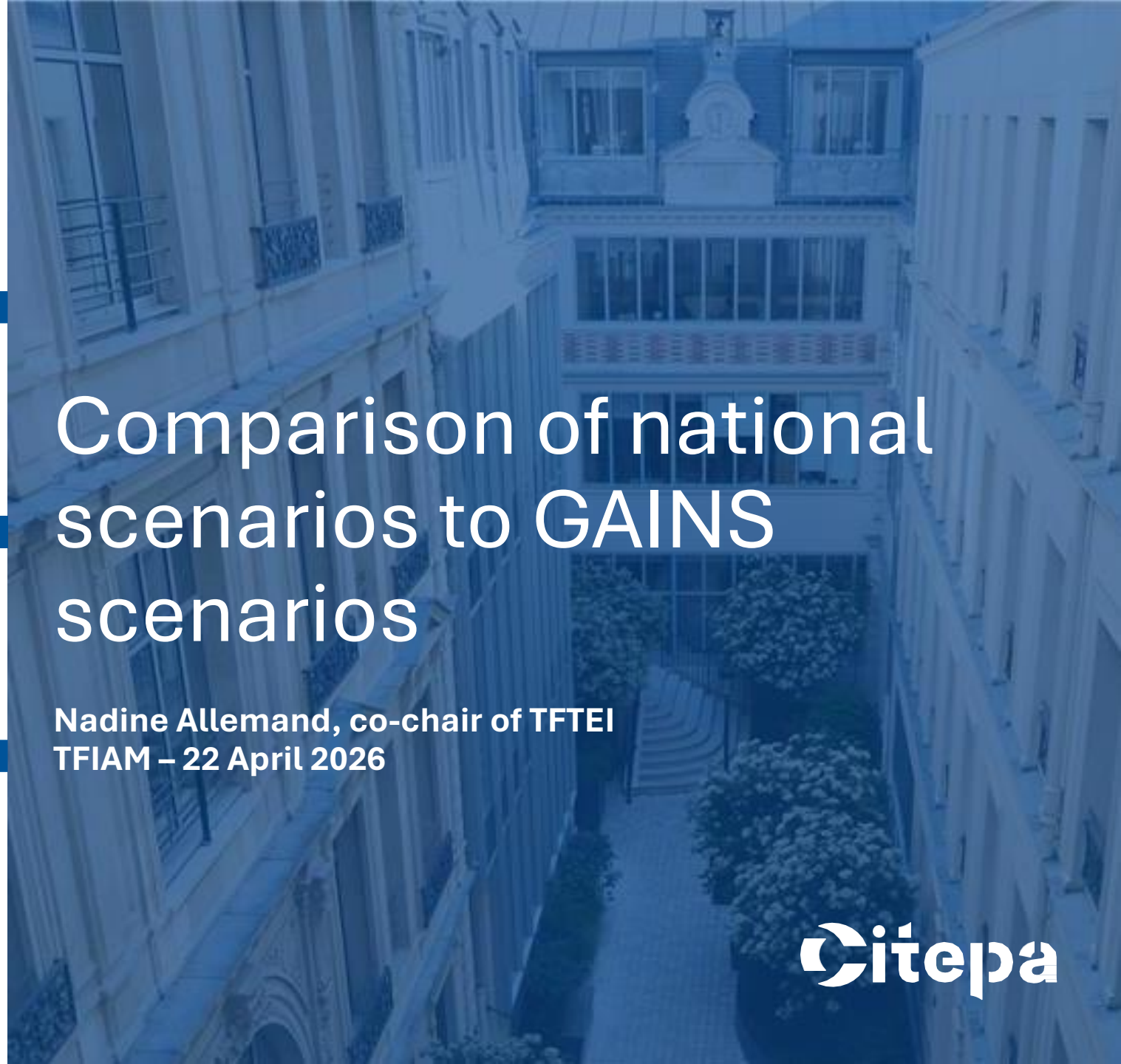


Comparison of national scenarios to GAINS scenarios

Nadine Allemand, co-chair of TFTEI

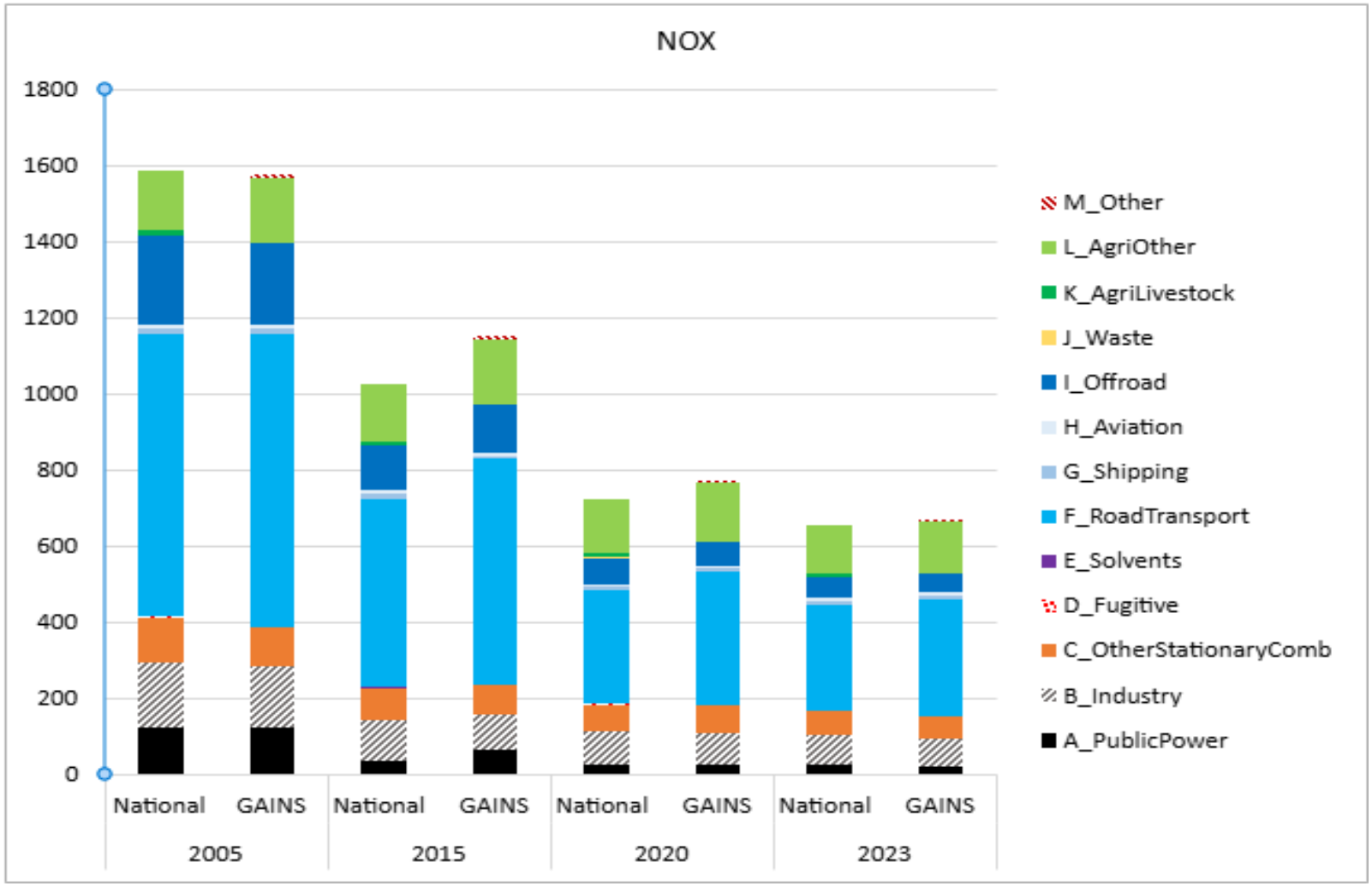
TFIAM – 22 April 2026

Citepa

Comparison of national scenarios with GAINS scenarios

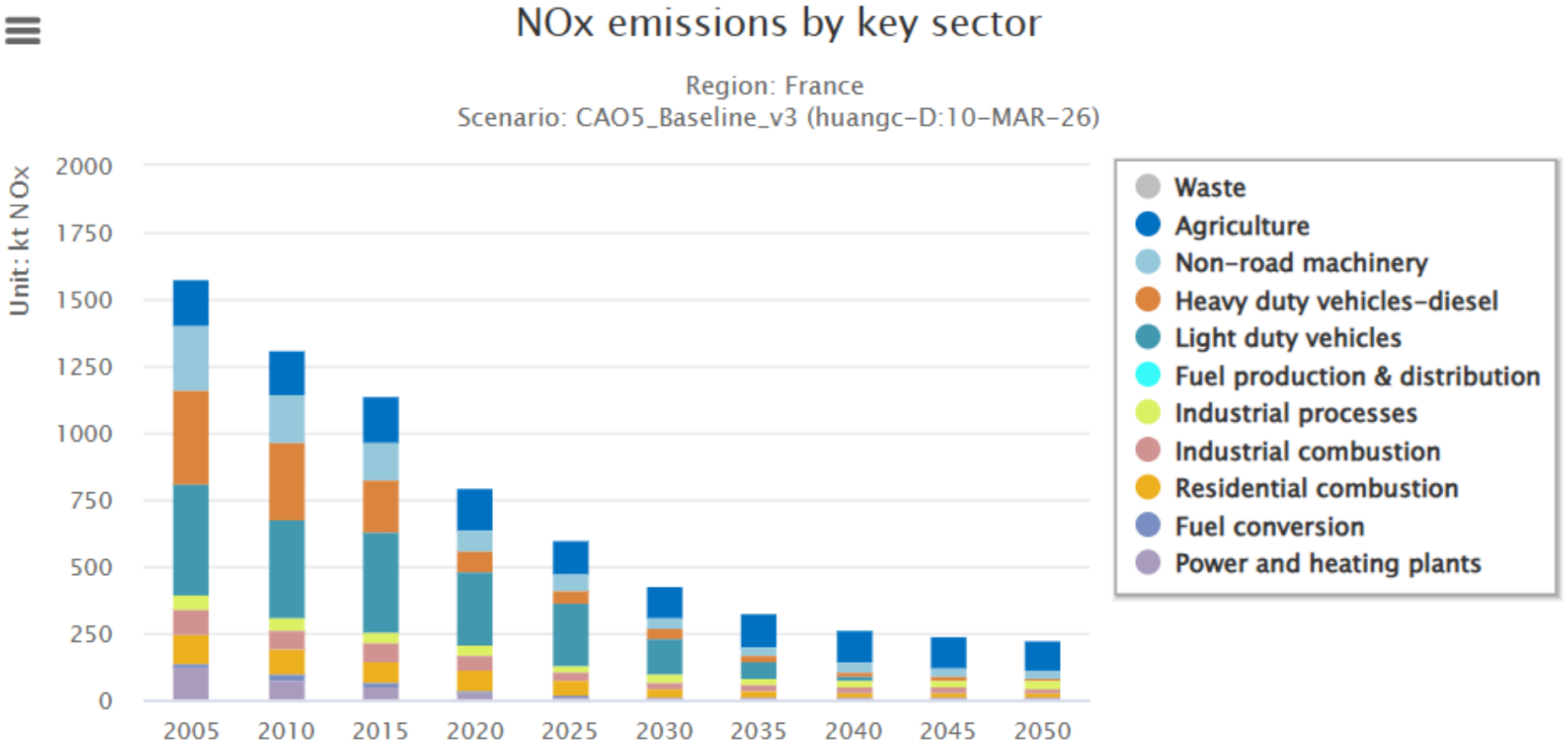
- French national scenarios for air pollutant emissions are regularly developed by France in the scope of reporting obligations under the Air Convention and the EU Directive 2016/2284:
  - Last French national projections for air pollutants were published in 2023 and in 2025 (WEM and WAM scenarios),
  - They are based on different energy and climate scenarios and updates of air pollutant measures corresponding to latest EU and national policies
- France involved in the consultation exercise with IIASA for the development of the fifth Clean Air outlook (CaO5) which will also serve the current work for AGP revision and the definition of the baseline
- Comparison of national scenarios with GAINS scenarios for air pollutant emissions has been carried out recently by IIASA in the scope of this consultation with Member States

