



This project is co-financed by the European Union  
and the Republic of Turkey

# Setting up a new F-gas legislation in Turkey

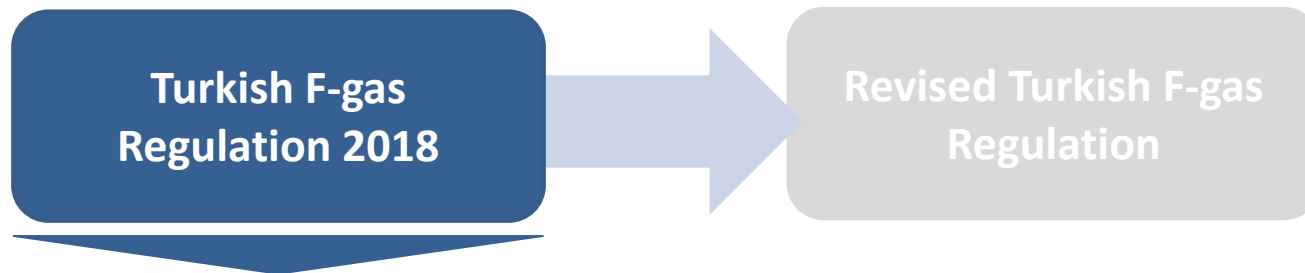
Julia Kleinschmidt  
Öko-Recherche

31<sup>st</sup> Meeting of the Parties to the Montreal Protocol  
6 November 2019  
Rome, Italy





## Current Turkish F-gas Regulation

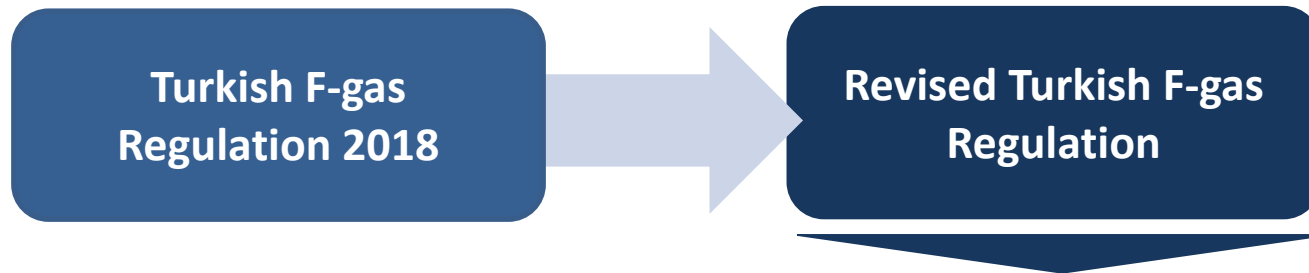


- Based on findings of the **earlier project** “Technical Assistance for the Usage of F-Gases in Turkey and Harmonisation of Related Legislation” (2014-2016)
- Based on the “**old**” **F-gas Regulation (EC) No 842/2006** that implemented a number of measures (e.g. containment, competence of personnel handling F-gases, bans of F-gases in specific applications, ban on non-refillable containers)
- Published in the Official Gazette on **4 January 2018**, numbered 30291





## Revising the Turkish F-gas Regulation



► **Development of a complete new draft F-gas legislation for Turkey**

- Based on the “**new**” **F-gas Regulation (EU) No 517/2014**
- Based on the results of the **legislative gap analysis**
- Taking into account Turkey’s obligations as **A5 country** under the Kigali Amendment
- Including **findings** and **recommendations** from discussions and consultations with the MoEU and **national stakeholders** from politics, industry and civil society







## General comparison

Measure	Kigali Amendment (Article 5 countries)	Regulation (EU) No 517/2014	Regulation (EC) No 842/2006	2018 Turkish F-gas Regulation
Production controls	V	V	-	-
Import/export controls	V	V	-	-
Placing on the market/use controls	-	V	V	V
Labelling	-	V	V	V
Emission controls	(V)	V	V	V
Registration and records keeping	-	V	V	V
Reporting	V	V	V	V
Training and certification	-	V	V	V



## F-gas Regulation (EU) No 517/2014

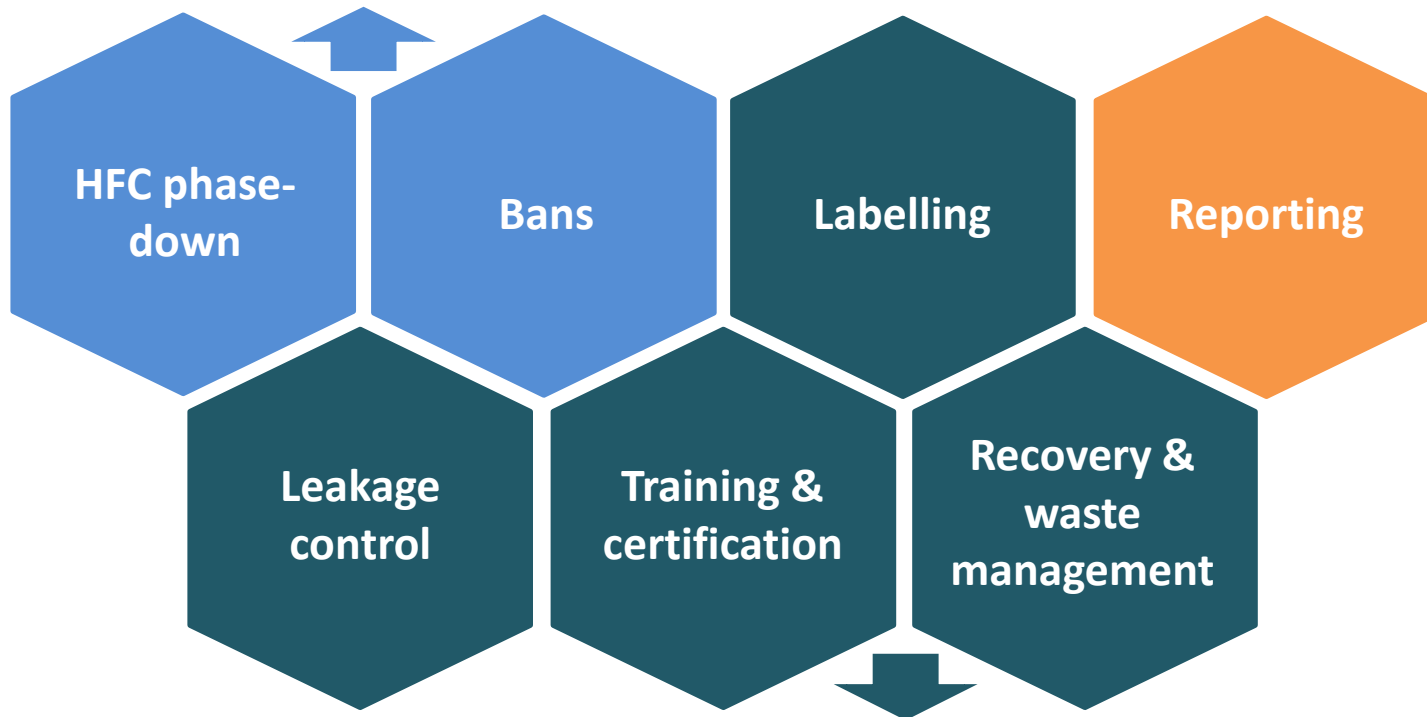


- Entered into force in **January 2015**
- Replaced Regulation (EC) No 842/2006
- Introduced additional and **far-reaching requirements**
- Supplemented by twelve Commission implementing regulations (some new or revised)
- EU Member States are allowed to **maintain or introduce more stringent measures**
- Includes
  - Several new or revised definitions
  - „Other“ F-gases (e.g. unsaturated HFCs)
  - „Tonnes of CO<sub>2</sub>e“ as key indicator



## F-gas Regulation (EU) No 517/2014

### Measures to avoid the use of F-gases



### Measures to prevent leakage of F-gases



## Example: leakage control



### 2018 Turkish F-gas Regulation

Charge size	Frequency of leakage checks	
	No LDS installed	LDS installed
<b>3 kg and more</b>	12 months	/
<b>30 kg and more</b>	6 months	/
<b>300 kg and more</b>	3 months	6 months



### F-gas Regulation (EU) No 517/2014

Charge size	Frequency of leakage checks	
	No LDS installed	LDS installed
<b>5 t CO<sub>2</sub>e and more</b>	12 months	24 months
<b>50 t CO<sub>2</sub>e and more</b>	6 months	12 months
<b>500 t CO<sub>2</sub>e and more</b>	3 months	6 months

- ▶ Charge size of 5 t CO<sub>2</sub>e is equivalent to e.g. 1.3 kg R404A (GWP 3922) or 3.5 kg R134a (GWP 1430)
- ▶ Leakage Detection Systems (LDS) obligatory for equipment types containing ≥ 500 t CO<sub>2</sub>e

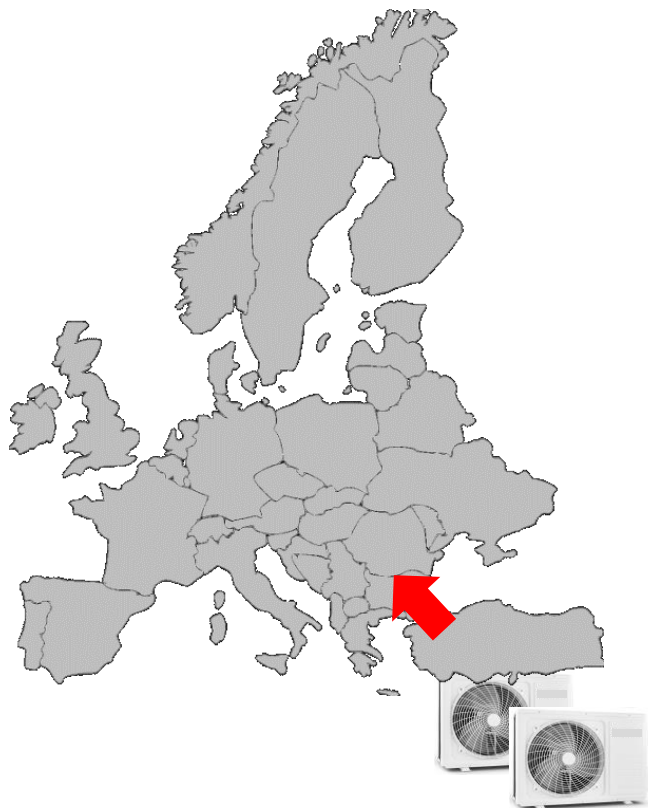
- The thresholds for leak check intervals are defined in t CO<sub>2</sub>e, rather than in kg refrigerant.
- The obligation for leakage checks immediately after putting new equipment into service not contained in the Turkish F-gas Regulation.



