

Task Force on Reactive Nitrogen, 2nd meeting

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Review and revision of the European legislation related to ammonia

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Summary

- **Thematic strategy air pollution objectives**
- **Current policy environmental results, gaps, needs**
- **NEC directive revision**
- **Role of the Nitrate Directive**
- **IPPC revision**
- **Challenges**

Thematic Strategy on Air Pollution

Objectives of the Thematic Strategy on Air Pollution expressed as % improvements in 2020 relative to 2000

Life Years Lost due to particulate matter (YOLL's)	Acute mortality from ozone (cases/yr)	Forest area with excess of acidification (km ²)	Ecosystem freshwaters area with excess of acidification (km ²)	Ecosystem area with excess of eutrophication (km ²)	Forest area with excess of ozone (km ²)
47%	10%	74%	39%	43%	15%

Current policy environmental results

Assumptions

- Study carried out to assess performance of the current policies (*in terms of achieving the TSAP objectives*)
- Assumptions:
 - energy projections at European level
 - national projections on agricultural activities
- Objectives of the C&E package are met
- National targets for GHG emissions for non-ETS sources are met in each MS
- Full trade of renewable energy within EU-27

Current policy environmental results

Agricultural activities

Table 2.9: National projections of agricultural activities for the year 2020 (Source: GAINS, based on national submissions)

	Cattle	Pigs	Chicken and poultry	Sheep and goats	Horses	Fertilizer consumption	Fertilizer production
	1000 animal heads					kt N	
Austria	1896	3228	13007	389	87	102	225
Belgium	2586	7266	39728	129	73	142	1440
Bulgaria	677	1100	22958	2411	373	151	350
Cyprus	48	457	4830	655	7	7	0
Czech Rep.	1400	3800	36234	260	28	230	310
Denmark	1310	14728	18146	95	168	176	0
Estonia	222	448	2640	87	4	21	38
Finland	791	1270	13113	97	65	145	210
France	19145	16327	226966	9971	458	2313	1374
Germany	8457	23983	141374	2491	1169	1828	1000
Greece	520	994	23923	14819	140	202	200
Hungary	907	7000	43000	1600	82	398	250
Ireland	5475	1503	13200	4824	85	332	0
Italy	6418	9181	197983	11320	337	799	428
Latvia	350	508	5091	55	16	35	0
Lithuania	766	1208	12782	38	65	119	500
Luxembourg	189	94	86	7	2	16	0
Malta	19	82	1010	26	3	1	0
Netherlands	3506	11181	108629	1951	165	272	1000
Poland	4850	15598	171500	340	355	963	1450
Portugal	1256	2064	38699	3992	40	170	152
Romania	2630	7300	90000	8297	800	391	800
Slovakia	693	1901	11602	359	10	101	270
Slovenia	527	665	5552	142	17	33	0
Spain	6173	26447	227461	26119	733	995	650
Sweden	1455	2490	20000	395	300	170	65
UK	8317	4835	175620	33813	291	976	500
EU-27	80583	165657	1665133	124681	5873	11088	11212

