Gothenburg Protocol

Attainability of 2020 ambition targets based on national data - Portugal

Francisco Ferreira

Departamento de Ciências e Engenharia do Ambiente

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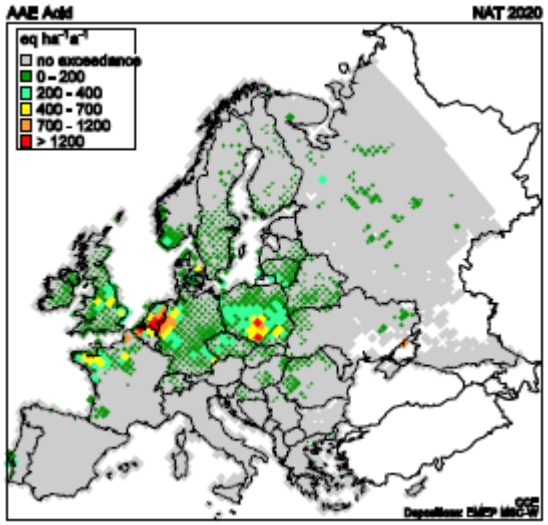
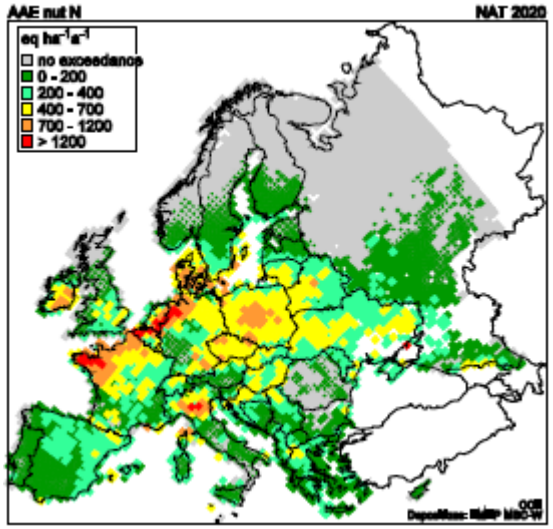
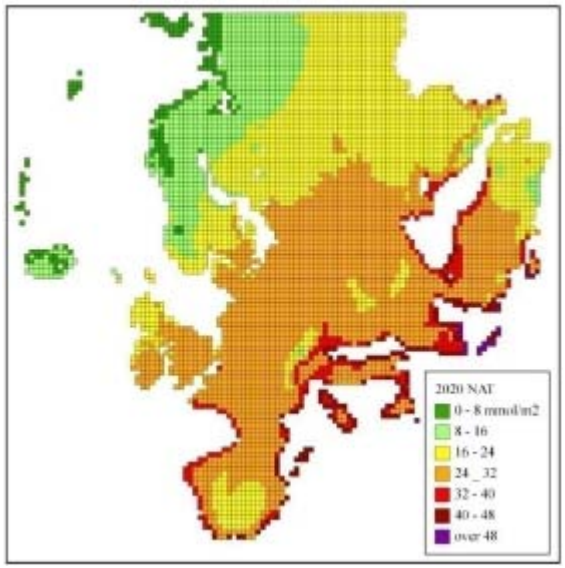
Introduction

- Use of different ambition level scenarios as a function of PRIMES is questionable
- GAINS NAT scenarios should be the basis
- What happens when PRIMES 2020 and GAINS NAT 2020 baselines are quite different?
- Major sectors continue growth activity plans
- High uncertaintity (easier for sectoral data)

