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Progress towards the achievement of the EU's air quality and emissions objectives

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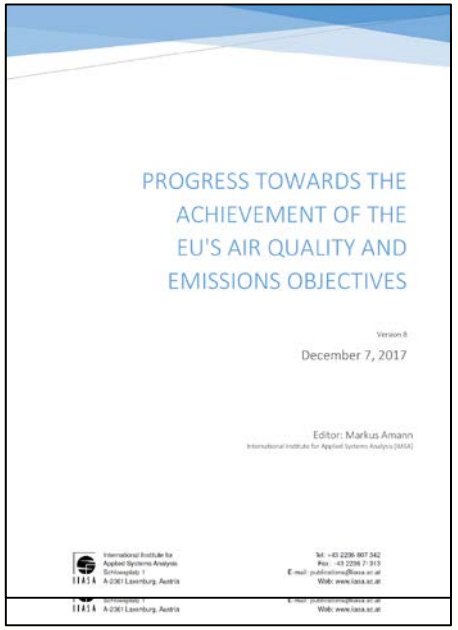
New developments after the NECD analyses

- Improved emission inventories
- The recent climate and energy policies of the EU
- New source-oriented emission control regulations
- The political agreement on the NECD

- Re-analyses of
  - Baseline emission projections incl. latest regulations (excl. the NECD)
  - Additional efforts to meet the NECD Emission Reduction Requirements (ERRs)
  - Achievement of WHO guideline and EU ecosystems targets


PROGRESS TOWARDS THE ACHIEVEMENT OF THE EU'S AIR QUALITY AND EMISSIONS OBJECTIVES

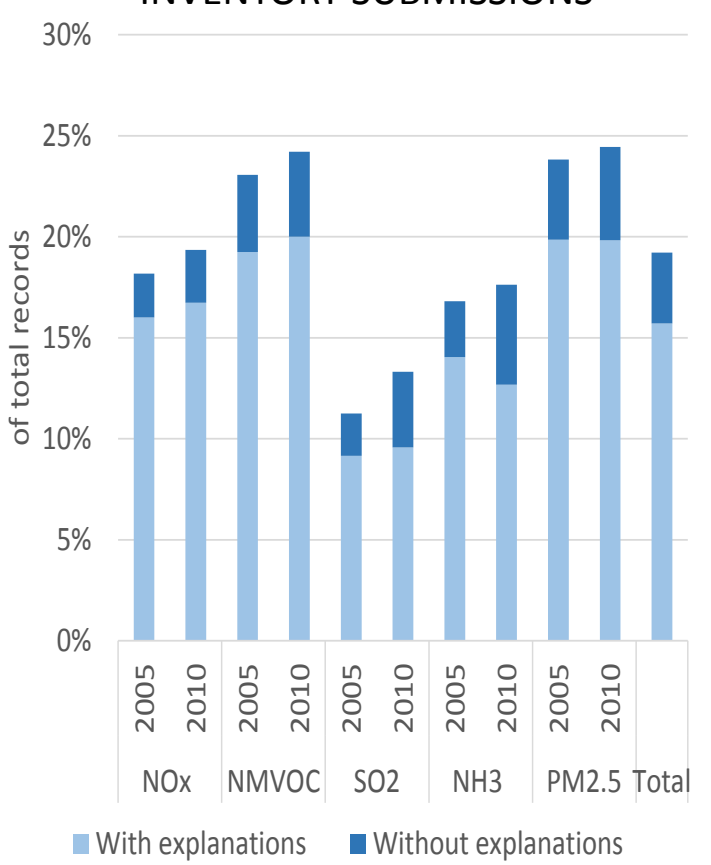
December 7, 2017

Editor: Markus Amann

Recent changes of reported emission inventories for 2005 and 2010

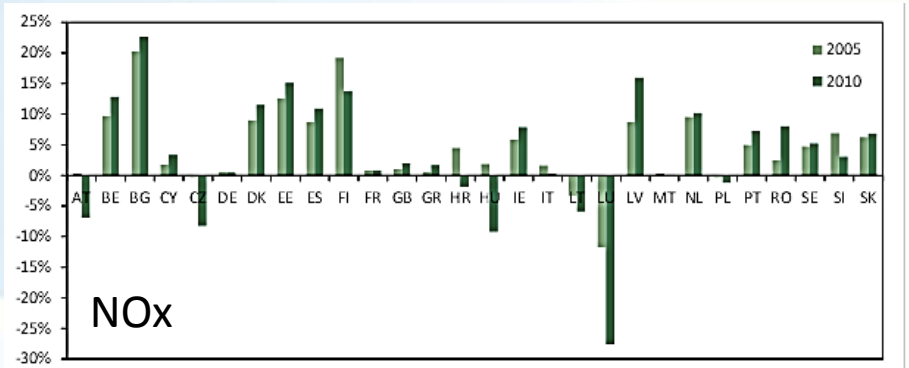
- Updates of methods and emission factors following the EMEP/EEA Emission Inventory Guidebooks of 2013 and 2016;
- Changes in national methods and emission factors;
- Updates of activity data;
- Changes in the reporting format from the 'Nomenclature For Reporting' NFR09 to NFR14.

