Council of the European Union

Brussels, 19 November 2015
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ENER 388
CLIMA 127
AGRI 607
COMPET 524
TRANS 370
ENV 718
ECOFIN 891
RELEX 947
TELECOM 217
CONSOM 197

COVER NOTE

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Delegations will find attached document SWD(2015) 222 final.

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COMMISSION STAFF WORKING DOCUMENT

Country Factsheet Estonia

Accompanying the document

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE, THE COMMITTEE OF THE REGIONS AND THE EUROPEAN INVESTMENT BANK

State of the Energy Union

{COM(2015) 572}
{SWD(2015) 208 à 209}
{SWD(2015) 217 à 221}
{SWD(2015) 223 à 243}

Towards an Energy Union

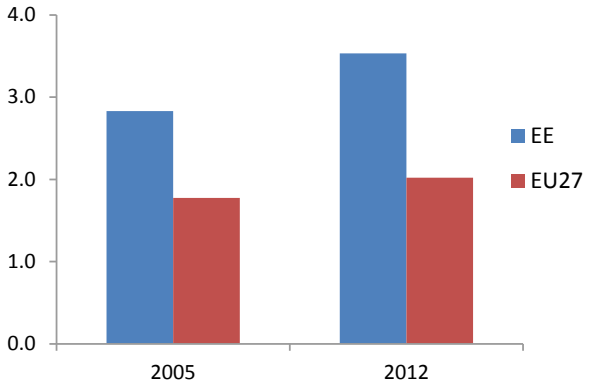
Estonia

Macroeconomic relevance of energy

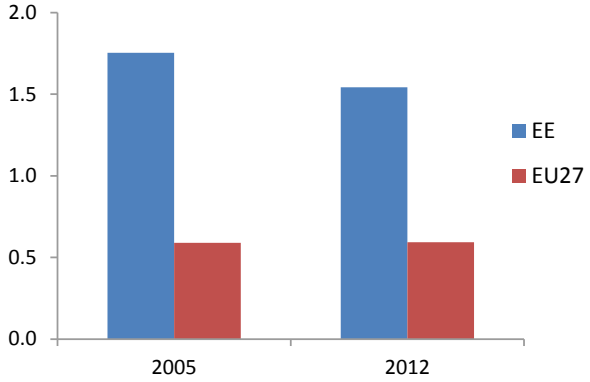
IMPORTANCE OF THE ENERGY SECTOR

At 3.5% of total gross value added in 2012, value added of the energy sector in Estonia is considerably higher than the EU average, and has increased from 2.8% in 2005. At the same time, the share of employment in the energy sector in total employment has decreased by nearly half a percentage point, but it remains almost three times the EU average (0.6% in 2012).

Value added of energy sector
% of gross value added (total economy)



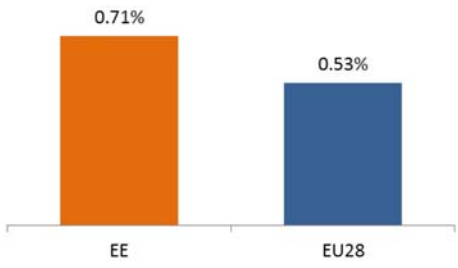
Employment in energy sector
% of total employment



Source: EUROSTAT – National Accounts

According to EurObserv'ER, in 2013, the share of direct and indirect renewable energy related employment in total employment of the economy in Estonia was at about 0.71%, above the EU average of 0.53%.

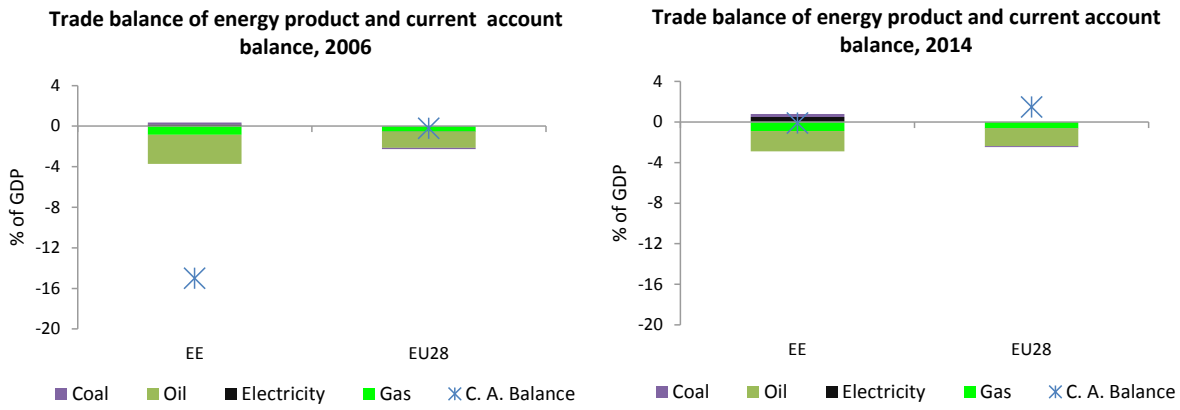
Renewable energy employment in 2013
[direct and indirect jobs as % of total employment]