Effects: the role of Portugal







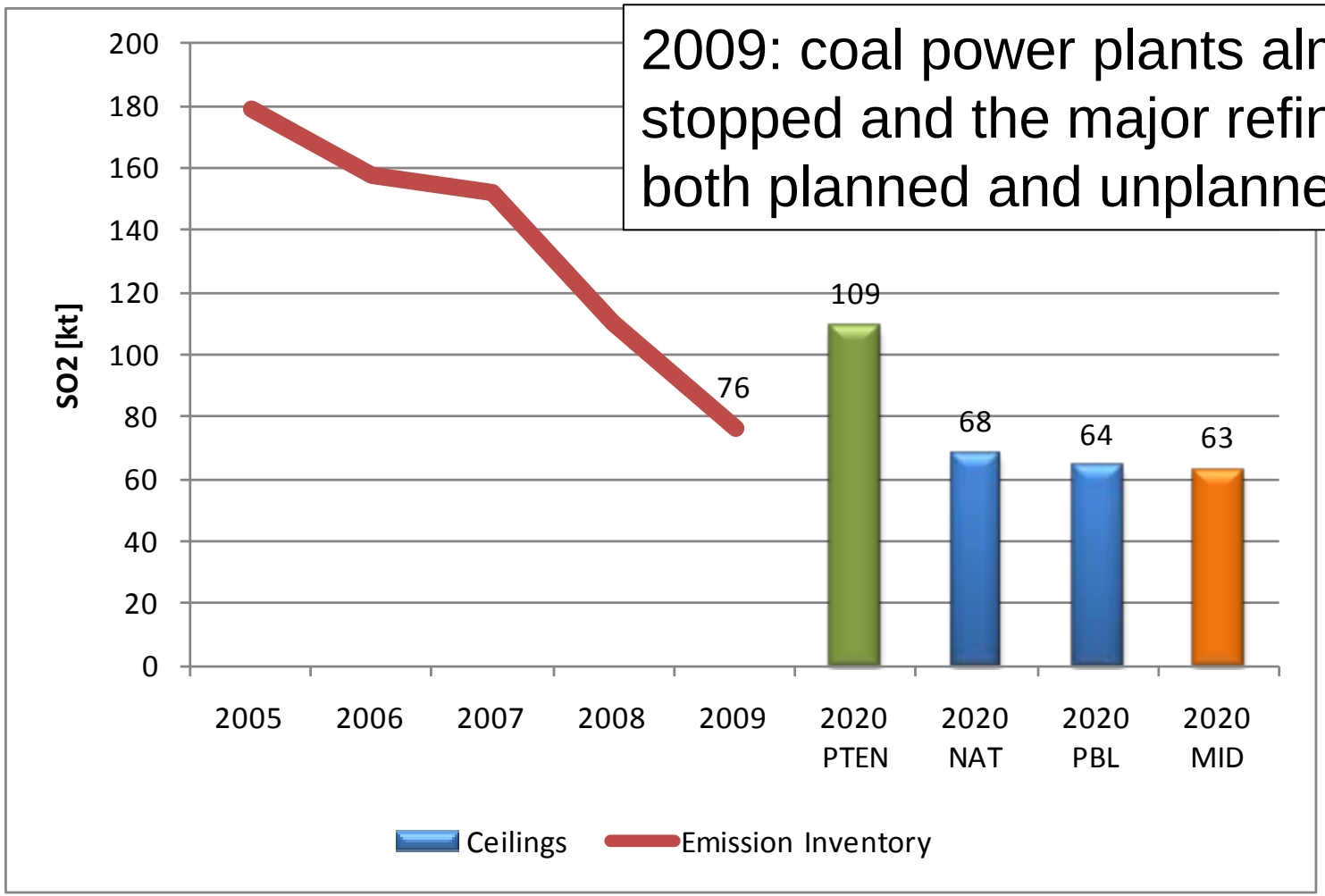
Acidification

Eutrophication

Ozone

$PM_{2.5}$ levels are currently low

SO_2 National totals



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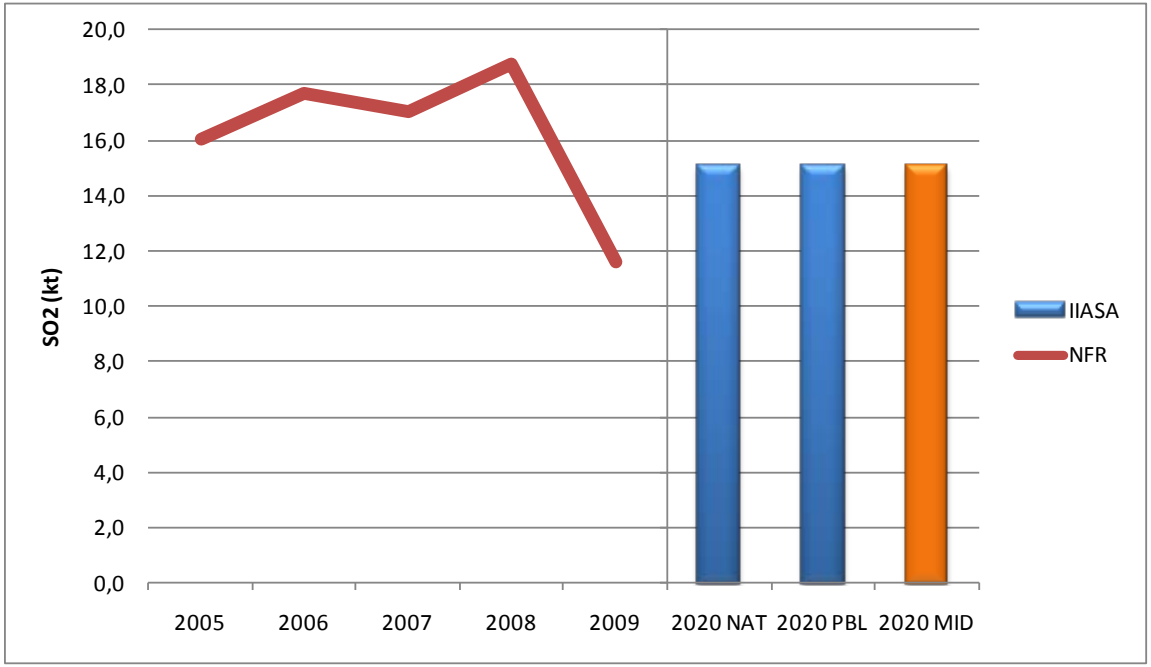
Combustion in refineries

