

Development of National Emission Projections - Introduction

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

Ankara, 29 September 2011



Outline

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

Abbreviations and terminology:

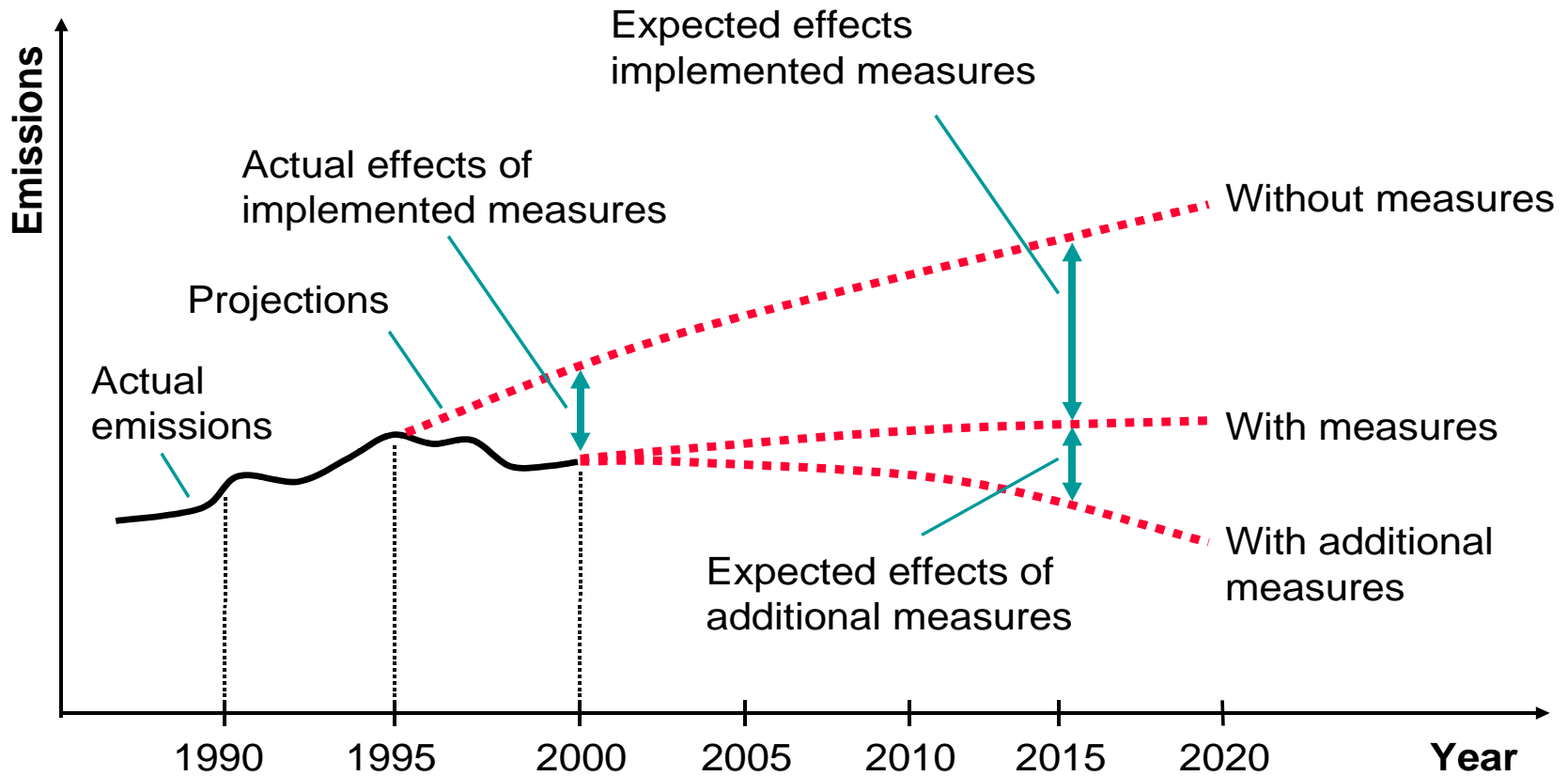
see <http://nec.cygm.gov.tr/nec>

-> Documents->Glossary

-> Documents ->Definitions

Definitions: wom, wm/wem, wam

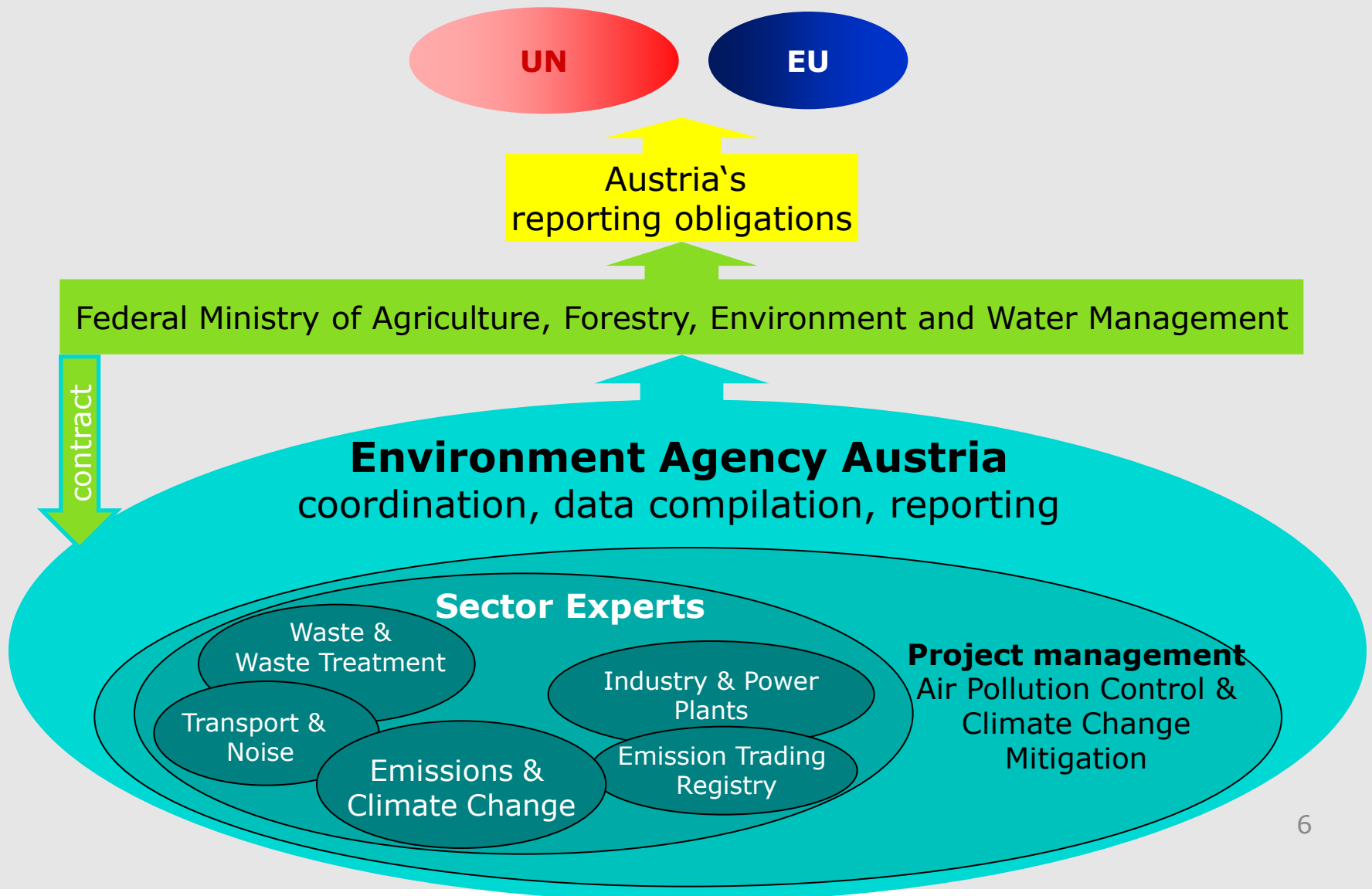