Source: European Commission, based on EurObserv'ER and EUROSTAT

TRADE BALANCE OF ENERGY PRODUCTS

Similarly to the EU average, the energy trade balance of Estonia is overall negative, with oil and gas being important drivers. On the other hand, Estonia is a net exporter of electricity. The current account deficit has significantly decreased between 2005 and 2014. The reduction was largely due to lower import and capital income outflows, with energy trade balance contributing only slightly to the rebalancing.



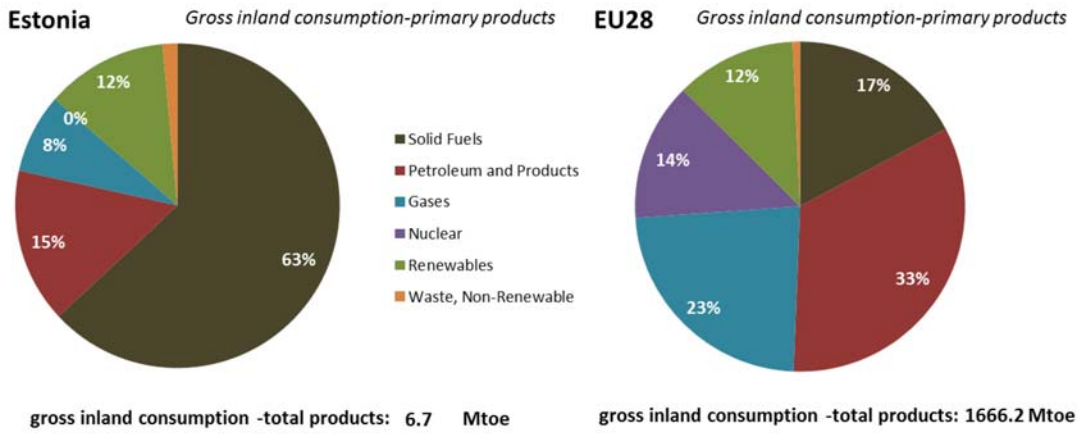
Source: EUROSTAT
Note: Current account balance for EU28 from European Commission (AMECO)

1. Energy Security, solidarity and trust

ENERGY MIX

The energy mix of Estonia differs from the EU28 average with the main difference of a much higher share of solid fuels and much lower of petroleum and products. Compared to 1995, the share of solid fuels petroleum and products decreased (from 64% to 60% and from 22 to 17% of the gross inland energy consumption, respectively), while the share of renewable energy sharply increased (by 7 percentage points). The share of gases decreased from 10 to 8% of the energy mix.

Gross inland energy consumption in 2013



Source: European Commission, based on EUROSTAT

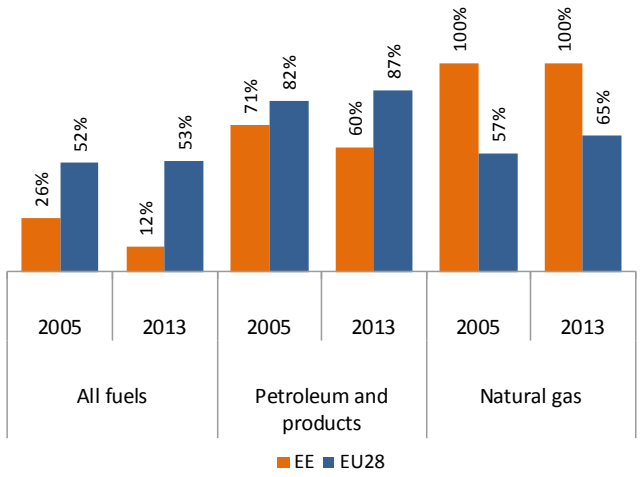
IMPORT DEPENDENCY

Since 1995, energy import dependency has decreased in Estonia, with overall import dependency much lower than the EU average. Energy dependence rate was 11.9% in 2013. The dependency for solid fuels and petroleum products has decreased, mainly due to Estonia's domestic oil shale production and biomass use. Estonia is highly dependent on gas imports from Russia[1]. However, gas only represents 8% of the gross inland consumption and plays a marginal role in energy imports. The

[1] Top non-EU gas suppliers table is based on EUROSTAT data. The share of imports from non-EU countries is calculated as the ratio between volumes of imports from that specific non-EU supplier and total imports (from EU and non-EU countries).

energy trade deficit (expressed in % of GDP) is lower than EU average.

