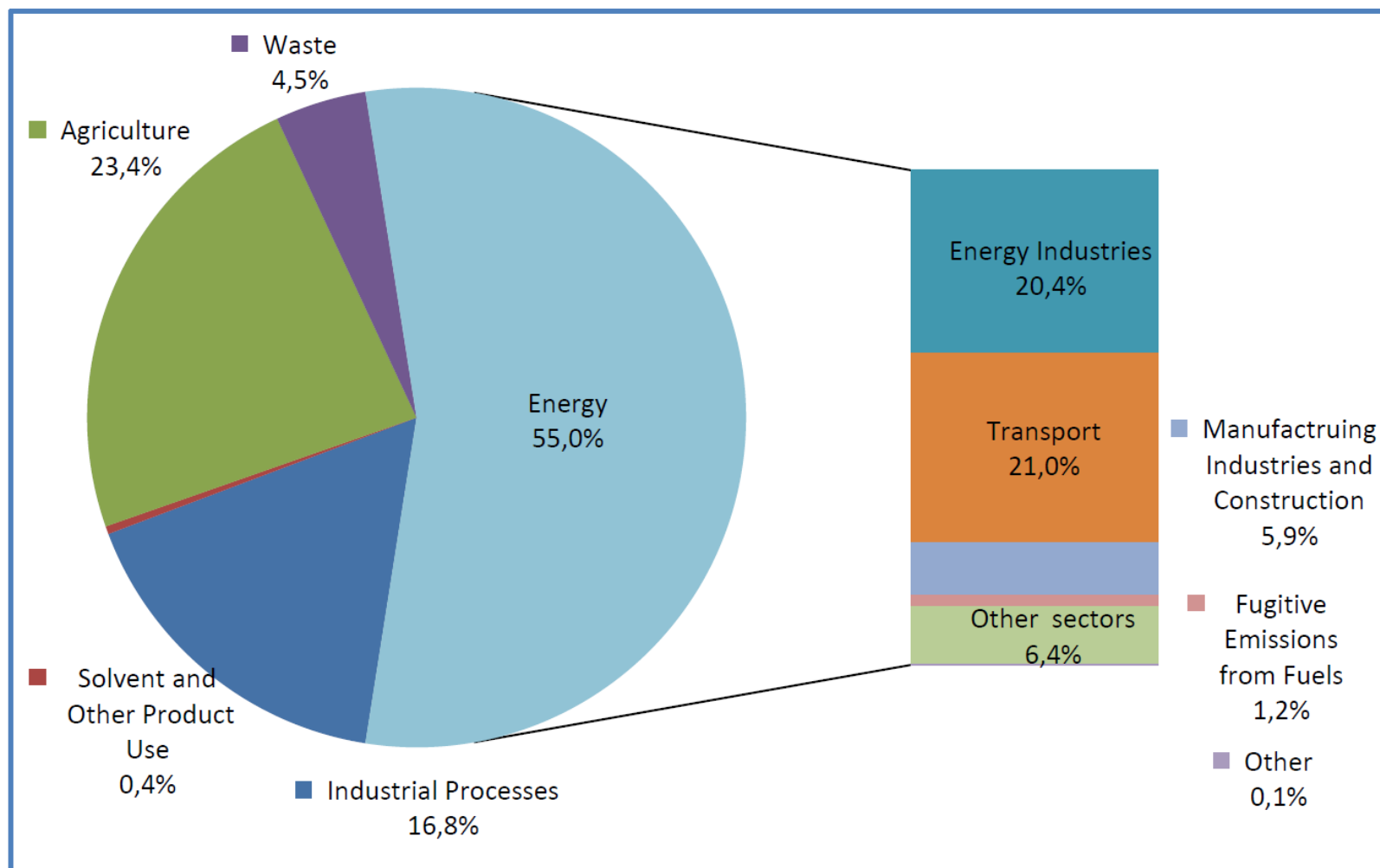# LITHUANIA'S GHG PROJECTIONS
ENERGY SECTOR

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Content

- Lithuania overview

- Preparation of GHG projections

- What we learned so far?

