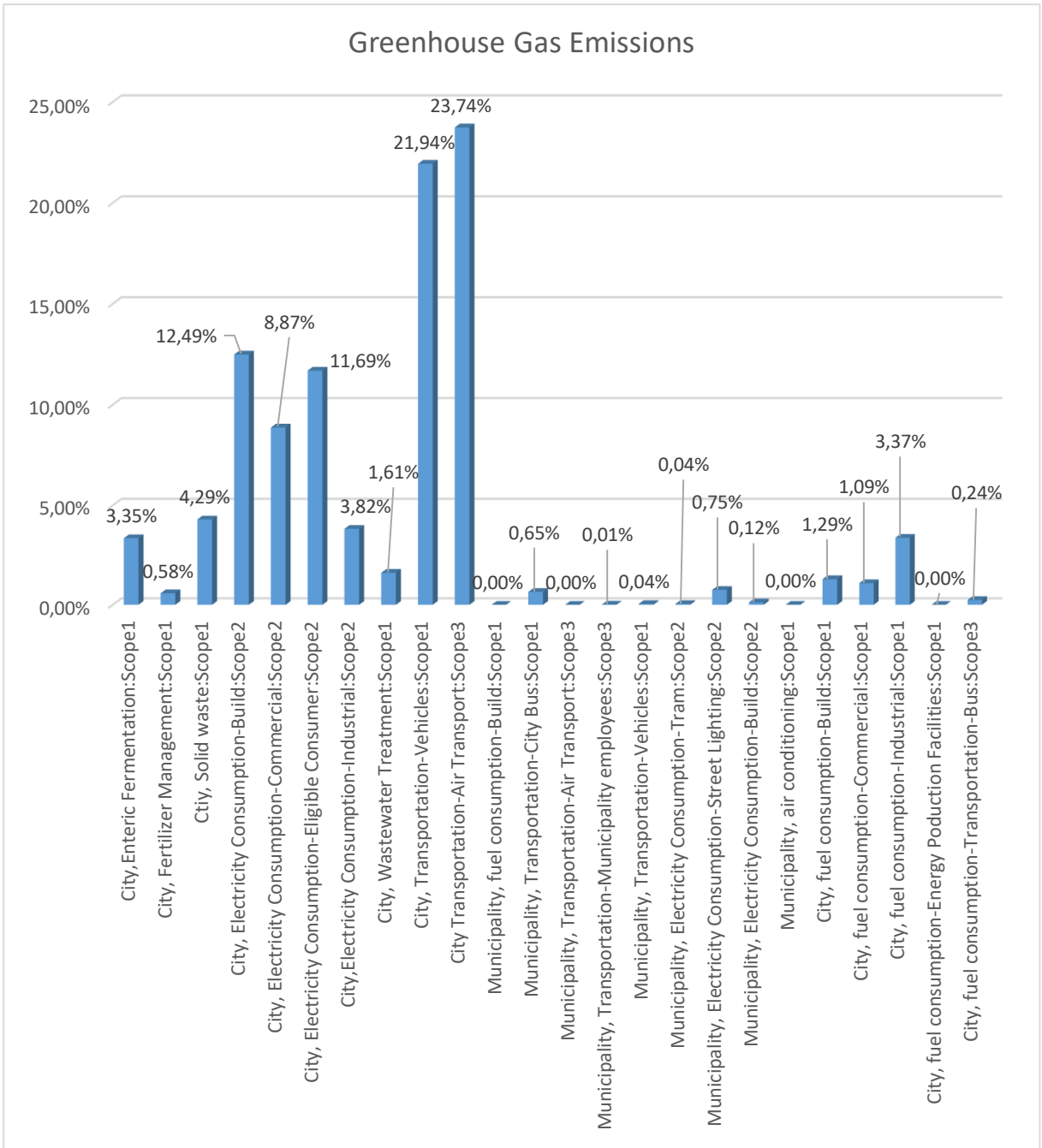
Antalya Metropolitan Municipality has committed to reducing greenhouse gas emissions by at least 23% by **2020** compared to **2012** in accordance with the **Covenant of Mayors** and presented the action plan in the SEAP.

