



# **Wrap up Session of Twinning Project Improving Emissions Control**

**TR08IBEN02**

**BY BC EXPERTS: FUNDA FILIZ, IRDE GÜRTEPE, CANAN KÖKSAL**

**BY MS EXPERTS: GEORG REBERNIG, ELISABETH KAMPEL, VIOLETA PHILIPPITSCH, CHRISTIAN NAGL**

**ANKARA, 30 MAY 2013**

# Twinning Partners

Beneficiary Country: **Turkey**

Beneficiary: **Ministry of Environment and Urbanisation**

BC Project Leader: **Muhammet Ecel**, Deputy GD

RTA Counterpart: **Ercan Gülay**, Head of Climate and Air Management Department

Member State: **Austria**

Institution: **Umweltbundesamt**

MS Project leader: **Manfred Ritter**, Head of Unit (Air quality control and climate change mitigation)

Resident Twinning Advisor (RTA): **Dietmar Koch**

Member State: **Finland**

Junior Project Leader: **Kimmo Silvo**

Institution: **Finnish Environment Institute, SYKE**

STEs from Austria, Finland, Romania, Latvia and the Netherlands

Private Sector Input from IIASA and TNO

# Overall objective of the project

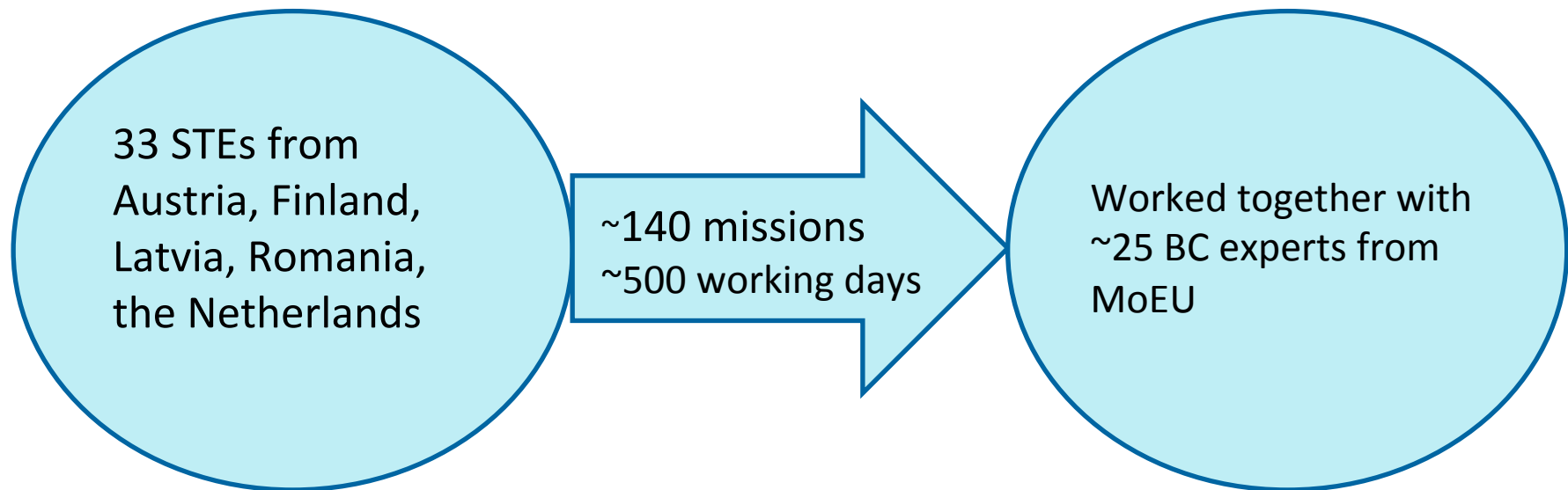
- To “*improve the environmental conditions in Turkey by implementation and enforcement of the EU environmental acquis in the frame of ambient air quality.*”
- Establish the necessary capacity at the MoEU to transpose and implement the NEC Directive:
  - prepare inventories and projections
  - develop national strategies for reducing emissions
  - strengthen intra-institutional cooperation
- Provide trainings in all areas relevant for the implementation of the NEC Directive

