Task Force on Integrated Assessment Modelling (TFIAM)
40th session, 18-20 May 2011,
Climate and Pollution Agency (KLIF), Oslo.

Analyses of the attainability of national targets of the Republic of Moldova

Sergiu Robu,

Institute of Power Engineering,
Academy of Sciences of Moldova

www.ie.asm.md
e-mail: sergiu.robu@asm.md

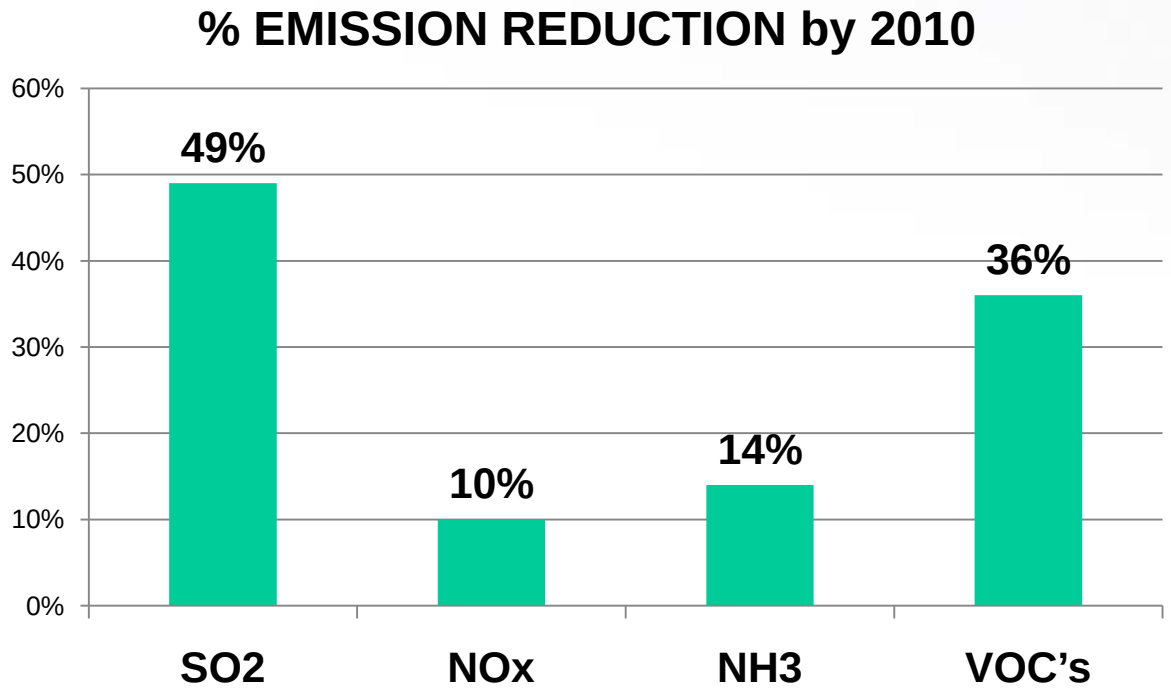
Valentina Tapis
e-mail: valtapis@gmail.com

Republic of Moldova.

- Location: East Europe, northeast of Romania
- Total area: 33845 km2
- Population: 3.39 million
- Capital: **Chisinau**, 716 thousands inhabitants, area 120 km2
- Moldova has NO fossil fuels resources

Gothenburg Protocol Ratification Capacity Assessment

- Moldova acceded to the Convention on Long Range Transportation of Air Pollution (CLRTAP) 1995, and ratified two Protocols of the Convention, *heavy metals and persistent organic pollutants* in 2002.
- To meet with the requirements of the Gothenburg Protocol and achieve targeted reduction of emissions, Moldova will have to comply with the following:

