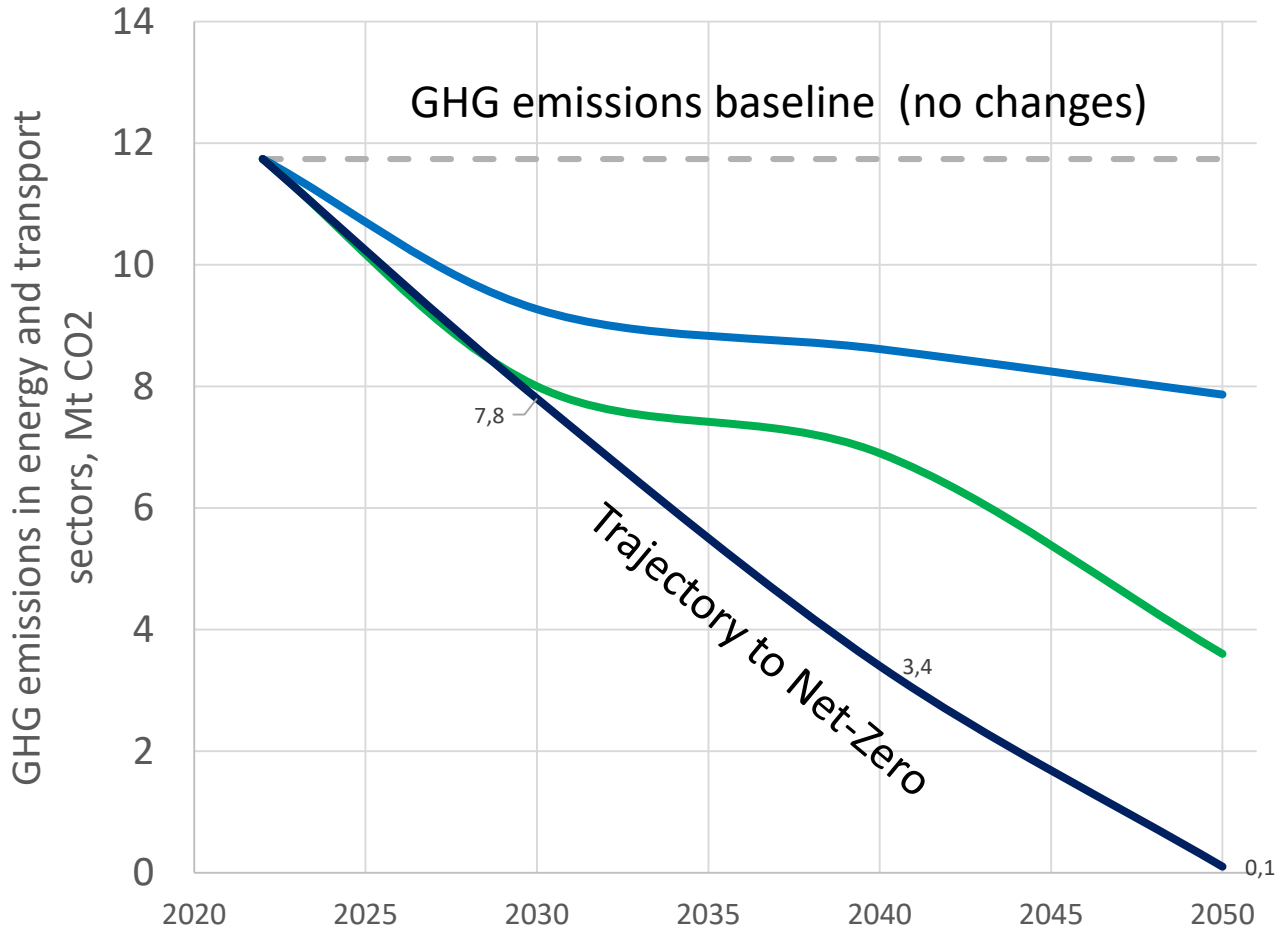
Energy efficiency and related regulatory challenges: **Case study – Lithuania** ***(NRA perspective)***

Karolis Januševičius, PhD
Board member
NERC

THE ROLE OF ENERGY EFFICIENCY TOWARDS DECARBONISATION



Measures required to achieve ***Net Zero by 2050****:*

Effect of Energy efficiency improvement

Effect of Renewable energy sources integration

Effect of Carbon capture and storage technologies

Source: *Adaptation from the National energy independence strategy of Lithuania, 2024*

THE ENERGY EFFICIENCY IMPROVEMENT POTENTIAL (LITHUANIA CASE)