# Twinning built on TA project

- The Twinning project was tightly linked to the Technical Assistance Project for Improving Emissions Control (EuropeAid/128897/D/SER/TR).
- The activities that have been covered by the Technical Assistance Project include:
  - Development of first National Emission inventory for 4 NECD pollutants (excel sheets)
  - Development of projections, and scenarios
  - Cost benefit analyses
  - Regulatory Impact Assessment
  - Guidelines for inventory compilers

# Training Facts

- MS and BC experts worked together on **4 Components** consisting of **13 activities**, aiming to fulfil **27 benchmarks within 24+2 months** (24<sup>th</sup> April 2011 – 6<sup>th</sup> July 2013)



# Components of the project

- **Component 1:** Assessment of international and EU legislation & roles and responsibilities of the competent authorities
- **Component 2:** Training to compile, report and archive NO<sub>x</sub>, NMVOC, SO<sub>2</sub> and NH<sub>3</sub> emission data
- **Component 3:** Develop a strategic action plan to reduce emissions on a sectoral basis
- **Component 4:** Development of reporting capacity in line with the NEC Directive

# Component 1

- Understanding of international and EU legislation related to the NEC Directive and of the roles and responsibilities of the competent authorities in the transposition of the NEC Directive
- Central questions:
  - What is the legal basis and the legal requirements?
  - What is the role of institutions?
  - How can the NEC Directive transposed into Turkish law?

Fulfilled by 17 missions

Component Leader: Jorma Jantunen (SYKE)

# Benchmarks under Component 1

- Activity 1.1: Identification of the present situation for the implementation of the NEC Directive
  - B111: list of activity data providers
  - B121: institutional & legal assessment report
  - B113: draft by law
- Activity 1.2: Investigation of roles and responsibilities (due to e.g. LRTAP Convention)
  - B121: list of international obligations
- Activity 1.3: Assessment of overall air emission structure in Turkey
  - B131: plans and programmes
  - B132: capacity analysis
  - B131: plans and programmes



# C1: Activity Data Providers

## Data providers

- Based on experience made by TA project
- activity data providers can be allocated to sectors
  - Energy: MoENR
  - Transport: MoTMAC
  - Industry: MoENR, Turkstat
  - Agriculture: MoFAL, MoFWW
  - Waste: MoEU
  - Overall: Turkstat
- activity data providers may vary due to specific inventory requirements

### B1.1.1 OVERVIEW OF DATA PROVIDERS

We share this list with the TA Project - discussed with BC - considered the SoP:

- **Çevre ve Şehircilik Bakanlığı (MoEU)**
- **Ulaştırma Bakanlığı** (Ministry of Transportation, Maritime Affairs and Communication)
- **Enerji ve Tabii Kaynaklar Bakanlığı** (Ministry of Energy and Natural Resources)
- **Gıda, Tarım ve Hayvancılık Bakanlığı** (Ministry of Food Agriculture and Livestock)
- **Orman ve Su İşleri Bakanlığı** (Ministry of Forest and Water Works)
- **TÜİK (TurkStat)**

We will have to monitor and update it if necessary.

# C1: Institutional & Legal Assessment

## Analysed Institutions:

- Ministry of Environment and Urbanisation
- Ministry of Forestry and Water Affairs
- Ministry of Health
- Ministry of Food Agriculture and Livestock
- Ministry of Energy and Natural Resources
- Ministry of Development
- Turkstat
- Ministry of Science, Industry and Technology
- Ministry of Transport, Maritime Affairs, and Communication



TR 2008 IB-EN-02  
"Improving Emission Control"

## DRAFT INSTITUTIONAL ASSESSMENT REPORT

Benchmark 1.1.2  
Legal part

Benchmark 1.1.2  
Institutional part

Twinning Project TR08IBEN02  
"Improving Emissions Control"

**Conclusions:** The analysed By-Laws are not adequate for reaching the obligations of the NEC Directive, and their relevance for the NEC By-Law are minimal

# C1: Draft by law

"By-Law on Control of national air emissions"

