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EU4 Energy Transition: Covenant of Mayors in Western  
Balkans and Turkey

# Guidance on Baseline Emission Inventory Preparation



21.01.2025



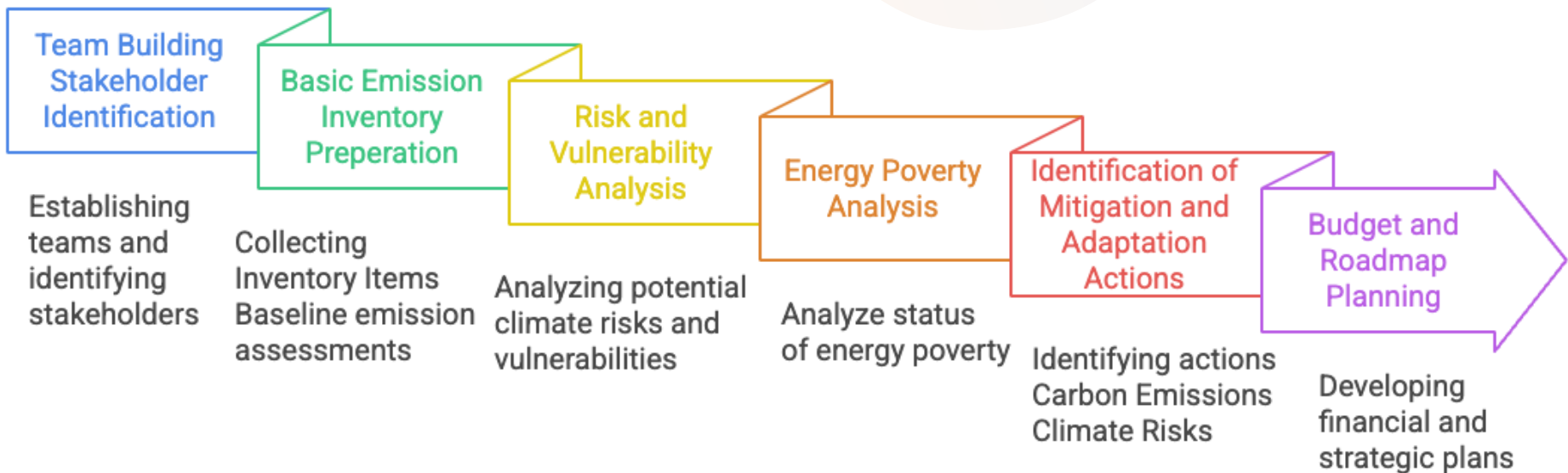
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# PILLARS OF SECAP

## SECAP Workplan Sequence





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## BASELINE EMISSION INVENTORY

- The Baseline Emission Inventory marks the **starting point** of our SECAP journey!
- The selected year will serve as a **reference point** for our 2030 targets.
- Through the Baseline Emission Inventory study, we **analyze all municipal sectors and identify key emitters**.
- The findings from the Baseline Emission Inventory study help us precisely plan targeted mitigation actions.



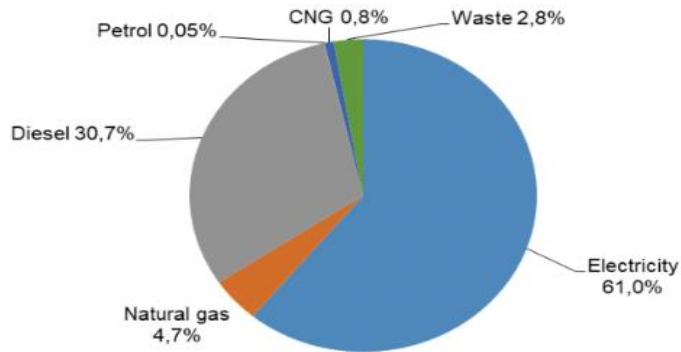


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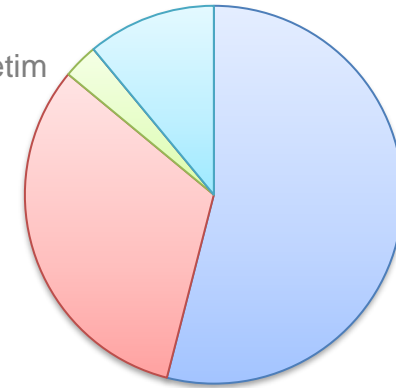