Import dependency 2013



Top non-EU gas suppliers in 2013 (% in total imports)

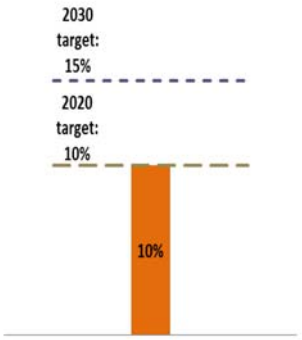
Estonia			European Union		
country		[%]	country		[%]
Russia		100.0	Russia		39.0
			Norway		29.5
			Algeria		9.7
			Qatar		6.7

Source: European Commission, based on EUROSTAT

2. A fully-integrated internal energy market

INTERCONNECTIONS

Interconnection capacity for electricity in 2014



Source: European Commission based on ENTSO-E scenario outlook and adequacy forecast 2014

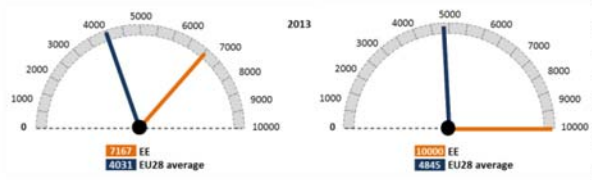
Note: Reference to 2030 target is based on October 2014 European Council conclusions stating that "the Commission will also report regularly to the European Council with the objective of arriving at a 15% target by 2030"

The interconnection capacity for electricity in the Baltic States increased to around 10% after the Estlink2 interconnection with Finland was put into operation in 2014. The launch of Estlink 2 interconnection has increased remarkably Estonian connectivity with the Nordic power market. This has increased competition and at the same time benefitted Estonian electricity consumers. The limited capacity of the interconnection between Estonia and Latvia has an adverse impact on the electricity markets of Estonia and the other Baltic States. The third electricity interconnection between Estonia and Latvia will enhance the development of the regional market and market integrity in the Baltic States. The three Baltic States agreed in the first quarter of 2015 on a common strategic goal: de-synchronisation from the Russian system IPS/UPS and the synchronisation of their power systems with the Continental European Network. The project of synchronisation is included as a key infrastructure project in the European Energy Security Strategy, as well as is highlighted as one of the key energy priority areas Baltic Energy Market Interconnection Plan (BEMIP).

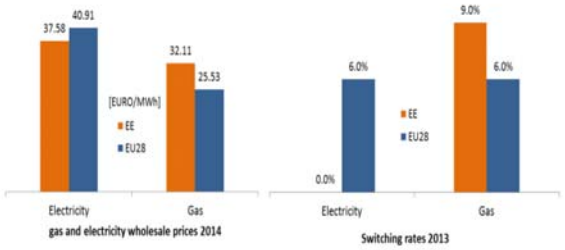
Estonia has natural gas network connections with Russia and Latvia. Two PCIs are key in increasing diversification and security of supplies and ending Estonia's isolation in the gas sector: the regional Baltic LNG terminal and the natural gas pipeline Baltic connector between Finland and Estonia. In addition, the building of the Poland – Lithuania gas interconnector (GIPL) will help to end the gas isolation of the Baltic States.

ELECTRICITY AND GAS MARKETS

Market concentration index for power generation (left) and gas supply (right) (2013) (Herfindahl index – 10000 means monopoly)



Sources: European Commission based on ESTAT, CEER and Platts Power Vision



Sources:ESTAT and European Commission Calculations

According to the selected indicators, market concentration on electricity and gas markets was high in 2014 and 2013 respectively (latest available data). The Estonian electricity market was fully liberalized from the beginning of 2013 eliminating regulated prices and opening the market to competition. Estonia is part of the Nord Pool Spot power exchange and from 2013 all the prices have been determined by the market. In 2014, wholesale electricity prices were below EU average.