NOx - Comparison of historical GAINS and national emissions



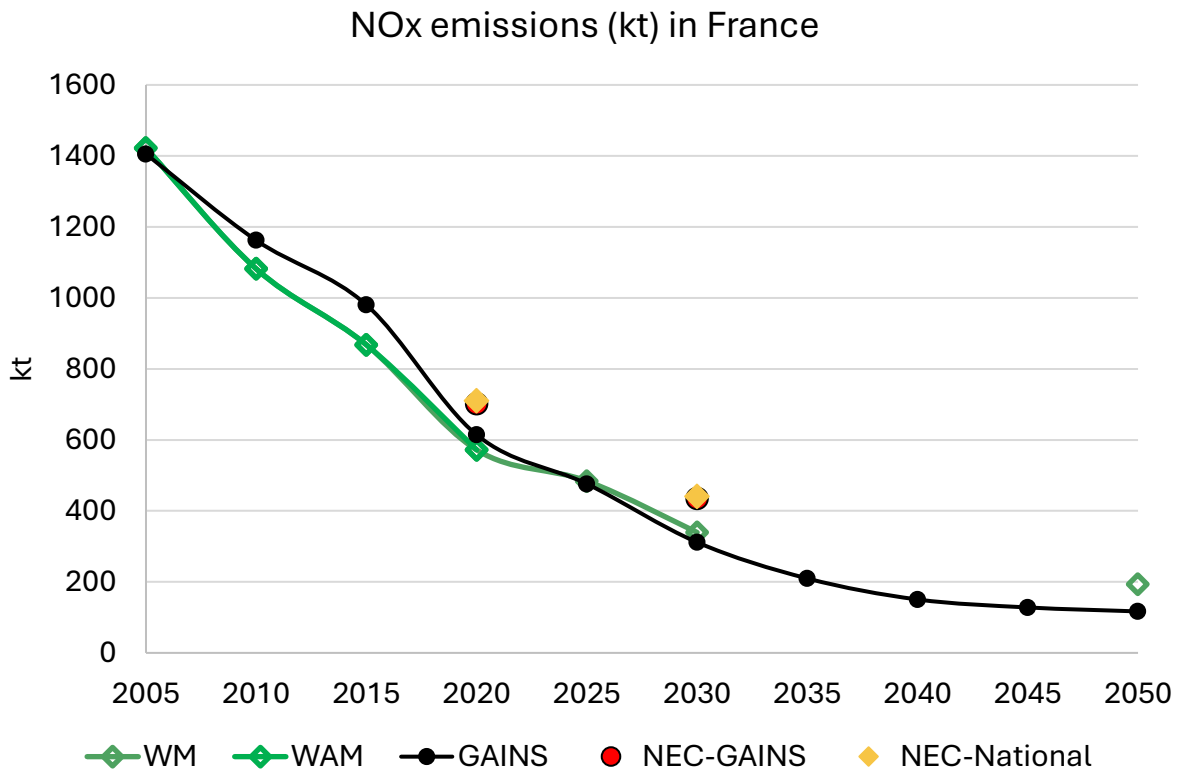
Source: IIASA – consultation 2026 CaO5

NOx - Future emissions according to GAINS



Source: IIASA – consultation 2026 CaO5

NOx - Comparison of future GAINS emissions with national projections



Source: IIASA – consultation 2026 CaO5

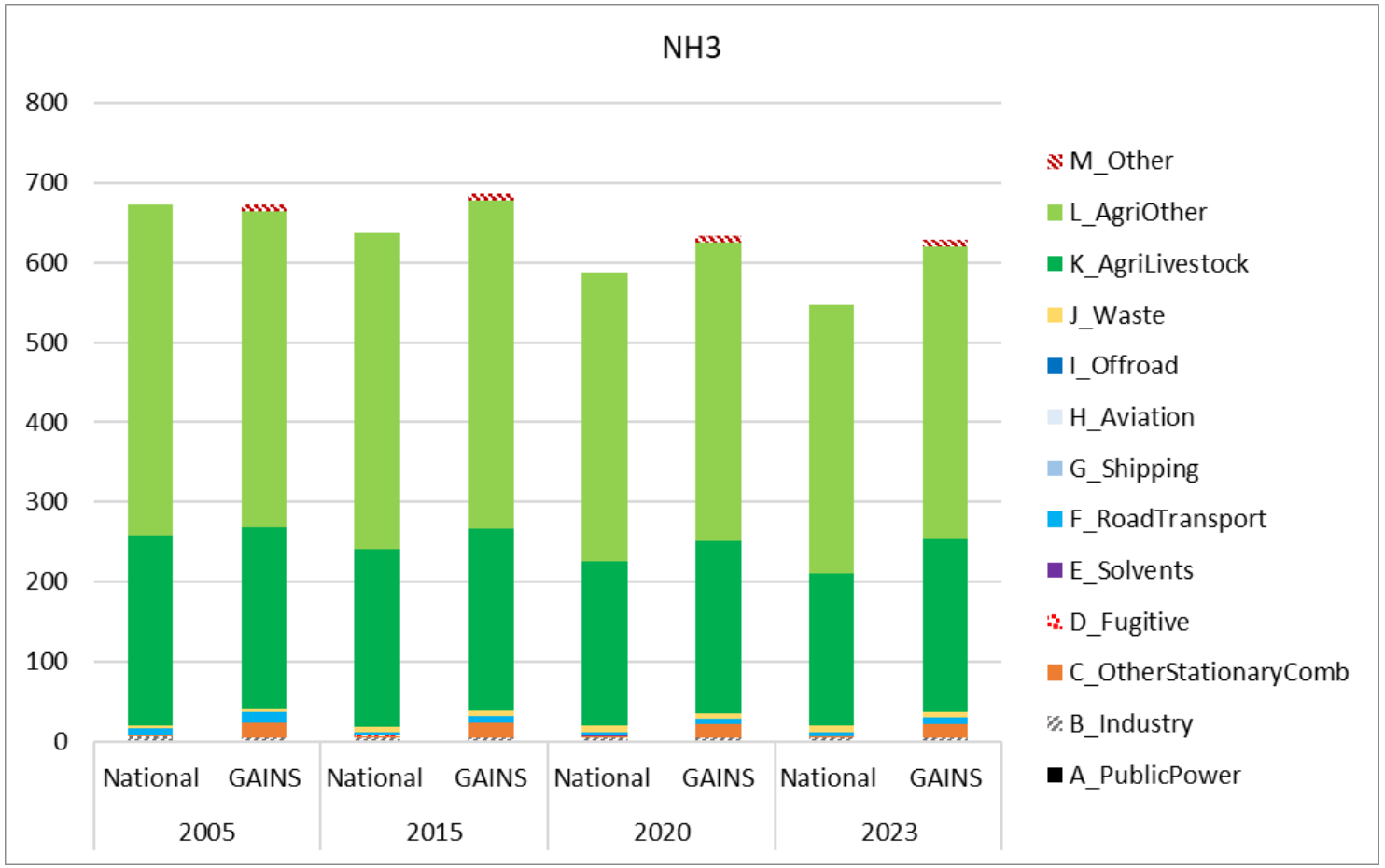
Road transport is a key source to understand the differences in future emissions