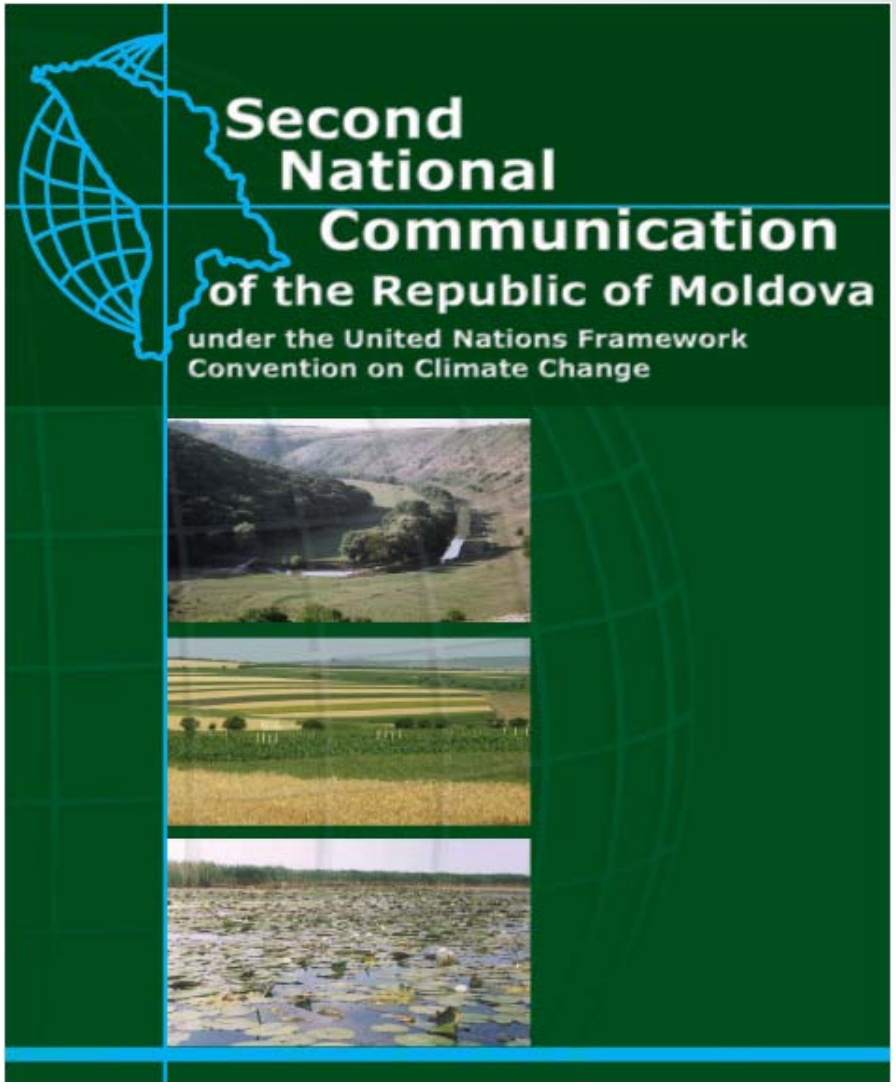


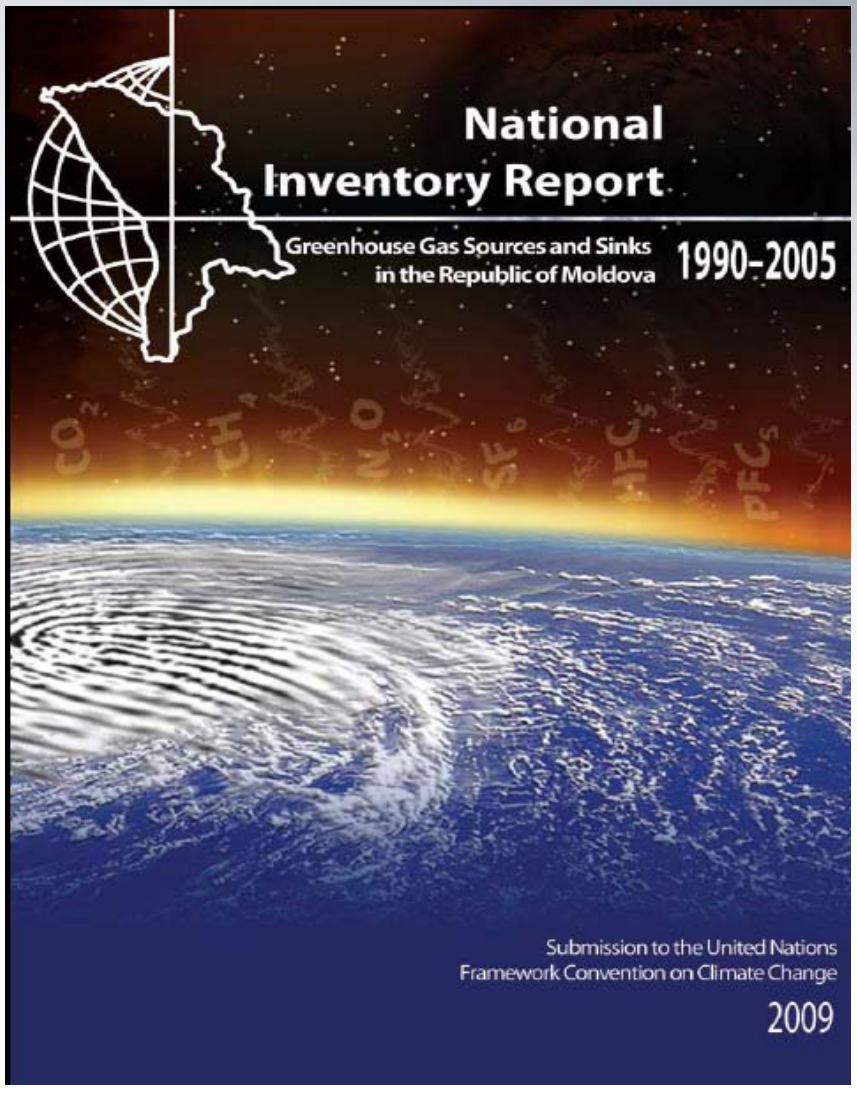
Gothenburg Protocol Emission Ceilings – Reductions – Costs, (ktonnes / year)

POLLUTANT	EMISSION LEVELS 1990	EMISSION CEILINGS 2010	INDICATIVE REFERENCE VALUE (€/KG)	% EMISSION REDUCTION FOR 2010 (BASE YR 1990)	REDUCTION 1990 – 2010 (KTONNES)	EMISSION REDUCTION COSTS (M€'s)
SO_2	265	135	2.3	-49	130	299
NO_2	100	90	4.6	-10	10	46
NH_3	49	42	3.5	-14	7	24.5
VOC's	157	100	4.6	-36	57	262.2
GRAND TOTAL COSTS EUROS						631.7

