ENVIRONMENT **umwelt**bundesamt



Project TR 2008-IB-EN-02, Activity 2.2





Outline

- 1. Basic terms
- 2. Institutional arrangements
- 3. Scenario development
- 4. Quality management
- 5. Reporting
- 6. Timeline



1. Basic terms

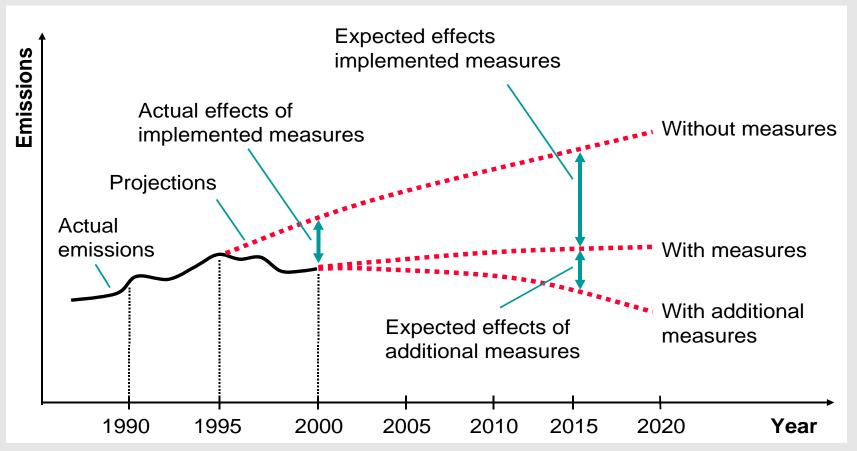
Abbreviations and terminology:

see http://nec.cygm.gov.tr/nec

- ->Documents->Glossary
- ->Documents ->Definitions



Definitions: wom, wm/wem, wam



Source: UNFCCC Guidelines on Reporting and Review FCCC/CP/1999/7, Part VI Projections and the Total Effect of Policies and Measures, para 29, 38



2. Institutional arrangements

Responsibilities





Federal Ministry of Agriculture, Forestry, Environment and Water Management

Environment Agency Austria

coordination, data compilation, reporting

Waste & Waste Treatment

Transport & Noise

Emissions & Climate Change

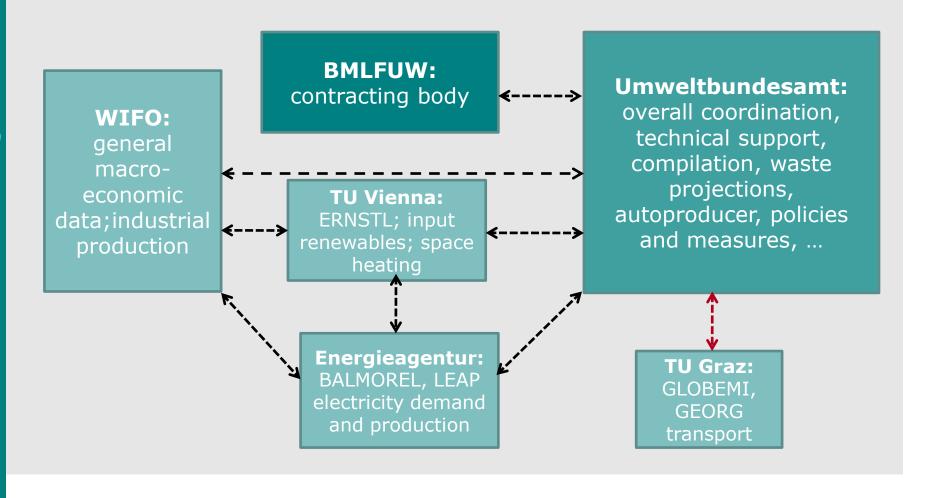
Industry & Power Plants

Emission Trading Registry Air Pollution Control & Climate Change

imate Change Mitigation



Modelling framework





3. Scenario development



Dataflow

Energy Forecast

- national energy balance
- macro-economic model
- bottom up models

Transport Forecast

 bottom-up national transport model GLOBEMI

Forecast Industrial Processes F-Gases Solvents

- expert judgment
- macro-economic model

Agricultural Forecast

- PASMA model
- expert consultations

Waste Forecast

expert judgment

Sectoral Emission Projections

(Umweltbundesamt)

National Emission Projections

(Umweltbundesamt)



Example: Key assumptions

	2010	2020	2030
GDP [bio€ 2000]	279.78	305.92	420.41
Population [1 000]	8 388	8 726	9 021
Stock of dwellings [1 000]	3 662	4 042	4 401
International coal prices [€/GJ]	5.71	7.36	7.44
International oil prices [€/GJ]	10.41	13.09	22.91
International gas prices [€/GJ]	8.33	12.56	18.33

Assumptions on general economic parameters



Example: Parameter (Driver)

Assumption for the energy sector:

Total Gross inland consumption
-> oil, gas, coal, biomass, liquid biofuels, solar, other renewables
(wind, geothermal) [PJ]
Total electricity production by fuel type [GWh]

Assumptions of the industry sector:

Growth of the industrial sector by GDP (growth rate % per year)

Assumptions for the transport sector:

Passenger km [Mkm]
Growth of freight tonne km [Mtkm]

Assumption for the agriculture sector:

Beef cattle [1 000 heads]

. . .

Scenarios: wm/wem, wam

- with measures scenario (wm) and with additional measures scenario (wam) for GHG and wm scenario for air pollutants (NEC)
- wam scenario takes into account **planned** policies and measures
 with a high probability of being adopted and implemented in time

All additional measures have been defined at expert level in consultation with the Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW).