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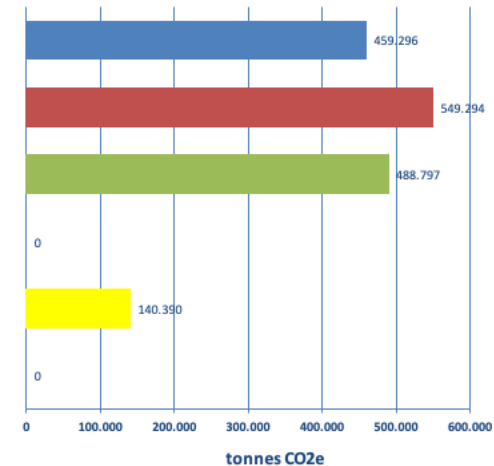
## Example of BEI Results



- Sabit Tüketim
- Ulaşım
- Atık
- Sanayi



tCO2e	BASIC+ Other Scope 3	Scope 1	Scope 2	Scope 3
	Stationary	255.125	201.496	2.674
	Transportation	547.214	2.080	
	Waste	5.206		483.591
	IPPU			
	AFOLU	140.390		
	Other Scope 3			
	<b>TOTAL</b>	<b>1.637.776</b>		





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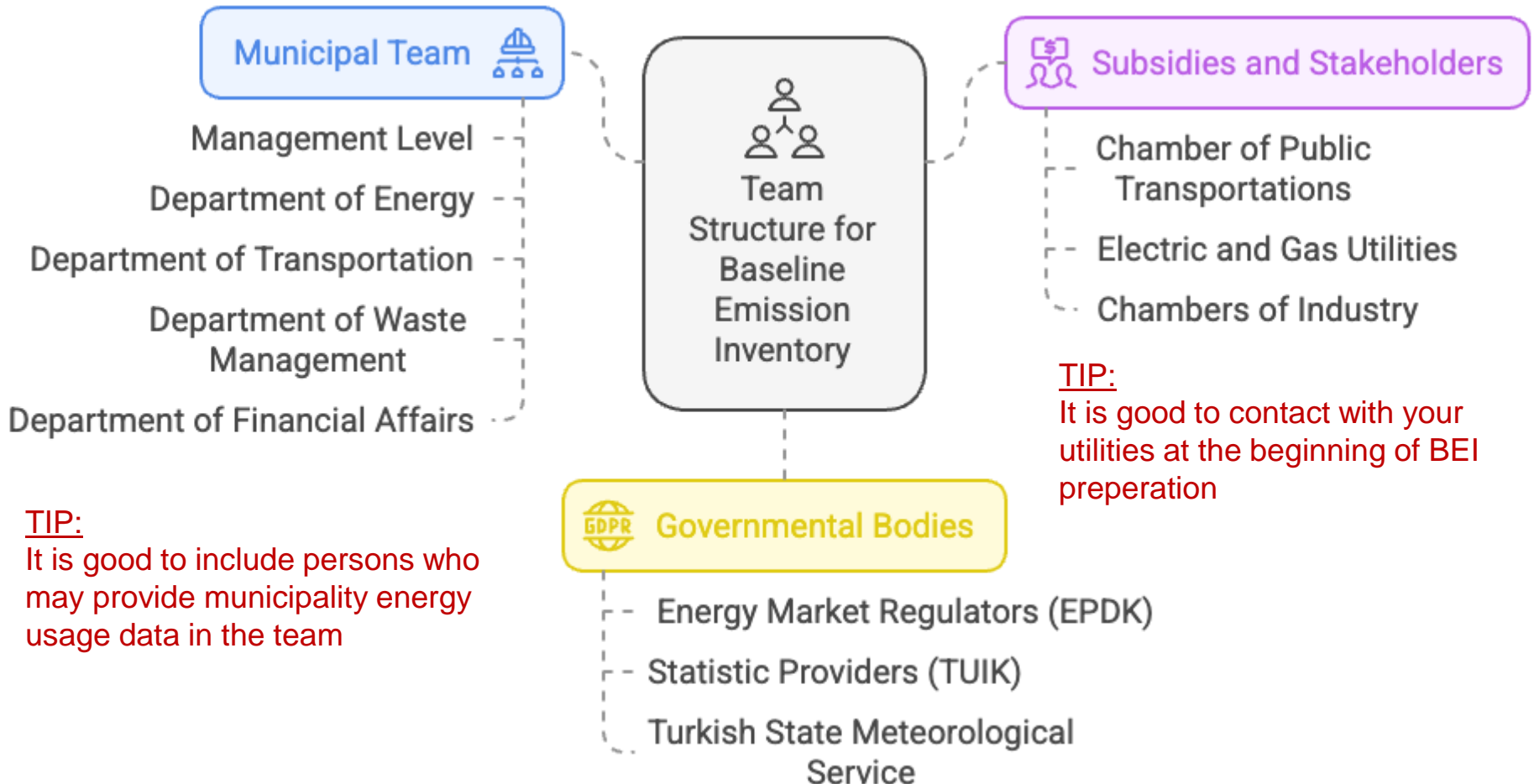
## Action Steps for Baseline Emission Preparation