Pat O'Brain:
http://www.infomil.nl/contents/pages/137973/nerechapter22005.pdf

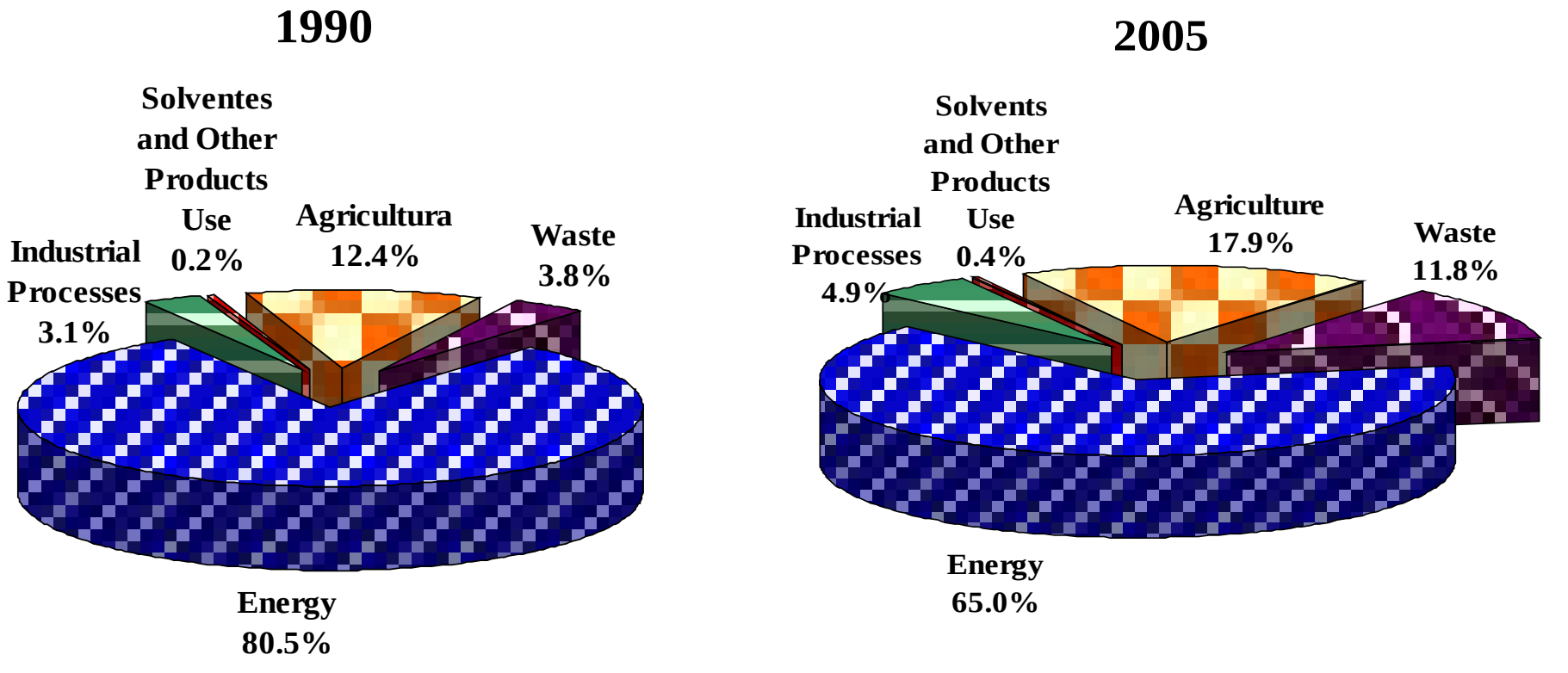
Some publications that are representing the position of the Republic of Moldova in climate change





http://unfccc.int/essential_background/library/items/3599.php?rec=j&priref=7159&suchen=n
http://www.clima.md/public/457/en/NIR_ENG1.pdf

Sectoral Breakdown of the Republic of Moldova's GHG Emissions in 1990 and 2005



The national inventory of the Republic of Moldova includes emissions of:
NOx, CO, NMVOC and SO2.

During 1990-2005,

- NOx emissions decreased by 77.1 %: from 137.74 Gg in 1990 to 31.58 Gg in 2005;
- CO emissions decreased by 73.1 %: from 429.05 Gg in 1990, to 115.22 Gg in 2005;
- NMVOC emissions decreased by 59.0 %: from 103.12 Gg in 1990 to 42.25 Gg in 2005,
- SO2 emissions deceased by 96.0 %: from 294.97 Gg in 1990, to 11.79 Gg in 2005