Work is in progress to assess:

- Distribution of vehicle fleets,
- Road traffic,
- Vehicle renewal rate,

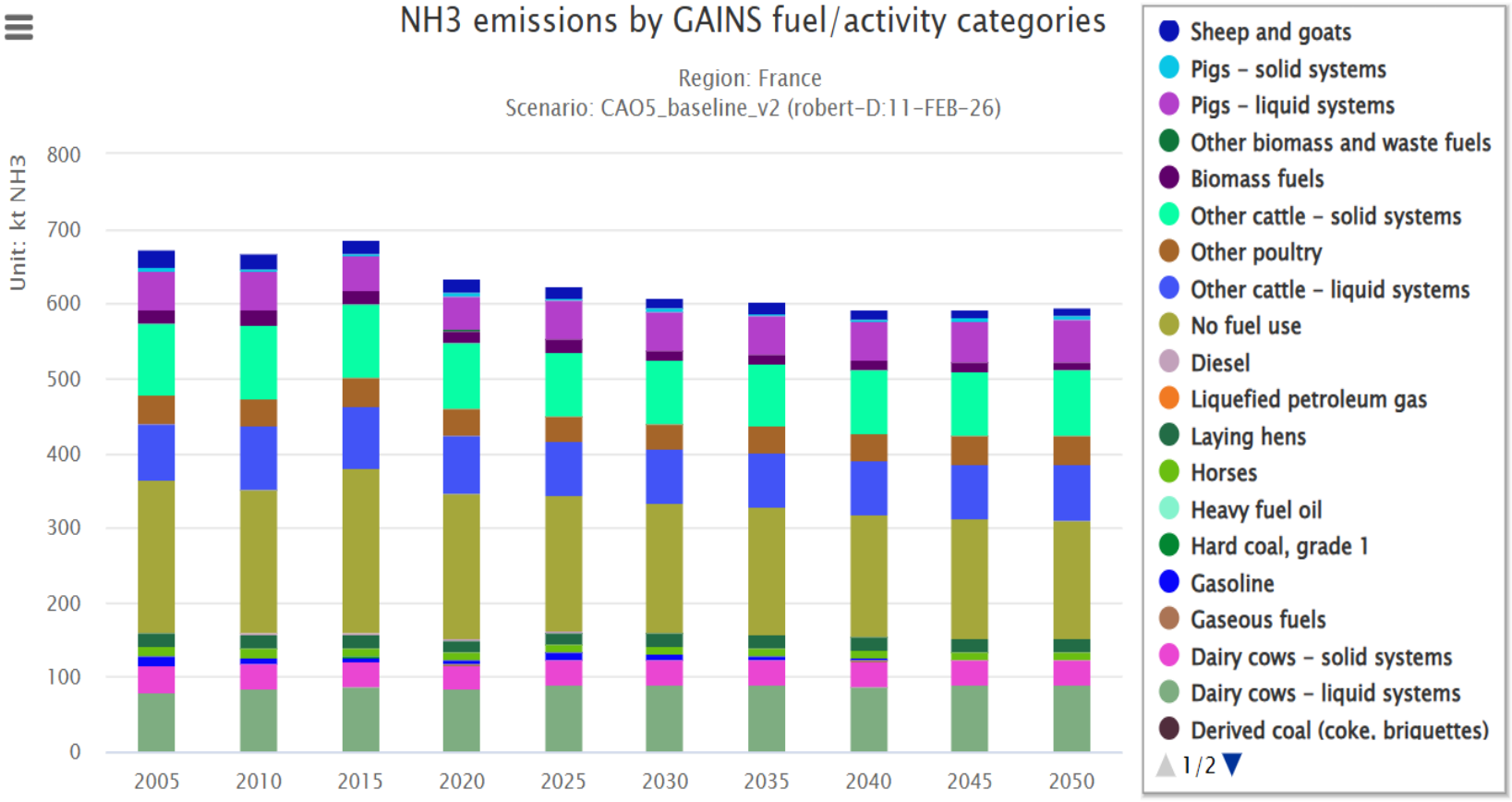
…

NH_3 - Comparison of historical GAINS and national emissions



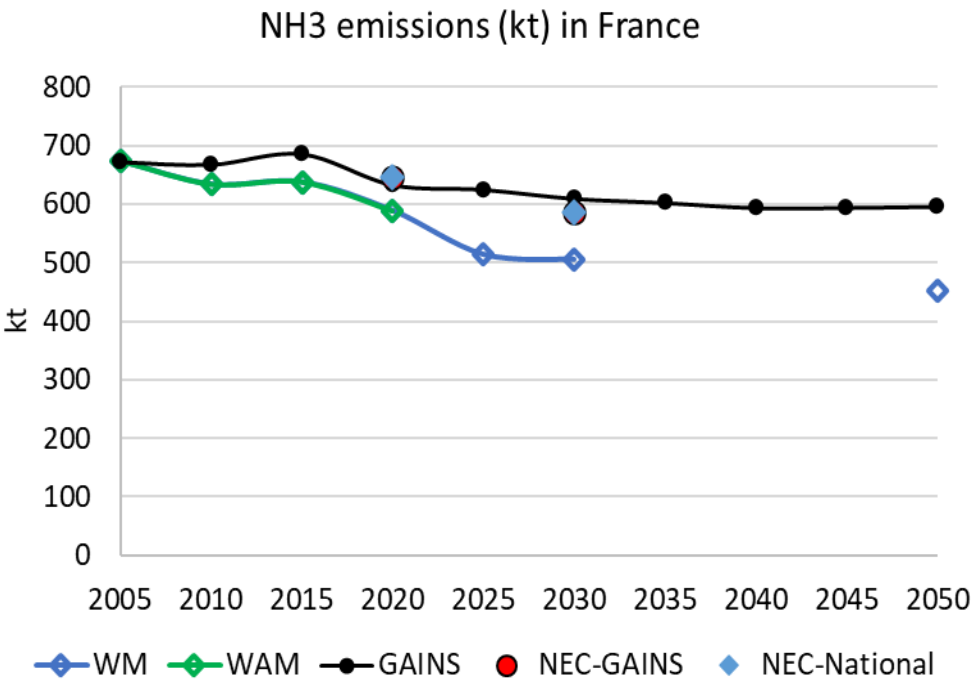