- i. Building Team & Stakeholders
- ii. Decision on Baseline Year and  
Inventory Sectors
- iii. Inventory Preparation with  
Stakeholders
- iv. Data Consolidation on CIRIS Tool
- v. Double-Check





## i. Building Team & Stakeholders





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## ii. Decision on Baseline Year and Inventory Sectors

### When selecting the baseline year:

- Ensure that accessing the inventory data for the chosen year will not pose any difficulties. For example, if you select 2019, you may encounter challenges in retrieving municipal inventory data for that year.
- Be aware that the 40% reduction target will be set based on this baseline year.

### When choosing inventory items:

- Recognize that there are both mandatory and optional categories.
- Remember that requirements differ between metropolitan and district municipalities.
- Aim to create a comprehensive inventory that aligns with the city's dynamics.



### iii. Inventory Preparation with Stakeholders

1. Stationary Combustion Inventory				
1.1 Stationary Combustion Inventory of Municipal Administration		Scope	Potential Stakeholders and Data Providers	Data Sources
Fuel Consumption in Municipal Facilities	Fuel consumption (e.g., natural gas, coal, diesel) for combustion processes in facilities owned by the municipal administration. This data must be collected from all municipal facilities through invoices or inventory studies.	Mandatory	Municipal energy management unit, accounting inventory, etc.	Internal inventory
Electricity Consumption in Municipal Facilities	Electricity consumption of facilities. This data must be collected from all municipal facilities through invoices or inventory studies.	Mandatory	Municipal energy management unit, accounting inventory, etc.	Internal inventory or can be obtained from the relevant distribution company using meter ID.
Lighting System Usage and Electricity Consumption in Municipal Facilities	Inventory of lighting systems in municipal facilities. While optional, it is useful for energy audits.	Mandatory	Municipal energy management unit, accounting inventory, etc.	Internal inventory or can be obtained from the relevant distribution company using meter ID.
Generator Usage in Municipal Facilities	Fuel consumption and electricity generation data of cogeneration units and generators in municipal facilities.	Mandatory	Municipal energy management unit, accounting inventory, etc.	Internal inventory
Energy Production Plants Owned by Municipal Administration	Electricity generation data from solar plants, biogas plants, or waste-to-energy plants owned by the municipality. Plant characteristics should also be shared.	Mandatory	Municipal energy management unit, accounting inventory, etc.	Internal inventory

The most accessible way to retrieve energy data:

I. Request from Electric/Gas utilities with Meter ID's

II. Utilizing Internal Inventory from Energy or Accounting Departments





### iii. Inventory Preparation with Stakeholders

1.2 Stationary Combustion Inventory at Urban Scale		Scope	Potential Stakeholders and Data Providers	Data Sources
Fuel Consumption in Residential Housing Stock	Fuel consumption for heating (e.g., natural gas, LPG, coal) in the residential housing stock.	Mandatory	Data on external inventory can be accessed via EPDK and TÜİK sources.	<a href="#">"EPDK Natural Gas Market Report EPDK Petroleum and LPG Market Report"</a>
Electricity Consumption in Residential Housing Stock	Electricity consumption in residential/household settings.	Mandatory	Data on external inventory can be accessed via EPDK and TÜİK sources.	<a href="#">EPDK Electricity Sector Report</a>
Fuel Consumption in Commercial and Public Buildings	Fuel consumption (e.g., natural gas, coal) in commercial and public buildings.	Mandatory	Data on external inventory can be accessed via EPDK and TÜİK sources.	<a href="#">"EPDK Natural Gas Market Report EPDK Petroleum and LPG Market Report"</a>
Electricity Consumption in Commercial and Public Buildings	Electricity consumption in commercial and public buildings.	Mandatory	Data on external inventory can be accessed via EPDK and TÜİK sources.	<a href="#">EPDK Electricity Sector Report</a>
Electricity Consumption in Lighting	Electricity consumption for urban lighting.	Mandatory	Regional electricity distribution companies are responsible for streetlights and lighting infrastructure and are the data owners.	<a href="#">EPDK Electricity Sector Report</a>
Fuel Consumption in Industrial and Manufacturing Sectors	If no action will be taken for this sector within the scope of the SECAP study, it is recommended to exclude it.	Optional	Data on external inventory can be accessed via EPDK and TÜİK sources.	<a href="#">"EPDK Natural Gas Market Report EPDK Petroleum and LPG Market Report"</a>

For City-Level Usage, EPDK Sources are accessible for Natural Gas, Electricity and other fuels

For District-Level Usage, it is better to reach out Electric and Gas Utilities.