GHG emissions in Lithuania

Preparation of GHG projections

- Energy sector GHG projections were based on Lithuanian Energy Institute (LEI) study "Lithuanian energy sector development outlook according to EU initiatives in energy sector" (prepared in June 5, 2014);

- GHG emissions were calculated according to LEI projected final energy consumption in industrial branches (reference scenario);

- PaMs compared to those used in LEI study (additional added);

- EPA did not use any models for GHG projections;

- Projected activity data in transport sector was received from the Ministry of Communications;

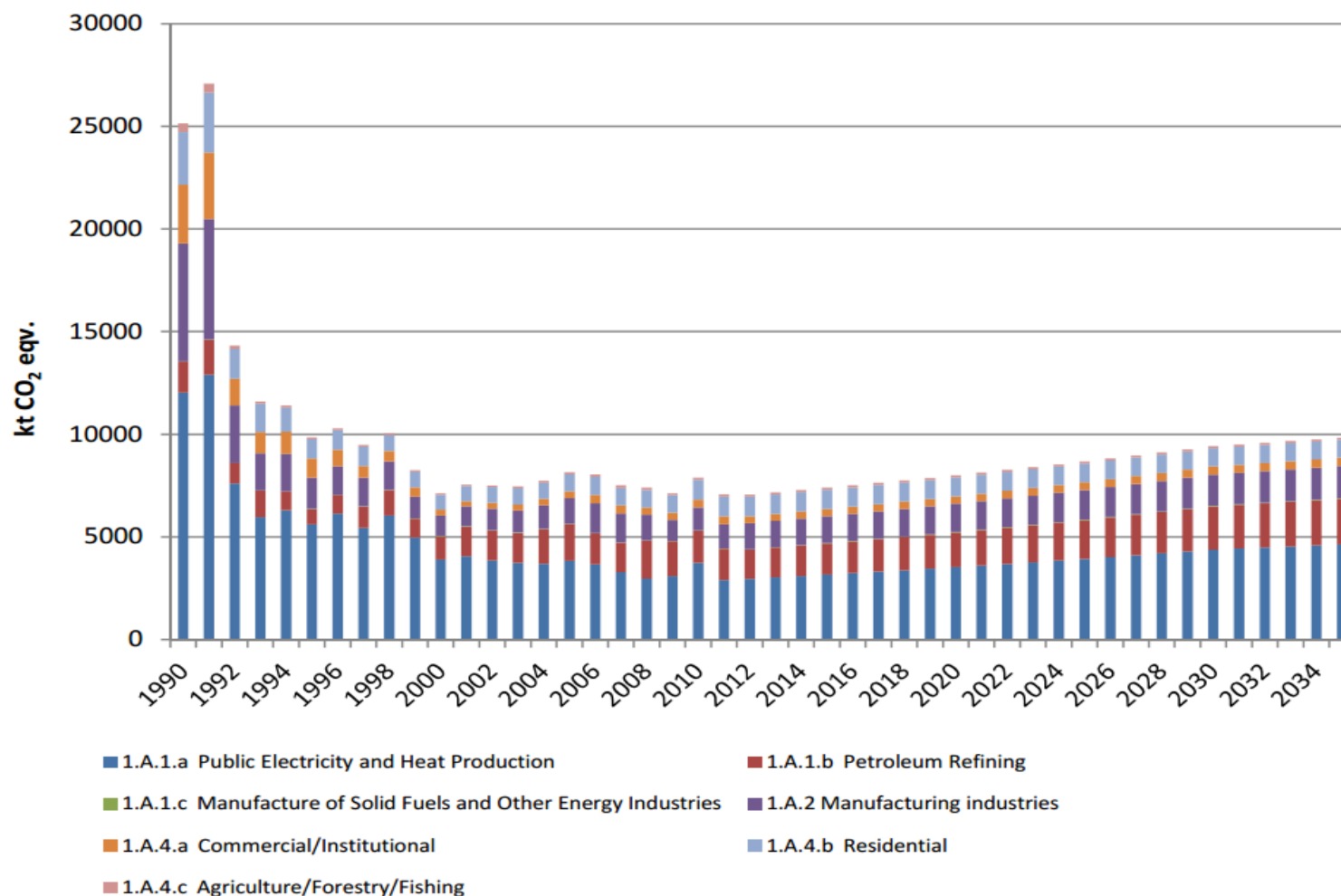Formulation of assumptions in energy sector
(Scenario with existing measures)

➤ Special Program for Climate Change for 2013 has provided funding for:

– the biofuel boilers up to 500 kW renovations in commercial/institutional sector. The project was expected decrease the GHG emissions by 82,881 t CO_2 until 2020 (13,813.5 t/year).