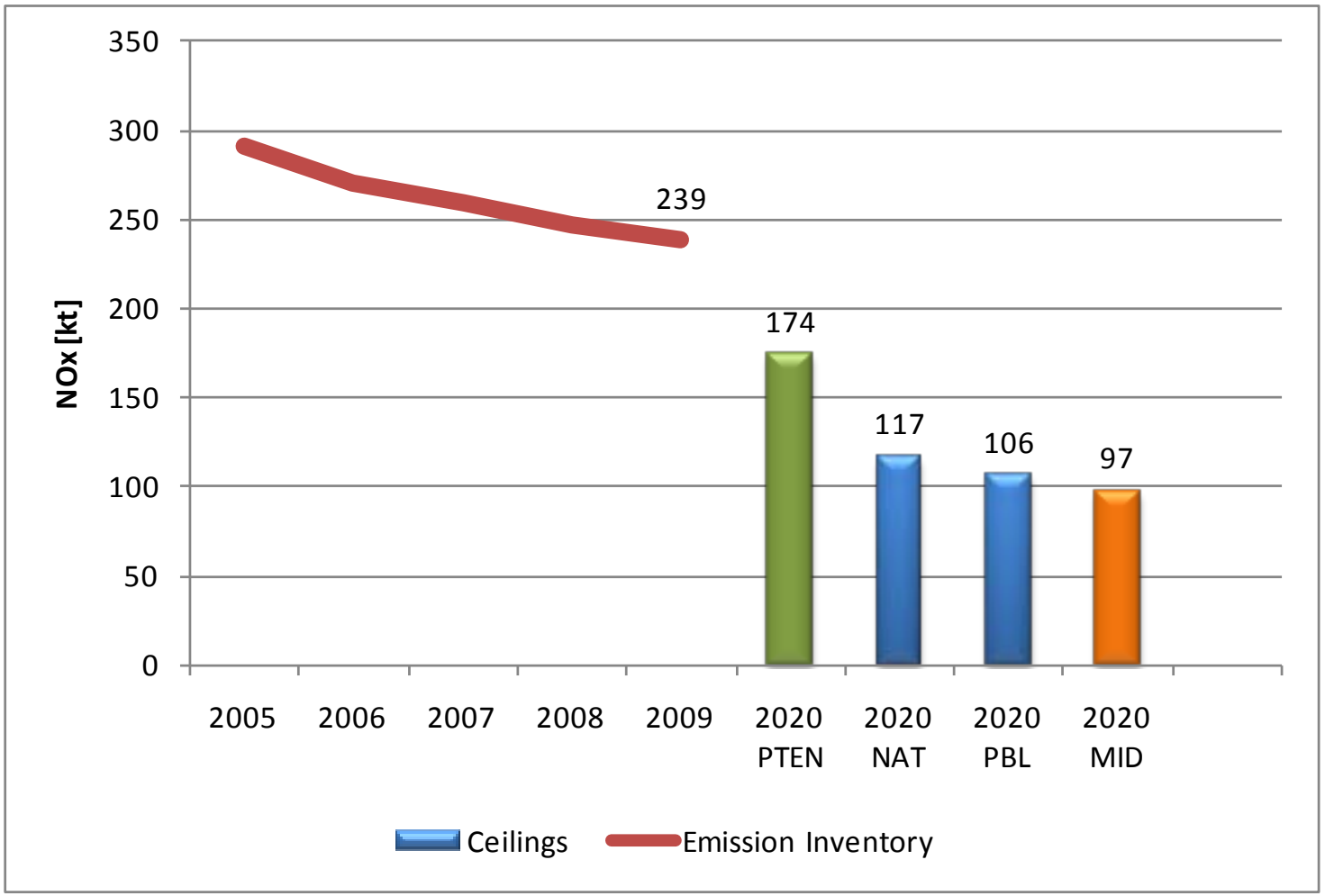


No physical and economic feasability to implement further emission reduction technologies