National Inventory of the Republic of Moldova

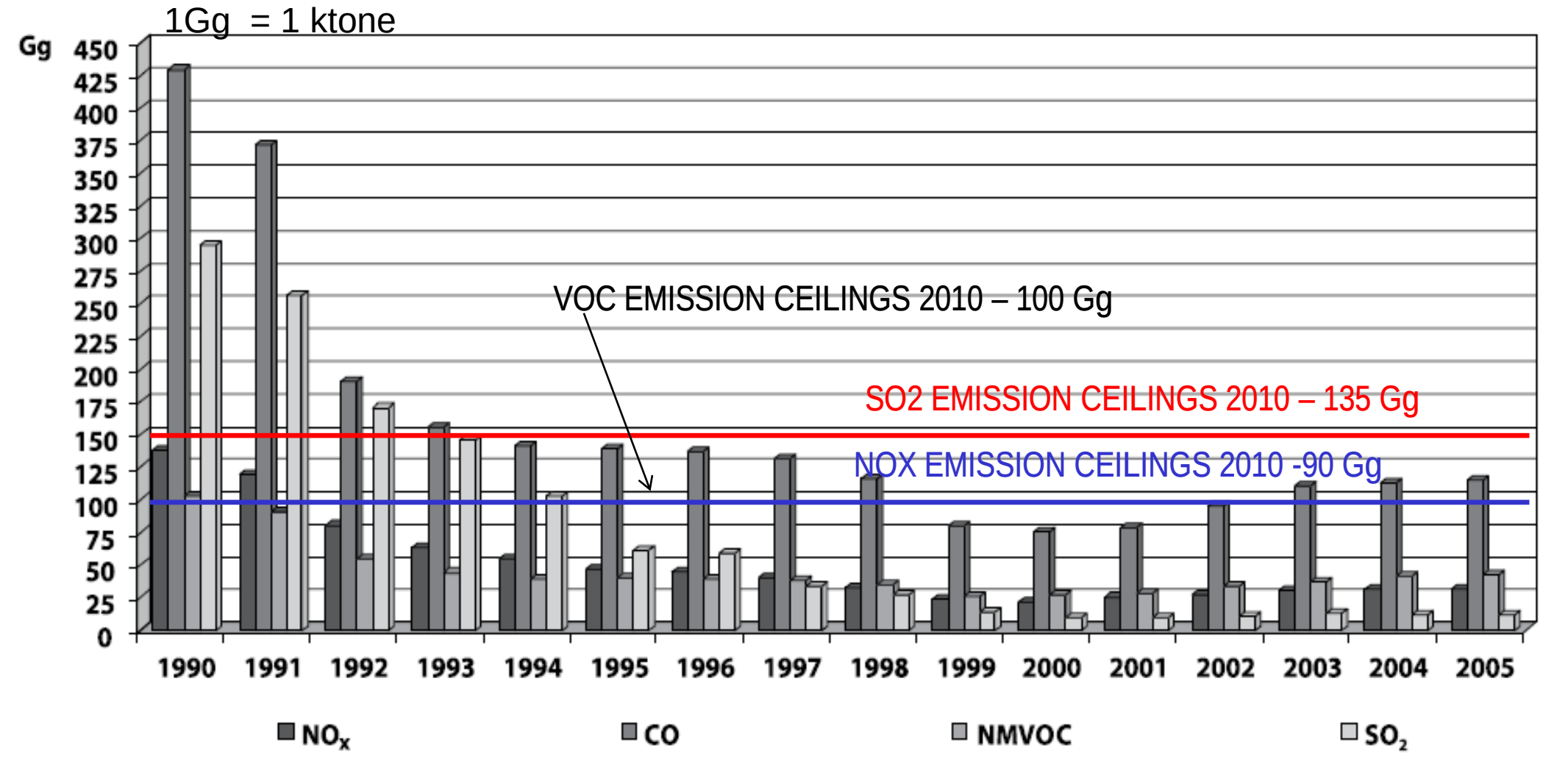