– School renovation projects in sector. By implementing this project it is expected to reduce the GHG emissions by 20,913.66 t CO_2 until 2020 (34,85.61 t CO_2 /year).

➤ Currently RES amounts to 21,7 % of final energy consumed in Lithuania therefore it was assumed that the target for RES use in final energy consumption balance (23%) will be reached by 2020.

➤ Existing and planed municipal solid waste incineration plants will determine that that district heat produced from municipal waste in 2020 will amount for 7 % of total supplied district heat.

➤ GHG emissions are proportional to the carbon price in the EU ETS market, therefore as the carbon price increase it is assumed that a significant amount of GHG emissions will be reduced due to installation shifting to the use of biomass boilers.

Preparation of GHG projections

Formulation of assumptions in energy sector
(Scenario with additional measures)

➢ National Energy Independence Strategy refers to the construction of the Visaginas nuclear power plant as the main target in securing energy independence (operation start from 2020) ;

➢ Additionally according to scenarios in data provided by the Ministry of Energy of the Republic of Lithuania it is estimated that use of renewable energy sources (RES) in 2030 would be equal to 31 %.

➢ According to data provided by the Ministry of Communications the increased uptake of RES up to 31% would decrease the use of gasoline and diesel oil by 25.8 ktne in transport sector by 2030.
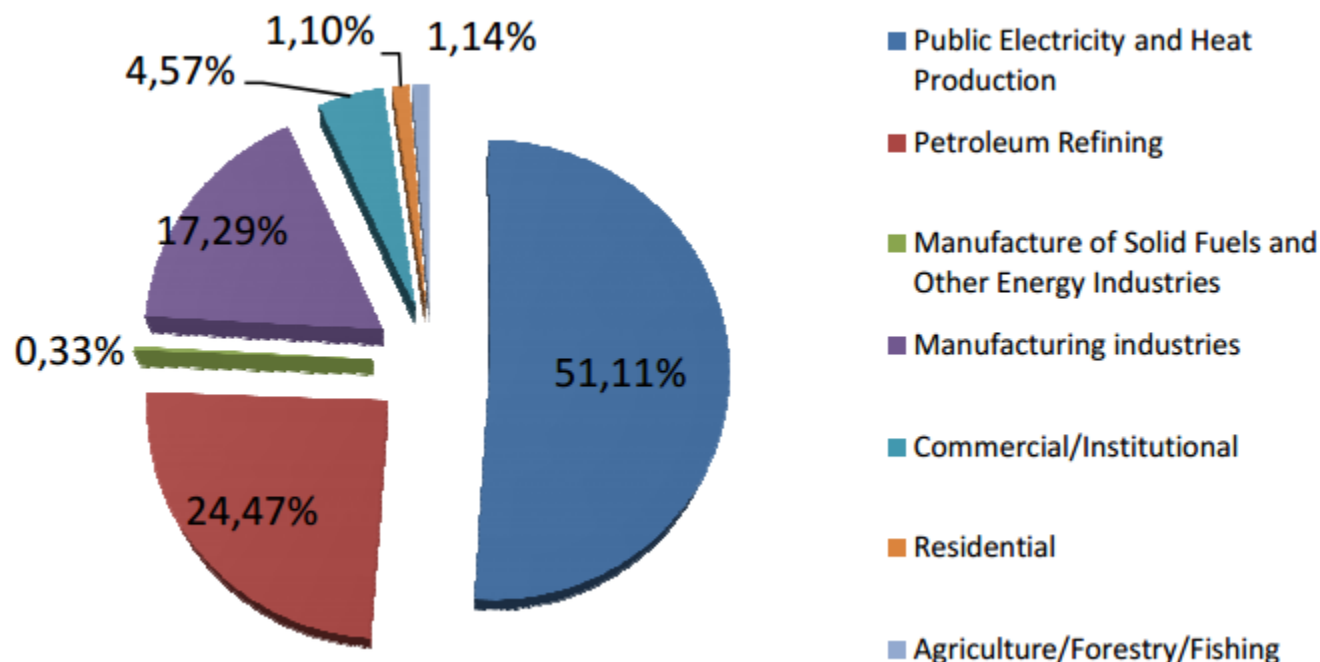
Estimated GHG emissions in Energy sector*