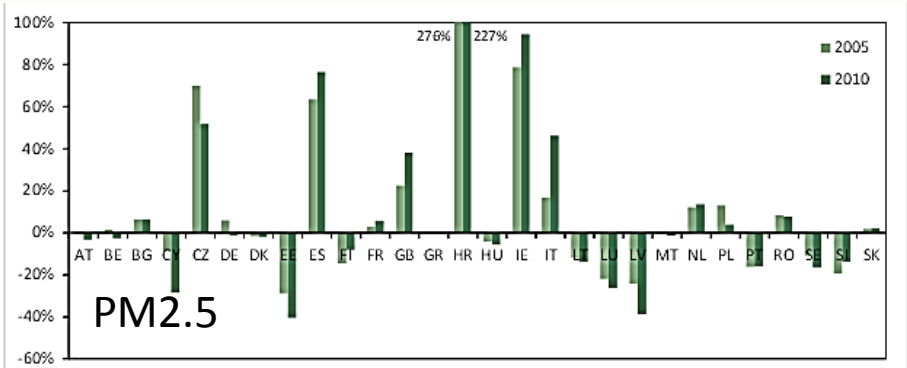
THE SHARE OF EMISSION REPORTING CATEGORIES WITH CHANGES > 10% BETWEEN THE 2014 AND 2017 INVENTORY SUBMISSIONS

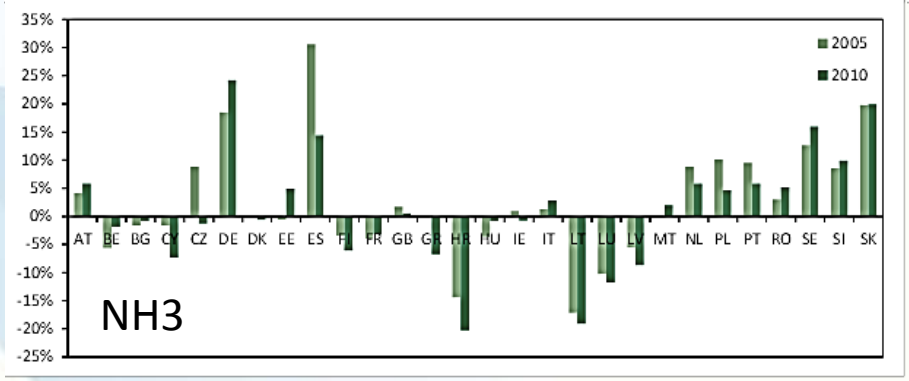


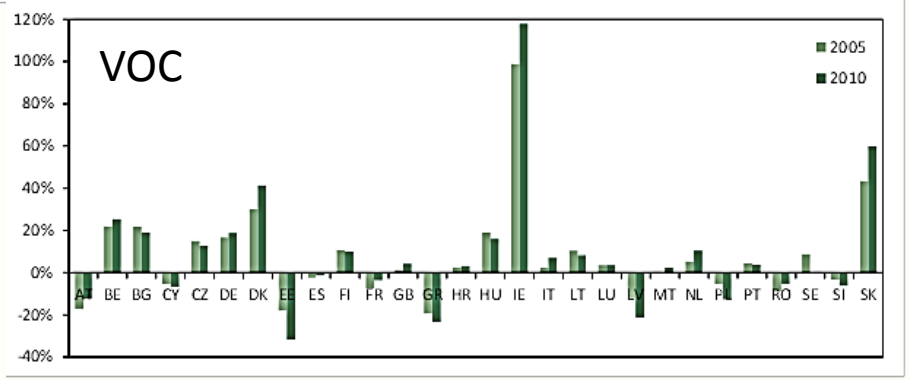
Large inventory changes for some Member Sates

Changes in reported emissions between the 2014 and the 2017 submissions









Total emissions for the EU-28 (excl. Greece)

	NO_x	VOC	SO_x	NH_3	PM2.5
Reference year 2005	+ 3.3 %	+ 3.3 %	- 1.2 %	+ 6.7 %	+ 11.4 %
Reference year 2010	+ 2.9 %	+ 5.2 %	- 2.1 %	+ 5.6 %	+ 13.0 %

New source-oriented legislation

after the last NEC/TSAP analyses 2014

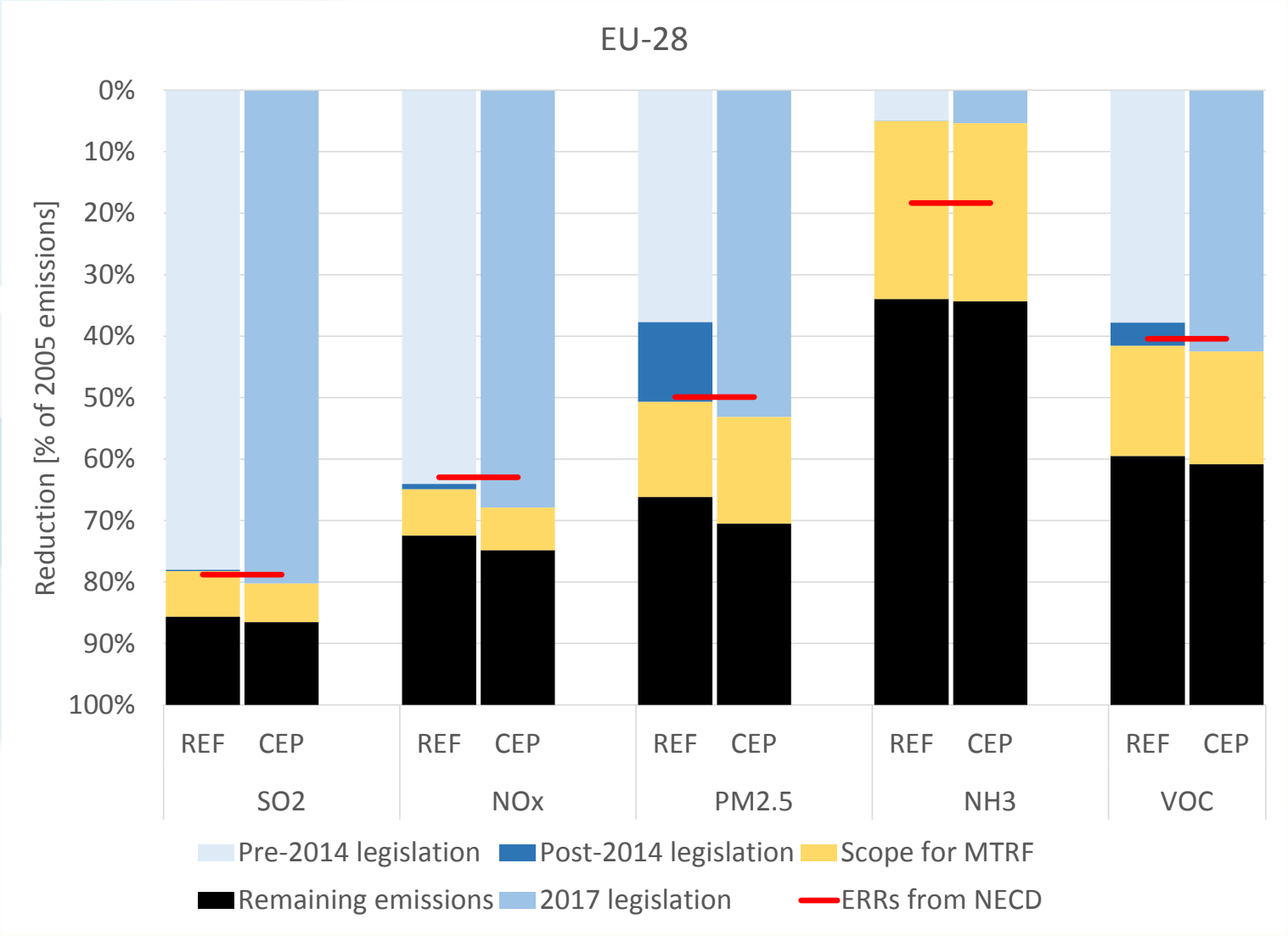
- Eco-design Directive: product-related emission standards for small combustion devices for solid fuels
- Medium Size Combustion Plant (MCP) Directive
- Non-Road Mobile Machinery (NRMM) Directive:
  Stage V emission standards phased-in between 2017 and 2021, with an enlarged scope of machine categories
- Final agreement on Euro 6 emission regulations
  (conformity factors, implementation schedules, etc.)