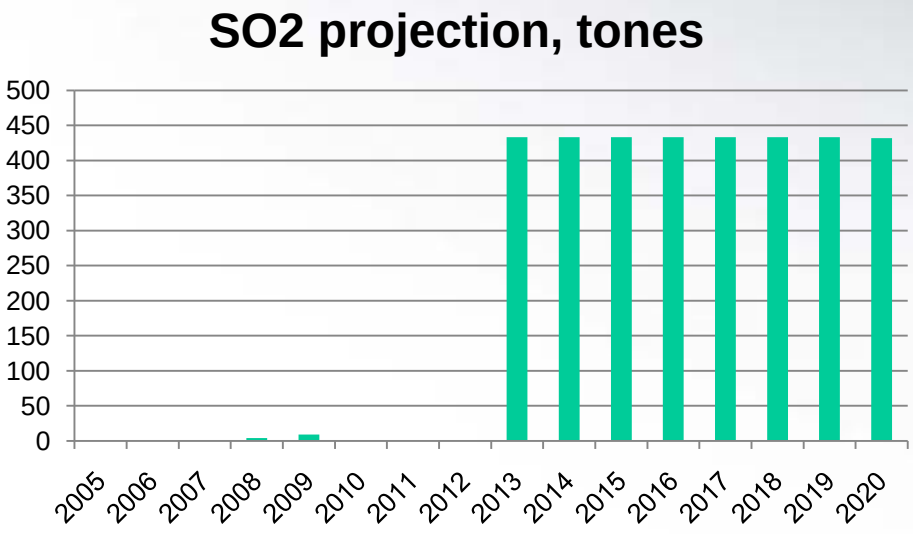
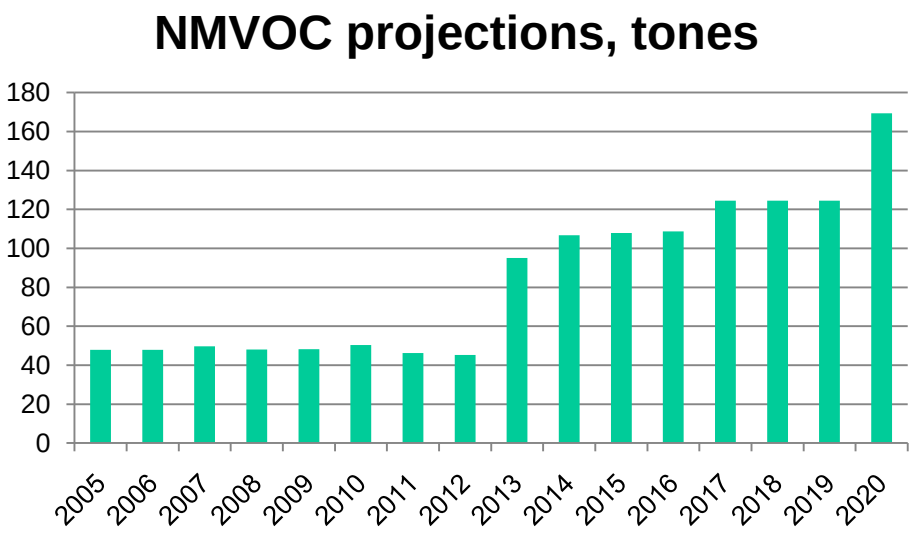
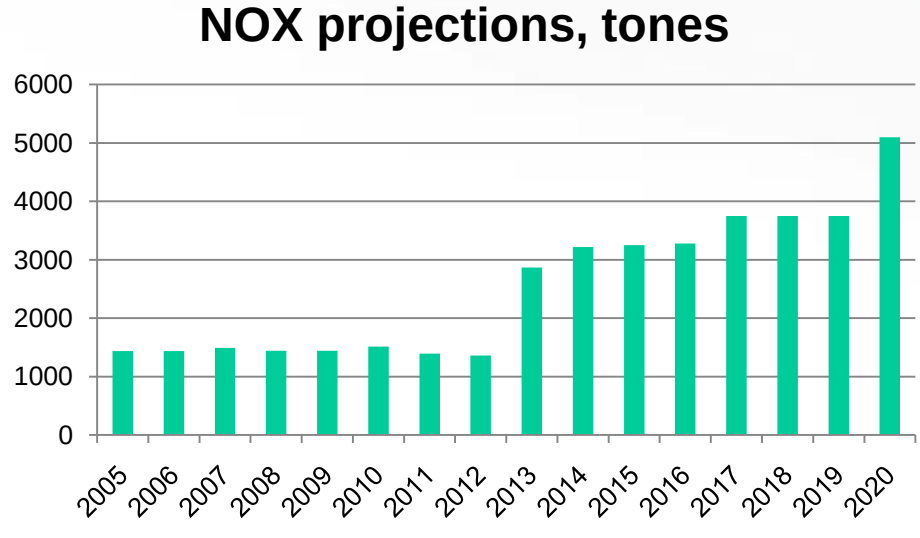