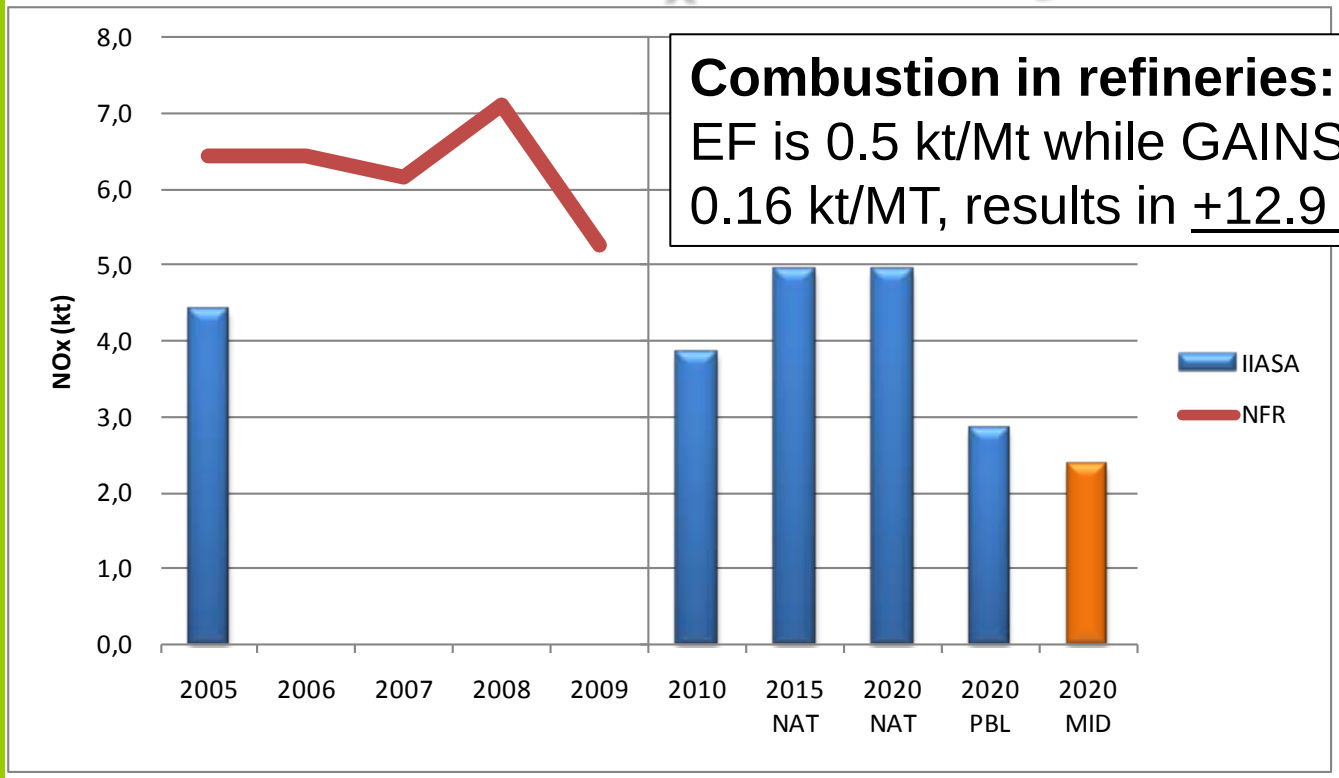
SO2 In PJ	PTEN	GAINS NAT	GAINS PRIMES PBL
2020	20.30 (HF) + 11.24 (OS2)	17.63 (HF)+18.07 (OS2)	22.40 (HF) + 0 (OS2)

SO2 in kt	PTEN	GAINS NAT	GAINS PRIMES PBL
2020	28.17 (EF = 1.4 kt/PJ for HF and around 0 for OS2)	11.87 (EF 26% with 1.9 kt/Pj and 70% 0.3 kt/PJ ; average = 0.67 kt/PJ)	

