



MINISTRY OF
ENVIRONMENT
& ENERGY



Multilateral Assessment Greece

UNFCCC - SBI 46 - Bonn, May 12th, 2017



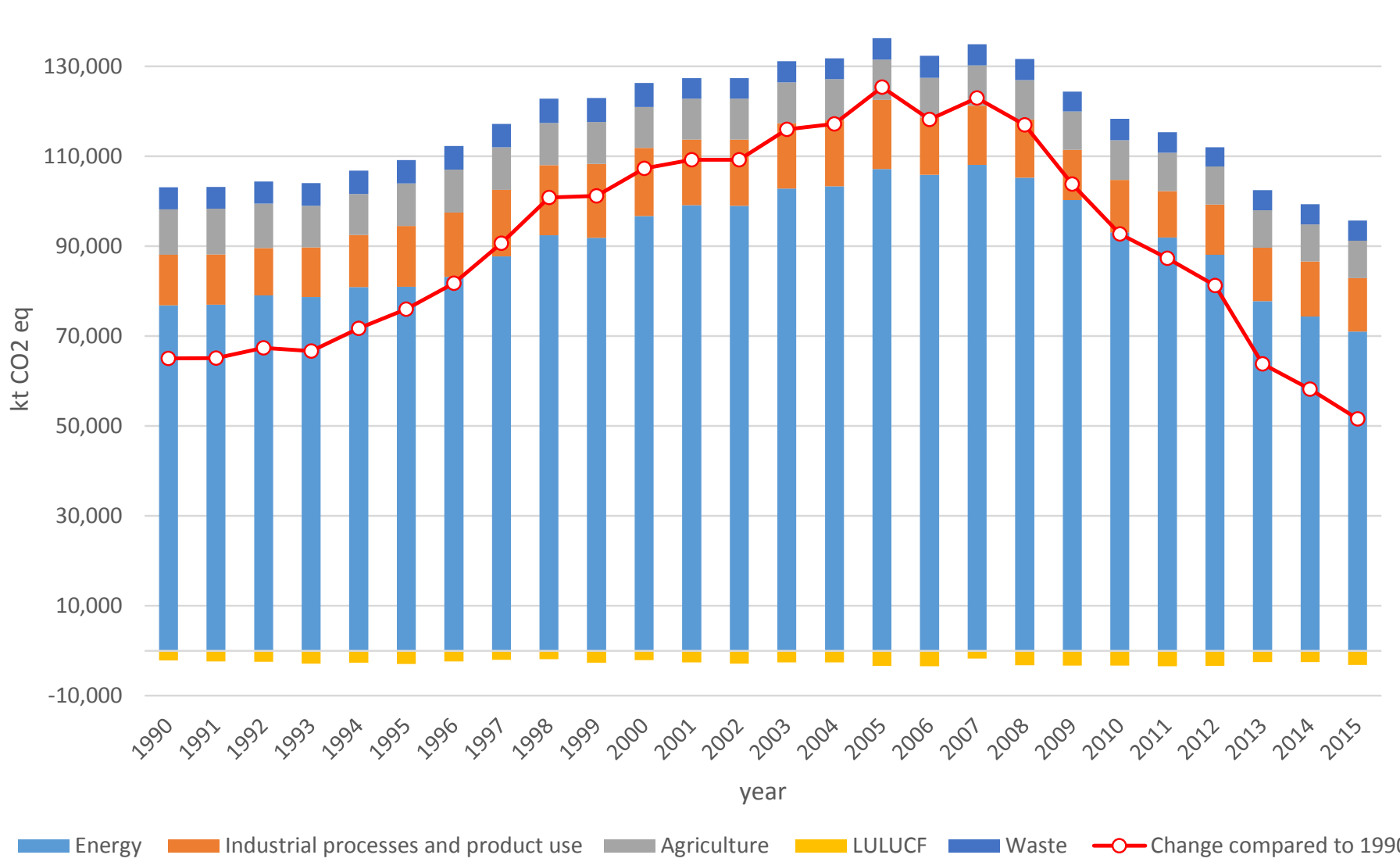
GREECE - basic national data :