New energy projections

- The PRIMES 2016 REFERENCE baseline scenario

- The CLIMATE AND ENERGY POLICY scenario
  - 30% energy efficiency improvements
  - 12% lower consumption of fossil fuels
  - 40% less GHG emissions

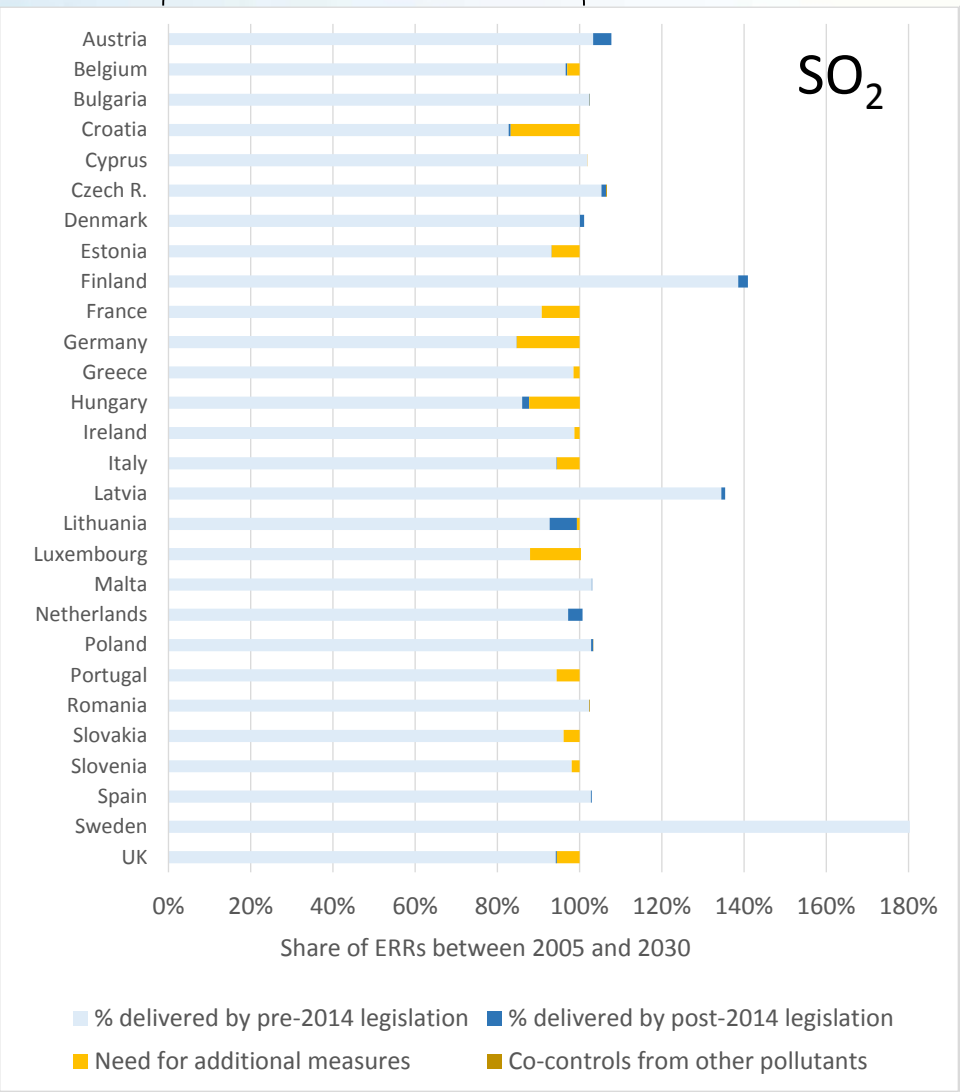
Resulting baseline emission projections for 2030 and scope for further measures – EU-28