NO_x National totals



NO_x Industry examples

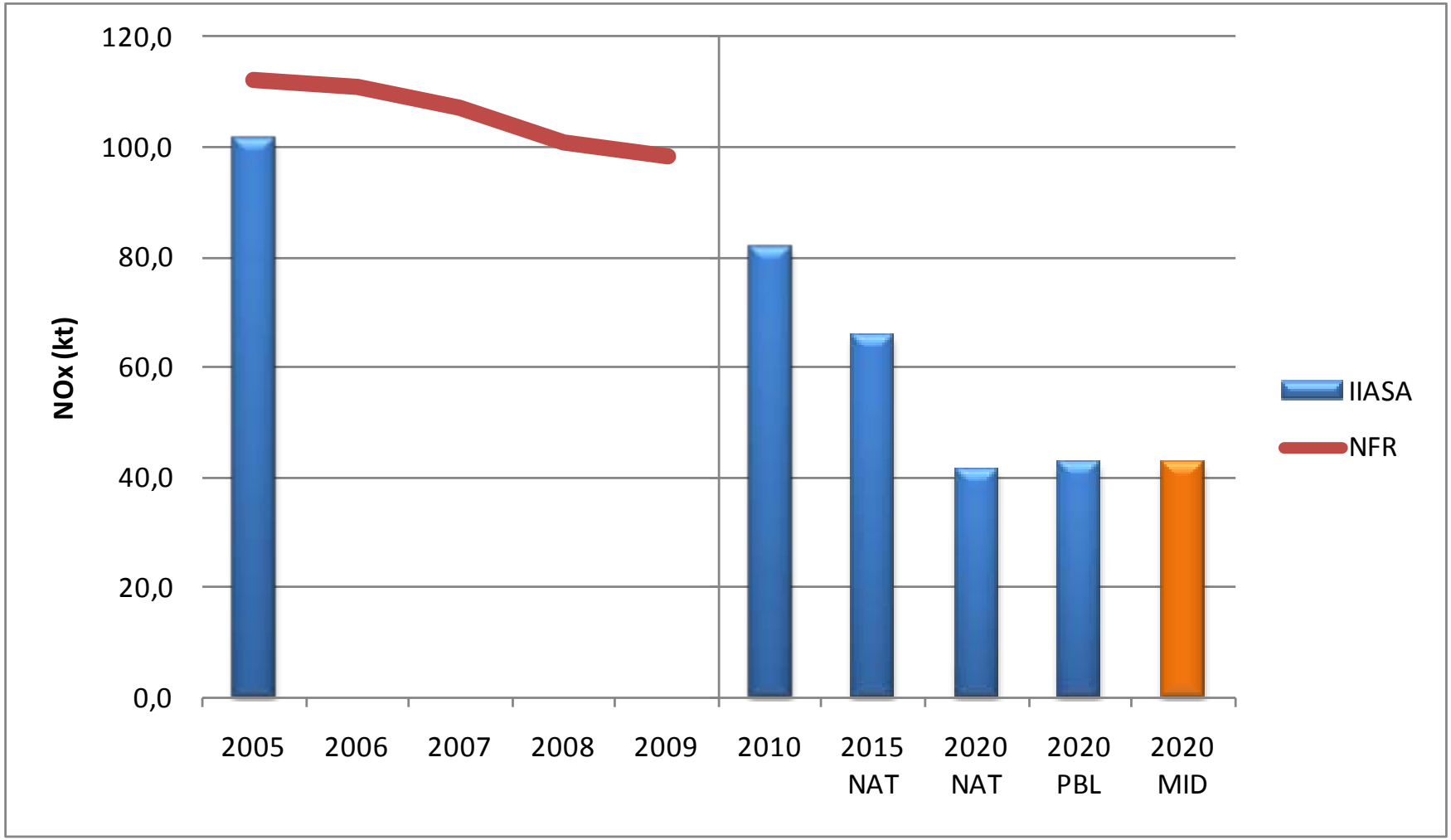


Combustion in refineries: different EF/AD; EF is 0.5 kt/Mt while GAINS is on average 0.16 kt/MT, results in +12.9 kt