NATIONAL ENERGY REGULATORY COUNCIL

Primary energy

14,3 TWh

17,8 TWh

12,7 TWh

42,5 TWh

Supply side

Non-RES (31%) **Generation** *- 2,94 TWh*

Transmission / distribution *- 0,951 TWh*

LNG Re-gasification *- 0,211 TWh*

Transmission / distribution *- 0,235 TWh*

Heat production *- 2,93 TWh*

Distribution *- 1,168 TWh*

Direct transfer to sector

Energy lost ~ 8,4 TWh

Final energy

10,4 TWh

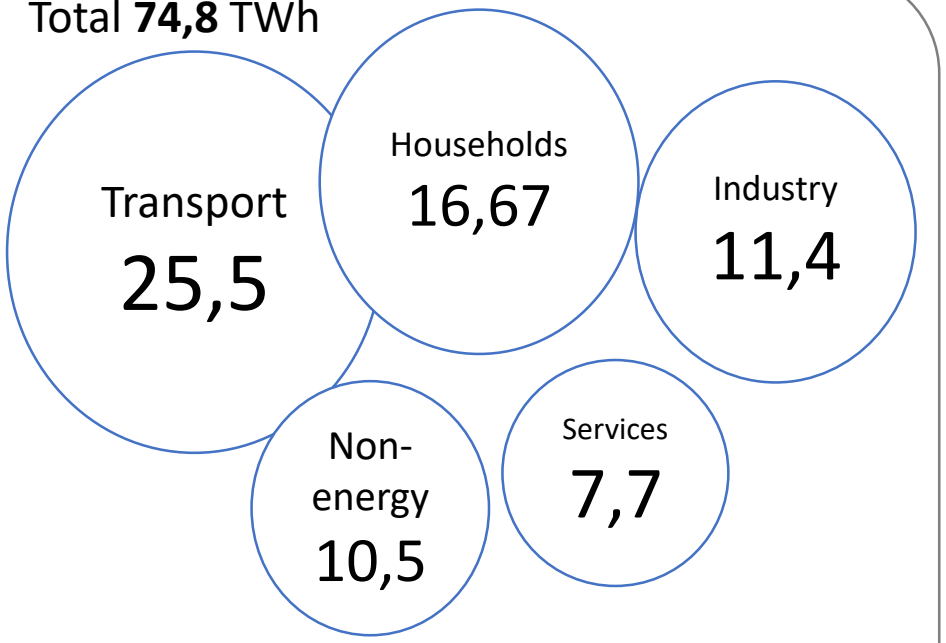
17,3 TWh

8,6 TWh

42,5 TWh

Demand side

Total **74,8** TWh



Theoretical loss >37 TWh

Generation **33 – 55%**
Production **75-90 %**

88 – 99 %

energy use efficiency in range of **20-90%**

Source: Numeric values adapted from Eurostat energy balance, 2020

THE KEY ACTIVITIES OF NRA ON IMPROVING ENERGY EFFICIENCY IN LT

NATIONAL ENERGY REGULATORY COUNCIL

Enables investment to improve the energy efficiency in *the supply side*

Enables cost coverage for awareness-raising campaigns (include costs to the approved tariff)

Supervises implementation of the "**Energy Efficiency First**" principle

Penalizes the non-compliance of efficiency improvement measures**

Supervises **heating and cooling system inspection process** in Lithuania (according to EPBD)

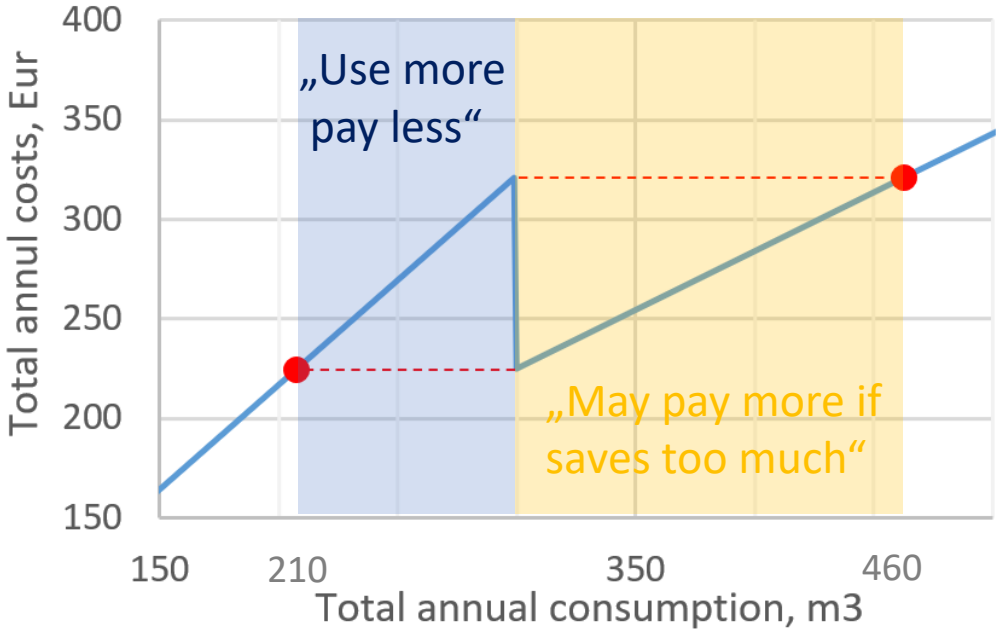
* *by reviewing the benefits and including the investment costs to the tariff if approved*