- ✓ **Geography:** 131.957 km², consisting of two main geographic areas:
 - a peninsular mainland, and
 - approx. 6.000 islands & islets

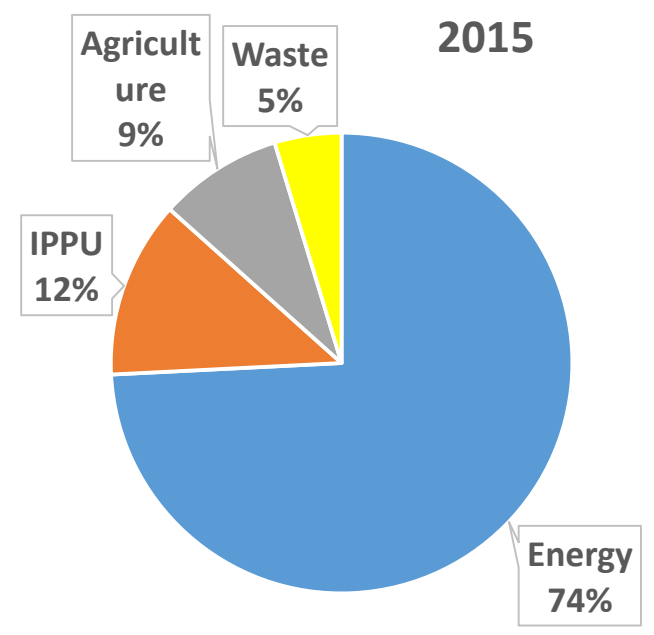
- ✓ **Population:** 10.816.286 (Census 2011)

- ✓ **GDP:** 175.697 mil euros (2015)
16.243 euros/capita (2015)
-26,4% (2015/2007)

GHG emissions profile



- ✓ GHG emissions (2015):
95.715 ktCO₂eq or 8,85 tCO₂eq/capita
- ✓ -7,15% (2015/1990)
- ✓ -29% (2015/2007)





2020 GHG emission mitigation commitments

- ✓ Pledge under the Convention for EU and its Member States (Quantified economy-wide emission reduction target, QEERT):
 - Unconditional quantified economy wide emission reduction target of 20% by 2020, compared to 1990 levels

- ✓ Binding commitment under Kyoto Protocol (implementing CP2 since 1.01.2013):
 - CP2: joint commitment of the EU, its MS and Iceland to reduce average annual emissions during 2013-2020 by 20% compared to base year

- ✓ EU internal target: 2020 Climate and Energy Package



EU pledged target under the UNFCCC

- The EU and its Member States are committed to an independent quantified economy-wide emissions reduction target of 20 per cent emission reduction by 2020, compared to 1990 levels.
- The 20% target is based on the understanding that it will be fulfilled jointly with the European Union.
- LULUCF is excluded from the target.
- The target is based on GWPs of IPCC AR4.
- The target will be implemented through binding EU legislation and is mainly based on the EU's "Climate and Energy Package",
 - ✓ For the emissions covered by the EU ETS, under an EU-wide cap, the goal is to reduce emissions of greenhouse gases by 21% in 2020 compared to 2005 levels
 - ✓ For the emissions of GHG not covered by the EU ETS, the goal is a collective reduction of 10% in 2020 compared to 2005 levels.