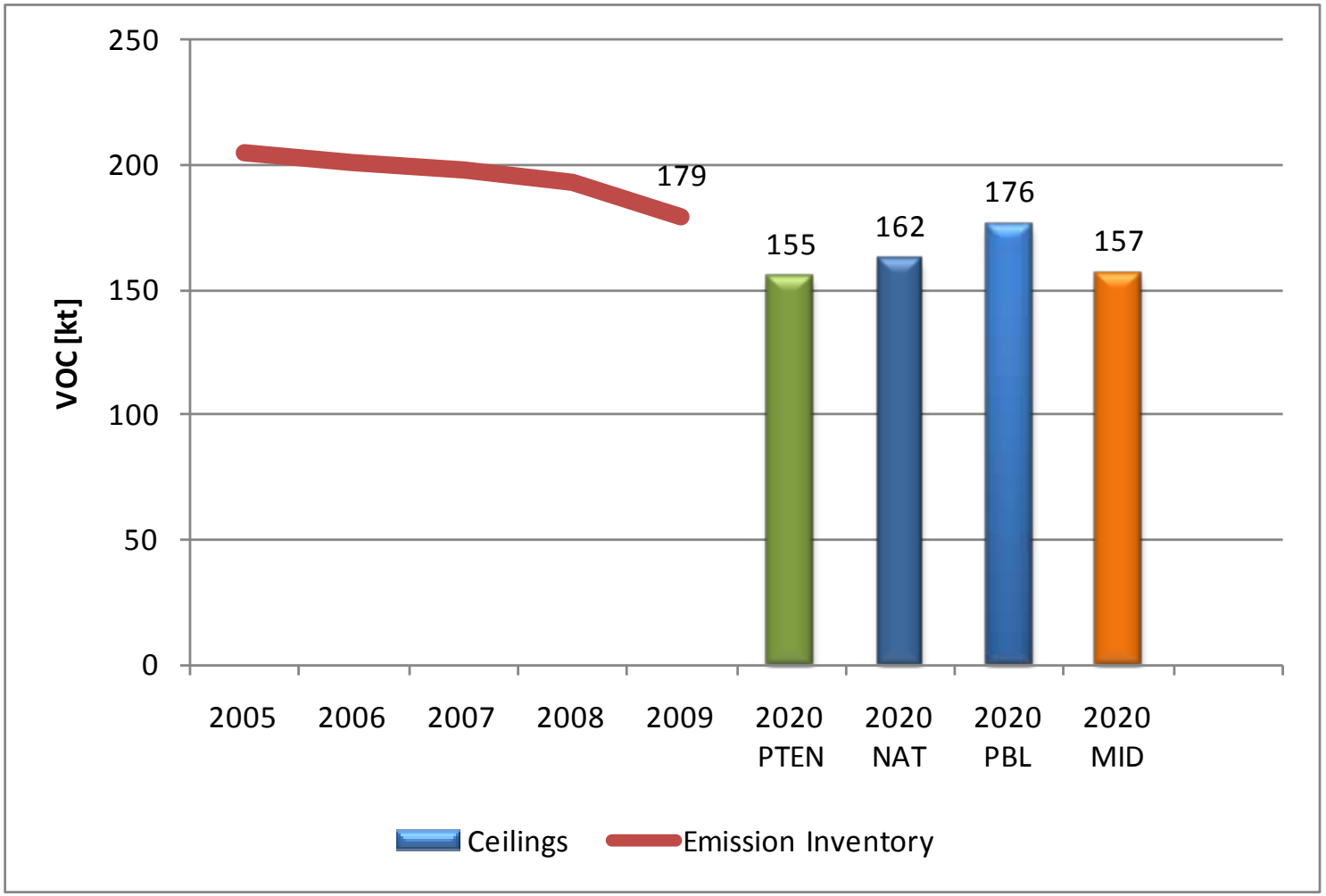
Cement: different EF/AD; EF already with all BAT implemented (real values from 2007) is 1.961 kt/Mt while GAINS is 1.05 kt/MT, results in +10 kt