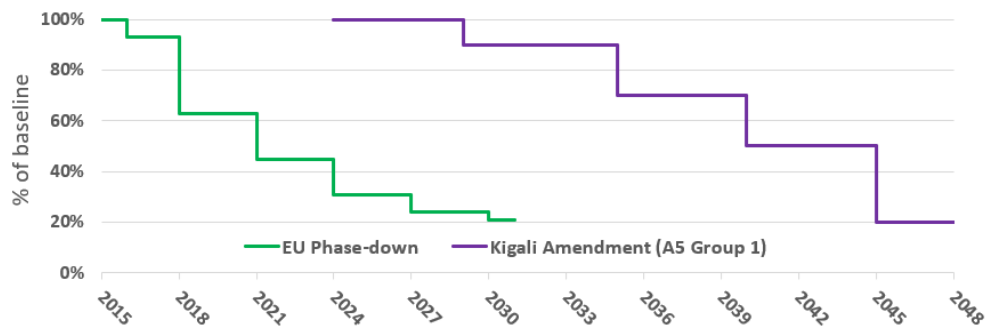




## “Between two worlds”



- **Geographical proximity** to the EU → Turkey as major producer of RAC equipment and **exporter to the EU**
- Turkish manufacturers affected by the **impacts of the EU HFC phase-down** and have already adopted alternative technologies
- Under the Kigali Amendment, Turkey will be obliged to follow the **HFC phase-down schedule obligatory for developing countries (A5, group 1)**





## Example: placing on the market bans



Placing on the market bans on RAC equipment according to the Regulation (EU) No 517/2014

Examples	GWP	Date of prohibition
Domestic refrigeration	≥ 150	1 January 2015
Commercial refrigeration (hermetically sealed)	≥ 2500 ≥ 150	1 January 2020 1 January 2022
Stationary refrigeration (except applications below – 50 °C)	≥ 2500	1 January 2020
Multipack centralised commercial refrigeration (≥ 40 kW)	≥ 150 ≥ 1500 in primary refrigerant circuit	1 January 2022
Movable room AC (hermetically sealed)	≥ 150	1 January 2020
Single split AC (< 3 kg of F-gases)	≥ 750	1 January 2025

- 2018 Turkish F-gas Regulation already introduced placing on the market ban for **domestic refrigerators and freezers that contain HFCs with GWP ≥ 150** (as of 1 January 2019)  
→ similar to the Regulation (EU) No 517/2014
- **New bans** e.g. in the RAC sector might follow the bans set out in Regulation (EU) No 517/2014  
→ to ensure competitiveness of the Turkish industry





## Stakeholder involvement



- **Variety** of stakeholders
  - Ministries, competent authorities
  - Environmental inspectors
  - Importers, exporters
  - Equipment manufacturers
  - Business associations
  - Service companies
  - Operators
- To provide their (sector-specific) **views on the scope** of the envisaged revision of the Turkish F-gas Regulation
- To develop **recommendations**



## Stakeholder input



Asking for **input on relevant aspects** such as

- Design of a HFC phase-down (according the KA/F-gas Regulation)
- Design of a quota allocation system
- Introduction of a HFC import/export licensing system
- Introduction of additional placing on the market bans
- Certification/evaluation/training body (or bodies)
- (Minimum) requirements for training/examination programme
- Certification system covering F-gases (and ODS)
- Introduction of a central equipment database
- Submission of annual reports to DBR database
- Organisation and infrastructure for recycling/reclamation/collection/destruction of F-gases
- ...



## Final process

New draft for a  
revised F-gas  
legislation



Revised Turkish F-gas  
legislation

- Prepared within the project (Activity 9)
- MoEU to review the draft for a revised Turkish F-gas Regulation and decide about final version
- MoEU to start the process of approval and legislative process within the Turkish government
- Publication in the Official Gazette





## TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPPOSITION AND CAPACITY BUILDING ON F-GASES

**Thank you very much for your attention!**

**Julia Kleinschmidt  
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**[www.F-GasesTurkey.com](http://www.F-GasesTurkey.com)**





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# Establishing electronic tools for F-gas data collection, monitoring and reporting in Turkey

**Felix Heydel**

TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR  
TRANSPOSITION AND CAPACITY BUILDING ON F-GASES

**Side event during the 31<sup>st</sup> MOP to the Montreal Protocol  
06 November 2019, Rome**



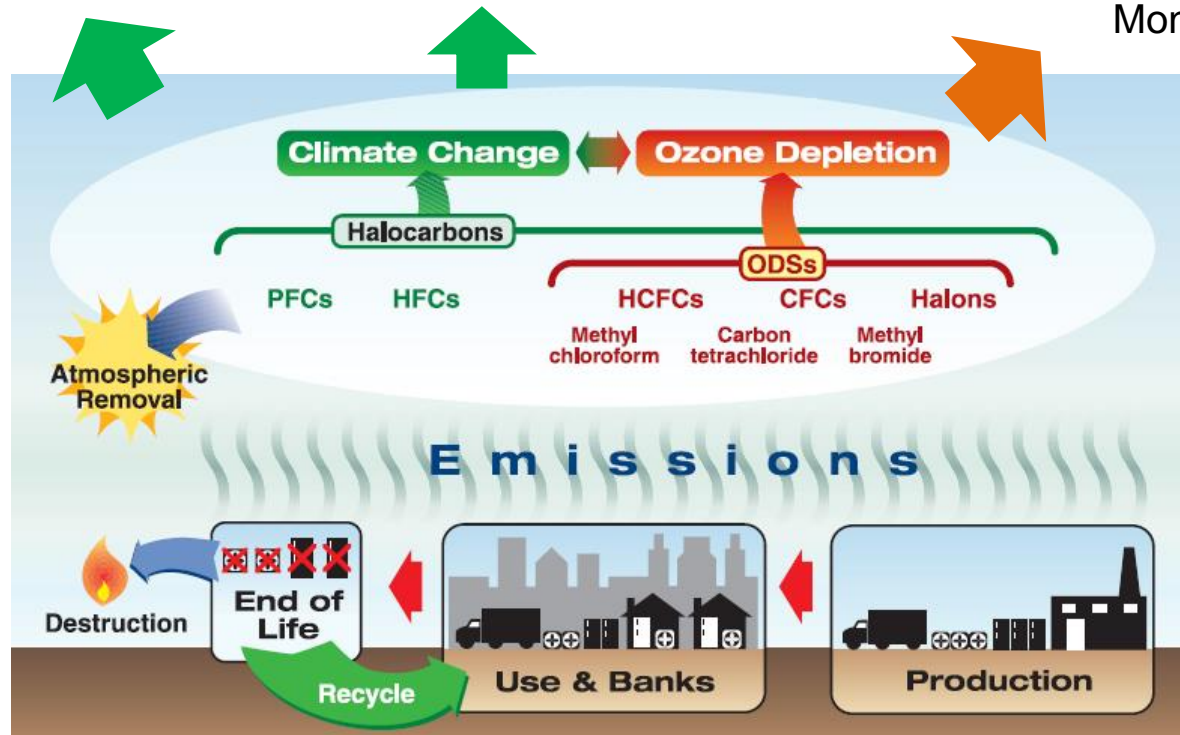


# International reporting obligations concerning F-gases

Reporting of  
**F-gas emissions** under  
UNFCCC

(New) reporting obligation of  
**HFC production and consumption** under  
Montreal Protocol (Kigali Amendment)

Reporting of  
**ODS production and  
consumption** under  
Montreal Protocol



Source: UNEP TEAP/IPCC SROC Report 2005.