Legend:
- 1.A.1.a Public Electricity and Heat Production
- 1.A.1.b Petroleum Refining
- 1.A.1.c Manufacture of Solid Fuels and Other Energy Industries
- 1.A.2 Manufacturing industries
- 1.A.4.a Commercial/Institutional
- 1.A.4.b Residential
- 1.A.4.c Agriculture/Forestry/Fishing

*Transport sector not included

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Preparation of GHG projections

Estimated share of GHG emissions by sub-sector

- Public Electricity and Heat Production
- Petroleum Refining
- Manufacture of Solid Fuels and Other Energy Industries
- Manufacturing industries
- Commercial/Institutional
- Residential
- Agriculture/Forestry/Fishing

(1,10%, 1,14%, 4,57%, 17,29%, 0,33%, 24,47%, 51,11%)

GHG emissions are estimated to reach a total of 9.838.32 kt CO_2 eq.
Key sectors:
- Public electricity and heat production;
- Petroleum refining;
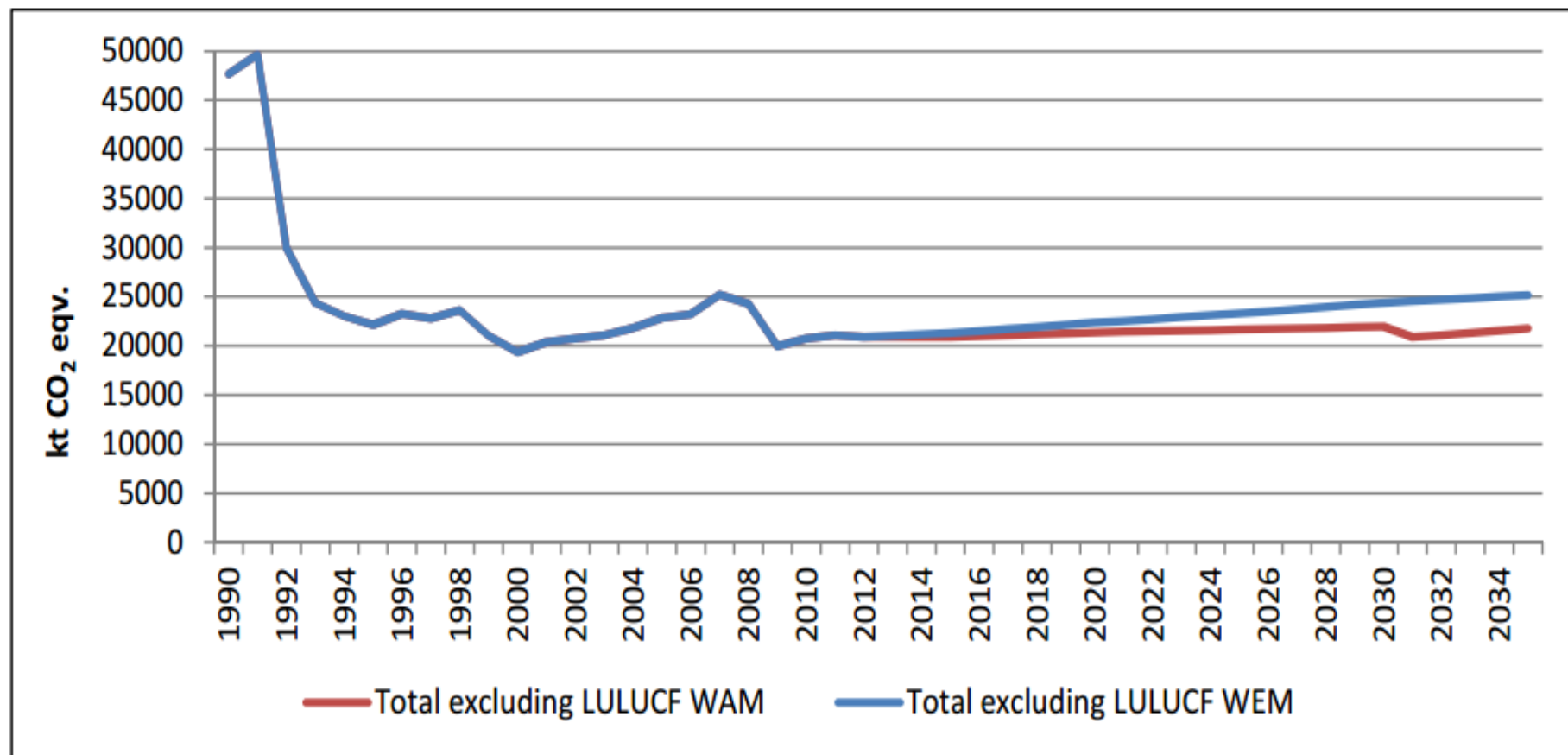- Manufacturing industries;