Pulp and paper: no NOx emissions present in GAINS; using PT EF 1.84 kt/Mt, results in +4 kt NOx

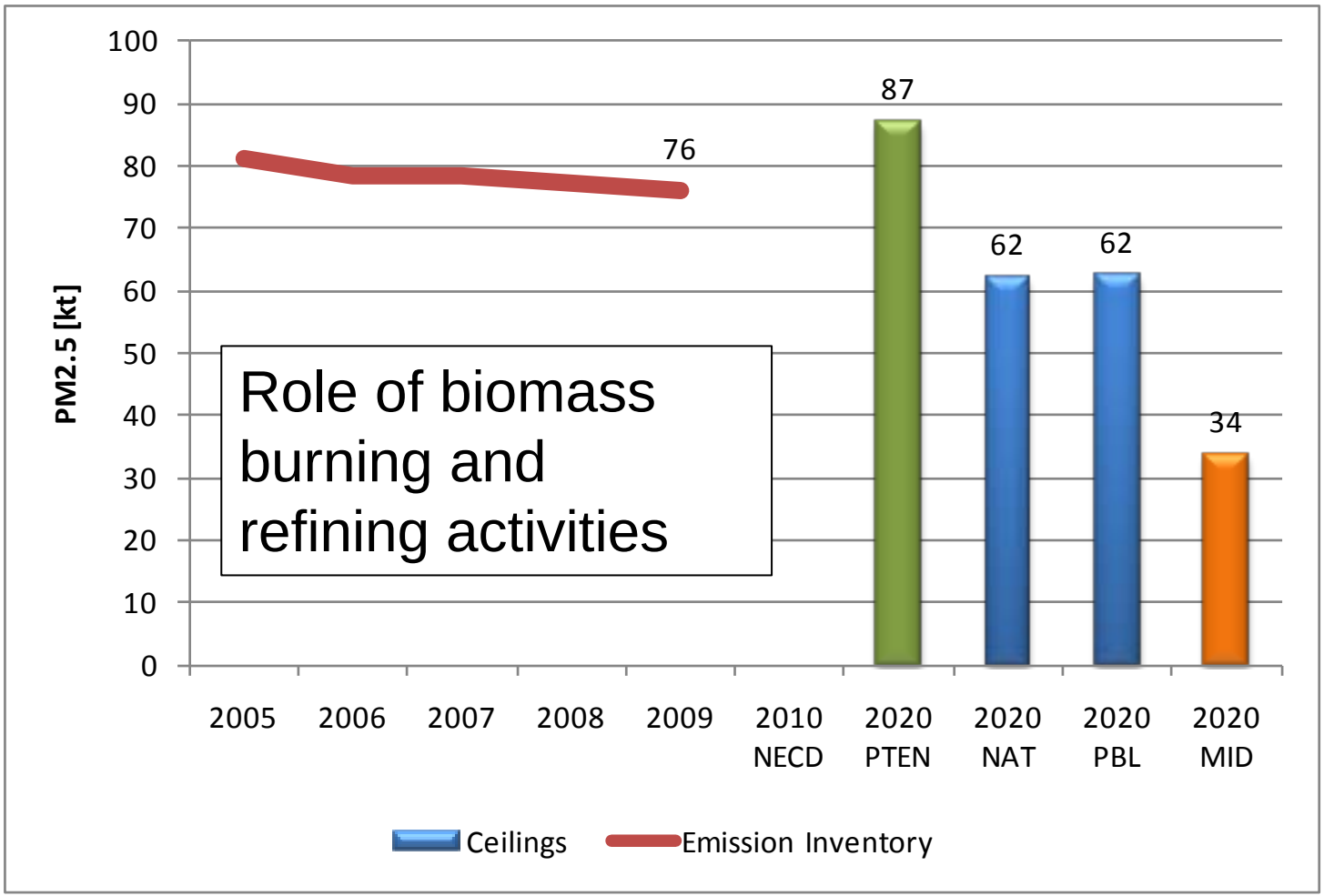
NO_x Road



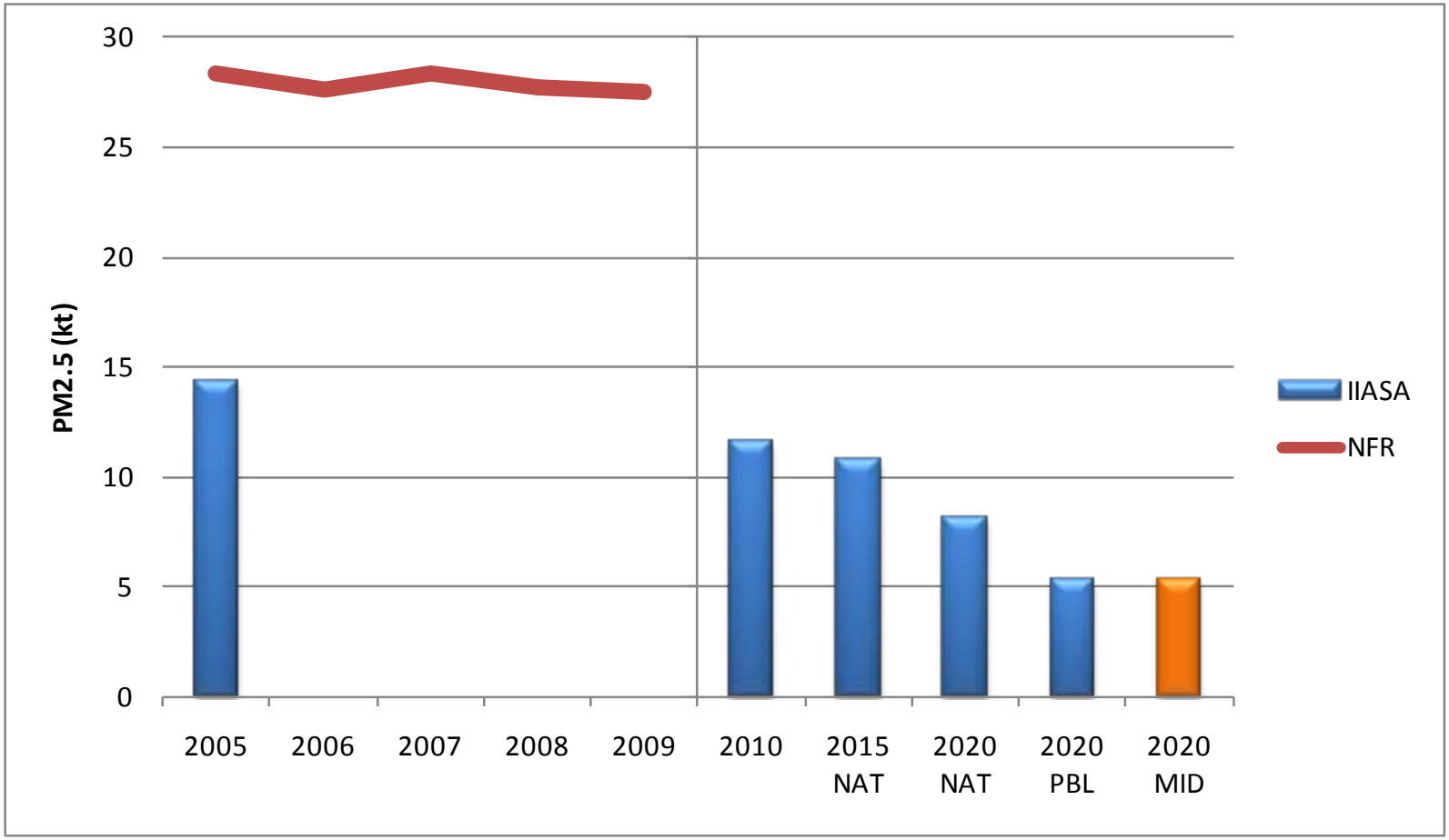
VOC National totals



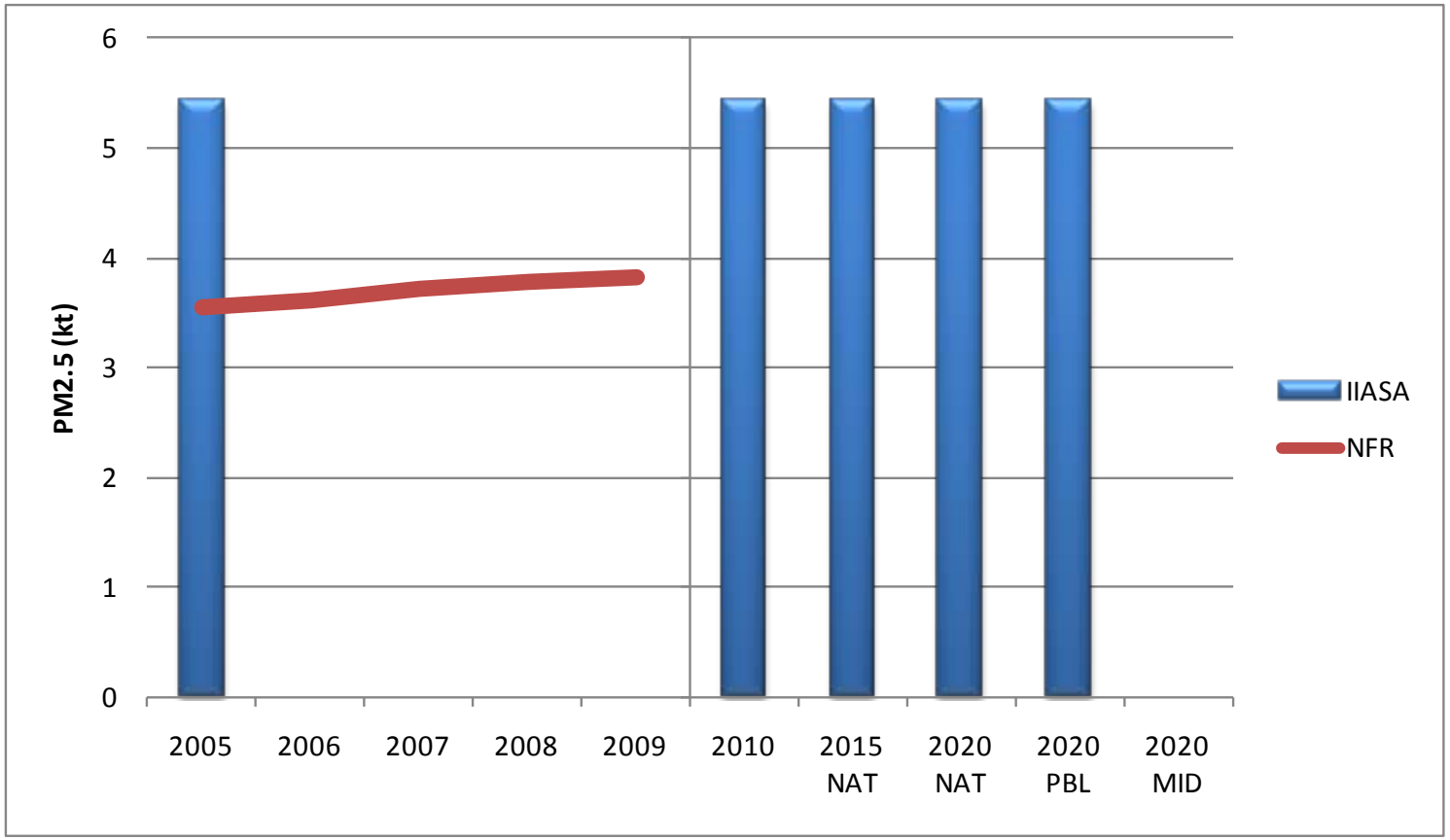
$PM_{2.5}$ National totals



$PM_{2.5}$ manufacturing industries and construction



$PM_{2.5}$ Agricultural waste burning



Fireplaces: implementation problems also

Conclusions

- New data to be sent to IIASA during July
- PRIMES basis is debatable
- EF/AD adjustments necessary
- Which scenario?
  - **NH_3** ☺ ? ☹?
  - **VOC** ☺ ? ☹?
  - **SO_2** ☺ ? ☹?
  - **NO_x** ☹ ☹
  - **$PM_{2.5}$** ☹ ☹ ☹ ☹ ☹ ….