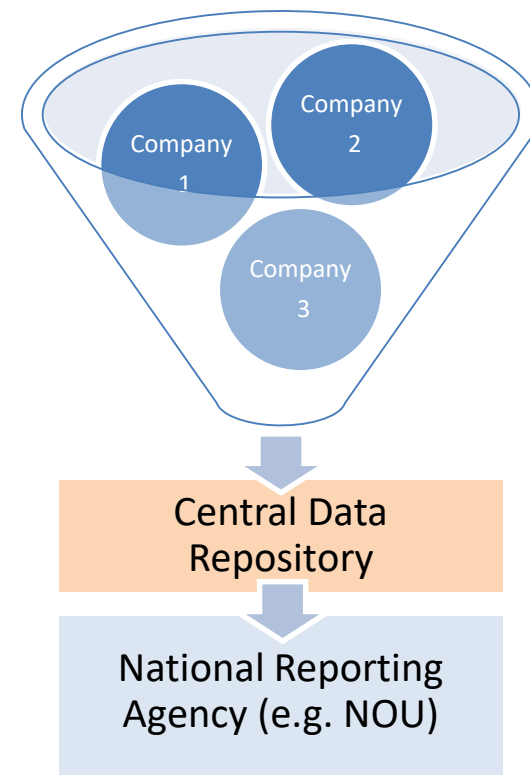






## Objective of the project activity

- **Development of two harmonised electronic databases**
  - Database of Business Reports (DBR) for the submission of the Ozone report to UNEP's Ozone Secretariat
  - Central Register of Equipment Operators (CREO) for compilation of F-gas emissions inventory (UNFCCC)
- **Experience from Poland considered**
  - **General advantages of electronic databases**
    - Ensure high quality of data
    - Keep track with high number of reporters
    - Enables automated checks with e.g. with import/export license data
    - Facilitates monitoring, aggregating and data analyses





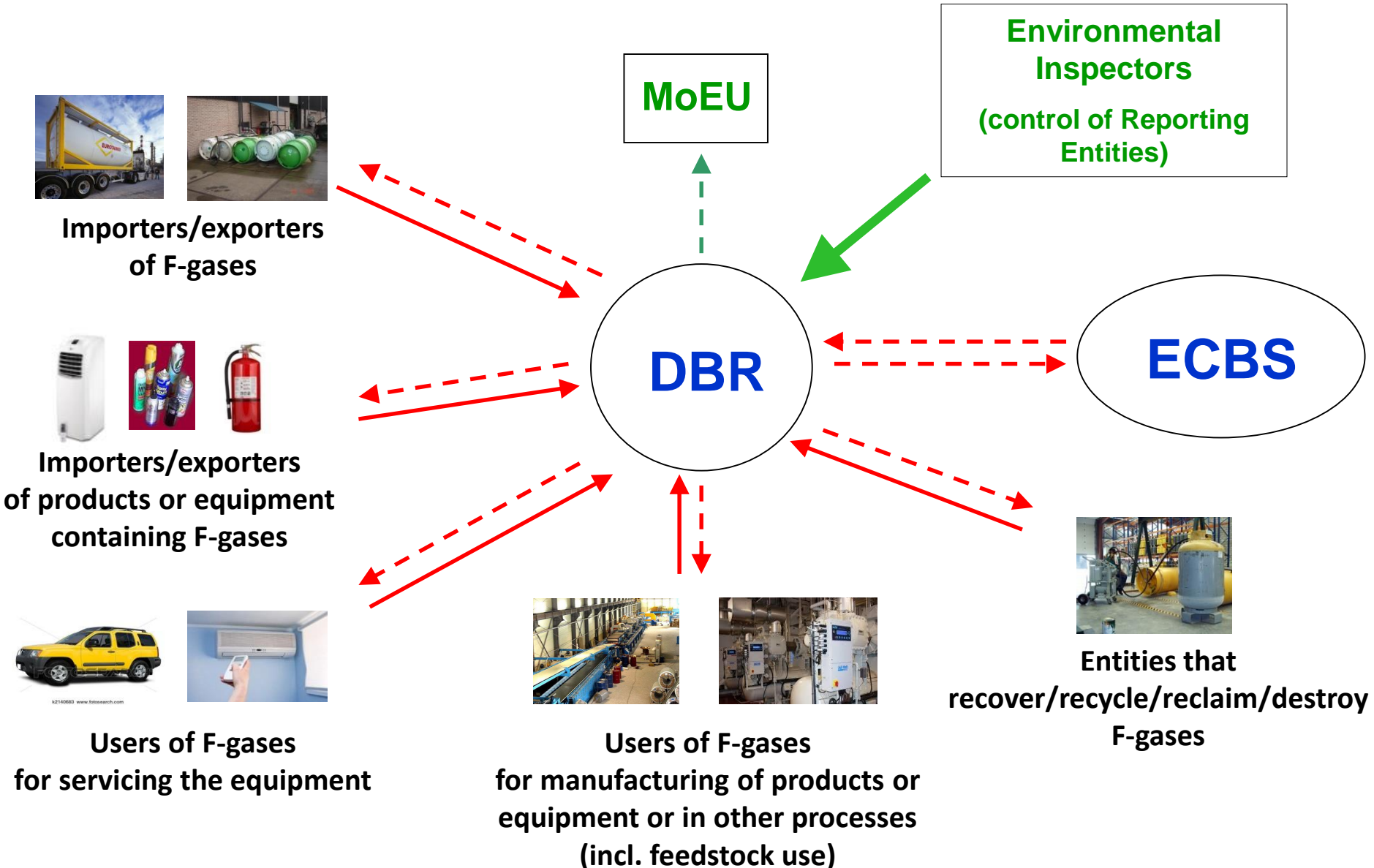
## Database of Business Reports

- **Collection of annual reports on F-gases, data will include:**
  - Quantity of F-gases (imported, exported, used, sold, purchased, recovered, recycled, reclaimed, destroyed, or stored)
  - Equipment (types) imported, exported, manufactured
- **Expected amount of reports submitted annually ca. 20 000**
- **“One time data submission database” where the reports on F-gases will be submitted once a year by certain deadline**
- **Enables to calculate the HFC consumption under Article 7 of the Montreal Protocol**

DBR



# Database of Business Reports (DBR)





# Central Register of Equipment Operators

- **Collection of logbooks for equipment containing 5 tons of CO<sub>2</sub> eq of F-gases or more**
- **Electronic F-gas logbooks will include data on:**
  - Operator, equipment type, F-gas contained
  - Conducted activities: installation, maintenance/servicing/repair, decommissioning, leakage checking, leakage repair, leakage detection system installation, leakage detection system checking, recovery
- **Expected amount of RAC units (=1 logbook each) in the country ca. 800 000**
- **“Live” database where new data entry can be introduced at anytime**
- **Enables to compile a national inventory on emissions of fluorinated GHGs under Article 4 of UNFCCC**

CREO



# Central Register of Equipment Operators (CREO)

Stationary  
RAC&HP  
equipment



Stationary  
fire  
protection  
equipment



Electrical  
switchgear  
equipment

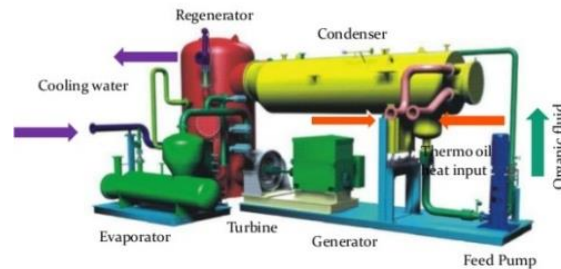


MoEU

Environmental  
Inspectors  
(control of equipment  
operators)

CREO

ECBS



Organic Rankine Cycles



Refrigeration units on  
refrigerated trucks  
(mass >3.5t) and trailers



# Additional benefit: link between reporting data flows

Top-down: HFC Consumption: Mass balance approach

Imports

Exports

Destruction

## DBR



Assess completeness checks of data collected using different approaches

Bottom-up: HFC Equipment Registry: Emission factor

Electronic logbook for each equipment unit

Leakage rates during operation  
(operation emissions)

Disposal and recovery emissions  
(disposal emissions)

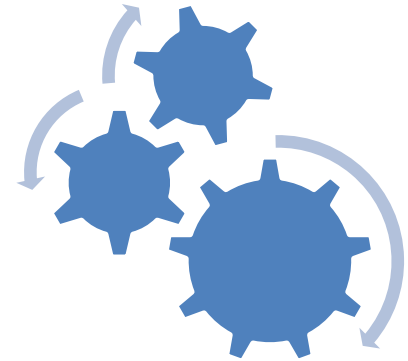
## CREO





## Process

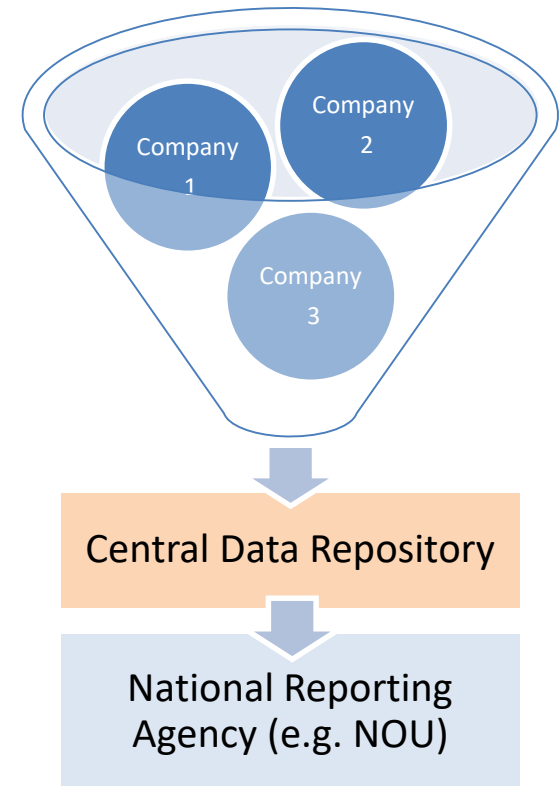
- **An IT company with experience in this field was contracted for the development**
  - From database concept to implementation about 1 year
- **Close communication with MoEU on technical details concerning the implementation**
- **IT expert supports the MoEU during implementation phase**
- **Systems includes a helpdesk function to communicate with companies and operators**
  - Allows for automated alerting of reporters or operators on deadlines e.g. for approaching leak check of operators