OR

"By-Law for the Transposition of the National Emission Ceilings Directive"

Three Chapters:

- 1: Introductory Provisions (e.g. Art 3. definitions)
- 2: Operative provisions (e.g. Art 4. National emission ceilings)
- 3: Final provisions (e.g. Art 11. Entry into force)

TR – IMPROVING EMISSION CONTROL

DRAFT NEC By-Law / August 2012

By-Law No. xyz

Date of the Official Gazette:

Number of the Official Gazette:

Proposed Name of By-Law (with two alternatives):

- "By-Law on Control of national air emissions" (this is a broader name) or
- "By-Law for the Transposition of the National Emission Ceilings Directive" (this is strictly limited to NEC Directive), or a compromise between these alternatives

**Chapter 1: Introductory Provisions**

Article 1: *Objective and Scope*

- (1) The aim of this By-Law is to limit emissions of acidifying and eutrophying pollutants and ozone precursors in order to improve the protection of the environment and human health against risks of adverse effects from acidification, soil eutrophication and ground-level ozone. It is directed to move towards the long-term objectives of not exceeding critical levels and loads and of effective protection of all people against recognised health risks from air pollution by establishing national emission ceilings.

This By-Law covers emissions from all anthropogenic sources in Turkey referred to in Article 4. Emissions from international maritime traffic and aircraft emissions beyond the landing and take-off cycle are not included.

Article 2: *Basis*

This By-Law has been decided by the Council of Ministers on *Date xyz*, based on the power granted by the Environmental Law No 2872 and 5491.  
(Reference needs to be checked and revised by MoEU)

Article 3: *Definitions*

- "Air pollutants" means substances, which causes changes in the natural composition of air through particles, gases or particulate material
- "AOT 40" means the sum of the difference between hourly concentrations of ground-level ozone greater than  $80 \mu\text{g}/\text{m}^3$  (=40ppb) and  $80 \mu\text{g}/\text{m}^3$  during daylight hours accumulated from May to July each year
- "AOT 60" means the sum of the difference between hourly concentrations of ground-level ozone greater than  $120 \mu\text{g}/\text{m}^3$  (=60ppb) and  $120 \mu\text{g}/\text{m}^3$  accumulated throughout the year
- "Emission" means release of a substance from a point or diffuse source into the atmosphere
- "Critical load" means a quantitative estimate of an exposure to one or more pollutants below which significant adverse effects on specified sensitive elements of the environment do not occur, according to present knowledge
- "Critical level" means the concentration of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur, according to present knowledge

# C1: List of International Obligations

- UN Framework Convention on Climate Change (UNFCCC)
- Convention on the Ozone Layer (UNEP)
- Stockholm Convention on POPs (UNEP)
- Protection of the Mediterranean Sea (Barcelona Convention/UNEP)
- EU Directives on Fuel Quality
- Regional Pollution Treaties
- The Industrial Emissions
- Convention on Long Range Transboundary Air Pollution

## INTERNATIONAL AIR POLLUTION OBLIGATIONS OF TURKEY and RECOMMENDATIONS for MEETING the OBLIGATIONS

This document provides an review of Turkey's international obligations relating to air pollution control. It shortly describes the treaties and the ensuing obligations. It also gives recommendations on how Turkey could meet these obligations in the future. The analysis of obligations related to the Convention on Long Range Transboundary Air Pollution has been.

The obligations listed below are taken from the Twinning Contract text, except the ones relating to protection of Regional Seas (parts 4 and 6 below). Due to experience from such treaties, short notions on the protocols concerning land-based pollution were added, including the impact of atmospheric pollution of the seas. Also the EU Directive on Industrial Emissions is included in this analysis.

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# C1: Plans and Programmes

- of most relevance are the
  - National Climate Change Action Plan
  - Local clean Air Plans



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## BENCHMARK 1.3.1 REPORT

### Plans and Programmes

Alec Estlander April 2, 2012

#### Table of Contents:

1. Introduction
2. Climate Change Action Plan
3. National Clean Air Action Plan
4. Plans for VOC emissions
5. Air Quality planning
6. Ministerial plans and projects
7. New national emission ceilings
8. Finland's Air Pollution Control Programme 2010
9. Conclusions



# C1: Capacity Analysis

- analyses is the situation as to environmental tasks and responsibilities in other Ministries
- It can be seen that the MoEU is the leading and strongest Ministry when it comes to environmental responsibilities.
- Regarding capacity and preparedness for environmental and especially NEC related tasks in other Ministries, it is very varying.