- 16 % +6 % +10 % - 10 % -6 %

Current policy environmental results

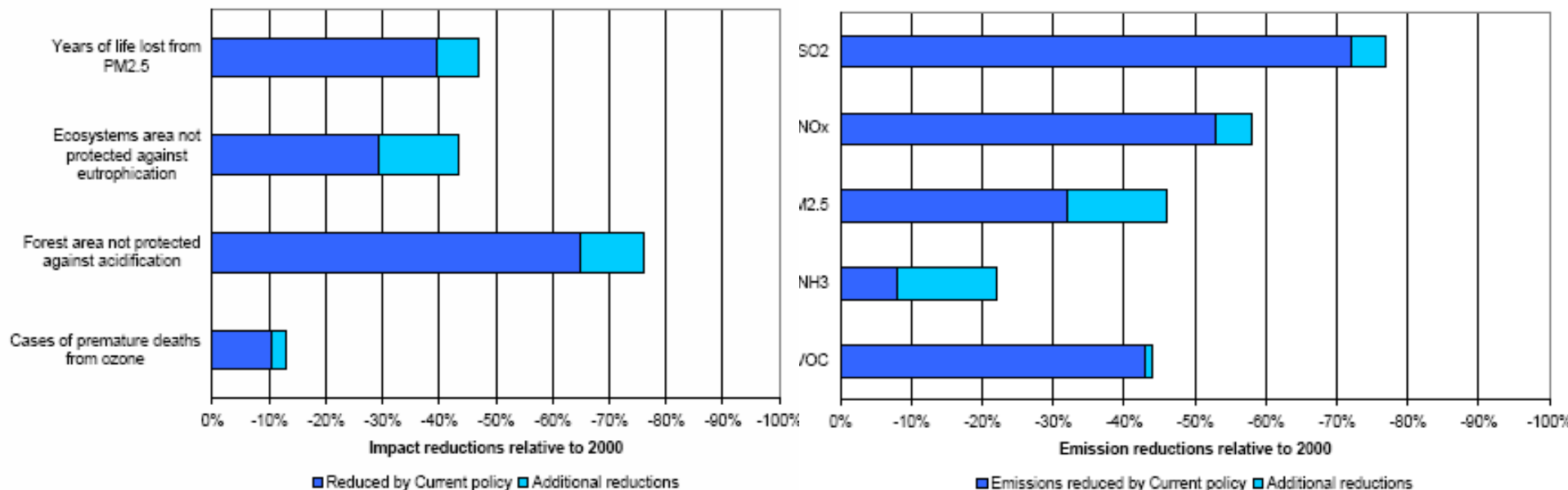
Gaps

	NH₃				Projected emission in 2010	Comparison situation 2020/objectives 2010
	2000	NEC 2010	CLE 2020	CP 2020		
Austria	60	66	60	60		
Belgium	84	74	77	77		+4%
Bulgaria	69	108	68	68		
Cyprus	7	9	7	7		
Czech Rep.	84	80	77	77		
Denmark	91	69	53	53		
Estonia	10	29	11	11		
Finland	35	31	30	30		
France	704	780	650	650		
Germany	629	550	594	566		+3%
Greece	56	73	48	48		
Hungary	78	90	90	90		
Ireland	125	116	104	104		
Italy	429	419	389	390		
Latvia	13	44	15	15		
Lithuania	38	84	40	40		
Luxembourg	6	7	6	6		
Malta	2	3	3	3		
Netherlands	149	128	138	129		+1%
Poland	317	468	313	313		
Portugal	76	90	70	70		
Romania	138	210	177	177		
Slovakia	31	39	32	32		
Slovenia	20	20	21	21		+5%
Spain	392	353	370	353	388 ktons	
Sweden	55	57	51	51		
UK	323	297	267	268		
EU-27	4020	4294	3763	3709		

Gaps also for
NOx (2010
national
projections and
2020 model
projections) VOC
(idem)

Current policy environmental results

Needs



Further emission reductions needed to meet the TSAP objectives (improvements in 2020 compared to 2000):

- SO2 from 72% to 77%: 5 % additional reduction!
- NOx from 53% to 58%: 5% additional reduction!
- PM2.5 from 32% to 46%: 14% additional reduction!
- NH3 from 8% to 22%: 14% additional reduction!
- VOC from 43% to 44%: 1% additional reduction!

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NEC directive revision

The Commission proposal is not finalized!

Objectives:

- ensure the achievement of the TSAP objectives for 2020
- Set national emission ceilings for NO_x, SO₂, VOC, NH₃ and PM_{2,5} for 2020, which are cost effective for the Community as a whole

NECD baseline includes:

- Euro 5/6
- IPPC-revision
- Climate & Energy Package (non ETS targets are met by each MS + full trade for renewables + carbon prices do not exceed 30 €/t CO₂)
- National projections for agriculture

Policy options

1. **No policy change** - Not setting new ceilings for 2020 and not taking action beyond current policy
2. **Cost-effective measures** - Setting national ceilings for 2020 for all five pollutants (incl. PM_{2,5}) in a least-cost way so that all objectives of the TSAP are met in 2020
3. **Fairness** aspects - As 2 but limiting (capping) the additional costs as percentage of GDP for less wealthy Member States to not more than 0.04% (option 3a) respectively 0.032% (option 3b) of GDP in 2020
4. **Cost-effective measures based on the agreement** made by **Marine Environment Protection Committee** of the **International Maritime Organization**, that includes new standards for marine fuels and engines, which will bring a progressive reduction in SO₂ emissions from ships.