## Benefits of the developed databases for the MoEU

- **The databases will allow the MoEU to effectively monitor compliance with obligations of the revised Turkish F-gas Regulation, e.g.**
  - Compliance with HFC reduction targets (also on company level)
  - Record keeping of equipment
    - Emission prevention
    - Leakage checking & installation of detection systems
    - Recovery of F-gases from equipment
  - Report breaches of F-gas legislation to national inspectorates



**Idea of establishing DBR and CREO received full support from Turkish industry!**







# Thank you for your attention !

**Felix Heydel**

**GFA Consortium**  
**fh@oekorecherche.de**





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# F-gas alternatives in Turkey

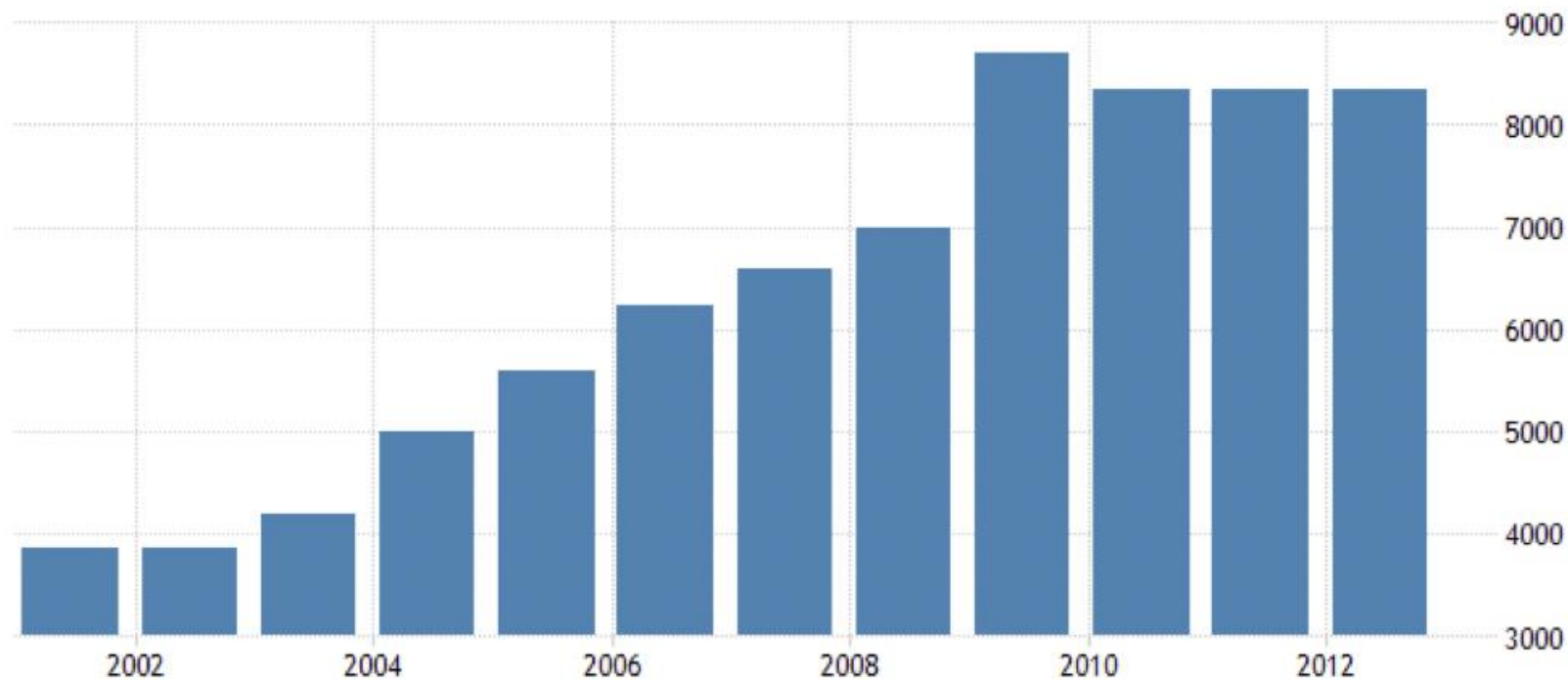
Dietram Oppelt  
Project Expert, HEAT International

31<sup>st</sup> Meeting of the Parties to the Montreal Protocol  
6 November 2019  
Rome, Italy





# BAU – Historically growing F-Gas emissions



WORLD BANK | TRADINGECONOMICS.COM





# Assessment of F-gas alternatives

## Focus subsectors

- Refrigeration, air conditioning and heat pumps (RAC&HP),
- Fire protection (FP),
- Switchgear,
- Foam and Solvent sectors





## Sector analysis

### Focus subsectors

- Refrigeration, air conditioning and heat pumps (RAC&HP),
- Fire protection (FP),
- Switchgear,
- Foam and Solvent sectors



- Questionnaires
- Interviews
- Workshops



## Key findings I

- RAC&HP, foam and fire protection sector ready for a fast take up of low GWP alternatives
- Low GWP alternatives are commercially available
- Ammonia available for chiller and industrial processing
- Medium and low GWP available for residential and commercial refrigeration and AC





## Key findings II

- Market penetration of low GWP alternatives low
- Potential to improve legislative measures
- Need for additional awareness raising activities





# TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPOSITION AND CAPACITY BUILDING ON F-GASES

## Key findings II

		Fully Deployable	Tested, Full Market Penetration Pending	R&D, Piloting	Low GWP penetration level in Turkey
Sub-sector	System				
Air conditioning	Self-contained				Very low (with R32 in split residential)
	Split residential				
	Split commercial				
	Duct split residential				
	Commercial ducted split				
	Rooftop ducted				
Multi-splits					
Chillers	Air conditioning chillers				Medium
	Process chillers				Medium
Mobile air conditioning	Car air conditioning				NA
	Large vehicle				NA
Domestic refrigeration	Domestic refrigerators				NA
Commercial refrigeration	Stand-alone equipment				NA
	Condensing units				
Industrial refrigeration	Centralized, supermarket				NA
	Condensing units				
Transport refrigeration	Centralized systems				NA
	Trucks, containers, ships, etc.				
Heat pumps	Water heaters, dryers, etc.				NA
Fire protection	Fixed and mobile systems				Medium
Foam	Buildings, equipment, etc.				Medium
Switchgears	GIS, circuit breakers, etc.				Very low







## Summary

- HFCs are still increasing
- The Turkish industry is capable to move to low GWP alternatives
- Implementing of EU F-gas legislations elements will accelerate transition to low GWP alternatives
- Awareness raising required to accelerate the “seeding” and market penetration of low GWP alternatives





**Thank you very much for your  
participation!**

[www.F-GasesTurkey.com](http://www.F-GasesTurkey.com)



# „Managing F-Gases in Turkey“

## HCFCs Phase-out interventions in Turkey and the Kigali Amendment



*Rodica Ella Ivan*  
*Industrial Development Officer*  
*UNIDO - Department of Environment*

*6 November 2019 – MoP31 side -event*



# IMLF funded projects with impact on the HCFCs future phase-out commitments

## 1. HCFCs Phase-Out Management Plan of Turkey

- Approved in 2012 by the 68th Meeting of the Executive Committee
- The Government of Turkey committed to reduce the consumption of HCFCs consumption by 86.4 % per cent of the calculated baseline by the year 2017
- (current achieved consumption phase-out in 2019 reached 98% of the baseline)

## 2. Enabling Activities for Kigali Amendment

- Approved by the 80 ExCom in November 2017

With the objective to support ratification of the Kigali Amendment to the Montreal Protocol and initiate early implementation actions





## IMLF funded projects and the impact on the HFCs future phase-out commitments

Two areas of priority interventions high were included within the HPMP Stage I of Turkey:

- To complete HCFCs consumption phase-out in foam sector (SH Manufacturers and their down-stream users) – *considering zero GWP alternatives*
- To address the increasing trend of the HCFC-22 consumption in the refrigeration servicing sector; several elements linked this sub-component with the HFCs control:
  - Introduction of EU F-Gas Regulation elements within the legislative system (with applicability mainly to HCFCs control)
  - Consideration of a demonstration component within the HPMP to raise awareness and promote low GWP refrigerants (including several pilot conversion to such alternatives and considering the energy efficiency benefits for each of the study cases)





## Synergy concept and benefits

Synchronizing the EU funded F-Gases project interventions with the HPMPs activities in field created premises for enhanced impact for both projects

- In developing the F-Gases regulatory framework, the experience accumulated during the development and enforcement of the HCFCs control (HPMP project) was beneficial for understanding the challenges and the barriers
- EU funded project main outcome is the complete HFCs regulatory framework, while the effective early interventions for low GWP alternatives introduced during the HCFCs phase-out contribute directly to its future enforcement and creates the momentum for achieving compliance with Kigali commitments
- The projects complements each other.