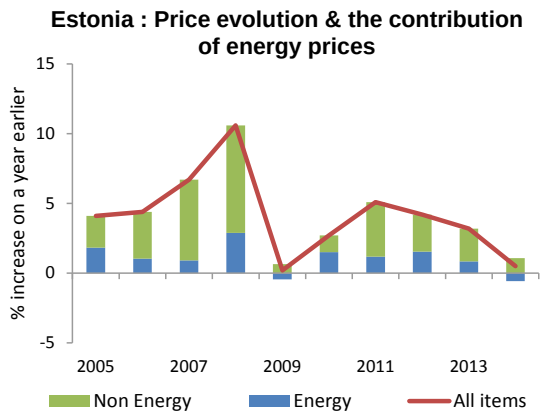
In 2014, wholesale gas prices were above EU average. Estonia finalised its gas market liberalisation process at the beginning of 2015. Several companies have now licenses for importing gas. In 2013, household electricity and gas prices were below the EU average, being the 3rd and 8th lowest electricity and gas prices respectively. [2]

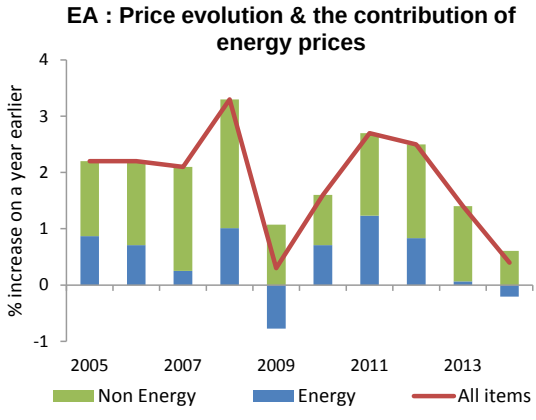
The retail gas market is assessed among the highest in the EU in terms of customer satisfaction [3]. In contrast, the retail electricity market is assessed below the EU average (23th position).

The completion of smart metering roll-out by the beginning of 2017 has been decided by the Estonian national grid code.

CONTRIBUTION OF ENERGY TO CONSUMER PRICE EVOLUTION

Inflation of consumer prices has decreased importantly in Estonia compared to the pre-crisis period. Past volatility in inflation was largely due to non-energy items. In Estonia and in the rest of the Euro area, oil prices have declined in 2014, driving overall inflation at historically low levels.



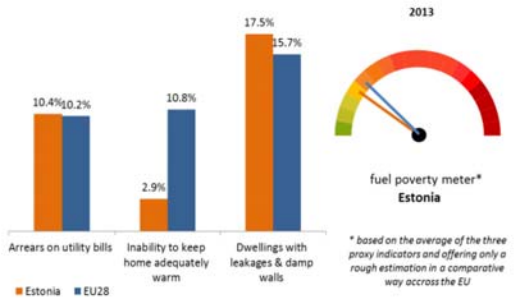


Source:DG ECFIN based on Eurostat

VULNERABLE CONSUMERS

[2] Source: Eurostat http://ec.europa.eu/eurostat/statistics-explained/index.php/Energy_price_statistics

[3] 10th Consumer Markets Scoreboard (June 2014), http://ec.europa.eu/consumers/consumer_evidence/consumer_scoreboards/10_edition/index_en.htm

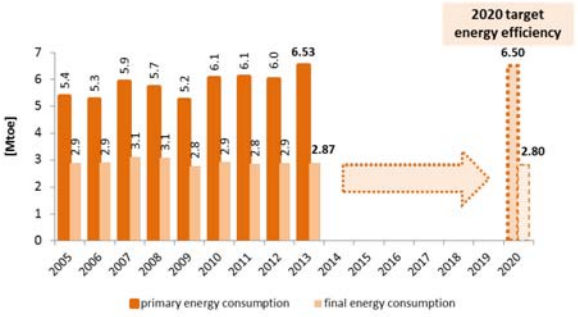


Source: European Commission, based on on EUROSTAT SILC survey

Based on a EUROSTAT survey on income and living conditions, three proxy indicators are used to assess fuel poverty. The fuel poverty meter is below the EU average. Less than 3% of households were unable to keep their homes adequately warm while 17.5% experienced leakages and damp walls in their properties. Measures against disconnection in winter are in place for electricity, gas and district heating.