Source: IIASA – consultation 2026 CaO5

NH_3 - Future emissions according to GAINS



Source: IIASA – consultation 2026 CaO5

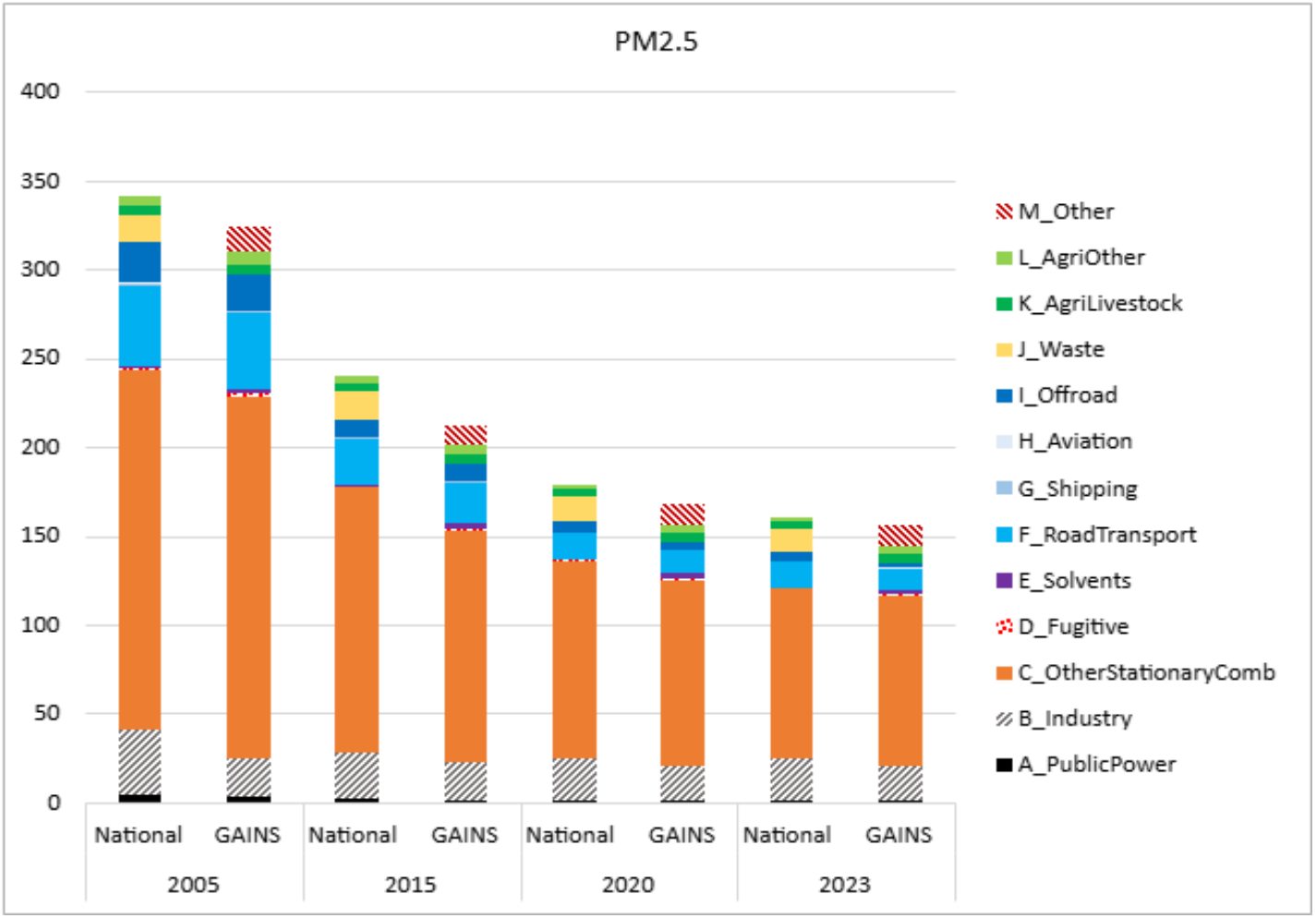
NH_3 - Comparison of future GAINS emissions with national projections