Twinning Project TR08IBEN02 “Improving Emissions Control”

## **INSTITUTIONAL ASSESSMENT REPORT - II**

*Benchmark 1.3.2*

March 2012

# BC view: what we learned ...

- Hard duty for foreign experts to deal with
- Lack of legal Turkish support ex. The lawyers of Ministry
- Obstacles for transpositions of Country specific issues
- Time loss due to institutional coordination and cooperation
- EU Accession period and ceilings

# Component 2

- **Component 2:** Establishment of the necessary capacity to prepare and manage the national NEC Directive inventory system and establishment of the capacity to compile, report and archive NO<sub>x</sub>, NMVOC, SO<sub>2</sub> and NH<sub>3</sub> emission data
- Central questions:
  - Why do we need an inventory?
  - How can we compile a national emission inventory fulfilling international requirements?
- Fulfilled by 27 missions
- Component Leader: Katarina Mareckova (EAA)



# Benchmarks under Component 2

- Activity 2.1      Comprehensive training of related personnel of MoEU, and Turkstat for the strengthening of personnel capacity and for the preparation of the emission inventories and projections and for reporting
  - B211: Identification of training needs
  - B212: study tour to Austria
  - B213: training of experts on compiling national emission inventory fulfilling TACCC requirements, plus guidance document
  - B214: training on handling emission data base
  
- Activity 2.2      Sharing experiences by workshops, seminars, published papers, brochures, etc.
  - B221: workshop to share MS implementation experience
  - B222: minutes of this workshop
  
- Activity 2.3      Preparation of a website
  - B231: launch of project website
  - B232: regular updating of project website
  - B233: guidance for management of website

# Training types ...

- Seminars for stakeholders (awareness raising)
- Individual tailor made workshops
- Presentations
- Trainings for newcomers
- Written training material (guidance, manual)
- Study visit to Vienna (June 2012)

# Training provided in 8 main areas

1. Reporting obligations and formats
2. National inventory system
3. Inventory compilation (per sector + cross cutting)
4. Preparation of emission projections
5. Documentation and archiving, IIR
6. QA/QC (QA/QC instructions, documentation)
7. Gridding emissions and reporting of LPS
8. Development of improvement strategy

# C2: Success stories

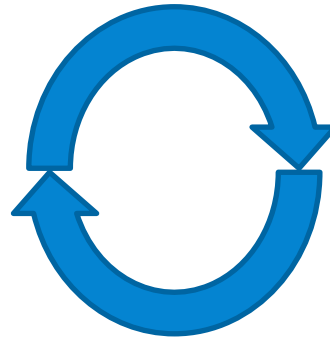
- The **national inventory system** is set-up
- The capacity at MoEU-AQAD to **compile and report emissions and projections** is provided
- **NECD inventory and IIR produced and submitted to UNECE and EEA**
- Awareness raising brochure drafted
- Guidance & training documents provided:
  - User manual for inventory compilers
  - Excel sheets (developed by TA project, improved by Twinning)
  - Gridding instructions
  - QA/QC guidance
  - KCA excel sheets plus instructions
  - Presentations

# Prepare for next reporting round

- Elaborate **time schedule**/ work plan (ASAP)
- Check the UNECE Reporting guidelines and EMEP/EEA inventory Guidebook for potential revisions
- **Allocate responsibilities** to the team
- Update user manual, **Document all steps**
- Agree on the procedures , formats and software used
- **Contact data providers** and agree the formats and deadlines for the data delivery (ASAP)
- Calculate emissions and projection
- Perform QA/QC, involve independent reviewers
- **Plan time reserve** for corrections and for approval by authorities
- Finalize NFRs and IIR
- Submit in time

# Priorities for inventory improvement

- Identify Key categories and biggest LPS
- Assess/reduce biggest uncertainties
- Check NE / improve completeness
- Add pollutants (CO, PM<sub>2.5</sub> , HMs, POPs)
- Add country specific emission factors
- Use higher tiers



## C2: BC view

- The most effective component; Thanks to the CL
- Capacity establishment in the Ministry has been succeeded in.
- Inventory improvements were planned and applied.
- Continuous improvement plan is ready.
- GHG Inventory references were used. GHG Inventory Integration is on the way.
- In the future projections will be studied in detail.