Climate and Energy Package: **Greek Targets**

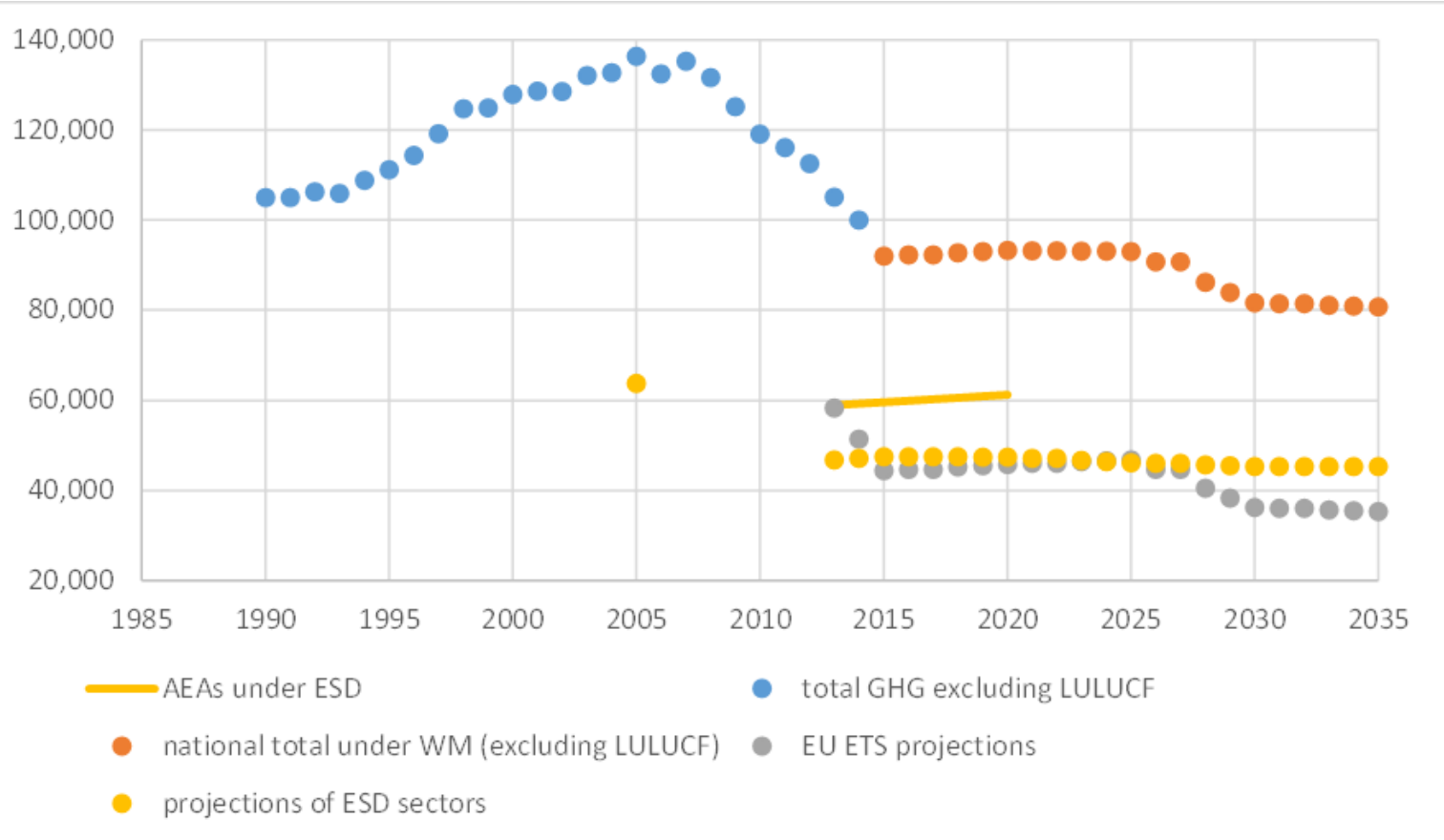
- ✓ RES: 18% of final energy consumption mandatory until 2020 (Directive 2009/28/EC). **The national target was increased from 18% to 20%** by L3851/2010
- ✓ Primary energy saving of 20% until 2020: The EU has set itself a 20% energy savings target by 2020 when compared to the projected use of energy in 2020 through Directive 2012/27/EU. **The national target of Greece for 2020 is 18,4 Mtoe final energy consumption (26,4 Primary energy consumption)**
- ✓ For the sectors of Industry & Power, under Directive 2003/87/EC (EU-ETS) there is a **single EU-wide cap**. For non-ETS sectors (ESD), i.e. Agriculture, Transport, Buildings, Waste etc., the target is **4% reduction of 2005 emissions by 2020**)