3. Energy Efficiency and moderation of energy demand

ENERGY EFFICIENCY TARGET 2020
(6.5 Mtoe primary energy and 2.8 Mtoe final energy)



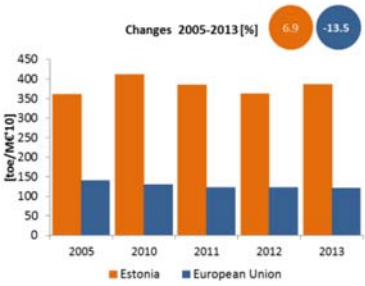
Source: European Commission, based on EUROSTAT and on national energy efficiency targets as declared by the MS under the Energy Efficiency Directive

Estonia's 2020 energy efficiency target states that 2020 final energy consumption will have to remain at the 2010 level. This means consumption of no more than 2.8 Mtoe (6.5 Mtoe expressed in primary energy consumption). Additional actions are required to ensure that the target is met, including in buildings and the transport sector, since if the trends observed in final energy consumption in 2005-2013 continue, the target is at risk of being missed.

ENERGY INTENSITY

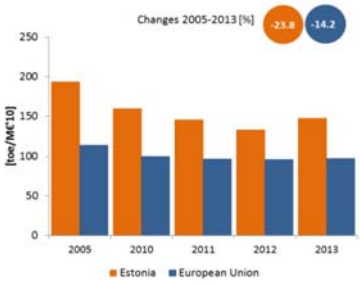
Primary energy intensity in Estonia increased from 2005 and remains significantly above the EU average. Nevertheless, a high energy intensity reduction is recorded in the industrial sector, i.e. about 24% between 2005 and 2013, significantly more than the average energy intensity reduction in the EU28.

Primary energy intensity of the economy (primary energy consumption/GDP)



Source: European Commission based on EUROSTAT and European Commission/AMECO

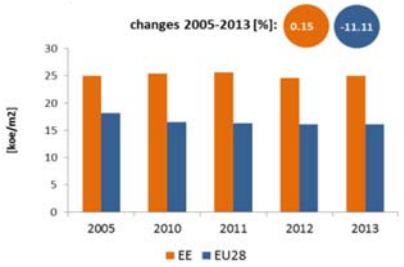
Final energy intensity in industry (final energy consumption/value added)



Source: European Commission based on EUROSTAT and European Commission/AMECO

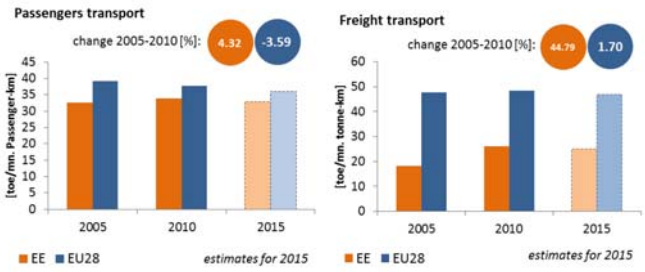
Specific energy consumption by households is above EU average and remained quasi-stagnant from 2005 onwards. The specific energy intensity of passengers cars increased between 2005 and 2010 which reflects a less efficient usage of cars. The specific energy intensity for freight transport increased consistently between 2005-2010 (by 44%), i.e. from the same unit of energy fewer tonnes of good are transported and/or on shorter distances. However, energy efficiency of freight transport in Estonia remains below EU average. Estonia's performance in terms of using energy efficient and clean transport technologies is relatively poor compared with other EU Member States. Estonia has made some progress in terms of improving the effectiveness of its transport infrastructure but it is unlikely to lead to consistent improvements if passenger transport by car remain taxed at a low level.

Final energy consumption per m2 in residential sector, climate corrected



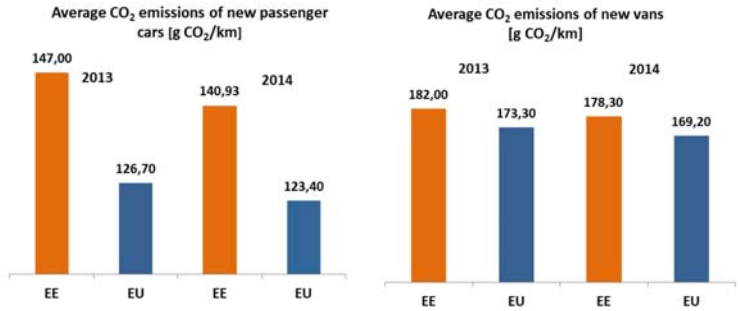
Source: European Commission based on Odyssee database

Specific energy intensity for passenger cars and freight transport[4]



Source: PRIMES model background data and estimations based on EU Commission and EU MS inputs

EU legislation sets mandatory CO_2 emission reduction targets for new cars and vans. By 2021, the fleet average to be achieved by all new cars is 95 grams of CO_2 per kilometre. For new vans, the fleet average is set at 147 g/km by 2020.