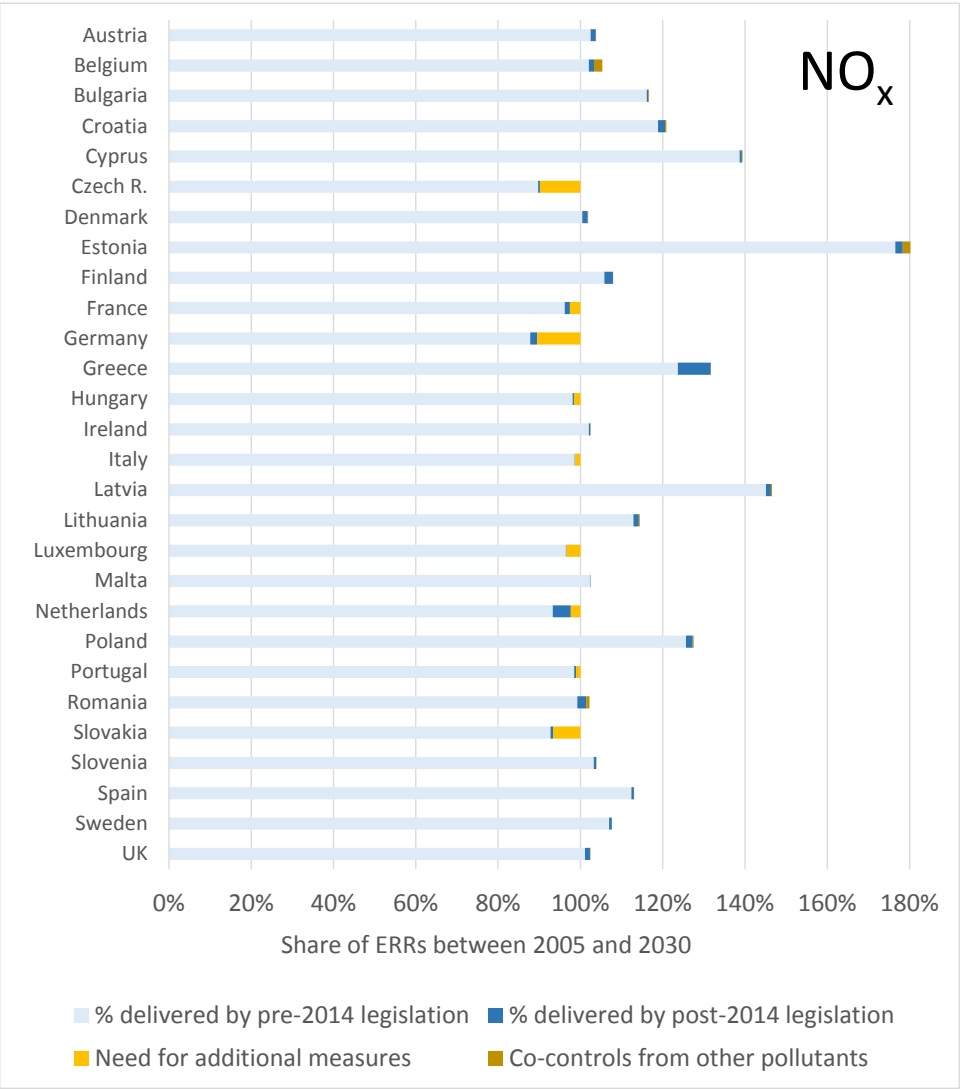


Additional efforts to achieve the ERRs

for the PRIMES 2016 REFERENCE scenario

The gap between 2005 and the ERRs

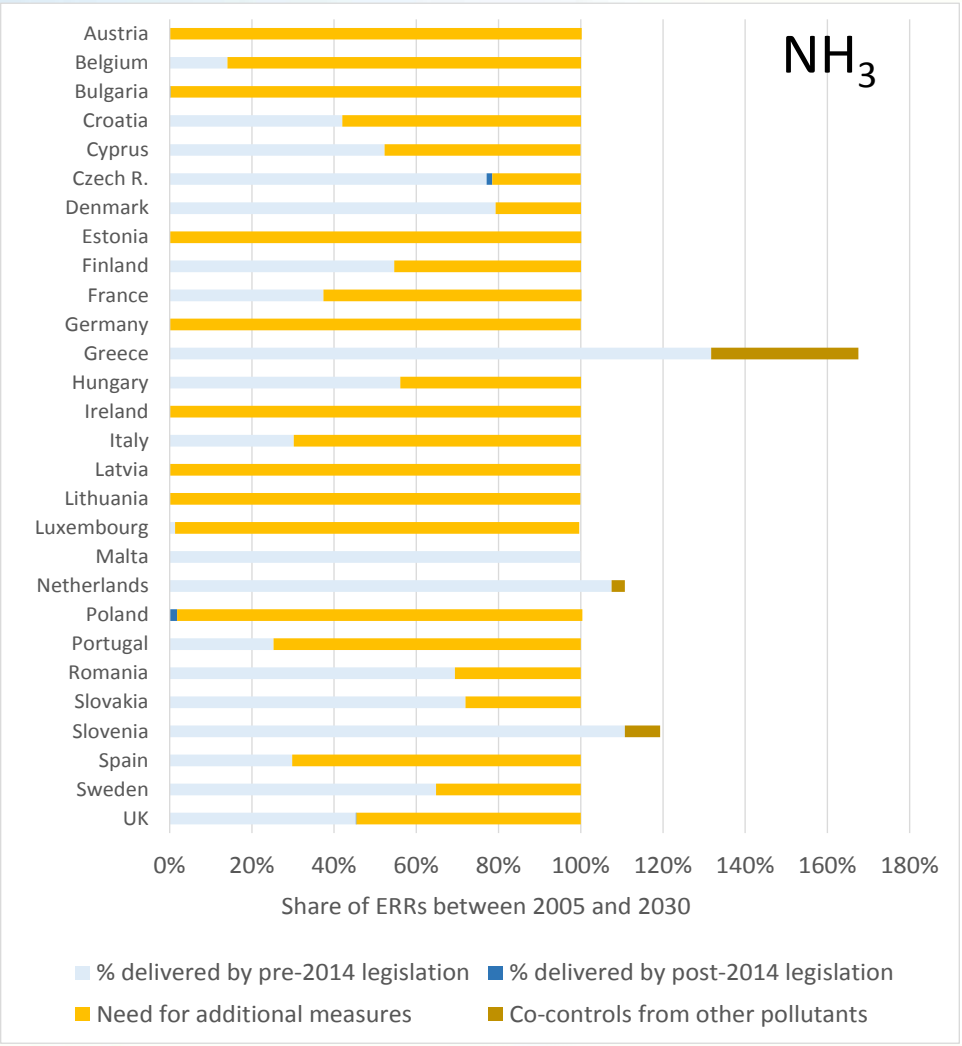