2nd CP (2013-2020) KP target

- ✓ Under the Kyoto Protocol the EU and its MSs in Doha adopted a QELRC (Quantified emission limitation or reduction commitment) of **20% reduction from base year for the period 2013-2020.**
- ✓ Activities under Articles 3.3 and 3.4 (Forest Management) will be accounted during 2nd CP by Greece.

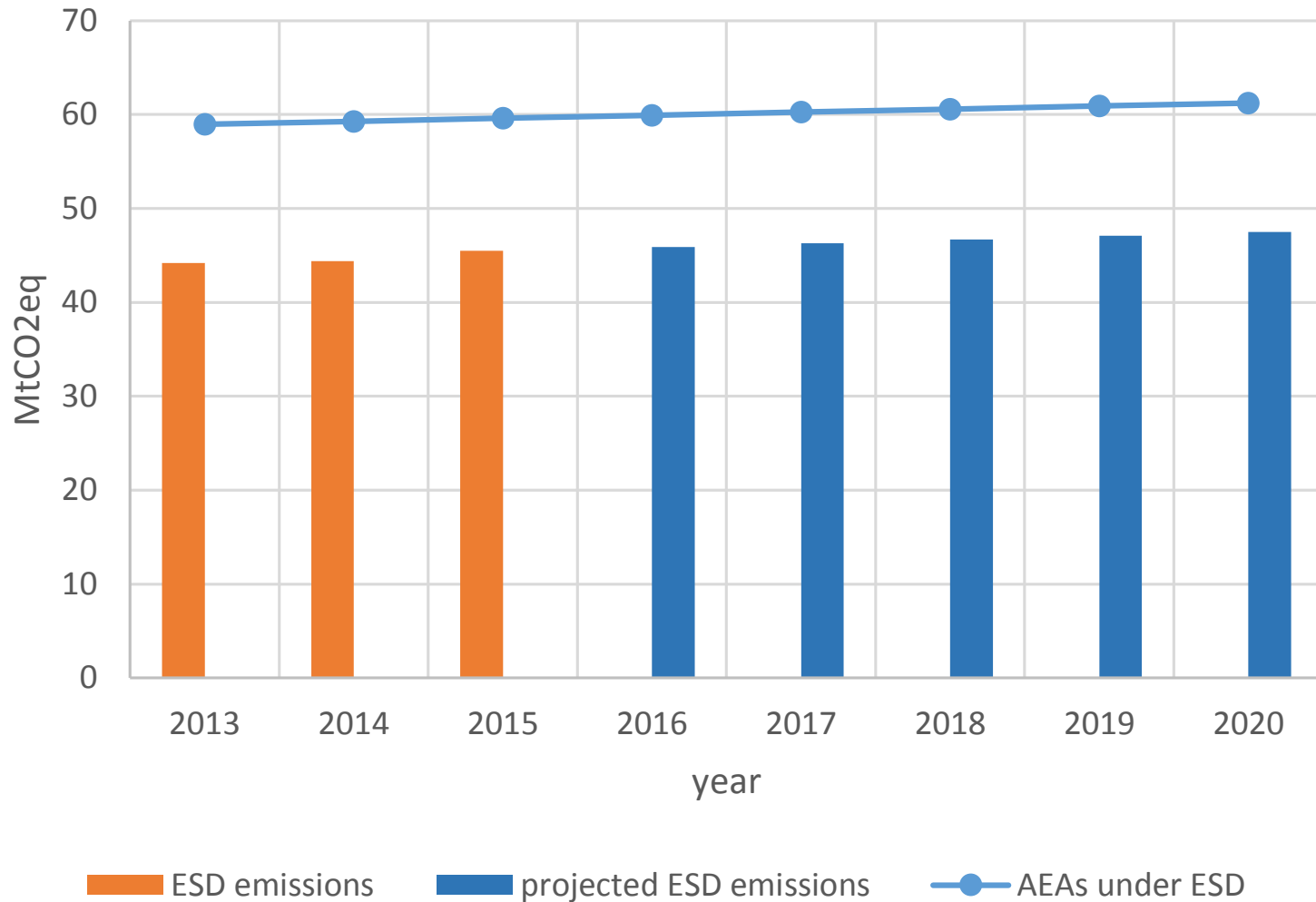
Projection of GHG emissions (Mt CO₂eq)