Source: IIASA – consultation 2026 CaO5

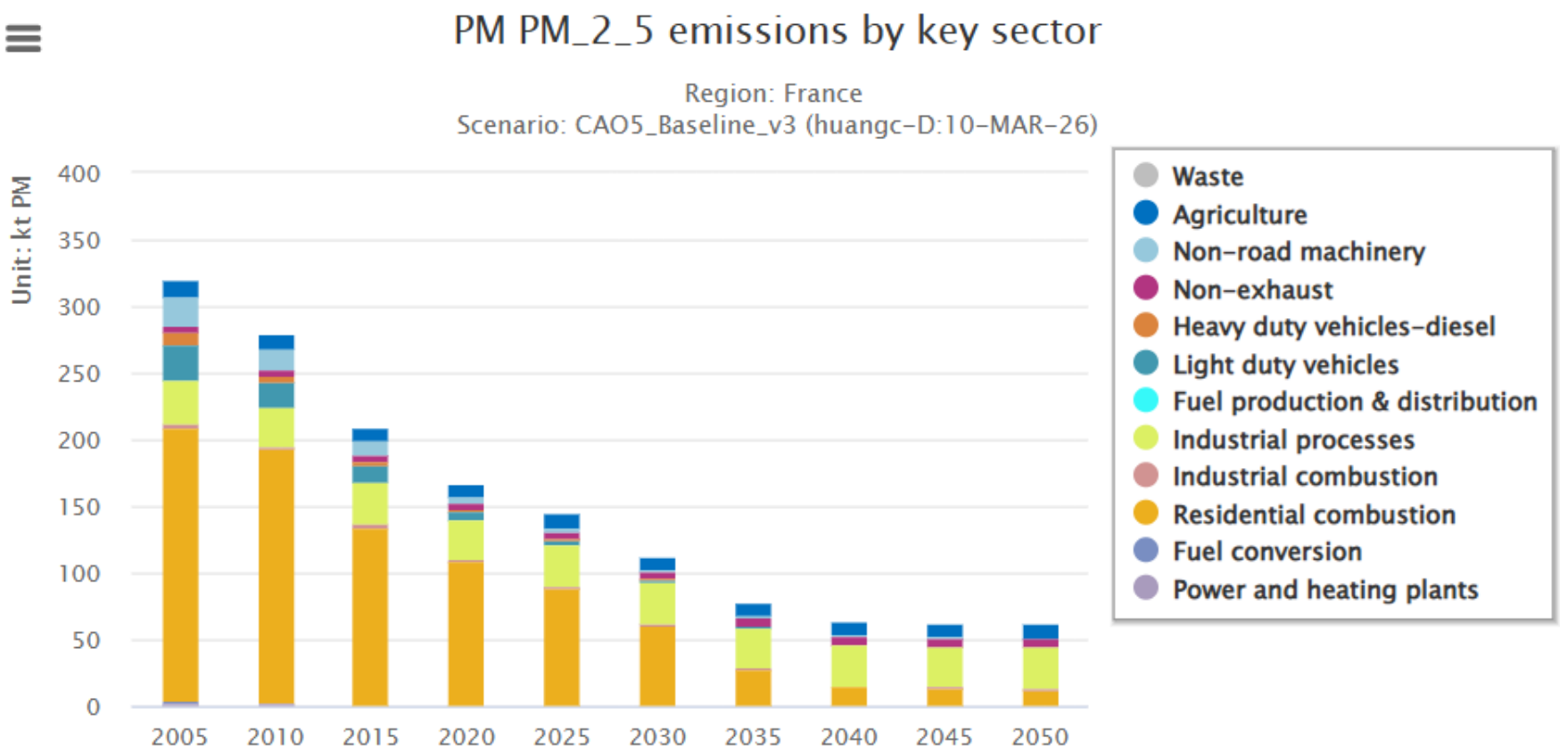
Need to provide detailed data and exchange on:
Activity data evolution
Control strategies
Comparison of the efficiencies of reduction measures
…