### iii. Inventory Preparation with Stakeholders

**Table 1.15: Distribution of Invoiced Consumption by Provinces and Consumer Type (MWh)**

+

Province	Consumer Type	Quantity	Share
İSTANBUL	Lighting	520.920,70	0,20%
	Public and Private Services Sector and Others	17.268.883,35	6,77%
	Household	12.887.932,67	5,05%
	Industry	11.829.296,94	4,64%
	Irrigation	8.325,99	0,00%
	<b>Province Total</b>		<b>42.515.359,65</b>
İZMİR	Lighting	232.639,71	0,09%
	Public and Private Services Sector and Others	4.289.981,19	1,68%
	Household	4.627.856,94	1,81%
	Industry	6.814.449,93	2,67%
	Irrigation	457.122,03	0,18%
	<b>Province Total</b>		<b>16.422.049,81</b>
ANKARA	Lighting	307.812,65	0,12%
	Public and Private Services Sector and Others	5.191.030,52	2,04%
	Household	4.835.479,81	1,90%
	Industry	4.320.049,67	1,69%
	Irrigation	225.562,73	0,09%
	<b>Province Total</b>		<b>14.879.935,39</b>



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### iii. Inventory Preparation with Stakeholders

Table 10.7 ANKARA

ANKARA	License Type	Conversion / Cycle Sector	Energy Sector	Transportation Sector	Industry Sector	Service Sector	Housing	Other	Total
AKPET GAZ ANONİM ŞİRKETİ	CNG License				925.600,75				925.600,75
	Wholesale License				2.823.971,36				2.823.971,36
AYGAZ DOĞAL GAZ TOPTAN SATIŞ ANONİM ŞİRKETİ	Wholesale License				1.634.532,52	362.391,88		213.317,94	2.210.242,34
BAŞKENT DOĞALGAZ DAĞITIM GAYRİMENKUL YATIRIM ORTAKLIĞI ANONİM ŞİRKETİ	Distribution License	53.845.391,49	20.547,26	59.656.375,89	126.982.352,75	812.815.684,98	1.993.477.228,83	6.505,33	3.046.804.086,55
BOTAŞ BORU HATLARI İLE PETROL TAŞIMA ANONİM ŞİRKETİ	Import License	830.228.151,01			529.164.775,36				1.359.392.926,37
ENERJİ GRUP SIVI DOĞAL GAZ LNG AKARYAKIT PETROL ÜRÜNLERİ TOPTAN SATIŞ ANONİM ŞİRKETİ	Wholesale License				1.178.153,81	351.754,35		3.381,53	1.533.289,69
GENİA TURKEY ENERJİ YATIRIMLARI ANONİM ŞİRKETİ	CNG License					50.302,03			50.302,03
HABAŞ SİNAİ VE TIBBİ GAZLAR İSTİHSAL ENDÜSTRİSİ ANONİM ŞİRKETİ	CNG License				214.363,00	39.150,00		5.572,00	259.085,00
İNÇİ ENERJİ LPG DOĞALGAZ VE AKARYAKIT SANAYİ TİCARET LİMİTED ŞİRKETİ	CNG License					179.339,34			179.339,34
İPRAGAZ ANONİM ŞİRKETİ	Wholesale License				511.798,00	201.308,00		1.353.677,00	2.066.783,00
KIZILCAHAMAM DOĞALGAZ DAĞITIM ANONİM ŞİRKETİ	Distribution License					3.604.595,18	4.826.667,96		8.431.263,13
NATURELGAZ SANAYİ VE TİCARET ANONİM ŞİRKETİ	Import License				38.232,92				38.232,92
	CNG License				3.771.023,55				3.771.023,55
OMV ENERJİ TİCARET ANONİM ŞİRKETİ	Wholesale License				1.505.784,00	183.637,00		204.148,00	1.893.569,00
OR-CAN DOĞAL GAZ TOPTAN SATIŞ DAĞITIM ANONİM ŞİRKETİ	Wholesale License				68.992,00	94.774,00		33.408,00	197.174,00
POLGAZ POLATLI DOĞAL GAZ DAĞITIM ANONİM ŞİRKETİ	Distribution License	87,21			2.475.426,69	8.207.245,40	45.961.247,64		56.644.006,94
TOTAL		884.073.629,71	20.547,26	59.656.375,89	671.295.006,71	826.090.182,16	2.044.265.144,43	1.820.009,80	4.487.220.895,96