- ✓ Total emissions (excluding LULUCF) in 2020: -9,5% vs 1990, and -31,5% vs 2005
- ✓ ETS sector in 2020: -36,2% vs 2005
- ✓ Non-ETS sectors in 2020: -26,4% vs 2005

	1990	2005	2015	2020	2030
ETS	-	71,8	50,2	45,8	36,3
Non-ETS	-	64,5	45,5	47,5	45,4
Total	103,1	136,3	95,7	93,3	81,7

Greece's Annual Emission Allocations under Effort Sharing Decision (ESD)



✓ It is projected that Greece will meet the non-ETS (ESD) target, on the basis of the domestic policies and measures

Key climate related data

- ✓ Total estimated mitigation effect of implemented and adopted policies is approx. **22,4 MtCO₂ eq in 2015** and is projected to be **30 Mt CO₂ eq in 2020**
- ✓ Total CO₂ intensity of GDP: - **25% in 2015** compared to 2000
- ✓ Total CO₂ intensity per capita: - **33,5% in 2015** compared to 2005
- ✓ Energy related CO₂ intensity of GDP: -**17,5% in 2015** compared to 2000
- ✓ Carbon intensity of total power generation: - **41,2% in 2015** compared to 1990
- ✓ Energy related CO₂ intensity of industry: - **30% in 2015** compared to 2000
- ✓ Specific CO₂ intensity of households: - **42,4% in 2015** compared to 2000



2030 climate & energy framework

- ✓ NDC communicated under the Paris Agreement (GR ratified PA : 7th Oct. 2016)
- ✓ The EU and its Member States are committed to a binding target of an at least 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990
- ✓ This will enable the EU to:
 - take cost-effective steps towards its long-term objective of cutting emissions by 80-95% by 2050,
 - make a fair and ambitious contribution to the new international climate agreement, to take effect in 2020.
- ✓ To achieve the at least 40% reduction target:
 - ✓ EU emissions trading system (ETS) sectors would have to cut emissions by 43% (compared to 2005) – to this end, the ETS is to be reformed and strengthened
 - ✓ non-ETS sectors would need to cut emissions by 30% (compared to 2005) – this needs to be translated into individual binding targets for Member States.



Q&As about implemented & adopted PaMs

- **Question:** In the WEM scenario, Greece includes implemented and adopted PaMs up to the year 2008. Could Greece explain the reasons for not including more recent PaMs?
- ✓ **Answer:** Each of the PaMs (Policies and Measures) reported in CTF Table 3 refers to a group of PaMs that consists of a number of mitigation actions that have the same scope / objective, cover the same sector / subsector and be of the same type (e.g. economic, fiscal, etc). Some of these actions started in the year 2008 and haven't been changed since then; some other have been trimmed or adjusted, when necessary, in order to conform to the current national circumstances; some other have been supplemented with additional elements in cases where the expected benefits are lagging behind planned outcomes or other national circumstances.
- ✓ Furthermore, we included information both in BRs and NCs about the evolution of these "grouped" policies since the starting year, which it is reported in CTF Table 3.