Preparation of GHG projections

Estimated GHG emissions in transport sector
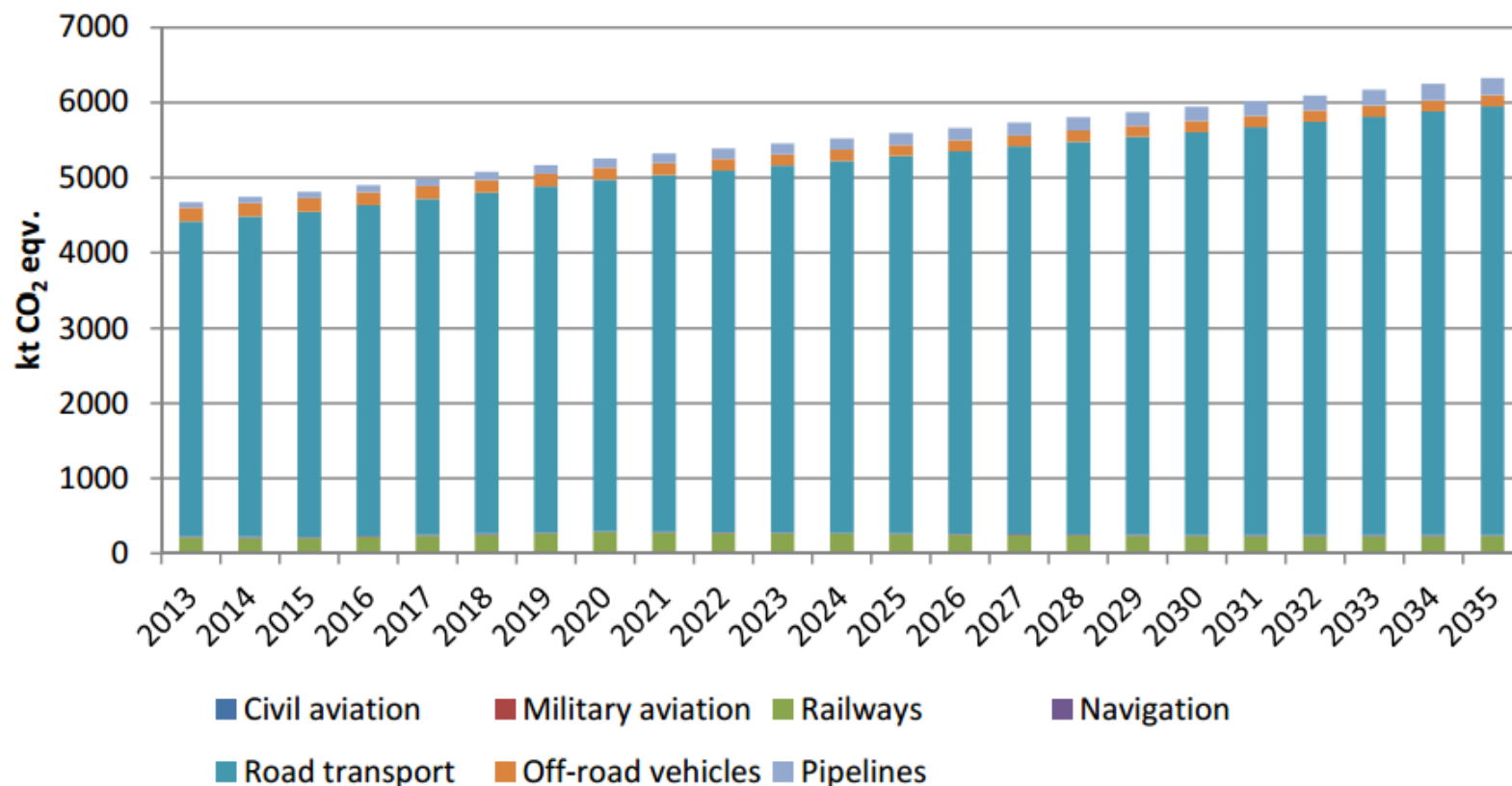
GHG emissions from transport sector are projected to increase up to 6,323 