## Synchronizing the EU funded F-Gases project interventions with the Kigali EA project

- Further, addressing at an early stage the HFCs control (as a priority in Turkey for accessing the EU market) was beneficial towards the ratification process for the Kigali Amendment (currently under consideration by the Parliament)
- The activities of the Kigali Enabling Activities project (the ratification) are strengthening the legal base for the HFCs control and supports the decision for the licensing and quota system allocation

Another important step for the decision making process on criteria for enforcing HFCs imports licensing and future quotas is **the ODS alternatives survey** conducted with MLF funding for the years 2014 – 2016, and replicated under the EA project for the HFCs consumption in 2017 and 2018, facilitating the market consumption forecast and potential trends.





# Setting up field cooperation

- NOU/ MoEU Turkey played crucial role
- Teaming-up in field on the projects activities execution (direct cooperation between the experts and executing teams)
- organization of the linked activities back-to-back (e.g. F-Gas regulatory consultative workshop back to back with legislative consultations on Kigali Amendment)
- Sharing information for avoiding overlaps and
- Aligning / linking projects annual work-plans
- Involving local technical experts in relevant events/workshop/ consultations of both projects







## Few elements on the low GWP pilot conversions component of the HPMP executed in partnership with SOSIAD Turkey

The HPMP Stage I demonstration component addressed a series of activities, that are expected to be completed until December 2019:

- **National awareness campaign on R-22** phase out and related bans, national dissemination activities on alternatives,
- **Demonstration Project - CO<sub>2</sub>/NH<sub>3</sub> cold room cascade system** conversion.
- **R-448A/R290 conversion of a discount supermarket** currently running on HCFC-22.
- **R-123 chiller conversion to R-1233zd**

<http://www.unido.sosiad.org.tr/en/>





## TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPOSITION AND CAPACITY BUILDING ON F-GASES

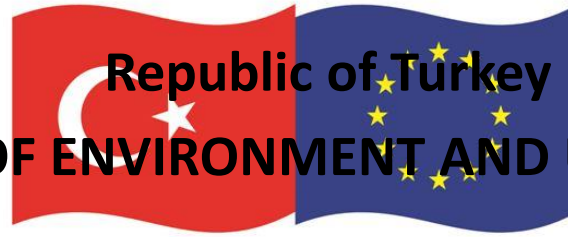
Demonstration Site	Reason for Selection	Type of System	End-User
Izmir	HVACR manufacturers are very active in this region. It is an appropriate target group for dissemination and awareness raising.	<b>CO<sub>2</sub>/NH<sub>3</sub> cold room cascade system conversion.</b>	<b>UNILEVER/Algida</b> Ice Cream Plant, Izmir
Istanbul (3 discount supermarkets)	International/national food retail sector is very common in Istanbul. Corporate headquarters and end users are located here and easy to reach.	<b>R-448A/R-452A/R290</b> conversion of a discount supermarket with HCFC-22.	Sariyer Market Ferahevler, Sariyer Market Etiler, Cagri Market, Fikirtepe <b>(Istanbul)</b>
Ankara	State-owned stakeholders are the target audience. Therefore, one of the important pillars of dissemination and awareness.	R-123 chiller conversion to <b>R-1233zd</b>	<b>ETI Soda, Ankara Plant</b>



## TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPPOSITION AND CAPACITY BUILDING ON F-GASES

Thank you for your attention !





**MINISTRY OF ENVIRONMENT AND URBANISATION**

**ENVIRONMENT MANAGEMENT GENERAL DIRECTORATE**  
**DEPARTMENT OF CLIMATE CHANGE AND ADOPTATION**

This project is co-financed by the European Union  
and the Republic of Turkey

situation in turkey ods phase-out  
**TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR  
AND F-GASES  
BACKGROUND INFORMATION  
TRANSPOSITION AND CAPACITY BUILDING ON F-GASES**  
Ulku fusun ERTUK



**6 November 2019, ROME**





# CONTENTS

- -Implementation of MP
- - By-Law on ODS and other relevant regulation
- - Provisions regarding the current By-law on F-Gas
- - Kigali Amendment Adaptation - Process (Road Map)



# MONTREAL PROTOCOL

Party to Montreal Protocol in 1999  
And adopted all amendments  
(except Kigali Amendment) to MP  
Ministry of Environment and  
Urbanization is coordinating  
national and international studie





# By-law on ods/other relevant regulations

In 1999 the first By-law on the Reduction of the Substances that Deplete the Ozone Layer published in Turkey. It has been revised in 2006 and 2008.

**Second By-law on ODS** entered into force in Official Gazette dated 12 November 2008 and numbered 27052 (By-law on phase-out of ODS)

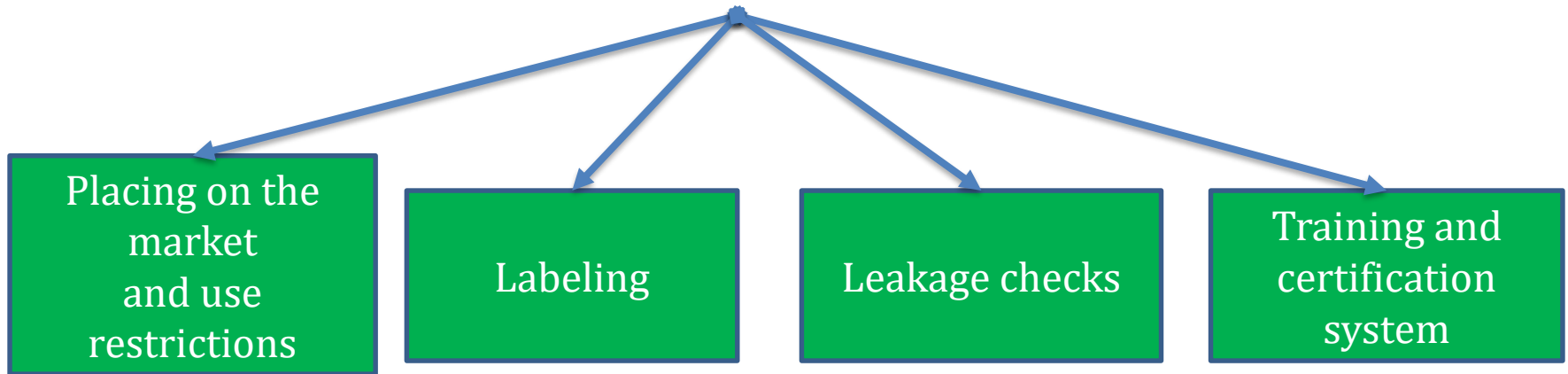
**Second By-Law on ODS** entered into force in Official Gazette dated 07 April 2017 and numbered 30031 based on 1005/2009 EC Directive.(By-law on ODS)

**Circular (2016/01)** Usage and Importation of ODS

**Communiqués of the Ministry of Trade;** importation &exportation



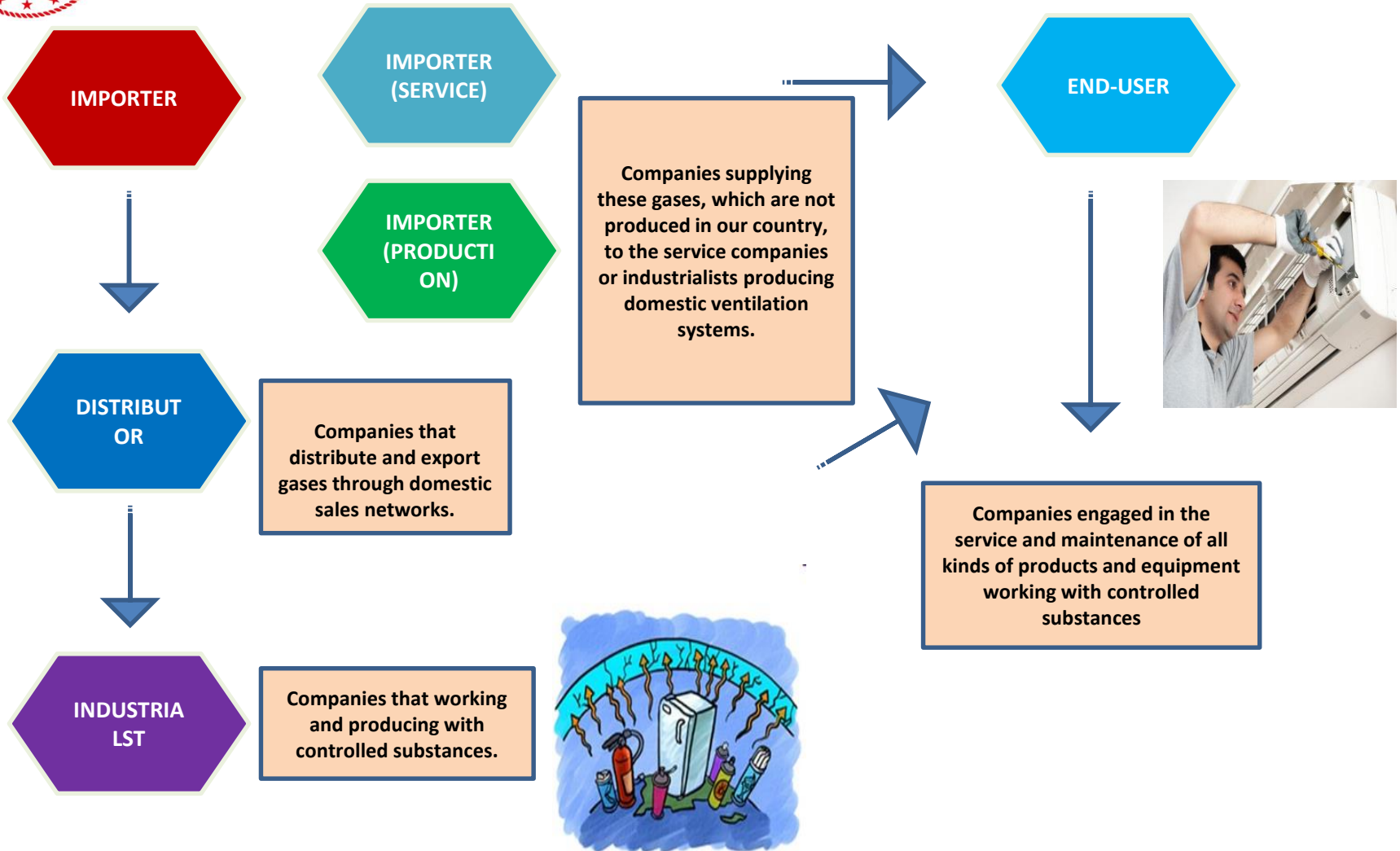
By-law on ODS  
dated 28.07.2017  
(harmonization of 1005/2009/EC Substances That Deplete  
The Ozone Layer Directive )