# Component 3

- Establishment of the necessary capacity to develop a **strategic action** plan to reduce emissions of the pollutants regulated in the NEC Directive and to implement the action plan
- Central questions:
  - How can policies and measures affect emission?
- Fulfilled by 28 missions
- 3 Benchmarks:
  - Draft Strategic Action Plan
  - Documentation of consultation
  - Emission Abatement Roadmap
- Component Leader: Christian Nagl



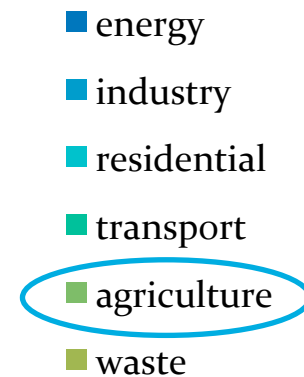
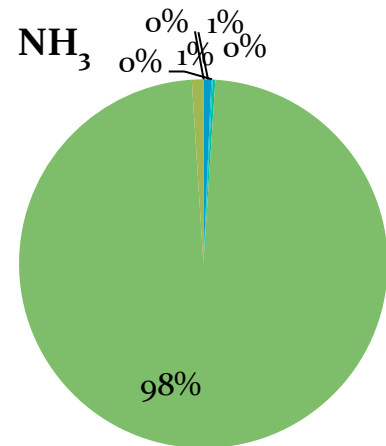
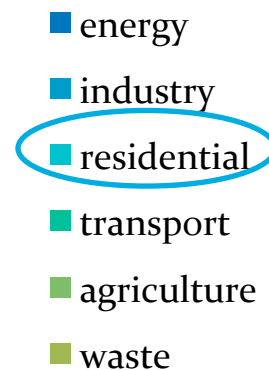
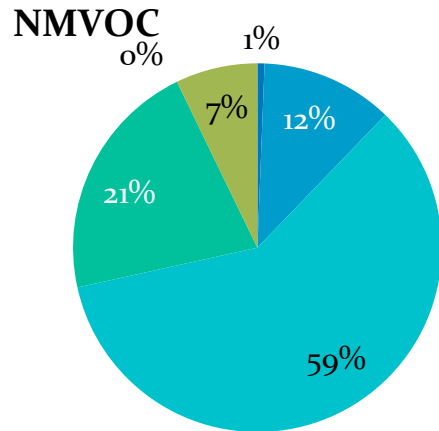
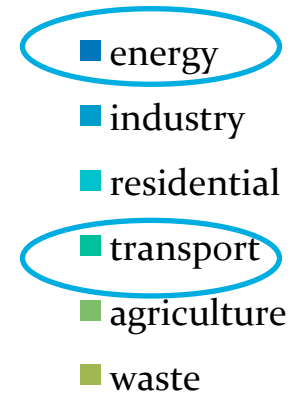
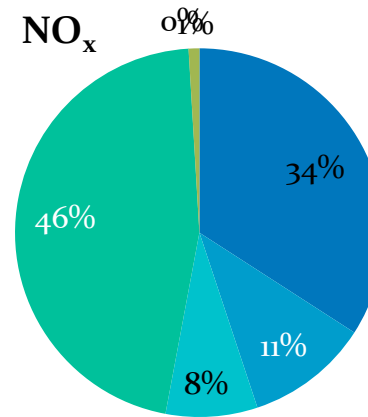
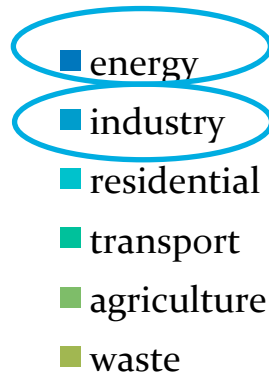
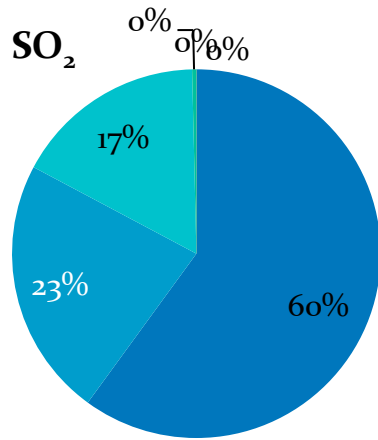
# C3: Basis for Strategic Action Plan