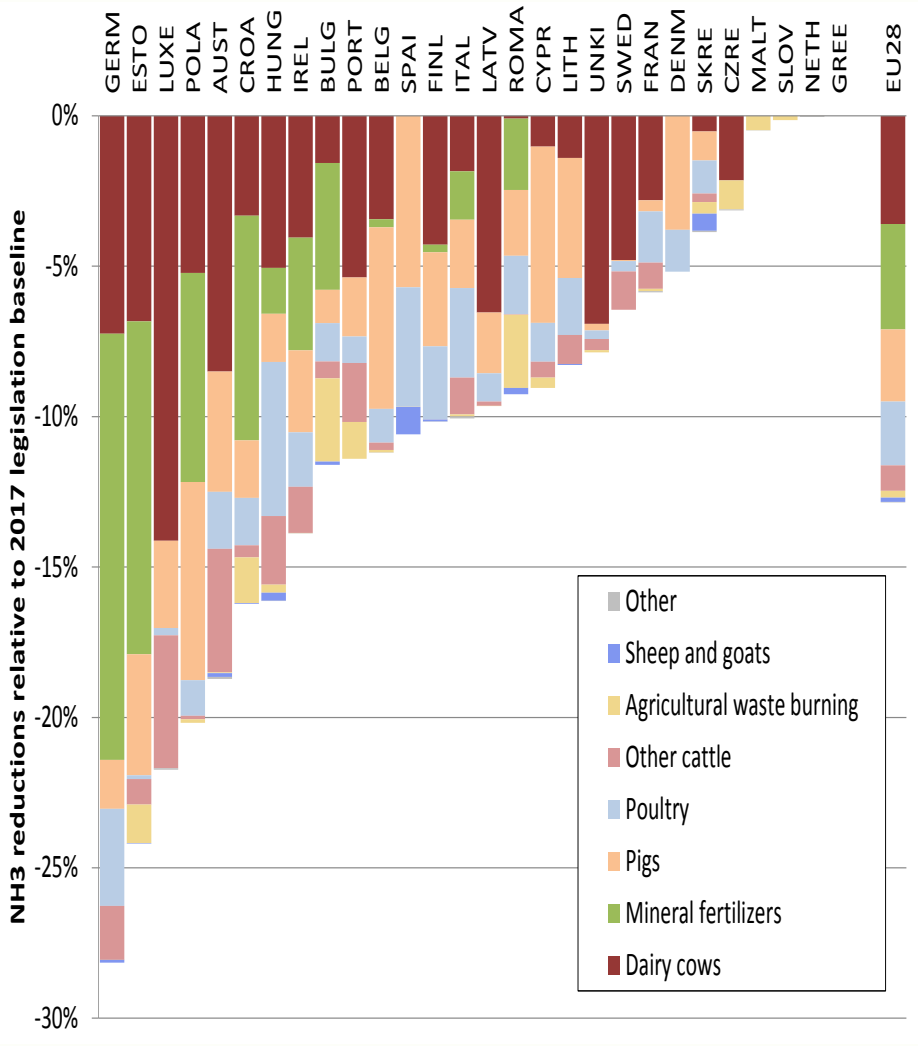
Additional efforts to meet the ERRs for NH_3

for the PRIMES 2016 REFERENCE scenario

Need for additional measures (% of ERRs)