# Ods Monitoring system

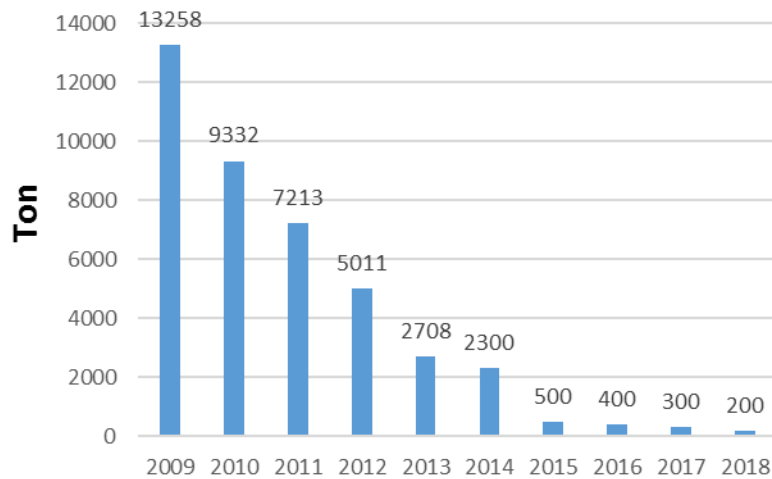




## phase OUT OF ods

The amount of the exported Ozone Depleting Substances decreased within the phase-down schedule applied under Montreal Protocol, from 13200 tonnes in 2009 to 200 tonnes in 2019.

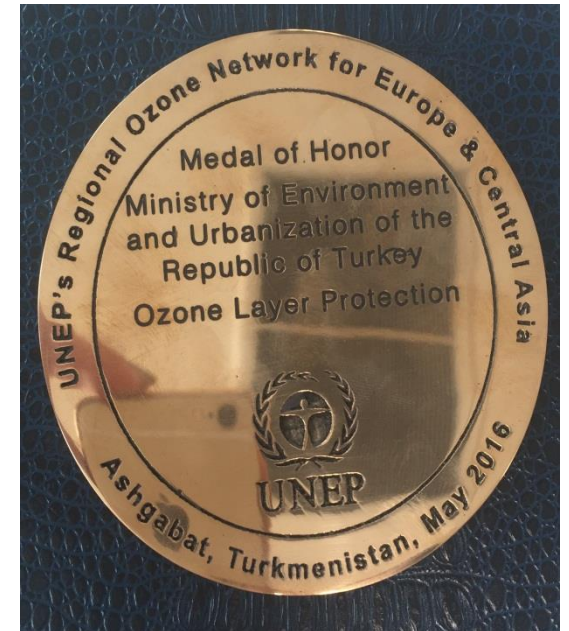
**Ozon Tabakasını İncelten (ODS) maddelerin tüketimi**



It is stated that 18 billion tonnes of CO<sub>2</sub> equivalent will be decreased between 2010-2050 as a result of HCFC phase-out through worldwide studies on ODS phase-down.



# Honor madals!





## Honor medal in 2019!





# Honor madal in 2019





## Training activities

- The meetings for raising cooperation between NOU and Customs Officer were held within in the framework of cooperation between UNEP-MoEU
- ODS Inspection Trainings have been conducted for the inspectors from 12 Province Directories (Ankara, İstanbul, Kocaeli, Tekirdağ, Bursa, Balıkesir, İzmir, Antalya, Konya, Mersin, Manisa ve Denizli)





## Other activities

- The International Ozone Day has been celebrating every year in various events around the world. Since 2010, various events have been organized in our country..



## Other activities







# F-GAS REGULATION

By-law on F-gas:

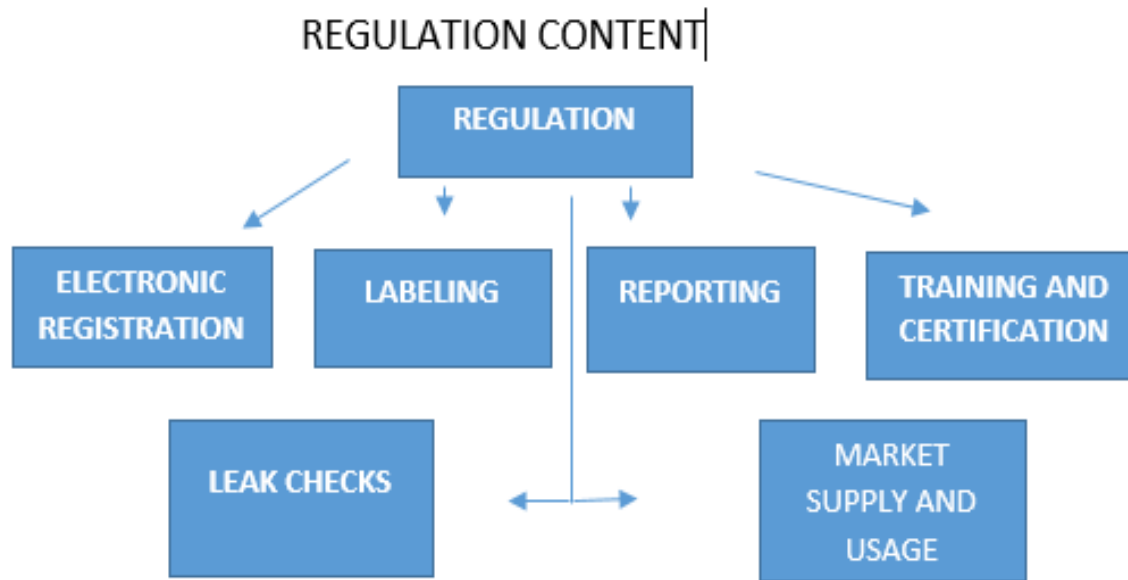
It entered into force after being published on the official gazette No. 30291 on 04.01.2018.

By-law;

- **Labelling** (As of the publishing of the by-law)
- **Leakage Testing**, (As of the establishment of central data base)
- **Reporting**, (As of the establishment of central data base)
- **Electronic Registration** (As of the establishment of central data base)



# by-law ON FLUORINATED GREENHOUSE GASES





# Placing on the market and use restrictions

- **Non-refillable F-gas cylinder**
  - **imports banned from 4 Jan 2020,**
  - **POM banned from 1 Jan 2022**





# Placing on the market and use restrictions

- **Placing on the market (POM) and use restrictions relevant to RAC&HP sector**
  - **Bans on placing on the market**
    - Non-confined evaporation systems that contain HFCs or PFCs as refrigerants
      - By-law on F-gas – **banned from 1 Jan 2019**
    - Domestic refrigerators and freezers that contain HFC with GWP of 150 or more (*either as refrigerants or as blowing agents in insulating foam*)
      - By-law on Fgas– **banned from 1 Jan 2019**





# Placing on the market and use restrictions

- **Placing on the market (POM) bans relevant to fire protection sector**
- Bans on placing on the market
- Fire protection equipment containing PFCs or HFC-23
  - from 1.01.2019





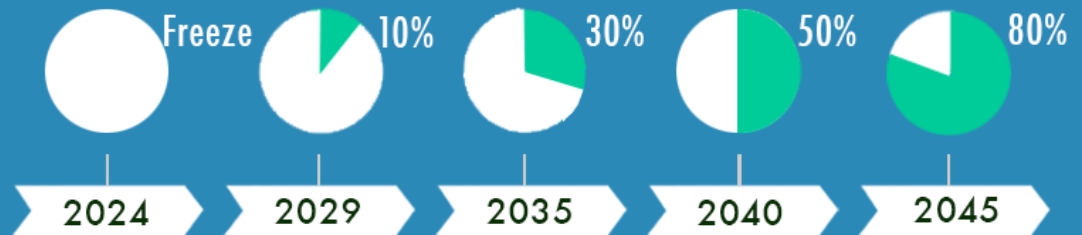
# KIGALI AMENDMENT PHASE DOWN PLAN

A5 countries are allowed to take time until **1 January 2021** to establish their licensing system.