Basic terms



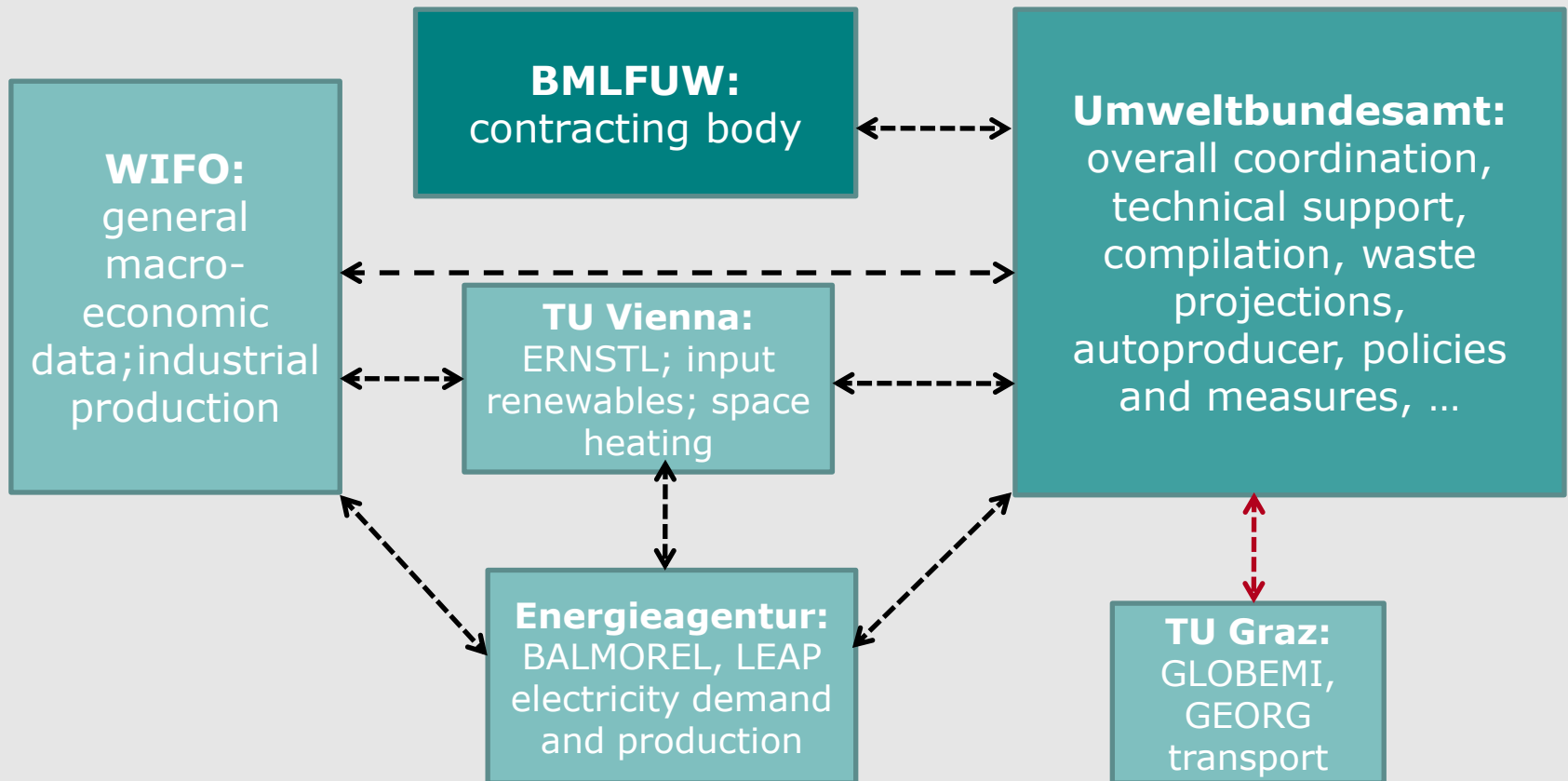
Source: UNFCCC Guidelines on Reporting and Review FCCC/CP/1999/7, Part VI Projections and the Total Effect of Policies and Measures, para 29, 38