Total emissions have been calculated as **8.966.179 tons of CO_2e** for the reference year 2012. The SEAP predicts 23% reduction by 2020. According to SEAP, it is stated that 1.6% is sourced from municipal activities, 37% from residential, commercial and industrial activities, 38% from electricity consumption and 24% from air transportation activities.

SEAP 2012 Results

SEAP 2012 Recommendations and Estimated Mitigation Amounts - 2020 Targets

MITIGATION MEASURES	Energy-saving **(MWh)**	tCO_2e Mitigation
Urban Development - The Built Environment	1,268,396	517,849
Transportation	2,768,215	658,023
Renewable energy	179,000	95,162
Solid Waste and Waste Water Management	0	525,068
Service Sector (Hotels)	242,910	129,149
Awareness Raising Campaigns	148,571	78,985
TOTAL	**4,607,092**	**2,004,236**


Greenhouse Gas Emissions
25,00%
20,00%
15,00%
10,00%
5,00%
0,00%
3,35%
0,58%
4,29%
12,49%
8,87%
11,69%
3,82%
1,61%
21,94%
23,74%
0,00%
0,65%
0,00%
0,01%
0,04%
0,04%
0,75%
0,12%
0,00%
1,29%
1,09%
3,37%
0,00%
0,24%
City,Enteric Fermentation:Scope1
City, Fertilizer Management:Scope1
Ctiy, Solid waste:Scope1
City, Electricity Consumption-Build:Scope2
City, Electricity Consumption-Commercial:Scope2
City, Electricity Consumption-Eligible Consumer:Scope2
City,Electricity Consumption-Industrial:Scope2
City, Wastewater Treatment:Scope1
City, Transportation-Vehicles:Scope1
City Transportation-Air Transport:Scope3
Municipality, fuel consumption-Build:Scope1
Municipality, Transportation-City Bus:Scope1
Municipality, Transportation-Air Transport:Scope3
Municipality, Transportation-Municipality employees:Scope3
Municipality, Transportation-Vehicles:Scope1
Municipality, Electricity Consumption-Tram:Scope2
Municipality, Electricity Consumption-Street Lighting:Scope2
Municipality, Electricity Consumption-Build:Scope2
Municipality, air conditioning:Scope1
City, fuel consumption-Build:Scope1
City, fuel consumption-Commercial:Scope1
City, fuel consumption-Industrial:Scope1
City, fuel consumption-Energy Poduction Facilities:Scope1
City, fuel consumption-Transportation-Bus:Scope3

Greenhouse Gas Calculation Principles

According to Global Covenant of Mayors for Climate&Energy, the greenhouse gas calculation principles outlined below will be followed:

● The inventory shall be relevant to the local and regional (where relevant) situation: reflecting the specific activities and policy-making needs of the city; taking into account its capacity and regulatory context.

● Local governments **shall** consider all categories of emission sources and report all emissions that are significant. Exclusion of emission sources **shall** be disclosed and justified, using the notation keys4 in the reporting template.

● Local governments **shall** compile GHG inventories on a regular basis, to enable monitoring and tracking the impact of climate actions, also to ensure continuous improvement in data quality, resulting in a clearly defined inventory boundary, improved data sources and defined methodologies that **shall** be consistent through the years (e.g., clarify where there is an evolution, e.g. population growth), so that differences in the results between years reflect real differences in emissions and mitigation efforts by the local government and the city.

● Local governments **shall** ensure sufficient accuracy to give local decision makers and the public reasonable assurance of the integrity of emissions reported. Efforts **shall** be made to reduce uncertainties and make improvements over time.

● To the extent possible, all relevant activity data5, data sources, methodologies, assumptions, exclusions and deviations **shall** be documented and reported, to allow for review, replication of good practice, and tackling challenges identified (e.g., lack of access to data in country X).