4. Quality management



Quality assessment & quality control

- Several data consistency checks have been performed e.g. by documentation of data inputs and changes in calculation files; fixed input form has been used for each sector
- Often same person responsible (sector expert) for sectoral emission projections and inventory; some sectors use emission methods based on the verified inventory methods
- An output data check has been carried out by comparing the results of the sectors in detail and checking the plausibility of the emission trends (checks with IIASA/GAINS, PRIMES)
- There are iterative feedback-loops between modeling teams, sectoral experts, and sectoral inventory experts in which scenarios, assumptions and policies and measures included in the forecasts are discussed



6. Reporting

Background Information:

Guidance, Reporting Templates, Example Reports, Legal Basis

see http://nec.cygm.gov.tr/nec

- -> Documents-> Inventory Guidelines and
- ->Documents ->Links

AGENCY AUSTRIA **umwelt**bundesamt

National Inventory System Austria Austria's National Air & GHG Emission Projections

UNFCCC + Kyoto Protocol

UNECE/LRTAP
+ Protocols

EU Greenhouse Gas Monitoring Mechanism

EU NEC Directive

Environmental Control Act (Federal Legal Gazette 1998/152) National Inventory System Austria (NISA)

> National System

Austrian Air Emission Inventory

Quality Management
System
including
Good Practice

according to the Kyoto-Protokol, Article 5.1

Policies & Measures and Projections

Submission under UNFCCC and under the Kyoto Protocol

National Inventory Report (NIR)
CRF Tables, National Communication

Submission under UNECE/LRTAP

Informative Inventory Report (IIR)
NFR Tables (Nomenclature for Reporting)

Submission under EC GHG Monitoring Mechanism

CRF Tables/Short-NIR, EMIPRO
Report, PaMs & Projections Tables

Submission under EU NEC

NFR Tables for NEC gases

State-of-the-Environment Report (SoE report)

Chapter 'Evaluation & Outlook'
Reports to the parliament
Reports for the public

Example:

AGENCY AUSTRIA **umwelt**bundesamt

Table of Content (for both - NEC-D, LRTAP) 41 pages

1 INTRODUCTION

2 EMISSIONS

2.1 Nitrogen Oxides NOx

2.2 Sulphur Dioxide SO2

2.3 Non-Methane Volatile Organic Compounds (NMVOCs)

2.4 Ammonia (NH3)

3 RELATION TO DATA REPORTED EARLIER AND CHANGES

3.1 Energy - Stationary fuel combustion

3.2 Energy - Mobile fuel combustion

3.3 Solvents

3.4 Agriculture

3.5 Waste

4 SOURCES OF DATA

5 METHODOLOGY

5.1 General Approach

5.2 General socio-economic assumptions

5.3 Stationary Fuel Combustion Activities (NFR 1 A)

5.3.1 Energy Industry (NFR 1 A 1)

5.3.2 Manufacturing Industry and Combustion (NFR 1 A 2)

5.3.3 Other Sectors (NFR 1 A 4)

5.4 Mobile Fuel Combustion Activities (NFR 1 A)

5.4.1 Road and Off-road Transport (NFR 1A 3)

5.4.2 Aviation (NFR 1 A 3 a)

5.4.3 Other transportation – pipeline compressors (NFR 1A 3e)

5.5 Fugitive Emissions (NFR 1 B)

5.6 Industrial Processes (NFR 2)

5.7 Solvent and Other Product Use (NFR 3)

5.8 Agriculture (NFR 4)

5.8.1 Methodology

5.8.2 Activity data

5.8.3 Emission calculation

5.9 Waste (NFR 6)

6 REFERENCES

ANNEX 1: NATIONAL PROJECTION ACTIVITY DATA FROM REPORTING TEMPLATE (UNECE/EMEP 2009)

ANNEX 2: ADDITIONAL KEY INPUT PARAMETERS
Residential, Commercial & Other Sectors
Agriculture



Example: Results (NEC D)

wm	1990	2000	2005	2007	2010
Pollutants	Austrian Emission Inventory 2008 [kt]			Projection Emissions [kt]	
NO _x	192.51	204.45	239.62	220.10	198.75
SO ₂	74.34	31.64	27.19	25.60	25.80
NMVOC	273.64	176.04	178.71	179.81	167.70
NH ₃	71.18	69.25	66.11	66.41	61.45

Pollutants	Emissions 2010 without 'tank tourism' [kt/a]	Ceilings 2010 [kt/a]
NO_X	146.20	103
SO ₂	25.75	39
NMVOC	164.31	159
NH ₃	61.31	66



Example: Results (LTRAP Convention)

wm	2010	2020	2030		
Pollutants	Austria's er	Austria's emission projection based on fuel sold [kt/a]			
NO _X	198.75	158.80	129.66		
SO ₂	25.80	24.53	23.63		
NMVOC	167.70	172.45	179.08		
NH ₃	61.45	61.13	61.01		
wm	2010	2020	2030		
Pollutants			on based on fuel		
		nission projection	on based on fuel		
Pollutants	Austria's er	nission projection used [kt/a]	on based on fuel		
Pollutants NO _X	Austria's er	nission projection used [kt/a]	n based on fuel 110.63		

7. Timeline

- ✓ Preliminary workshop April 2010
- ✓ Kick-off June 2010
- ✓ Agreement for conservative WAM December 2010
- ✓ Scenario WM December 2010
- ✓ Reporting NEC December 2010
- ✓ Scenario WAM February 2011
- ✓ Reporting Monitoring Mechanism March 2011
- ✓ Reports First Draft April 2011
- ✓ Final Reports and Final Meeting June 2011



Contact & Information

Melanie Sporer

Air Pollution Control & Climate Change Mitigation

Environment Agency Austria

melanie.sporer@umweltbundesamt.at

Umweltbundesamt.at