EPDK GAS MARKET REPORT 2023



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### iii. Inventory Preparation with Stakeholders

Hesap Sınıfı	KNT-EVSEL (Sm3)	MALHİZMET1 (Sm3)	MALHİZMET2 (Sm3)	TASIMA (Sm3)	Genel Toplam (Sm3)
Ametal mineraller (cam, seramik, çimento)	-	26.518,67	-	-	26.518,67
Apartman yönetimi	74.571.411,77	22.124,13	-	-	74.593.535,90
Cami	-	491.119,02	-	-	491.119,02
Dağıtım şirketi	-	-	-	-	343.431,79
Danışmanlık	-	14.573,08	-	-	14.573,08
Demir - çelik	-	26.145,01	-	-	26.145,01
Demir dışı metal üretimi ve işleme (krom)	-	1.455,32	-	-	1.455,32
Depremzede	451.546,17	-	-	-	451.546,17
Dernek	2.587,14	711.444,88	-	-	714.032,02
Diğer	-	16.030,68	-	-	16.030,68
Eğitim	-	5.317.758,10	11.215.143,40	-	16.532.901,50
Gıda ve içecekler	-	591.742,48	-	-	591.742,48
İnşaat (inşaat ürünleri, yol yapım, vs.)	-	30.904,96	443.728,38	-	474.633,34
Kimya (petrokimya dahil)	-	5.035,34	-	-	5.035,34
Konut	136.114.973,90	16.157,85	-	-	136.131.131,70
Makine sanayi	-	339.475,35	636.232,91	-	975.708,26
OSB'ler	-	-	-	86.972.865,00	86.972.865,00
Otel	-	2.010.590,12	313.570,17	-	2.324.160,29
Resmi daire	52.378,36	7.437.491,28	12.441.579,89	-	19.931.449,53
Sağlık	-	895.137,63	4.551.102,22	-	5.446.239,85
Tekstil, deri ve giyim sanayi	-	234.623,11	-	-	234.623,11
Ticarethane	7.412,02	17.713.877,29	2.343.296,09	-	20.064.585,40
Vakıf	-	600.187,44	-	-	600.187,44
<b>Genel Toplam (Sm3)</b>	<b>211.200.309,32</b>	<b>36.845.823,52</b>	<b>31.944.653,06</b>	<b>86.972.865,00</b>	<b>366.963.650,91</b>
	Konut Tüketimleri	211.154.089,69	57,54%		
	Ticari Binalar	22.425.442,90	6,11%		
	Hizmet binası	42.401.709,90	11,55%		
	Sanayi	89.308.726,52	24,34%		
	Enerji	343.431,79	0,09%		
	Ticari Olmayan	1.330.250,14	0,36%		
	Toplam	366.963.650,93	100,00%	Kapsam dışı	



### iii. Inventory Preparation with Stakeholders

2. Mobile Combustion Inventory				
2.1. Mobile Combustion Inventory for Municipal Administration		Scope	Potential Stakeholders and Data Providers	Data Sources
Fuel Consumption of Municipal Vehicle Fleet	Inventory of all vehicles owned or leased by the municipality, including those allocated to employees or used for operational services (e.g., garbage collection). The fleet should be categorized by vehicle type (passenger, heavy-duty, etc.) and fuel type (gasoline, diesel, electric, etc.).	Mandatory	All municipal affiliates	Internal inventory
Fuel Consumption of Municipal Public Transportation Vehicles	Fuel types and quantities for buses and minibuses operated by the municipality.	Mandatory	Public transportation department	Internal inventory
Fuel Consumption of Municipal Rail Systems	Electricity and other fuel consumption of tram, metro, and similar rail systems operated by the municipality.	Mandatory	Rail Systems Directorate, Public Transportation Department	Internal inventory
Fuel Consumption of Municipal Maritime Transportation	Fuel consumption of ferries, boats, or other maritime vehicles used for public transportation or marine cleaning operated by the municipality.	Mandatory	Maritime Lines Directorate, Public Transportation Department	Internal inventory
Off-road Vehicle Fuel Consumption	If no action will be taken for this sector within the scope of the SECAP study, it is recommended to exclude it.	Optional		Internal inventory

Generally, District Municipalities are not responsible for public transportation

The most accessible way to retrieve municipal transportation data:

- I. Utilizing Internal Inventory from Accounting Departments
- II. Sometimes the departments has their own inventory of their fleet and fuel usage
- III. Another method is tracking vehicle with tachometer



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### iii. Inventory Preparation with Stakeholders