- Draft strategic action plan finalized, which is based on:
  - Guidance by the European Working Group on Implementation
  - Experience with NEC programmes of various Member States
  - Selection of measures developed within the National Climate Change Action Plan (same systematics)
  - Measures from local clean air plans (e.g. Bursa)
  - Emissions, scenarios, draft ceilings, CBA from the TA project
  - Measures proposed by STEs and discussed with MoEU
- Turkish version available for discussion in CoBoard and further development of measures

# Draft Strategic Action Plan – ToC

- Political and administrative procedure of adopting the SAP and NEC programme
- Policies and measures, which will be implemented to reach the emission ceilings
- Current emission levels and projections.
- Costs and benefits of policies and measures
- Evaluation and monitoring procedures
- Annex A: summary table of information on the NEC programme
- Annex B: socio-economic assumptions in more detail.
- Annex C: notation keys
- Annex D: list of acronyms

# Contributions to emissions (to be updated)



# Main measures – energy & industry sector

- Adoption of best available techniques (BAT) under the Integrated Pollution Prevention and Control (IPPC) regime and the Large Combustion Plant Directive (LCPD)
- Use of low sulphur fuels
- Various measures to improve energy efficiency
- Increase in renewable energy sources
- Use of clean coal technologies

# Main measures – residential and commercial sector

- Shift of fuel mix to less polluting ones
  - Geothermal and solar energy
  - Less wood and waste
  - No extension of fuel grants for coal
  - Extension of natural gas distribution
- Technology and fuel-efficiency of combustion units (new heaters and boilers, maintenance)
- Insulation of buildings
- Reducing the solvent content of products – implementation 2004/42/EC and product testing scheme

# Main measures – transport

- Euro standards regarding the exhaust emissions from different vehicle classes
- vehicle testing system
- petrol vapour recovery
- Sulphur content of specific fuels (relevant for shipping)
- Electrification of railway system