A5 parties – “Group 1”

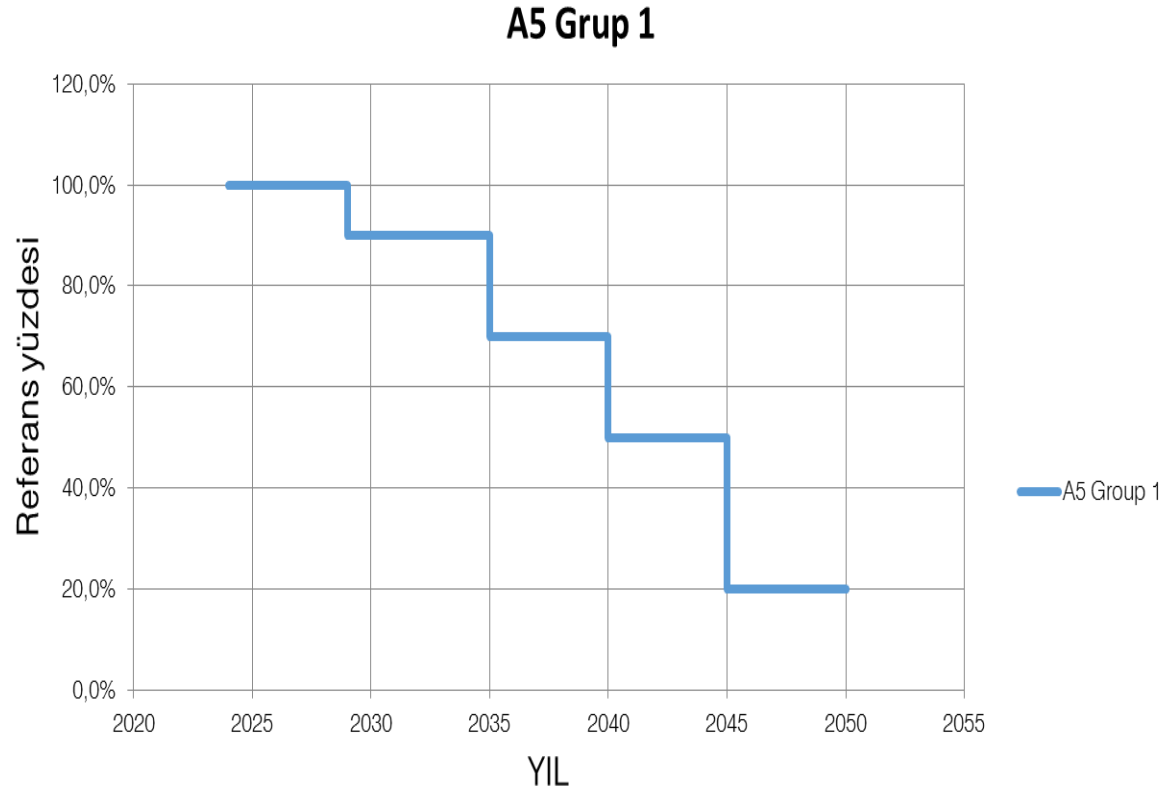
Baseline formula

Average HFC consumption for 2020-2022 + 65% of hydrochlorofluorocarbon (HCFC) baseline





# what is the road map for phase down?





## RESPONSIBILITIES UNDER KIGALI AMENDMENT

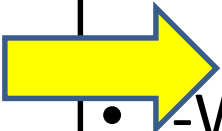
- Base Year Reporting (Article 7)
- Production, export and import base year for articles on Annex-F will be prepared.
- Base year period for A 5 Group 1 countries is between 2020-2022.

Baseline year Article 5 Group 1	Baseline data to be reported by
2020	30 September 2021
2021	30 September 2022
2022	30 September 2023





## TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPOSITION AND CAPACITY BUILDING ON F-GASES LEGISLATION GAP ANALYSIS

- 
- -When the provisions of Kigali Amendment and F-Gas Regulation are compared,
  - The most important parts of EU Directive;
  - Some definition,
  - HFC phase-down schedule
  - HFC Quota system
  - HFC licensing system
  - Prohibition of placing on the market and use
  - Are not included in By-law on Fluorinated Greenhouse Gases.



## ROAD TO KIGALI...



### **Ratification of Kigali Amendment,**

- Preparation of more comprehensive By-law on F-Gas the provisions regarding implementation of Kigali Amendment of Montreal Protocol,
- Issuing a circular about Training /Certification,
- Preparing a HFC phase-down plan, calculation the baseline
- Developing HFC quota allocation, quota authorisation mechanism and recording system
- Developing separate national customs codes for HFC and mixtures containing HFC.
- Developing a reporting system, central data base and business reports data base.



## ROAD TO KIGALI...

- ● It is very important to enter leak checks with Central Data base (CREO) as gas leaking increases emission in industrial and commercial refrigerant and fire protection sectors.
- ● Awareness for transition to low GWP alternatives must be expanded and studies for capacity building must be accelerated.
- ● F-gas waste management system development activities (legislation&system)

•  
•



**THANK YOU FOR YOUR ATTENTION!**

**ENVIRONMENT MANAGEMENT GENERAL DIRECTORATE  
DEPARTMENT OF CLIMATE CHANGE AND ADAPTATION  
PROTECTION OF OZONE LAYER UNIT (NATIONAL OZONE  
UNIT)**



This project is co-financed by the European Union  
and the Republic of Turkey

# Overview of the project - current status and success factors

Gönül Ertürer  
Project leader

31<sup>st</sup> Meeting of the Parties to the Montreal Protocol  
6 November 2019  
Rome, Italy





## Project Overview

- Co-financed by EU and Government of Turkey
- Beneficiary: MoEU
- Technical capacity development for regulating and managing f-gases towards mitigating climate change
- Technical Assistance Team: GFA Consulting - Ankon - Öko Recherche - Heat International
- <https://f-gasesturkey-en.com>
- 3-years project; May 2017-May 2020





# Project Components

- **Legislative Studies**

- Activity 1: Legislative Gap Analysis
- Activity 2: Preparatory Workshops
- Activity 9: Revised F-Gas Legislation

- **Capacity Building Activities**

- Activity 3: Training and Certification of Technicians and Service Companies
- Activity 4: Awareness Raising on F-Gas Alternatives
- Activity 5: Leak Testing
- Activity 7: Waste Treatment and Recovery

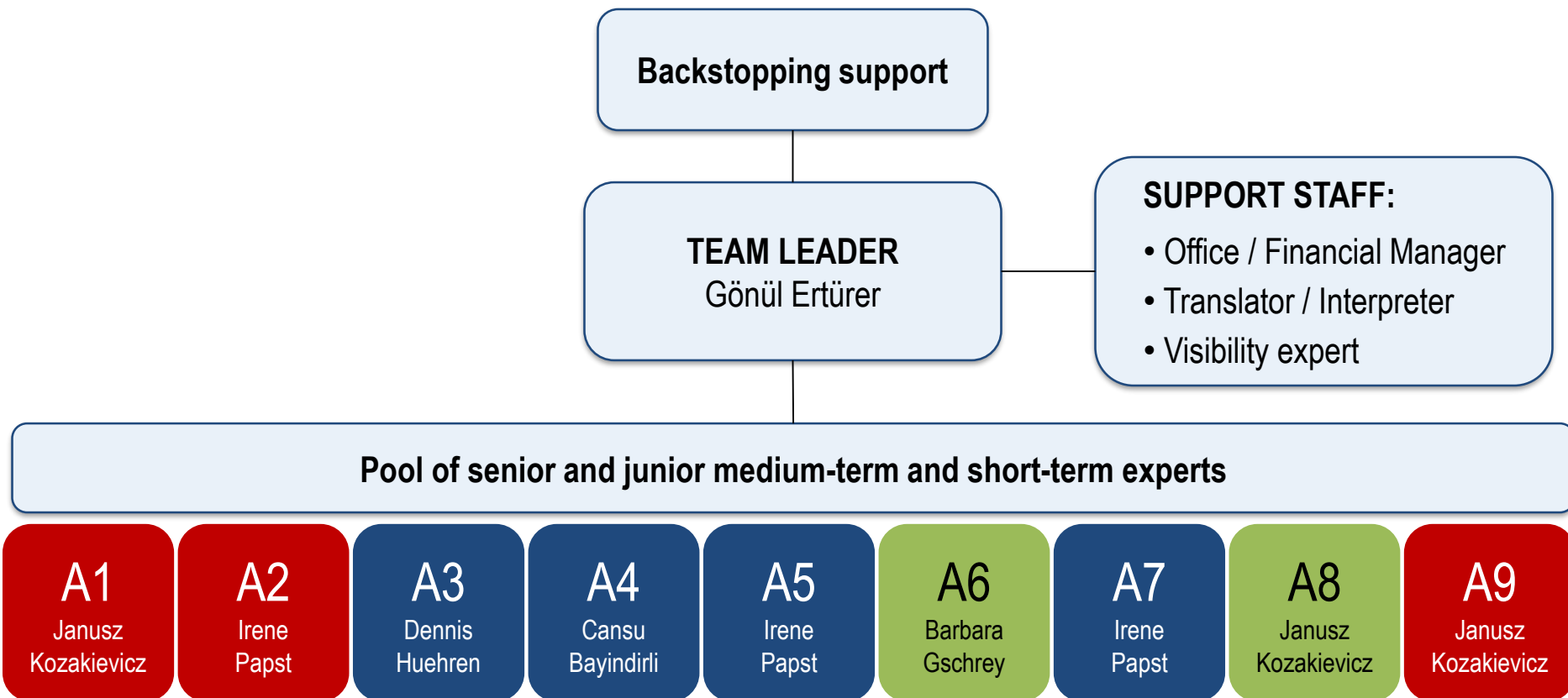
- **Establishment of F-Gas Inventory and Database**

- Activity 6: National F-gas Inventory
- Activity 8: Establishment of a Reporting System of Fully-Functioning F-gas Database