1.2. Mobile Combustion Inventory at Urban Scale		Scope	Potential Stakeholders and Data Providers	Data Sources
Fuel Consumption of Private and Commercial Vehicles in the City	Total fuel consumption of vehicles used by residents for personal or commercial purposes.	Mandatory	Data on external inventory can be accessed via EPDK and TÜİK sources, using the total vehicle stock and fuel sales data in the city.	<a href="#">"EPDK Natural Gas Market Report EPDK Petroleum and LPG Market Report"</a>
Fuel Consumption in Public Transportation Vehicles Operated by Private Entities	Total fuel consumption of buses, minibuses, and taxis operated by private companies for public transport services.	Mandatory	Private transportation operators, transportation cooperatives.	Data on external inventory can be accessed via EPDK and TÜİK sources, including operator reports.
Fuel Consumption in Urban Rail Systems Operated by Private Entities	Electricity and/or fuel consumption of metro, tram, or light rail systems operated by private companies.	Mandatory	Private operators (if applicable)	Internal operator records or through municipal reporting systems.
Fuel Consumption in Maritime Transportation Operated by Private Entities	Total fuel consumption of ferries, boats, or other water-based transportation systems operated by private companies.	Optional	Private operators (if applicable)	<a href="#">Internal operator records or EPDK petroleum market reports.</a>
Off-road Vehicle Fuel Consumption for Urban Activities	Total fuel consumption of construction vehicles, machinery, and other off-road vehicles used in urban activities.	Optional	Construction firms, industrial zones, or rental companies	TÜİK industrial reports or data collection from relevant private firms.

#### Our findings:

The only source for private & commercial transportation is EPDK Sources

For Public Transportation provided private entities, you should contact with them:

Chamber of Taxi Service, Marinetime Service etc.



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### iii. Inventory Preparation with Stakeholders

Table 8.49. Kırklareli

Licence Holder	Gasoline Types		Diesel Types			Fuel Oil Types			Aviation Fuels		Marine Fuels		Kerosene		Other Products	Total (tons)	
	Delivery to Dealer	Other Delivery	Delivery to Dealer	Delivery to Eligible Consumer	Other Delivery	Delivery to Dealer	Delivery to Eligible Consumer	Other Delivery	Delivery to Dealer	Other Delivery	Delivery to Dealer	Other Delivery	Delivery to Dealer	Other Delivery	Other Delivery		
PETROL OFİSİ A.Ş.	4.074,02	0,00	31.828,07	15.636,79	886,73	333,40	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	52.814,00
OPET PETROLÇÜLÜK A.Ş.	7.354,25	0,00	31.182,87	0,00	12,52	369,32	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	38.918,95
BP PETROLLERİ A.Ş.	4.002,89	0,00	18.791,43	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	22.794,32
SHELL & TURCAS PETROL A.Ş.	4.119,41	0,00	14.405,59	330,43	24,87	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	18.880,30
TP PETROL DAĞITIM A.Ş.	1.446,91	0,00	11.797,53	224,13	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	13.468,57
TERMOPET AKARYAKIT A.Ş.	366,00	0,00	4.295,93	0,00	28,00	3.132,83	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	7.822,76
ENERJİ PETROL ÜRÜNLERİ PAZARLAMA A.Ş.	1.105,87	0,00	6.069,61	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	7.175,48
GÜZEL ENERJİ AKARYAKIT A.Ş.	2.131,39	0,00	4.242,96	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	6.374,35
HYPCO PETROLÇÜLÜK A.Ş.	310,90	0,00	4.355,43	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4.666,33
KADOOĞLU PETROLÇÜLÜK TAŞIMACILIK TİCARET SANAYİ İTHALAT VE İHRACAT A.Ş.	115,72	0,00	3.472,86	0,00	0,00	20,08	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3.608,66
AYTEMİZ AKARYAKIT DAĞITIM A.Ş.	475,16	0,00	2.532,47	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3.007,64
ALTINBAŞ PETROL VE TİCARET A.Ş.	224,71	0,00	1.702,63	0,00	0,00	334,44	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2.261,78
İPRA ENERJİ A.Ş.	118,11	0,00	1.611,44	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1.729,59
ES ES AKARYAKIT DAĞITIM A.Ş.	0,00	0,00	431,69	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	431,69
TECO PETROLÇÜLÜK SANAYİ VE TİCARET A.Ş.	42,71	0,00	368,13	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	410,84
PETLİNE PETROL ÜRÜNLERİ TİCARET A.Ş.	52,41	0,00	236,86	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	289,27
NORM GAZ PETROL ÜRÜNLERİ SANAYİ TİCARET A.Ş.	9,52	0,00	113,18	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	122,71
SOCAR TURKEY PETROL TİCARET A.Ş.	0,00	0,00	0,00	0,00	25,78	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	25,78
<b>Total</b>	<b>25.950,00</b>	<b>0,00</b>	<b>137.438,68</b>	<b>16.191,34</b>	<b>977,91</b>	<b>4.190,07</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>0,00</b>	<b>54,98</b>	<b>0,00</b>	<b>0,00</b>	<b>184.802,98</b>