Q&As about implemented & adopted PaMs

- ✓ **Answer (cont'd):** Example: the mitigation policy entitled in CTF Table 3 as “Improvements in the conventional power generation system”.
- The main mitigation actions for the improvement of the conventional power generation system are:
- The gradual decommissioning of old inefficient and more pollutant thermal power units;
 - The commissioning of new power units that follows Best Available Technique (BAT) and the new Industrial Emissions Directive (IED);
 - The increase of Natural Gas (NG) share in electricity production;
 - The interconnection of certain islands with the mainland grid;
 - Seven lignite-fired and five Heavy Fuel Oil (HFO)-fired power units is expected to be decommissioned till 2020, while nine additional lignite-fired units till 2025. They will be substituted by NG-fired plants and Renewable Energy Sources (RES)



Q&As about implemented & adopted PaMs

- ✓ **Answer (cont'd):** Each of these actions is on-going and started either in 1996 or after 1996. We selected the year 1996 as the “start year of implementation”, because the introduction of natural gas in the national energy system, which is one of the largest investments ever carried out in Greece, was done in 1996, when an important part of the infrastructure, mainly the high pressure transmission system and the medium pressure network, which is necessary for the transport of natural gas to the main regions of consumption, has been completed.
- ✓ The interconnection of islands to the mainland grid (bullet d) is being implemented according to the following phases:
 - Interconnection of Cyclades islands (2018); and
 - Interconnection of Crete (2025)
 - Both phases have started after 2008



Q&As about ‘with additional measures’ scenario



- **Question:** In BR1, Greece reported table 6 (c) “Information on updated greenhouse gas projections under a ‘with additional measures’ scenario”. Could Greece please explain why in BR2 table 6(c) was not reported?
- **Answer:** The reporting of ‘with additional measures’ scenario’ is not a “shall” requirement according to the guidelines.
- As it is reported in section 3.1 of the BR2, “Greece, as an EU Member State, is under the joint quantified economy-wide emission reduction target of EU and its Member States.”
- As it is described in section 3.2 of the BR2, the joint quantified economy-wide emission reduction target of EU and its Member States is divided between the ETS and ESD sectors. While the EU ETS target is to be achieved by the EU as a whole, the ESD target was divided into national targets to be achieved individually by each Member State.
- Since the national target (ESD target) is met by the ‘with measures’ scenario, it was decided that there is no added value reporting a ‘with additional measures’ scenario.

Q&As about current estimates of mitigation impacts

- **Question:** Regarding “CTF Table 3 Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects”, are there any current estimates of mitigation impacts since the respective years of implementation?
- **Answer:** The mitigation effect has been estimated by comparing the actual data (e.g. data from the 2015 national energy balance) with a hypothetical ‘without measures’ scenario that does not include the mitigation effect of the examined policy or measure.
- The total mitigation effect of the PaMs reported in CTF Table 3 is **22.438 kt CO₂eq** for year 2015. A detailed table with the individual effect of each mitigation policy was provided during the Q&As phase.



Name of PaM or group of PaMs	Mitigation effect (kt CO2 eq) year 2015
Improvements in the conventional power generation system	7.404
Promotion of natural gas in residential sector	259
Promotion of natural gas in tertiary sector	121
Promotion of natural gas in industry	638
Promotion of natural gas in transportation	11
Promotion of RES for electricity generation	11.383
Biofuel use in transportation	489
Implementation of energy efficiency measures in Residential and Tertiary Sector (National Energy Efficiency Action Plan)	93
Road transport measures	272



Name of PaM or group of PaMs	Mitigation effect (kt CO2 eq) year 2015
Recovery of organic waste	200
Recovery of biogas	769
Establishing common rules for direct support schemes under the common agricultural policy: Reduction of the rate of intensity of agricultural land use and improvement of management of animal waste.	370
Establishing common rules for direct support schemes under the common agricultural policy: Increase of organic farming.	329
Establishing common rules for direct support schemes under the common agricultural policy: Decrease of the use of synthetic nitrogen fertilizers by 30% beyond the limit defined in cross compliance system.	100
Total mitigation effect in 2015	22.438



*Thank you very much
for your attention!*