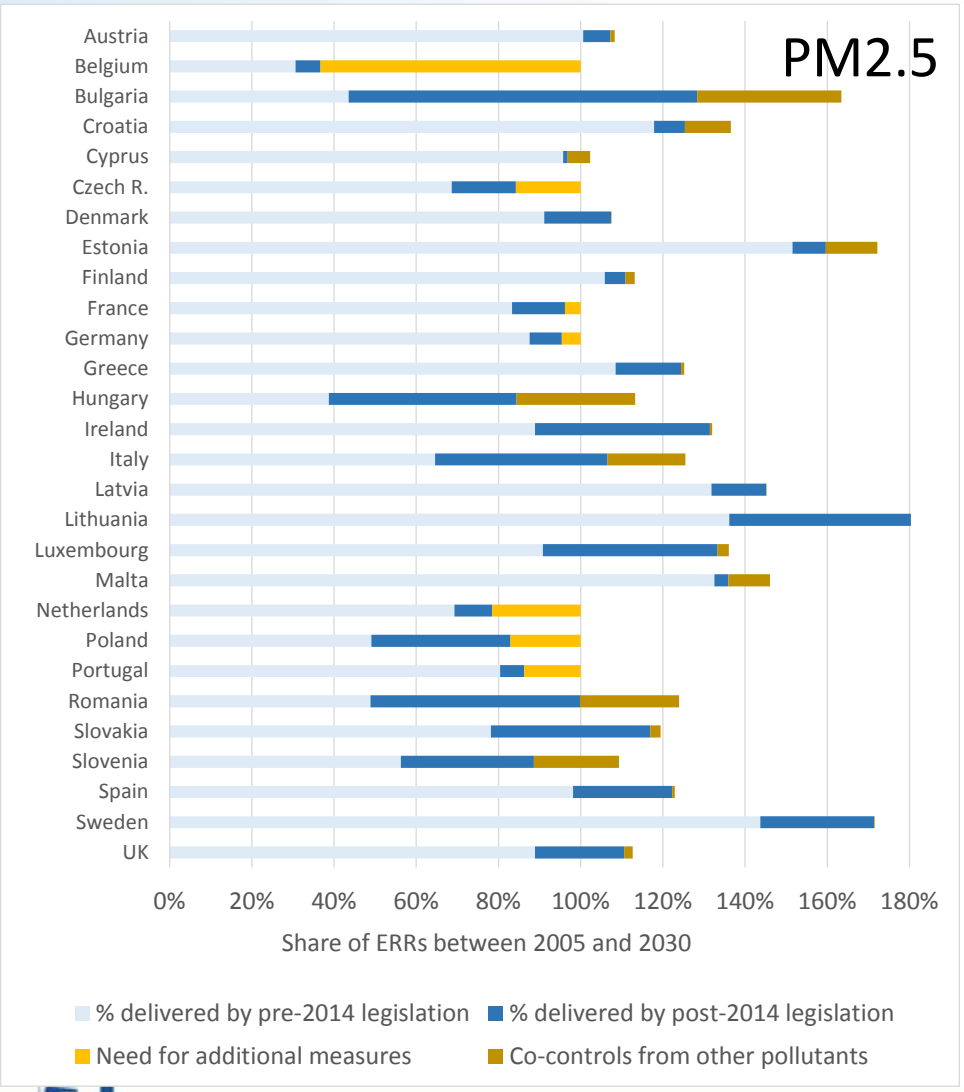
Sector focus of additional measures



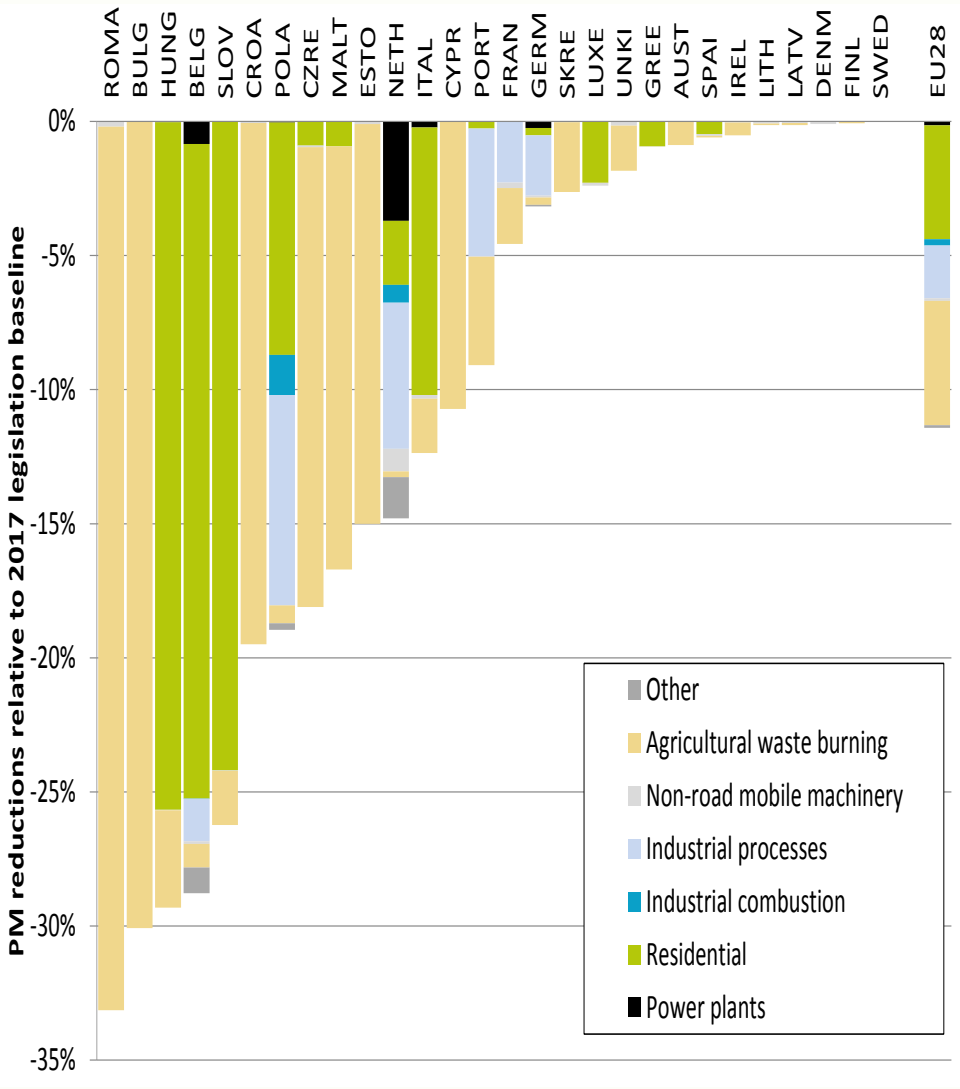
Additional efforts to meet the ERRs for PM2.5

for the PRIMES 2016 REFERENCE scenario

Need for additional measures (% of ERRs)