[EPDK OIL MARKET REPORT 2023](#)  
[EPDK LPG MARKET REPORT 2023](#)

Tips:

In LPG Market Report you may find both:

- CNG Usage in vehicles
- Bottled gas usage from households and commercial facilities



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### iii. Inventory Preparation with Stakeholders

Table14. Characteristics of public transportation for the baseline year

Types of cars and vehicles Otomobil ve araç türleri	Quantity Miktar	Average annual mileage yıllık ortalama kilometre	Fuel consumption per vehicle Araç başına yakıt tüketimi		Type of fuel Yakıt türü
	<i>pcs.</i>	<i>km/vehicle</i>	<i>liter or m3 per 100 km</i>	<i>1000 l or 1000 m3 per year</i>	
Microbuses Mikrobüsler					
Medium capacity buses Orta kapasiteli otobüsler					
High capacity buses Yüksek kapasiteli otobüsler (dizel araçlar)					
High capacity buses Yüksek kapasiteli otobüsler (doğalgazlı)					
High capacity intercity buses* Yüksek kapasiteli şehirlerarası otobüsler*					
Taxi					
Subway Metro					
Trolleybuses Trolleybüsler					
Tramways Tramvaylar					
Regional trains Bölgesel trenler					
<b>Total</b>					





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## iii. Inventory Preparation with Stakeholders

### Other Sources:

#### 1. Waste Management (Solid Waste Disposal & Waste Water Treatment)

- Waste Management Emissions are one of the main sector of BEI
- However, many district municipalities are not responsible party for waste management
- Waste Management Inventory should be prepared by Department of Environment and Water Distribution Subsidy Members
- There is a simplified calculation tool in CIRIS

#### 2. Emissions from Agricultural, Forestry, Fishery, and Livestock Activities

- Many municipalities prefer exclude this scope since generally they have limited activity
- Electricity usage of agricultural irrigation can be obtained from EPDK or Utility partner
- For livestock statistics Tarım ve Hayvancılık Genel Müdürlüğü or TUIK



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### iii. Emission Factors

[TUIK - Türk GHG Envanteri Raporu 1990-2021  
IPCC Publications](#)

Contact us for emission factors

Yakıt Türü veya Faaliyet	CO <sub>2</sub> (kg)	CH <sub>4</sub> (kg)	N <sub>2</sub> O (kg)	CO <sub>2</sub> e (kg)	Kaynak
Doğal Gaz	55.400	0.100	0.265	555.665	TUIK - Türk GHG Envanteri Raporu 1990-2021
Kömür (Bitümlü veya Siyah Kömür)	93.640	0.150	0.398	943.175	TUIK - Türk GHG Envanteri Raporu 1990-2021
Elektrik	0.475	0.000	0.000	0.479	Türkiye Elektrik Üretimi ve Elektrik Tüketim Noktası Emisyon Faktörleri Bilgi Formu
Rezidüel Fuel Yağı	77.000	0.600	1.590	77.439	TUIK - Türk GHG Envanteri Raporu 1990-2021
Dizel Yağı	72.300	0.600	1.590	72.739	IPCC - Bölüm 3 - Mobil Yanma
Motor Benzini (Benzin)	69.300	0.600	1.590	69.739	IPCC - Bölüm 3 - Mobil Yanma
Sıvılaştırılmış Petrol Gazı (LPG)	63.100	0.100	0.265	632.665	TUIK - Türk GHG Envanteri Raporu 1990-2021
Kerosen (Parafin)	71.900	0.600	1.590	72.339	TUIK - Türk GHG Envanteri Raporu 1990-2021
Diğer Sıvı Biyoyakıtlar	70.800	0.600	1.590	71.239	IPCC - Bölüm 3 - Mobil Yanma

Greenhouse gas		IPCC Assessment Report			
Formula	Name	5AR	4AR	3AR	2AR
CO <sub>2</sub>	Carbon Dioxide	1	1	1	1
CH <sub>4</sub>	Methane	28	25	23	21
N <sub>2</sub> O	Nitrous Oxide	265	298	296	310