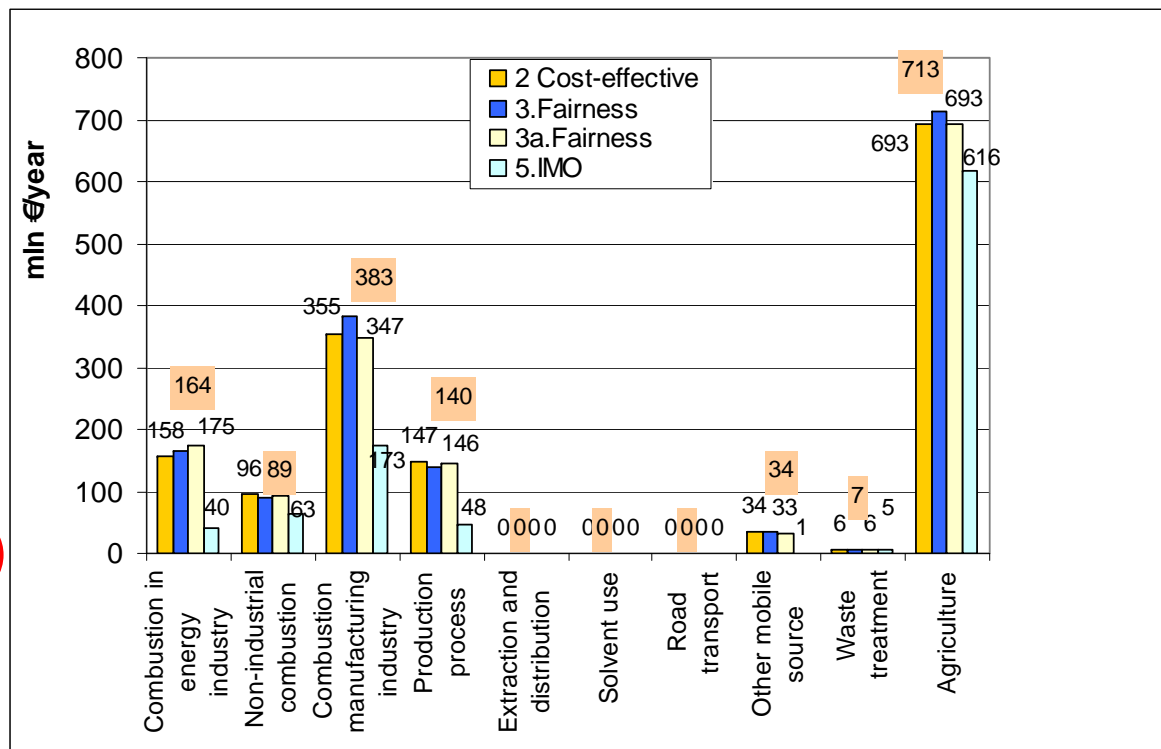
Environmental benefits for different policy options

	TSAP	Option 1	Option 2	Option 3a	Option 3b	Option 4
	Objective	No Change	Cost-effective	Fairness Cap at 0.04% of GDP	Fairness Cap at 0.032% of GDP	Cost-effective IMO
Life years lost PM (years)	-47%	-40%	-47%	-47%	-47%	-47%
Acidification forests (1000 km2)	-74%	-65%	-76%	-76%	-76%	-78%
Acidification lakes (1000 km2)	-39%	-46%	-48%	-48%	-48%	-57%
Eutrophication (1000 km2)	-43%	-29%	-43%	-43%	-44%	-43%
Mortality ozone (cases/year)	-10%	-10%	-13%	-13%	-13%	-13%
Ozone forests (1000 km2)	-15%	-24%	-32%	-32%	-32%	-