Sector focus of additional measures



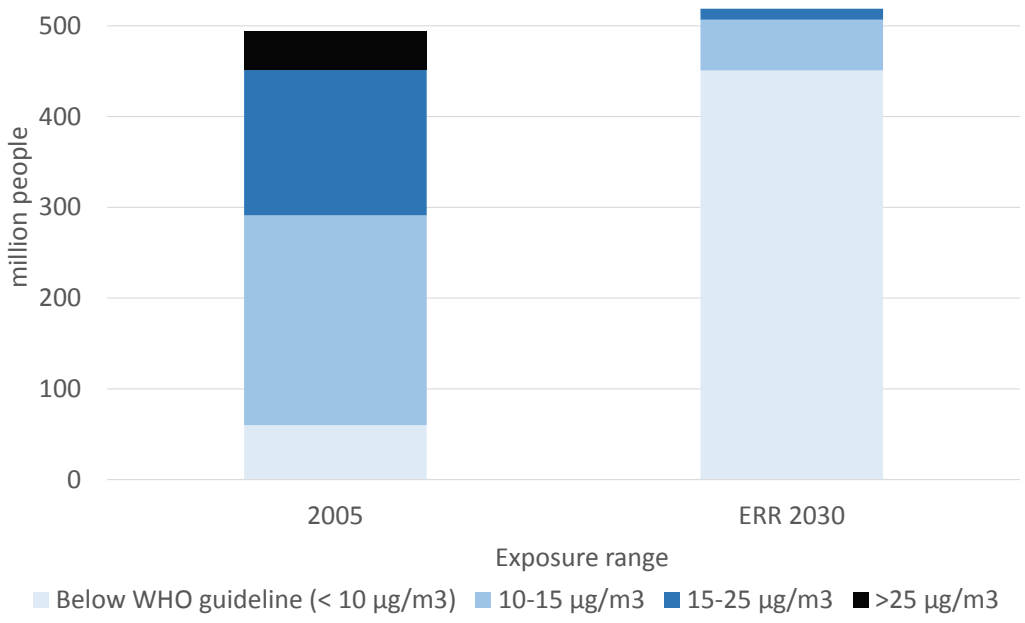
Air pollution emission control costs for meeting the ERRs

- For the PRIMES 2016 REFERENCE scenario:
  - 960 million €/yr (1.9€/person/year)

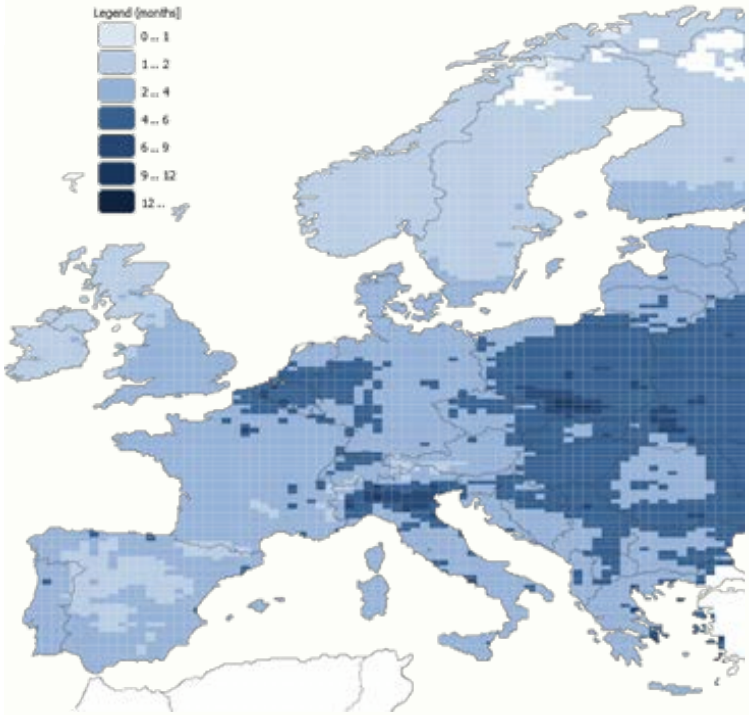
- For the CLIMATE AND ENERGY POLICY scenario (12% lower consumption of fossil fuels, 40% less GHG emissions, 30% energy efficiency improvements):
  - 540 million €/yr (1.05€/person/year)