Yakıt Türü	Yoğunluk	Isıl Güç	Kaynak
<b>Benzin</b>	0,7475 kg/L	44,3 TJ/Gg	IPCC 2006 Global
<b>Dizel (Motorin)</b>	0,83 kg/L	43 TJ/Gg	IPCC 2006 Global
<b>Doğal Gaz</b>	0,67 kg/m <sup>3</sup>	48 TJ/Gg	EPDK, IPCC 2006 Global
<b>Linyit</b>	-	11,9 TJ/Gg	IPCC 2006 Global



## iv. Data Consolidation on CIRIS Tool

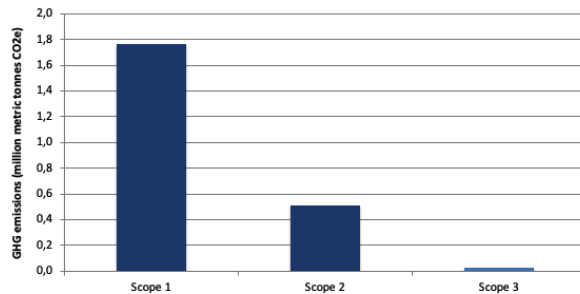
CIRIS (City Inventory Reporting and Information System) has been designed to support cities in reporting city-wide GHG emissions according to the requirements of the Global Protocol for Community-scale Greenhouse Gas Emission Inventories (GPC).

CIRIS also aligns with the Common Reporting Framework (CRF) of the Global Covenant of Mayors for Climate and Energy (GCoM).

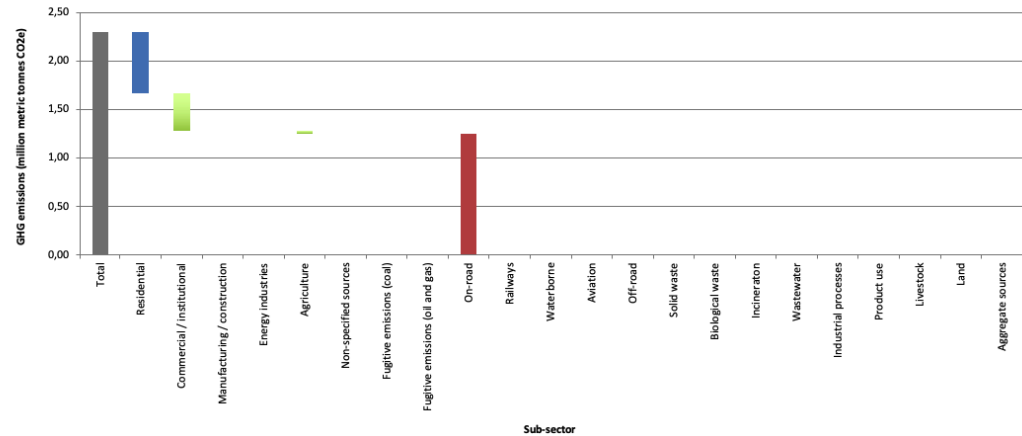
CIRIS is a perfect tool for

- Consolidating your Emission Inventory
- Calculate corresponding carbon emissions
- Present Insights on Actual Emitters

By scope



BASIC/BASIC+ by subsector - waterfall chart












## iv. Data Consolidation on CIRIS Tool

Here are some tips using CIRIS:

1. You may use conversion factors of CIRIS easily. Conversion factors are embedded in the activity data multiplier function
2. You may enter your emission factors in detail. We also provide commonly used emission factors.
3. Even if you do not find the conversation unit, you may use activity data converter coloumbs. This is useful when you have emission factor with tCO<sub>2</sub>e/TJ but you have energy usage in tonne or m<sup>3</sup>
4. In case you have already calculate corresponding emissions, it is good to put it in CIRIS for consolidation.
5. Be Carefull when selecting the right category for your emission activity
6. Solid Waste Disposal Calculation Section provides quite useful templates for calculating corresponding waste emissions
7. You may use all graphs from result section into your SECAP Report

Fuel volume to energy conversion factors

Fuel	From	To	Factor
Aviation gasoline	m <sup>3</sup>	kWh	9290,544485
Aviation gasoline	m <sup>3</sup>	MWh	9,290512785
Aviation gasoline	m <sup>3</sup>	GWh	0,009290513
Aviation gasoline	m <sup>3</sup>	TWh	9,29051E-06
Aviation gasoline	m <sup>3</sup>	MJ	33446,09963
Aviation gasoline	m <sup>3</sup>	GJ	33,44609963
Aviation gasoline	m <sup>3</sup>	TJ	0,0334461

tCO <sub>2</sub> e	BASIC	Scope 1	Scope 2
	Stationary	516.711	510.723
	Transportation	1.245.235	
	Waste		
	IPPU		
	AFOLU		
	Other Scope 3		
	TOTAL		2.272.669



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Thank You!

Questions?



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