Additional costs for different policy options

- Agriculture: +47%
- Industry: + 34%
- Power sector: +11 %

Substantial variation between Member States



	Current policy		Cost-effective solution		Costs <0.04% of GDP		Costs <0.032% of GDP	
	mio €/yr	% of GDP	mio €/yr	% of GDP	mio €/yr	% of GDP	mio €/yr	% of GDP
EU-27	79962	0.510%	1490	0.009%	1493	0.010%	1531	0.010%

Option 2: costs 0.001 % - 0.055 % of GDP

Option 3a: costs < 0.04 % GDP

Option 3b: costs < 0.032 % GDP

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Role of the Nitrates Directive

- **NEC baseline assumes national estimations on implementation of the ND**
- **Sensitivity analysis**
 - Full implementation ND
 - Balanced fertilization scenario
 - Reduced application of animal manure to soils
 - Low protein feed to reduce nitrogen excretion
 - Reduction in livestock density
- **Results show**
 - fertilizer use will decrease by 20% compared to national projections for 2020 (and 25% lower than 2000)
 - 9% ammonia emission reduction (310 kt) as a « side effect »
 - Additional costs for achieving TSAP objectives will decrease by 50 % (option 2: 1.490 €bn/year; option 5: 0.990 €bn/year; option ND: 0.756 €bn/year)

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IPPC revision

Fundamentals of IPPC

- Focus on **prevention** of pollution and, if not feasible, **minimisation**
- Installations must operate according to an **integrated permit**
- Permits should contain **Emission Limit Values (ELV)** based on **Best Available Techniques (BAT)** with the possibility to take into account certain local conditions
- BAT information exchange leads to the BAT Reference Documents (**BREFs**), adopted by the Commission

IPPC revision

Scope of recast

■ Through the Commission's proposal for a Directive on industrial emissions the following legislation is recast into one single act

- Directive 2008/1/EC concerning integrated pollution prevention and control (IPPC)
- Directive 1999/13/EC on VOC solvent emissions (SE)
- Directive 2000/76/EC on waste incineration (WI)
- Directive 2001/80/EC on large combustion plants (LCP)
- Directives 78/179/EEC, 82/883/EEC and 92/112/EEC related to the titanium dioxide industry

IPPC revision

Concerns related to the status quo

The Commission's review identified 4 key areas of concern:

- 1) Insufficient implementation of Best Available Techniques (BAT) [*e.g. for chemical plants - benzene: BAT 5 mg/m³ and ELV 2500 mg/m³ - 500x more than BREF -*]
- 2) Enforcement issues
- 3) Unnecessary administrative burdens due to complexity and inconsistency of parts of legal framework
- 4) Insufficient scope to achieve the Thematic Strategy objectives

IPPC proposal

new elements

- **Permits conditions** must be **based on BAT** (any **deviation needs to be justified**) - BREFs shall be the reference for setting the permit conditions
- Permits conditions will cover not only emissions to **air** and **water** but also emissions to **land**, **waste** management, **energy efficiency**, etc.
- Environmental improvements through the introduction of **new activities** to the scope of IPPC (Smaller combustion activities of 20-50 MW capacity, Some additional waste management activities)

IPPC proposal

new elements

- **Inspections** (at least 1 site visit every 12 months unless programmes are based on a systematic appraisal of the environmental risks)
- **Review of permit conditions** (Permits to be reconsidered within 4 years of the publishing of a new BREF and, if necessary, will have to be updated)
- **Reduced reporting requirements for MS and operators**
- **Unified / Single permits** for installations subject to the proposed Directive

These actions should reduce administrative burden

→ by **€31 million per year** at EU level

→ **By a further €150-300 million** saving per year at Member States level

State of play in EU institutions

- EP: 1st reading (vote in plenary in March 2009)
- Council: political agreement (foreseen under CZ Presidency in June 2009)
- EP: 2nd reading (end of 2009 or beginning 2010)
- End of co-decision (foreseen around the end of 2010)

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Challenges

- Different instruments are contributing to achieve the same objectives (C&E package, NEC, IPPC, ND..) ... how optimize results at EU level?
- How could we better relate environmental objectives to emission ceilings establishment? (need to assess different policies implementation results)
- How to ensure the achievement of 22% NH₃ emission reduction from agriculture in 2020 in order to meet the TSAP objectives?
- How the CLRTAP Convention could help in the process of achieving the TSAP objectives?