# Main measures – agriculture

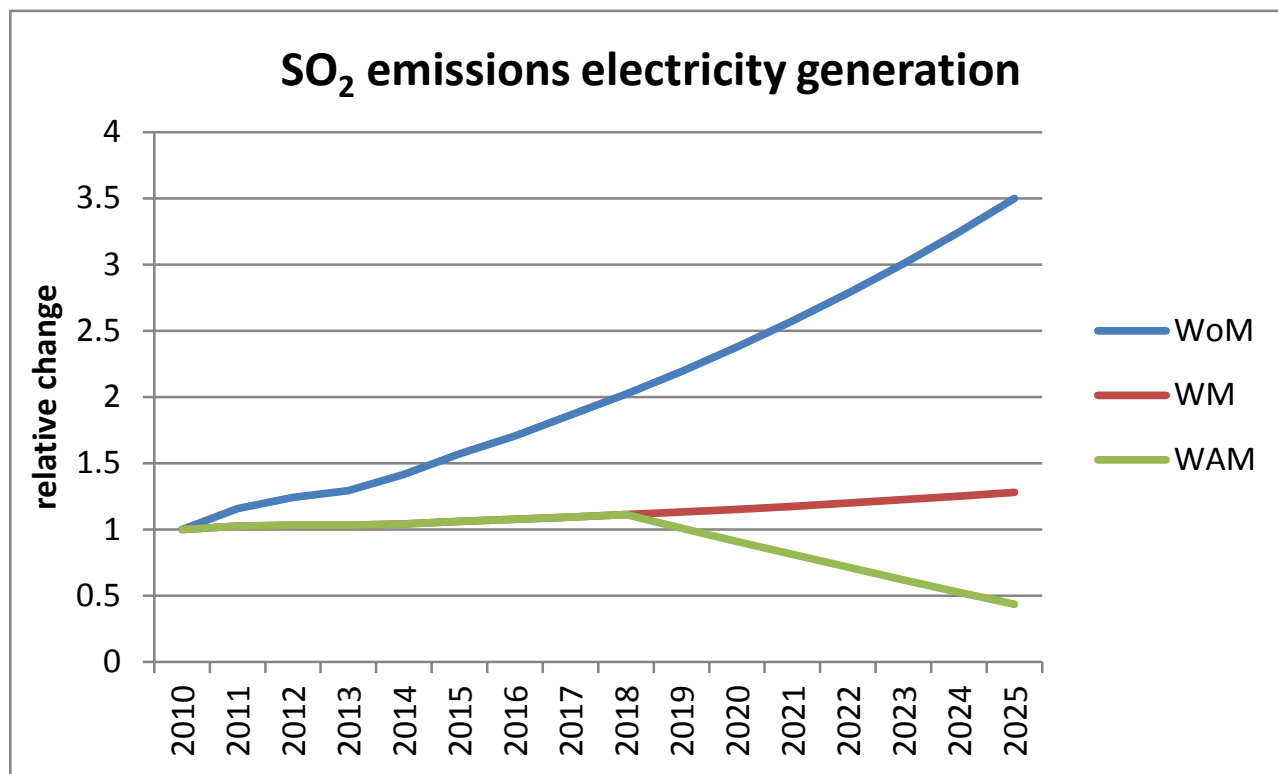
- Disseminating good agricultural practice methods
  - Livestock feeding strategies
  - Low emission manure storage systems
  - Low emission animal housing systems
  - Low emission spreading techniques
  - Efficient mineral fertilizer application
  - Increasing the effectiveness of pasture management

# Main measures – waste

- Reduction of solid waste disposal being disposed on landfill sites
- Minimise the production of landfill gas containing CH<sub>4</sub>, NMVOC and other gases
- Minimising the release of particulate matter during transport, handling, disposal of solid waste
- Minimising air emissions from waste incineration



# Impact of measures



WoM: without measures

WM: with measures

WAM: with additional measures

Source: TA project: PM Group 2012

# Strategic Action Plan: possible update

- Current and future status of TR concerning the Gothenburg Protocol
- Process to get engaged with IIASA
- Description of TR and challenges TR faces
- Ambition level for ceilings (“goals” to be achieved)
- Link with TurkStat: Co-Benefits for projections, scenarios (“data gathering improvements”)

# Component-3 BC view

- Less contribution from BC
- Basis is ready and affected by Climate Change Action Plan -NCCAP
- With the help of further project support SAP can be improved
- Improvement needed by CoBoard
- Institutional comments will be included by the working group studies

# Component 4

- Development of reporting capacity in line with the NEC Directive
- Central questions:
  - How can the results of the project used in practise?
- Fulfilled by 34 missions
- Various Activities:
  - B411: Institutional Assessment Report
  - B412: draft legislation
  - B421: capacity training
  - B422: study tour to Finland
  - B431: establishment of Coboard
- Component Leader: Jorma Jantunen (SYKE)

# Benchmarks under Component 4

- Activity 4.1: Evaluation of the institutional and technical capacity for the implementation of the NEC Directive in Turkey
  - B411: Assessment of present situation of the institutional structure and technical capacity and proposals for enhancement submitted
  - B412: Draft legislation that defines the roles and responsibilities of all involved institutions provided
- Activity 4.2: A comprehensive training programme covering training events both in Turkey and Member States
  - B421: Numerous seminars and workshops hold
  - B422: Study Visit to Finland
- Activity 4.3: Dissemination workshops on the implementation of the NEC Directive in Turkey
  - B431: five coordination committee meetings with representatives of relevant stakeholders