TARGET SETTING

All local governments and cities are required to set and report city-wide emissions reduction targets: https://www.globalcovenantofmayors.org/wp-content/uploads/2019/07/TR-Current-CRF.pdf

Risk and Vulnerability Assessment

The assessment **shall** include the following information:

- Boundary of assessment (boundary of assessment **shall** be equal to or greater than the city boundary), including the local government(s) name(s)
- Year of approval from local government
- Data sources
- A glossary of key terms and definitions
- Leading/coordinating team in the city

Terminologies and definitions used in the reports **shall** be consistent with those used in the IPCC Fifth Assessment Report (AR5) or any update following the AR5 as well as with national frameworks/requirements.

Targets Reporting Framework

	Minimum	Ambitious	Comments
Boundary (geographic, coverage, sectors and GHGs)	Consistent with minimum requirements of GHG inventory framework		Where target boundary does not align with inventory boundary, additions and exclusions shall be specified and justified. Exclusions shall be indicated using the notation key Included Elsewhere (IE)
Target type	Any target type (base year, base year intensity, baseline scenario, fixed level)		For baseline scenario target, modeling methodology and parameters shall be transparently described
Target year	Same as NDC, or as set by regional/national Covenants	2050	If beyond 2030, shall also include interim target. If the NDC target is before 2030, cities **should** additionally set a target for 2030.
Base year (base year and intensity targets only)	Should be the same as NDC, or as set by regional/national Covenants		If different to NDC, shall be justified
Ambition	Same as NDC, or as set by regional/national Covenants	More ambitious than NDC	Refers to unconditional components of NDC
Units	% reduction from base / scenario year, and absolute emissions for target year in tCO2e		
Use of transferable emissions	Only permissible where target ambition exceeds the unconditional components of the NDC		The local government shall report the target, with and without the transferable emissions units, as well as identify the source of the transferable emissions units.
Conditionality	Permissible but conditional components shall be stated and identified	Conditional components of the target are identified and should be quantified where possible	Permissible only when LG's target ambition exceeds the unconditional components of the NDC

The local government **shall** identify the most significant climate hazards faced by the community. For each identified climate hazard, the local government **shall** report the following information:

- Current risk level (probability x consequence) of the hazard
- Description of expected future impacts
- Expected intensity, frequency, and timescale of the hazard
- All relevant sectors, assets, or services that are expected to be most impacted by the hazard in future and the magnitude of the impact for each of them

Furthermore, the local government **should** provide information on vulnerable population groups (e.g. poor, elderly, youth, people with chronic disease, unemployed, etc.) that are expected to be most affected by future hazards; this information can help the local government in having a better understanding of the vulnerability dimension of risks and in prioritizing their adaptation actions