kt CO_2 eq. in 2035 due to increasing number of road vehicles and increasing transportation of natural gas in pipelines.
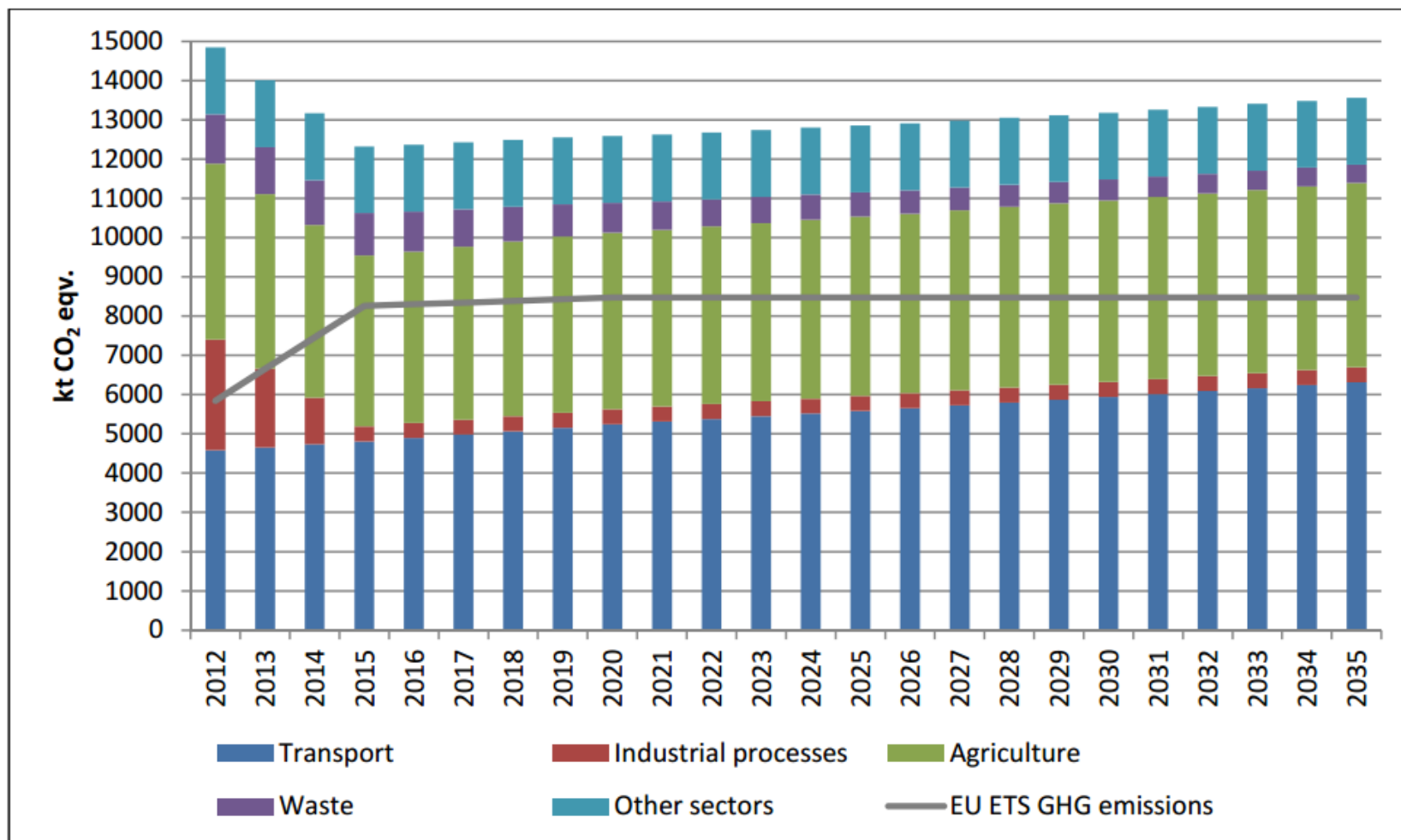
Preparation of GHG projections