**saving agreements, consumer awareness rising, not performing energy audits or not implementing energy management systems, not providing data | monitored and verified by the Energy Agency

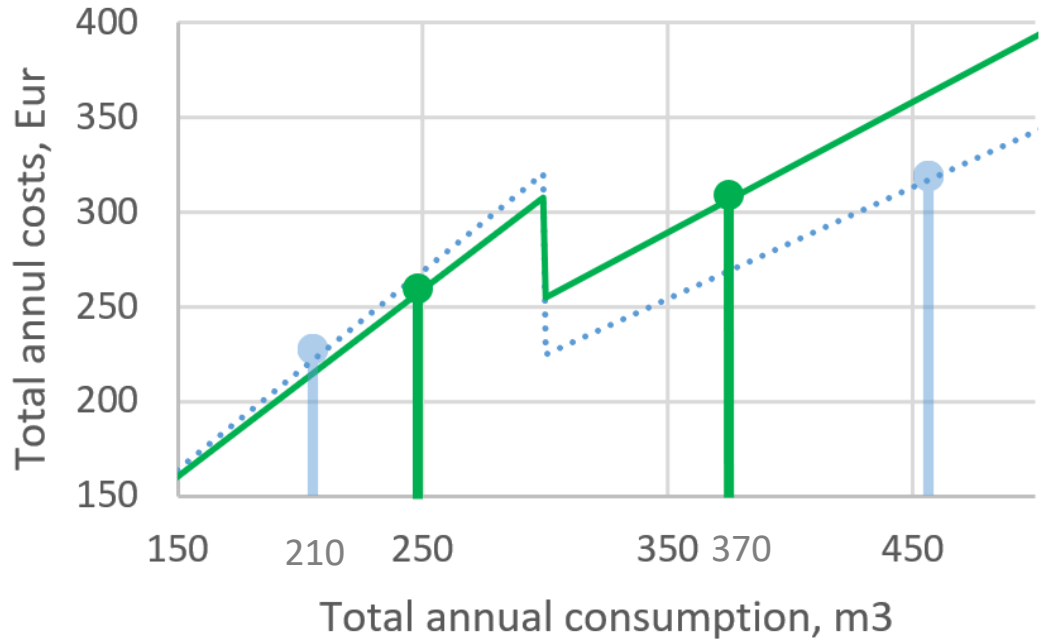
CHALLENGES: TARIFF STRUCTURE

NATIONAL ENERGY REGULATORY COUNCIL

Paradox: Higher savings may result in higher unit price



	Up to 300 m3	From 300 to 20 t.m3
Monthly fee	0,56 Eur	3,99 Eur
Price per unit	1,05 Eur/m3	0,59 Eur/m3



	Up to 300 m3	From 300 to 20 t.m3
Monthly fee	0,56 Eur	3,99 Eur
Price per unit	1,05 Eur/m3	0,59 Eur/m3

CHALLENGES: CONFLICTING PRIORITIES

NATIONAL ENERGY REGULATORY COUNCIL

AIM TO REDUCE ENERGY UNIT PRICES

Longer payback periods for energy efficiency investments

Decreased resilience towards energy price volatily

Increased need for the subsidies to encourage the investments

OBSERVED OPORTUNITIES

NATIONAL ENERGY REGULATORY COUNCIL

Increased Energy efficiency leads to:

Reduction in **energy poverty***

Increase of **Energy security and energy indepenence**

Reduce the amount of **renewable energy generators** needed

**If adopted for the consumers exposed to energy poverty*

NATIONAL ENERGY REGULATORY COUNCIL

THANK YOU !
QUESTIONS?

karolis.janusevicius@vert.lt