Current and future climate risks, exposure, impacts and vulnerability

Table 1. Please identify **the most significant** climate hazards faced by your jurisdiction (m) and complete the questions to the right for each one.		
HAZARDS[21] *(grouped under headers, can report on multiple across the table)*	CURRENT hazard **RISK** level (*dropdown for each hazard selected)*	
	Probability of Hazard (m)	Consequence of hazard (m)
Extreme Precipitation		
Rain storm	○ High ○ Moderate ○ Low ○ Do not know	○ High ○ Moderate ○ Low ○ Do not know
Monsoon	[dropdown as above]	[dropdown as above]
Heavy snow	[dropdown as above]	[dropdown as above]
Fog	[dropdown as above]	[dropdown as above]
Hail	[dropdown as above]	[dropdown as above]
Storm and wind v		
Severe wind	[dropdown as above]	[dropdown as above]
Tornado	[dropdown as above]	[dropdown as above]
Cyclone (Hurricane / Typhoon)	[dropdown as above]	[dropdown as above]
Extra tropical storm	[dropdown as above]	[dropdown as above]
Tropical storm	[dropdown as above]	[dropdown as above]
Storm surge	[dropdown as above]	[dropdown as above]
Lightning / thunderstorm	[dropdown as above]	[dropdown as above]
Extreme cold temperature v		
Extreme winter conditions	[dropdown as above]	[dropdown as above]
Cold wave	[dropdown as above]	[dropdown as above]
Extreme cold days	[dropdown as above]	[dropdown as above]
Extreme hot temperature v		
Heat wave	[dropdown as above]	[dropdown as above]
Extreme hot days	[dropdown as above]	[dropdown as above]
Water Scarcity v		
Drought	[dropdown as above]	[dropdown as above]
Wild fire v		
Forest fire	[dropdown as above]	[dropdown as above]
Land fire	[dropdown as above]	[dropdown as above]
Flood and sea level rise v		
Flash / surface flood	[dropdown as above]	[dropdown as above]
River flood	[dropdown as above]	[dropdown as above]
Coastal flood	[dropdown as above]	[dropdown as above]
Groundwater flood	[dropdown as above]	[dropdown as above]
Permanent inundation	[dropdown as above]	[dropdown as above]
Chemical change v		
Salt water intrusion	[dropdown as above]	[dropdown as above]
Ocean acidification	[dropdown as above]	[dropdown as above]
Atmospheric CO2 concentrations	[dropdown as above]	[dropdown as above]
Mass movement v		
Landslide	[dropdown as above]	[dropdown as above]
Avalanche	[dropdown as above]	[dropdown as above]
Rock fall	[dropdown as above]	[dropdown as above]
Subsidence	[dropdown as above]	[dropdown as above]
Biological hazards v		
Water-borne disease	[dropdown as above]	[dropdown as above]
Vector-borne disease	[dropdown as above]	[dropdown as above]
Air-borne disease	[dropdown as above]	[dropdown as above]
Insect infestation	[dropdown as above]	[dropdown as above]

The local government **shall** identify factors that will most greatly affect its own and the city's adaptive capacity and enhance climate resilience. For each factor, the local government **shall** report the following information:

- Description of the factor as it relates to (supporting or challenging) the adaptive capacity
- Degree to which the factor challenges (as opposed to supports) the adaptive capacity and obstructs enhanced climate resilience

Besides the assessment of future hazards, the local government **shall** report the following information about major hazards that occurred in the past years:

- Scale of the hazard, including loss of human lives, economic losses (direct and indirect, if possible), environmental and other impacts
- Current risk level of the hazards (probability X consequence)
- Intensity and frequency of the hazard
- All relevant sectors, assets, or services most impacted by the hazard and the magnitude of impact for each of them
- Vulnerable population groups most affected by the hazard (if available)

CLIMATE ACTION AND ENERGY ACCESS PLAN(S)

The climate action plan requirements outlined in this section are applicable to both mitigation and adaptation plans (or integrated plans).

Local governments **shall** develop plans for both climate change mitigation and adaptation (climate resilience), which **may** be presented in separate plans or an integrated plan. All action plan(s) **shall** include the following information for both mitigation and adaptation actions:

- Description of the stakeholder engagement processes
- Mitigation target(s) and/or adaptation / climate resilience goal(s); including (if available) sectoral targets
- All actions of priority sectors (identified from GHG emissions inventories and risk/vulnerability assessments)
- Descriptions for each action
- The local government(s) which formally adopted the plan and the date of adoption

- Synergies, trade-offs, and co-benefits of mitigation and adaptation actions
- Lead author team/Action Plan responsible/coordination team in the local governments

For each action/action area/sector, the action plans **shall** provide the following information:

- Brief description of the action/action area/sector
- Assessment of energy saving, renewable energy production, and GHG emissions reduction by action, action area or sector (only applicable to mitigation actions).