According to projected GHG emissions in case of WAM scenario additional implemented measures will result in total 3187 kt CO_2 eq. (excluding LULUCF) decrease compared to WEM scenario in 2035.
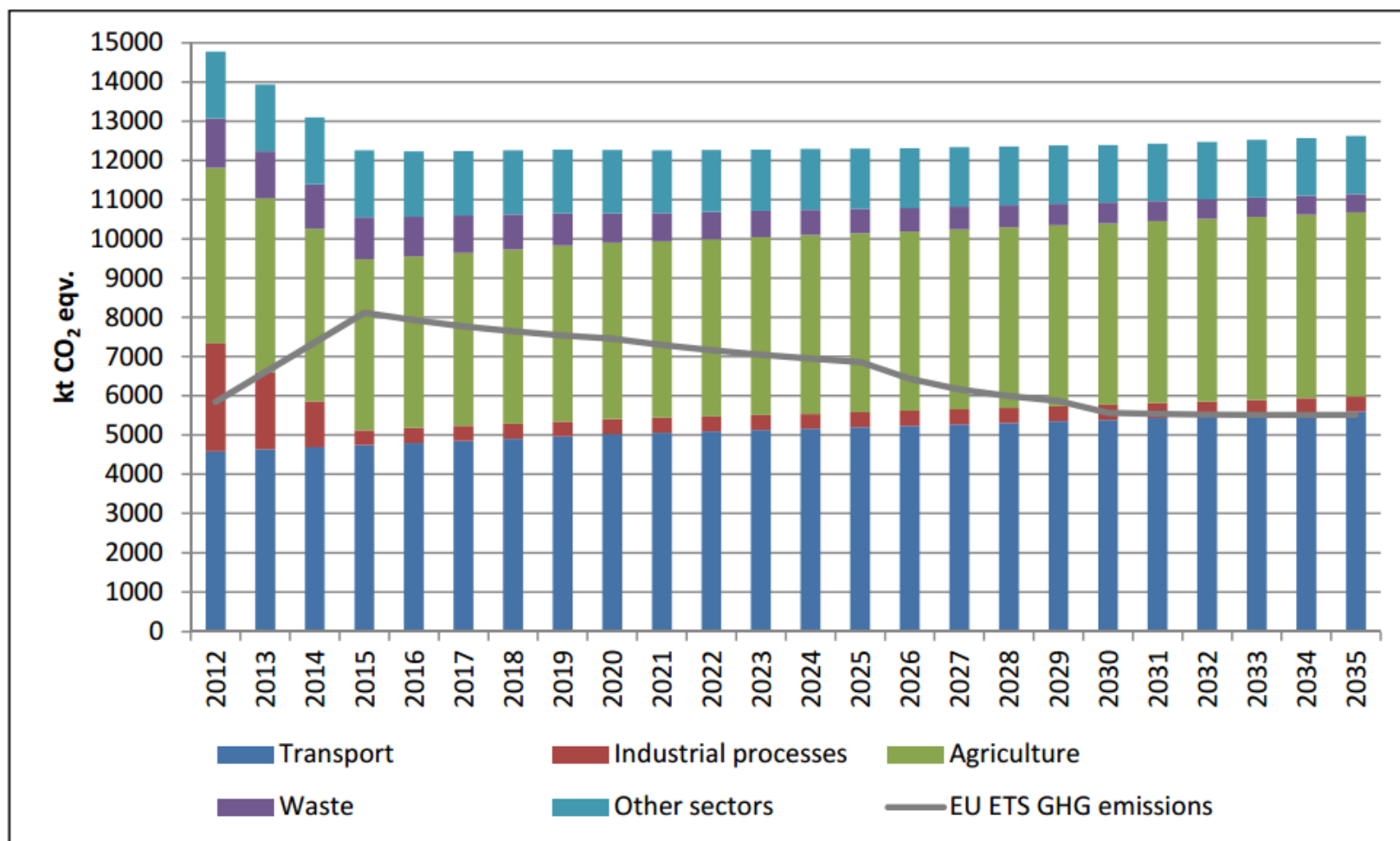
Preparation of GHG projections

Projected GHG emissions in EU ETS and ESD sectors (WEM scenario)

Preparation of GHG projections

Projected GHG emissions in EU ETS and ESD sectors (WAM scenario)

What we learned so far?

- Communication and cooperation between governmental, research institutions, companies, external companies is invaluable for preparation of GHG emissions.

- Modeling system required for preparation of GHG projections (LEAP?).

- Deep analysis of PaMs required. Sometimes planned measures does not reflect current situation (e.g consideration of constructing a nuclear power plant in Lithuania is currently on-hold).

Ačiū! Liels paldies! Tusen takk!

Thank You!