Ambient air quality – PM2.5

Distribution of population exposure to PM2.5 in the EU-28 - 2005 and 2030

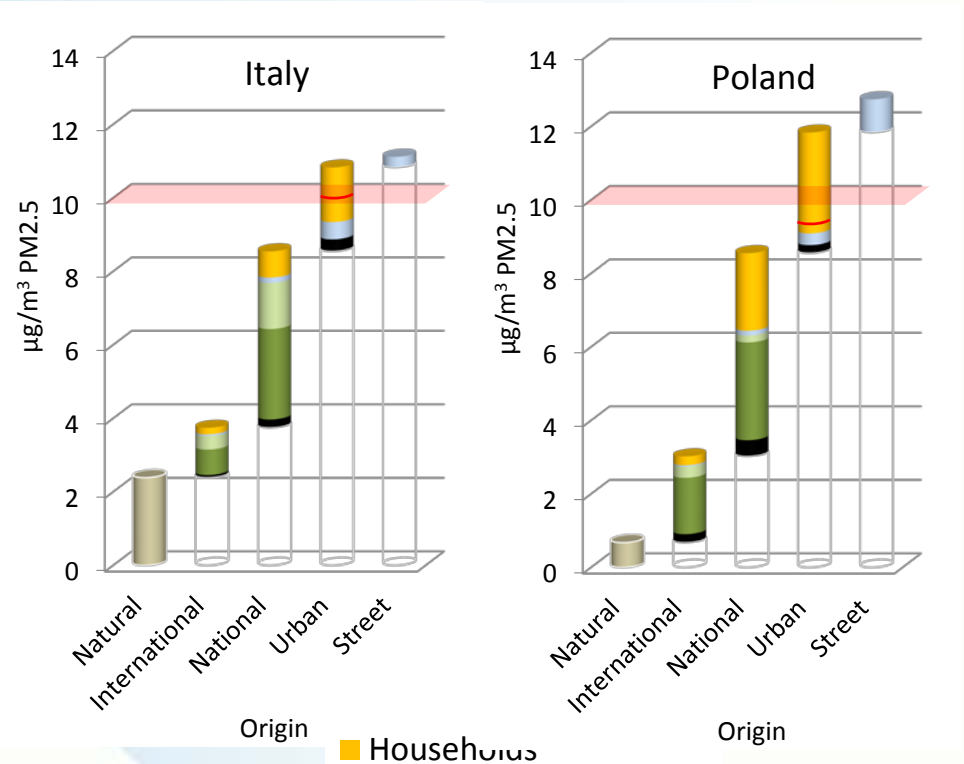


PM2.5 in 2030 ERR



In the overwhelming majority of countries
PM2.5 will fall below the WHO guideline value of 10 µg/m^3
– with the exception of Northern Italy and Southern Poland.

Remaining sources of PM2.5 - 2030 ERRs



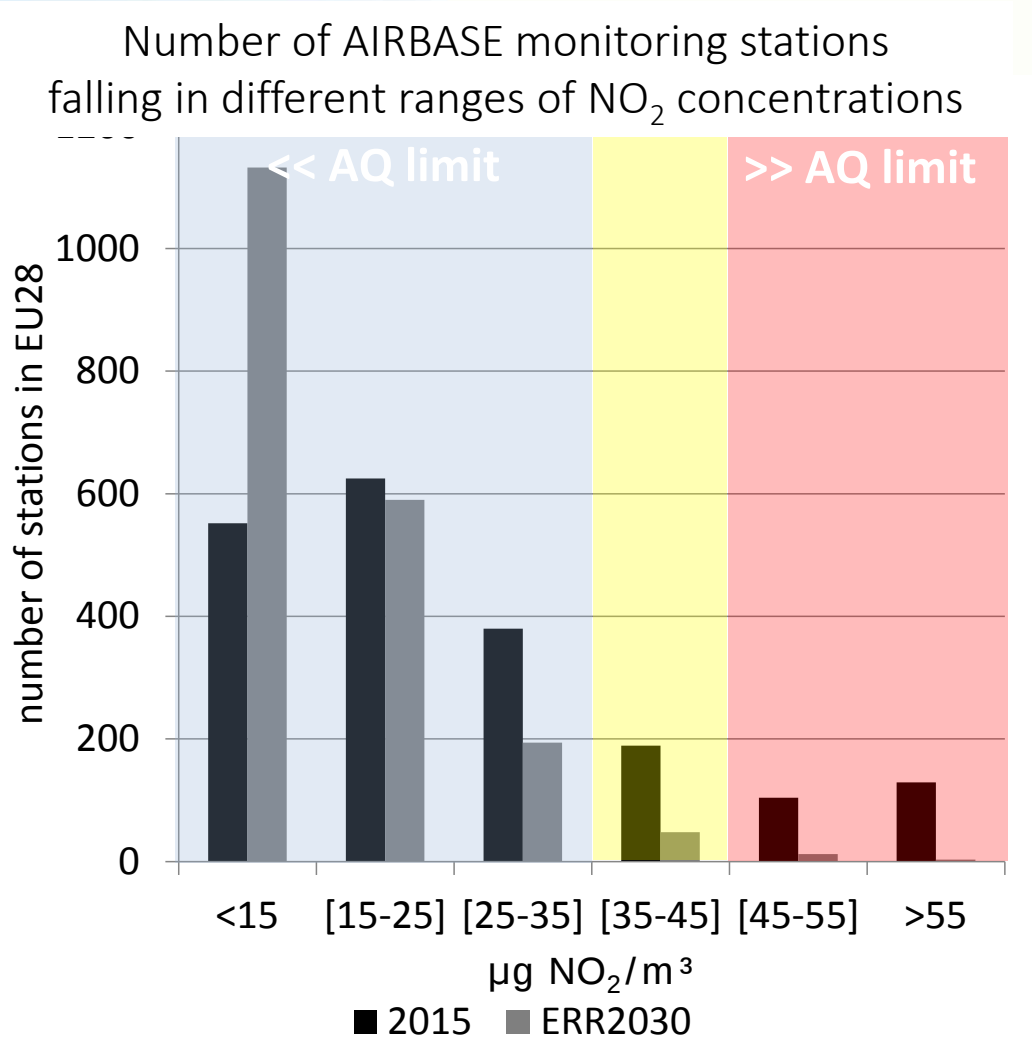
In Italy and Poland:

Main remaining contributors in 2030 after ERR measures:

- Secondary particles incl. NH_3
- Solid fuel stoves in households

- MTFR would eliminate almost all exceedances of WHO guideline

NO_2 exceedances



- While currently about 20% of the almost 2000 AIRBASE monitoring stations are robustly or possibly above the NO_2 limit value, that figure is almost eliminated with the ERRs

Biodiversity will remain under threat

- For biodiversity, the measures envisaged for reaching compliance with the ERRs will not achieve the improvements that have been suggested in the 2013 Commission proposal for the NEC Directive.

- Additional measures, especially for controlling NH_3 emissions, are available, and their application could further reduce excess nitrogen deposition by 75%. However, this would still leave 50% of the Natura2000 nature protection areas at risk.

Conclusions

- The 2005 inventories reported by MS in 2017 have significantly changed since 2014 - more than 20% of sectoral figures by >10%.
- ERRs for NH_3 and PM2.5 require further action in almost all MS; recent legislation will deliver the other ERRs in about half of the MS.
- Costs for additional emission reductions range between € 960 and 540 million/yr (or € 1.9-1.05/person/year), depending on energy and climate policy decisions
- The recent legislation will bring the WHO guidelines for PM2.5 within reach for most areas in 2030, while further efforts will be required at hot spots, especially for agriculture and residential combustion.