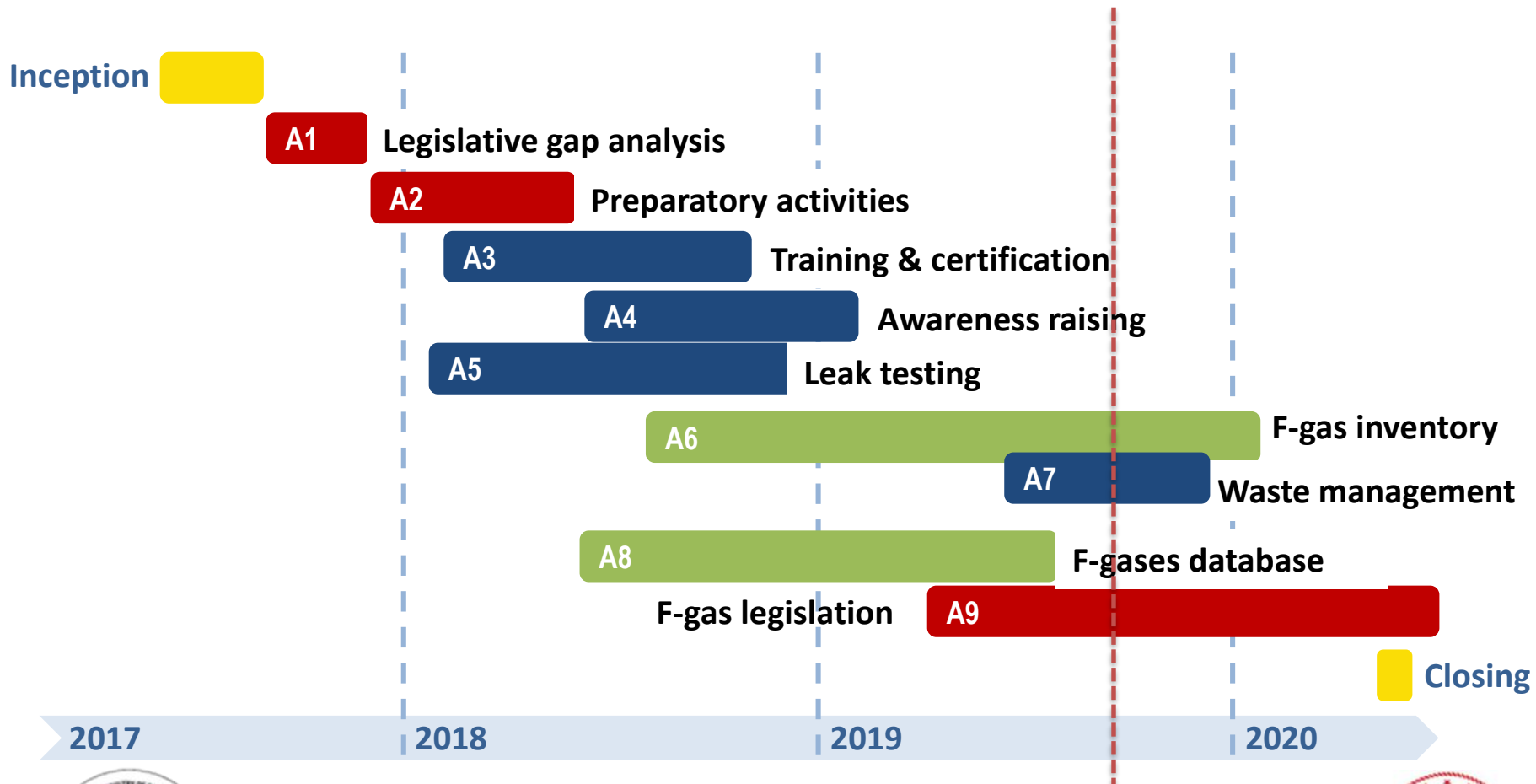
# Technical Assistance Team







# Workplan / Timeline for Project Activities





## Legislative Gap Analysis

- Align the current national F-gas legislation with EU F-gas Regulation 517/2014 and supplementing by-laws
- Comply with Kigali Amendment commitments





## Preparatory Workshops

- **Stakeholder consultation meetings** with regulators, sectoral associations, operators, equipment distributors, gas importers, service technicians
- **Thematic discussions**
  - Training and certification
  - Waste management
  - Quota allocation
  - Leak tests
  - Data Base and Reporting





## Capacity Building Activities

- Training of Service Technicians
- Pilot Programme for Leak Testing
- Training of MoEU inspectors
- Recovery of f-gases, recycling, treatment and disposal





# TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPPOSITION AND CAPACITY BUILDING ON F-GASES

## Consultation workshops





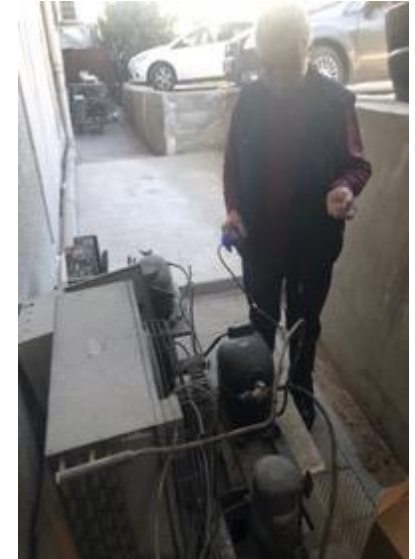
# TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPOSITION AND CAPACITY BUILDING ON F-GASES

## Training of Trainers





# Leak Test Programme





# TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPPOSITION AND CAPACITY BUILDING ON F-GASES

## Waste management field study







# TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPOSITION AND CAPACITY BUILDING ON F-GASES

## Awareness Campaign

Technical Assistance for Increased Capacity for Transposition and Capacity Building on F-Gases

F-Gazlar Konusunda Kapasite Oluşturma ve Aktarım için Kapasite Geliştirme Teknik Yardım Projesi

### FLORLU SERA GAZLARI AZALTIMI İÇİN İKLİM DOSTU ALTERNATİFLER

İKLİM DOSTU ALTERNATİFLER

F-GAZLAR

ERİŞİM ÜRETİCİLERİ

EKİPMAN ÜRETİCİLERİ

SON KULLANICILAR

KAYIT VE RAPORLAMA

TEKNİK SERVİS-BAKIM

YÜRÜTME

İZLEME VE KONTROL

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İZLEME VE KONTROL

F-GAZLAR AZALTIMI





# TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPOSITION AND CAPACITY BUILDING ON F-GASES

## Visibility Materials





# TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPOSITION AND CAPACITY BUILDING ON F-GASES

## Broschures

**F-Gazlar Nedir?**

F-gazlar, yapay olarak üretilenlerdir. Bunların en önemlisi gazdır. Atmosferde zaten bulunan bazı gazların emisyonları, özellikle sera etkilerine sahip olanları, emisyonlarıdır.

**Kullanılan Alanlar**

F-gazlar genellikle üç ana gruba ayrılmaktadır: hidrokarbonlar (HC), perfluorokarbonlar (PFC) ve halojen hidrokarbonlar (HFC). Bunların dışında, iklim değişikliği için yapılan çalışmada önemli rol oynayan CO2 (her yıl 33.000 milyar ton kadar daha fazla) ve azot oksitleri de bulunmaktadır.

Sera Gazı	GWP
CO2	1
Metan	25
Azot Dioksit	298
HFC 134a	1.430
HFC 410a	2.088
HFC 225fa	3.200
HFC 324a	3.922
HFC 23	14.800
SO2	22.800

**F-Gaz Emisyonlarını Nasıl Azaltabiliriz?**

Her yıl sera gazları emisyonları azaltılmadan önce 3 temel strateji bulunmaktadır:

- F-gazların kullanımını azaltma veya ortadan kaldırma
- Yalıtım, güneşli çatılar ve güneşli alanlar
- F-gazlı ekipmanların bakımını ve onarımını

**Hangi Alternatifler?**

Ekolojik olarak en iyi alternatifler, emisyonları azaltma ve emisyonları azaltmaktır. Ancak en uygun alternatifler, emisyonları azaltma ve emisyonları azaltmaktır.

**Alternatifler:**

- Karbon emisyonları azaltma
- Emisyon azaltma (genellikle) azaltma
- Yalıtım, güneşli alanlar
- Yalıtım, güneşli alanlar
- Yalıtım, güneşli alanlar

**AgriKültür ve Enerji Üretimi:**

AgriKültür ve Enerji Üretimi, emisyonları azaltma ve emisyonları azaltmaktır. Bu nedenle emisyonları azaltma ve emisyonları azaltmaktır.

**Ulusal F-Gaz Yönetmeliği**

**T.C. Resmi Gazete**

**F-GAZLAR**

**FLORLU SERA GAZLARI AZALTIMI İÇİN İKLİM DOSTU ALTERNATİFLER**

**Şimdi Zaman Değişime Uyum Sağlama Zamanı!**

**www.f-gazlar.gov.tr**

**0312 444 54 55**

**0312 444 54 55**

**0312 444 54 55**





# TECHNICAL ASSISTANCE FOR INCREASED CAPACITY FOR TRANSPOSITION AND CAPACITY BUILDING ON F-GASES

## Workshops





## Establishment of F-Gas Inventory and Database

- Central Registry of Equipment Operators
- Data Base of Reporting
  
- National F-Gas Inventory
- Evaluation of Current Inventories
- Evaluation of calculation approaches





**Thank you very much for your  
participation!**

[www.F-GasesTurkey.com](http://www.F-GasesTurkey.com)