# C4: Institutional Assessment report

## Proposals for Enhancement concerning the following subjects:

- Coordination Board & Working groups
- Air Emission inventory
- External Cooperation
- Human Resources
- Technical Recommendation



Twinning Project TR08IBEN02

## “Improving Emissions Control”

### INSTITUTIONAL ASSESSMENT REPORT III

Fulfilling benchmark 4.1.1



# C4: draft legislation

- The aim of this legislation is to **define the roles and responsibilities** of institutions involved in the transposition and implementation of the National Emission Ceilings Directive (NECD) and on the **exchange of data and information** related to NECD
- Contains provisions to implement the draft by-law elaborated under benchmark B113

# C4: Capacity training

- Numerous seminars and workshops hold in Ankara:
  - in-depth training to fulfil the specific needs of the BC experts
  - E.g. Excel training, ArcGis training, gridding by MACC model, CollectER software use, project management tools, project acquisition, communication and dissemination workshop, inventory management, uncertainty assessment.
- Study Visit to Finland: planned for week 25 (17. – 21. June)



# C4: Coordination Committee/Board

- Approval of Circular by the Prime Minister to establish the Coordination Board
  - Four Coordination Committee meetings held within Project time
  - 1<sup>st</sup> Coordination Board meeting expected in June 2013 to set up rules of procedures and working groups

# C4: Coordination Committee/Board

- Extract from the Circular:
- “Air Emissions Coordination Board” (The Board) was established 15/12/2012 legally consisting of the 14 Members ; Ministries of European Union; Science, Industry and Technology; Foreign Affairs; Economy; Energy and Natural Resources; Food, Agriculture and Livestock; the Interior; Development; Finance; Forestry and Water Affairs; Health; Transport, Maritime Affairs and Communication; and the Undersecretariat of Treasury, as well as the President of the Union of Chambers and Commodity Exchanges of Turkey (TOBB).”

# Component-4 BC View

- Important for sustainability of Project.
- Reporting capacity success is obvious with acceleration
- Integrating the guidelines of the Project by BC team for new colleagues
- QA/QC establishment process on going

# Final Recommendations (1/4)

## Air emission inventory

- Keep emission inventory alive
- Regular update of historic and projected emissions
- Establish agreements with other institutions for data and information exchange
- Stabilise inventory team
- Maintain stable institutional setting with clear responsibilities
- Collaborate with GHG inventory team to ensure consistency
- Provide sufficient resources (personnel & time)

# Final Recommendations (2/4)

## Continue Capacity building

- self study !!!
- Ensure **sufficient resources** *for annual update* of inventories and projections + resources *for further development and improvement*
- participation at EEA trainings, workshops and Eionet meetings,
- nominate reviewer to the UNECE roster....
- Make use of guidebooks and manuals
- Exchange information with inventory team & other experts

# Final Recommendations (3/4)

**Inter-institutional cooperation → Coordination Board**

## **International Involvement**

- Start bilateral consultation with IIASA
- Agree on ceilings within Coordination Board
- → International negotiations

# Final Recommendations (4/4)

## Implementation of Policies and Measures

- Use Coboard Meetings and its Working groups to raise awareness and chance to involve other stakeholders
- Discuss the implementation of policies and measures proposed in the SAP&EARM, based on the NCCAP, as well as further measures
- Bring the legislation prepared forward in the political process

## Implementation of draft by-law

- Approval within Coboard
- Aim for primary legislation
- Decree law to be released by Council of Ministers

# Thank you ...

- For good cooperation and communication
- For welcoming our STEs
- For reserving time for trainings
- For being available for intense bilateral trainings
- For helping to achieving mission objectives

## We wish you...

- Good progress in the implementation of the NEC Directive
- Fruitful coming Coboard Meetings
- A stable and motivated inventory team
- To have fun with inventory compilation



**Please feel free to  
contact us for any questions!**

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Wrap up: Improving Emissions Control  
Ankara ■ 30.5.2013



## Improving Emissions Control



END



ENVIRONMENT  
AGENCY AUSTRIA

umweltbundesamt<sup>u</sup>  
workshop: BC needs

