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# CIAM comment on the Verbal Note received from FYR of Macedonia on 31.01.2012

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Center for Integrated Assessment Modelling (CIAM)

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IIASA, International Institute for Applied Systems Analysis

# Basis for comparison of emissions

- FYR of Macedonia officially reported emissions in 2010, 2011, and 2012 (IIR and NFR tables available from [www.ceip.at](http://www.ceip.at))
- Verbal Note from FYROM submitted on 31.01.2012
- GAINS model calculations developed for the discussion of the revision of the Gothenburg Protocol – consistent with the CIAM Report #4/2011 (<http://www.iiasa.ac.at/web/home/research/researchPrograms/MAG-CIAM4.pdf>) and available online <http://gains.iiasa.ac.at/models/>

# GAINS 'current legislation' baseline considers for FYROM:

- PRIMES 2008 energy pathway and
- CAPRI 2009 pathway for agriculture.
- Emission controls on stationary sources that take into account obligations of countries that have joined the European Energy Community. This includes implementation until 2020 emission limit values for large combustion plants from the EU Large Combustion Plants Directive as well as meeting the requirements regarding EU legislation on sulfur content of liquid fuels.
- Controls on mobile sources according to the European legislation with a five to ten years delay depending on the type of the vehicle

# Comparison of reported numbers 2005-2010

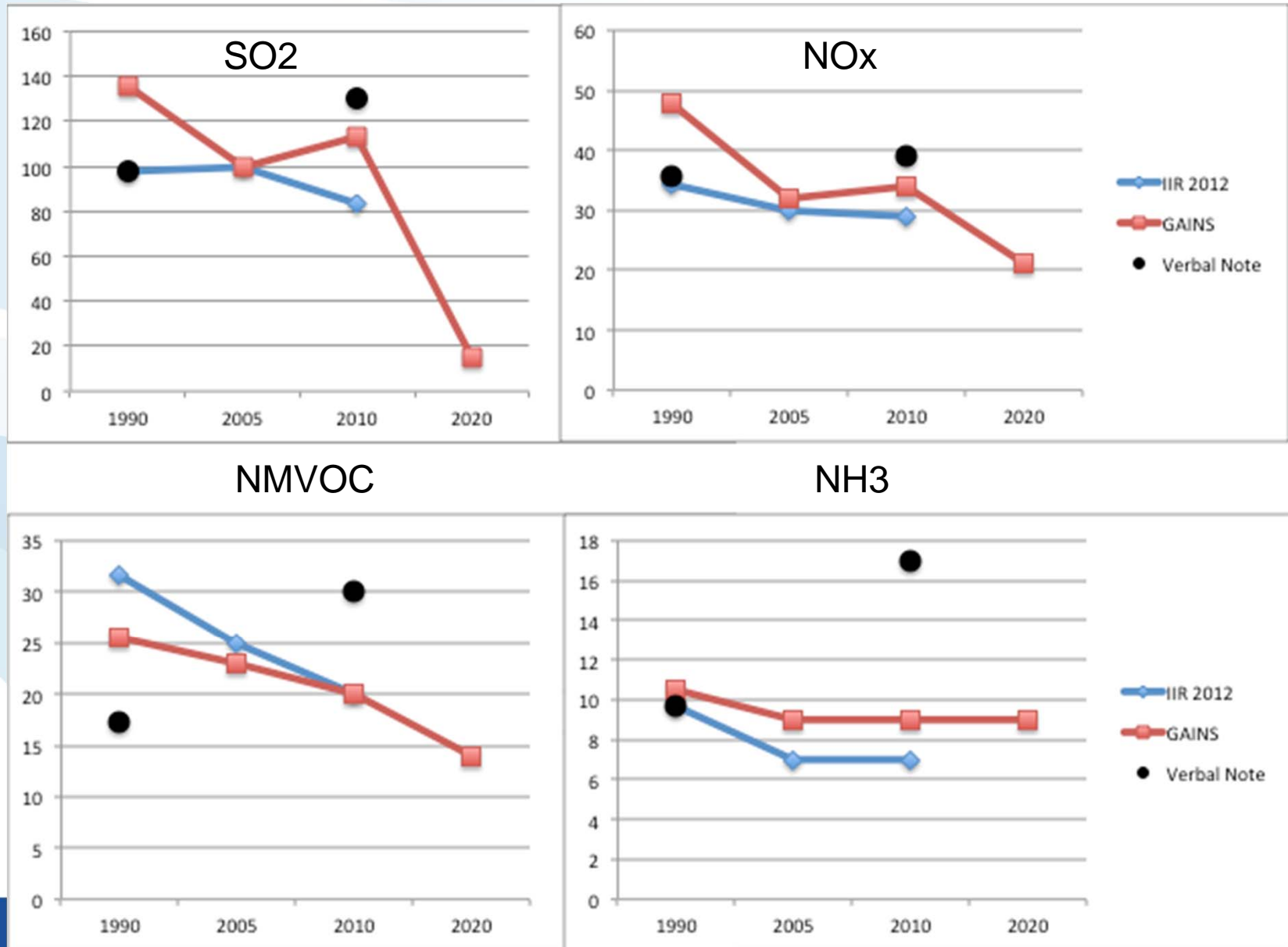
	SO <sub>2</sub>				NO <sub>x</sub>			
Source	2005	2009	2010	2020	2005	2009	2010	2020
IIR 2010-2011		113				33		
IIR 2012	100	85	83		30	26	29	
GAINS	100		113	15	32		34	21
Verbal Note			130				39	

	NMVOC				NH <sub>3</sub>			
Source	2005	2009	2010	2020	2005	2009	2010	2020
IIR 2010-2011		25				7.0		
IIR 2012	25	23	20		7.0	9.6	7.0	
GAINS	23		20	14	9		9	9
Verbal Note			30				17	

# Comparison of reported numbers 1990

Source	SO <sub>2</sub>	NO <sub>x</sub>	NM VOC	NH <sub>3</sub>
Verbal Note (31.01.2012)	97.42	35.84	17.31	9.7
IIR, 2012	97.42	34.4	31.6	9.7
GAINS	136.1	47.8	25.5	10.5

# Emission comparison (kt)



# Few open issues

- Some recent updates or inconsistencies in national reporting needs explanation and possibly documentation
- GAINS shall make full use of the latest IIR (2012)
- Why proposed emission ceilings are so much higher than reported emissions for 2010?
- More information about data and assumptions used for 1990 are needed