Figure S-4: Emission Trends for Ozone and Aerosol Precursors in the Republic of Moldova, 1990-2005

Energy Generation Sector

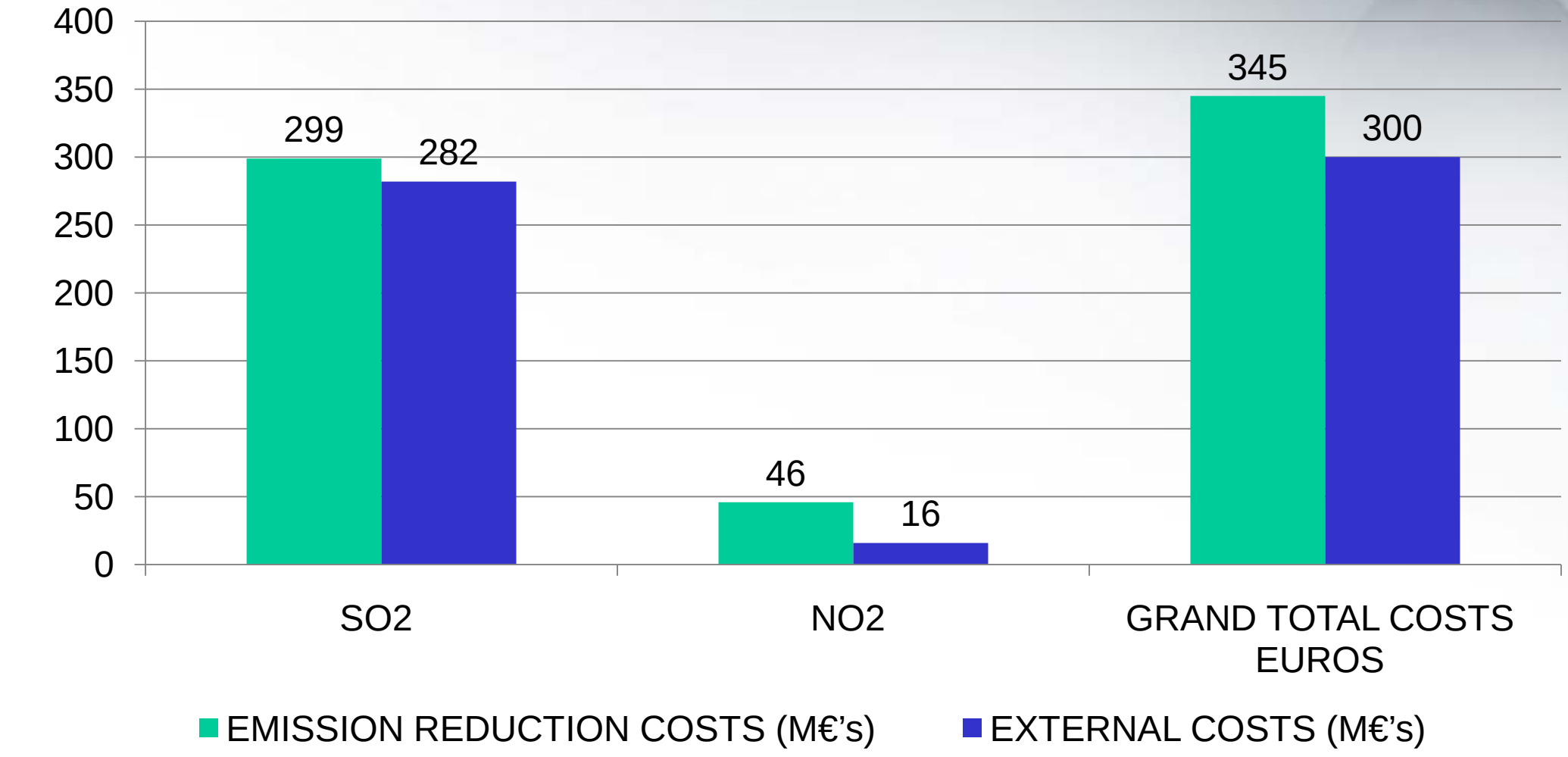






Reference Costs and External Costs of the Energy sector

(no transport sector)