Overall overview of the participatory process carried out in the adaptation planning process

Stakeholders	Drop down list: level of participation	Multiple choice: participatory technique
National government	High Medium Low None	Questionnaire/survey Online consultation In-depth interview Roundtable Focus group Workshop Citizen jury Other: indicate which one
Regional government	[drop down list as above]	[drop down list as above]
Local government	[drop down list as above]	[drop down list as above]
Academia	[drop down list as above]	[drop down list as above]
Business & private sector	[drop down list as above]	[drop down list as above]
Trade union	[drop down list as above]	[drop down list as above]
NGO and associations	[drop down list as above]	[drop down list as above]
Citizens	[drop down list as above]	[drop down list as above]
Other: indicate which one	[drop down list as above]	[drop down list as above]

Legend:
Low → Information (meaning "low" level of participation): this is produced when the public are informed through a one-way flow of information, i.e. information passes from officials to the public, with no chance to provide feedback from the public to officials. There is no room for negotiation. The most frequent tools for informing are news, media, pamphlets, posters, and responses to inquiries.
Medium → Consultation ("medium" level): the public is invited to give their opinion and provide feedback on analyses, alternatives and/or decisions; however, these opinions may have or may have not been taken into account.
High → Partnership ("high" level): there have been negotiations between planners and the public in each aspect of the planning process. They have both agreed to share planning and decision-making responsibilities through joint policy boards, planning committees or other mechanisms for resolving impasses. The public have had some genuine bargaining influence over the outcome of the plan, including the development of adaptation options and the identification of the preferred solution.

For each action/action area/sector, the action plans **should** provide the following information:

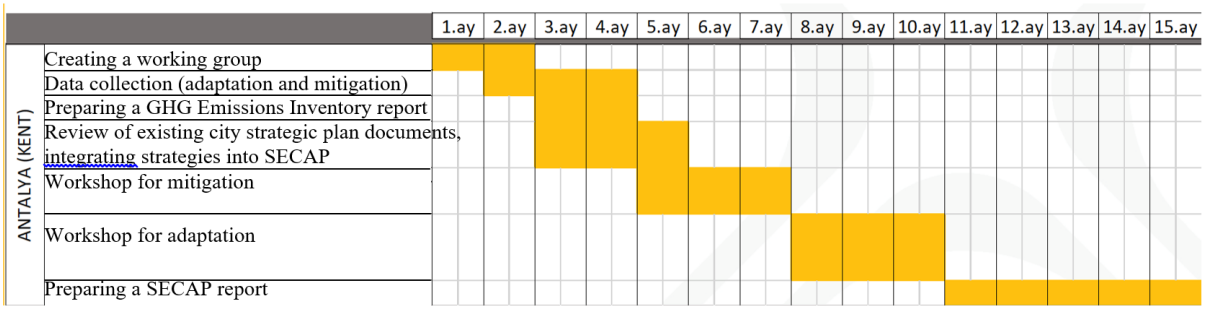
- Financial strategy for implementing the action/action area/sector
- Implementation status, cost and timeframe
- Implementing agency(ies)
- Stakeholders involved in planning and implementation

In addition, local governments **should** also provide the following information in the action plans:

- Prioritization of actions
- Policy instrument(s) to implement the actions

Local governments are encouraged to report actions in as much detail as possible.

PROCESS AND NEXT STEPS



7. CONTACT

FOR ALL YOUR QUESTIONS ABOUT THE WORKSHOP AND MATCHUP PROJECT:

E-Mail: matchupantalya@gmail.com

Web: http://matchupantalya.org

Instagram: https://www.instagram.com/matchupantalya

Facebook: https://www.facebook.com/pg/MAtchUp-Antalya-110087670702083

Twitter: https://twitter.com/matchupantalya

YouTube: https://www.youtube.com/channel/UCAVegg3YOzQLxG5GIU1A

NEWS IN THE MEDIA ABOUT THE WORKSHOP:

- https://www.antalya.bel.tr/Haberler/HaberDetay/?Id=8129&CategoryName=Genel&NewsOnPage=8&PageID=
- https://www.haberturk.com/antalya-haberleri/79644601-secap-calistayi-duzenlendi
- https://www.hurriyet.com.tr/yerel-haberler/antalya/buyuksehir-belediyesinde-secap-calistayi-41571872
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