$PM_{2.5}$ - Comparison of historical GAINS and national emissions



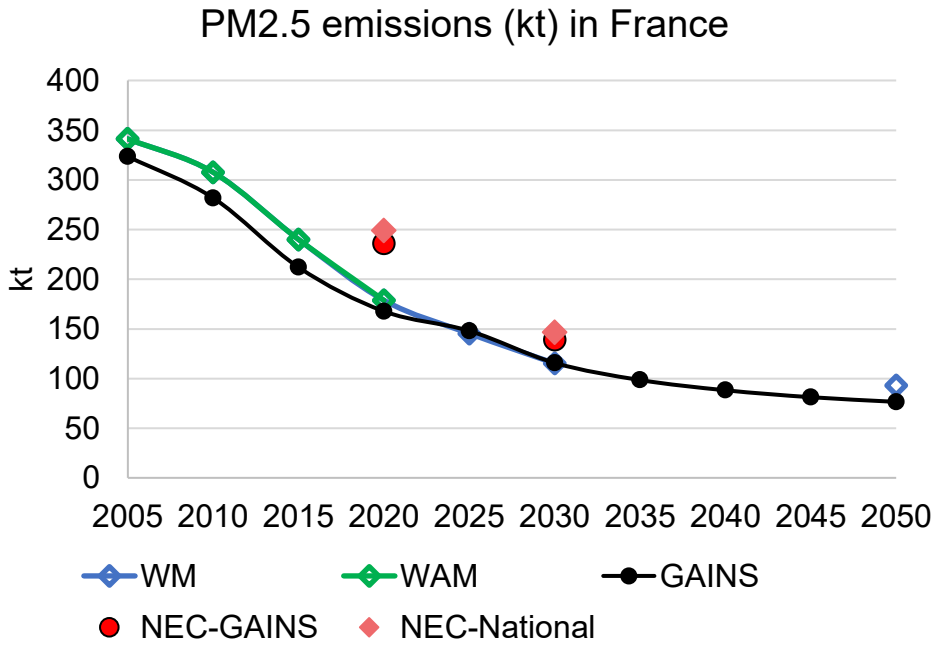
Source: IIASA – consultation 2026 CaO5

$PM_{2.5}$ - Future emissions according to GAINS



Source: IIASA – consultation 2026 CaO5

$PM_{2.5}$ - Comparison of future GAINS emissions with national projections



Source: IIASA – consultation 2026 CaO5

Domestic wood heating is a key source to be analysed.
A dataset to examine and reduce the gap for historical data and future emissions

- Distribution of domestic appliances,
- Renewal rates of domestic appliances,
- EFs used,
- Etc.

Conclusions

- On average, rather good consistency between GAINS data and national data in terms of total emissions
- The consultations for the CaO5 report are good opportunity to improve GAINS data and reduce the gaps between national data and GAINS data when they exist by focussing on the main sources of emissions concerned
- Difficulties which can be encountered:
  - National emission inventories are improved every year
  - Inventory methods can evolve
  - Calendar of publication of national projections not always compatible with GAINS work
  - Difficulty for GAINS to be based on latest inventories and projections (this is why consultations are important)
- National emission projections are based on energy and climate scenarios which may differ from the energy and climate scenario used currently in the baseline

Thank you for your attention

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Citepa is an association that guides players in the ecological transition in France and around the world.

It assesses the impact of human activities on climate and air pollution. It produces reference data and develops solutions to encourage action to reduce emissions, improve air quality and adapt to climate change.

Our multidisciplinary team contributes to building a sustainable world.

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