2. Institutional arrangements

Responsibilities



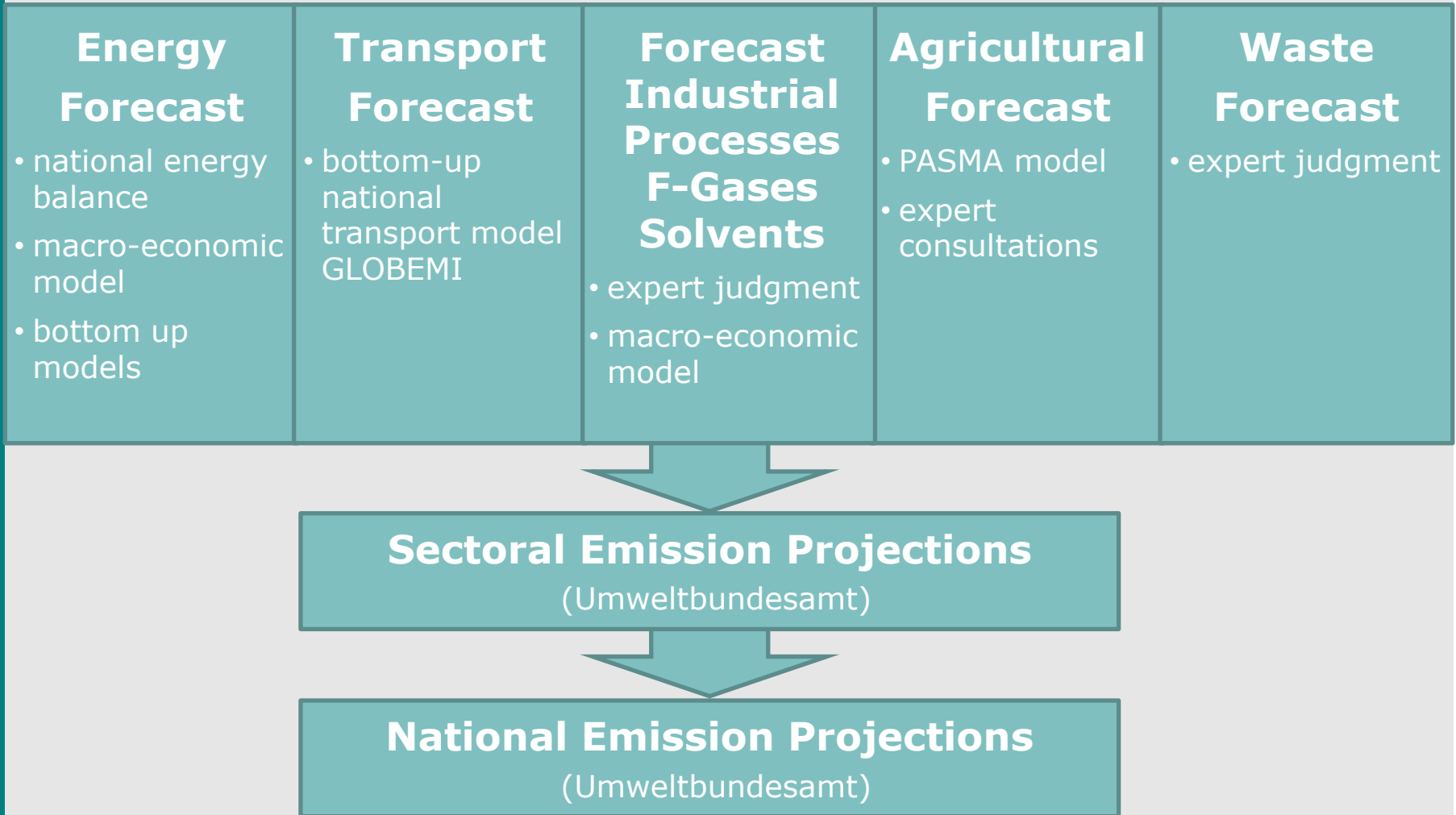
Modelling framework



3. Scenario development

Dataflow

Scenario Development I



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>

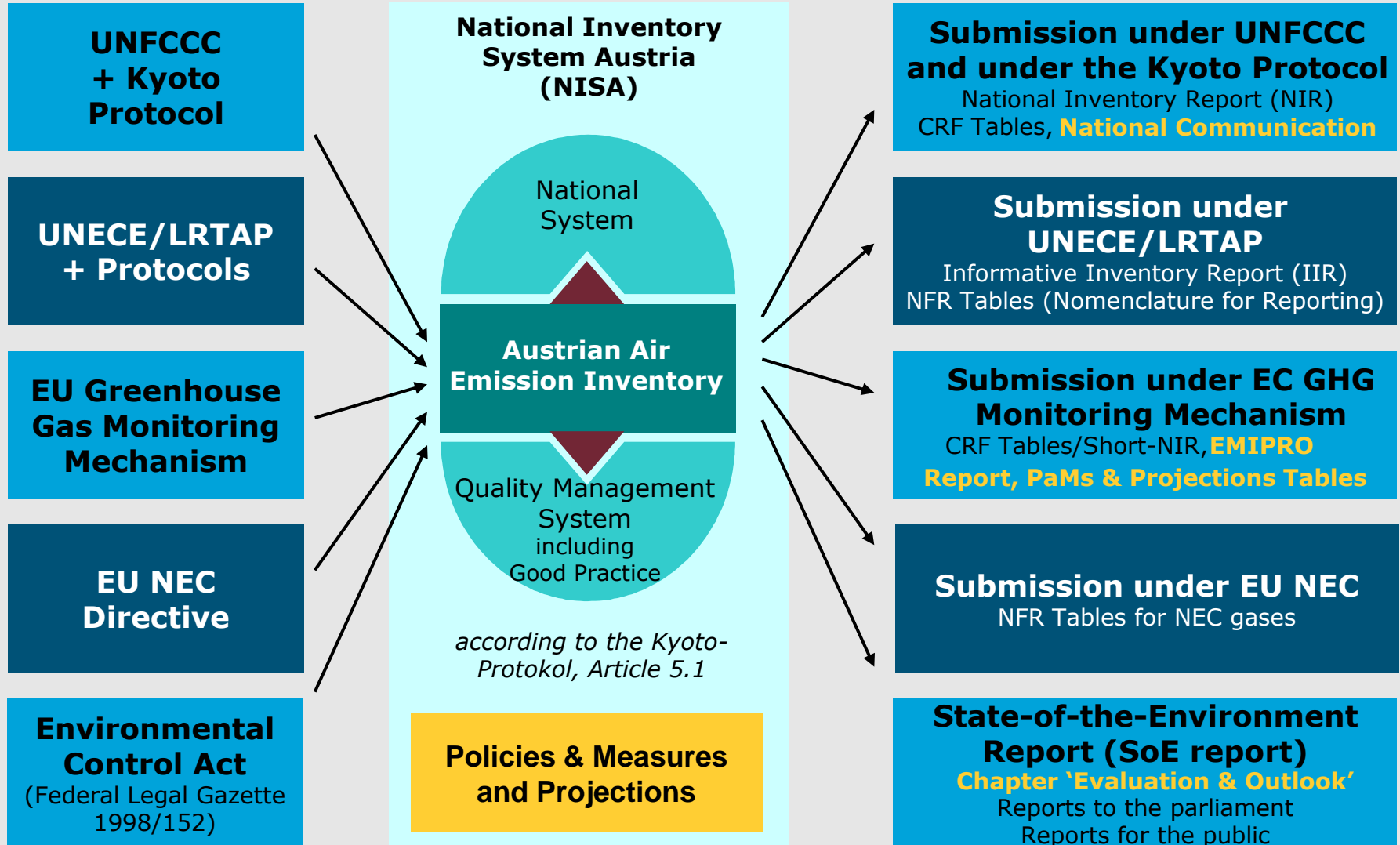
-> Documents->Inventory Guidelines and

-> Documents ->Links

National Inventory System Austria

Austria's National Air & GHG Emission Projections

Reporting I



Example:

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

1 INTRODUCTION

2 EMISSIONS

2.1 Nitrogen Oxides NO_x

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
NMVOG	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
NMVOG	164.31	159
NH ₃	61.31	66

Example: Results (LTRAP Convention)

wm	2010	2020	2030
Pollutants	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	Austria's emission projection based on fuel used [kt/a]		
NO _x	146.20	125.44	110.63
SO ₂	25.75	24.48	23.57
NMVOC	164.31	169.15	176.13
NH ₃	61.31	61.04	60.93

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**

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