The AirPacts program – Basic methodology

Emission

↓

Transport & transformation

↓

Exposure risk

↓

Exposure route

↓

Physical impact

↓

Damage cost

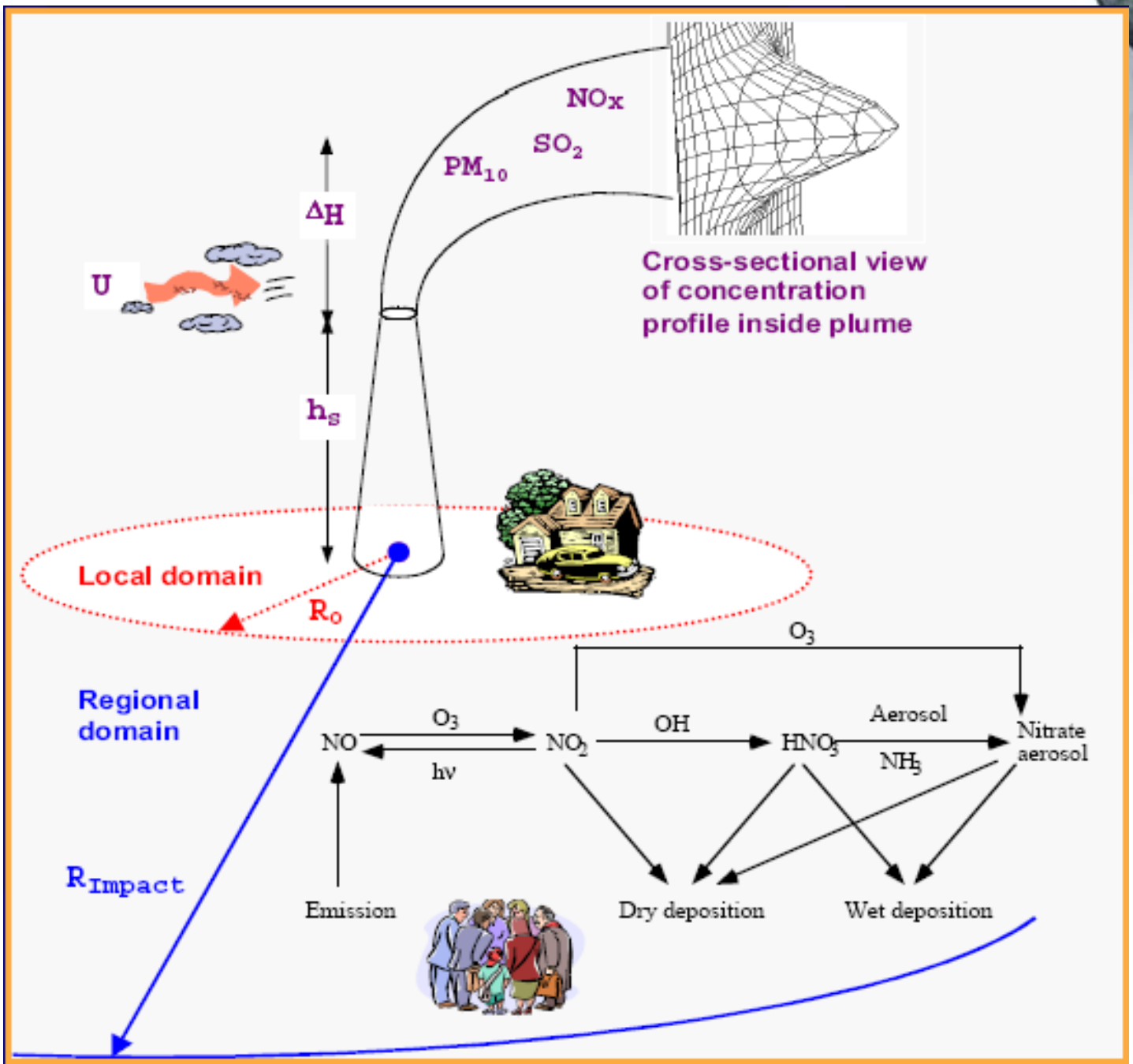
Impact Pathways Analysis – IPA

Physical impacts (health consequences) and economic costs (damages and *externalities*) are calculated by tracing the fate of a pollutant from point of emission into the air,dispersion and chemical transformation, receptor uptake at some downstream location from the source, estimation of resulting impacts and costs.

External cost

a burden imposed on someone without providing proper compensation

Methodology of Damage Costs



Regional area of impact

Conclusions

- Need more time to prepare and report national scenarios. July 2011 is optimistic deadline;
- Participation in GAINS Workshop of June 2011 can help a lot to speed-up the process;

Thanks for Your Attention

Sergiu Robu

Institute of Power Engineering
Academy of Sciences of Moldova
www.ie.asm.md
e-mail: sergiu.robu@asm.md