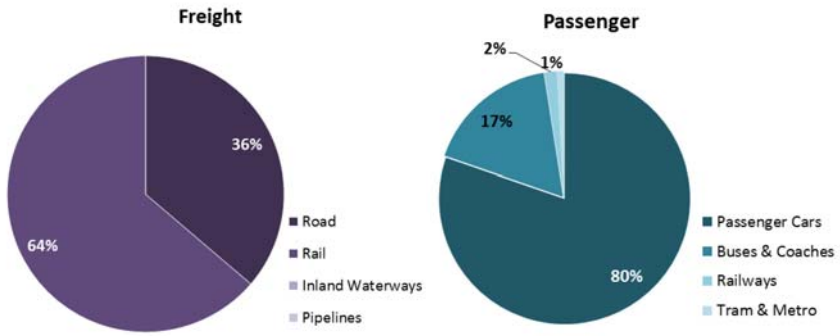


Source: European Environmental Agency. 2014 values are provisional. 2013 EU average refers to EU-27.

Regarding transport performance, in EU-28 the inland freight modal shares are 71% by road, 17% by rail, 7% by inland waterways and 5% by pipelines. The respective inland passenger modal shares are 82% by private car, 9% by buses and coaches, 7% by railways and 2% by tram and metro. In Estonia, as in the other Baltic states, rail is widely used in freight transport.

Modal share Estonia

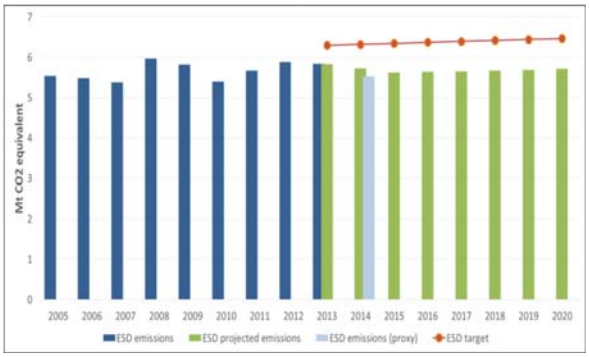
[4] Statistics on energy demand for passengers and freight transport are not available and model estimates have been used instead. These issues should be borne in mind when comparing energy intensity in freight or passenger transport between Member States, which should be regarded as merely indicative.



Source: Eurostat and EU transport in figures 2015. Data refers to 2013. Modal shares based on tonne-kilometres for freight sector and passenger-kilometres for passenger sector, freight data based on activity within country territory. Estimates are made when data is missing.

4. Decarbonisation of the economy

NON-ETS GHG EMISSION REDUCTION TARGET 2020
(+11% by 2020 as compared to 2005 in the non-ETS sector)



Source: European Commission based on EEA. Based on preliminary inventory data.

ESD (Effort Sharing Decision) emissions are the emissions from sectors not covered by the EU ETS.

Estonia has decreased it emissions by 5% between 2005 and 2014 (based on 2014 approximated data). According to its 2015 projections, Estonia is expected to overachieve its 2020 target, with a 13% gap between the projected emissions and its target as compared to 2005. Emissions are expected to increase in particular in the transport sector.

Non-ETS Emissions (vs. 2005)	**Projections/proxy**	**target**
Projections with existing measures 2020	-2%	+11%
Proxy 2014	-5%	+8%

RENEWABLE ENERGY SHARE TARGET 2020 (25%)

Source: European Commission based on EUROSTAT

With a renewable energy share of 25.62% in 2013, Estonia is already above its 25% target for 2020.

GREENHOUSE GAS EMISSION INDICATORS

- Estonia is the second largest carbon-intensive economy in the EU, and has one of the highest carbon intensity of energy use.
- In 2014, the revenues from the auctioning of ETS allowances amounted to EUR 7.4 million, out of which around 50% are used or planned to be used for energy and climate related purposes, mainly in support of energy efficiency projects.

Largest Sectors of GHG Emissions in 2012 (*)	Estonia	EU Average
Energy/power industry	69%	33%
Transport	12%	20%
Industry	8%	19%
Agriculture (incl. forestry & fishery)	8%	12%
Residential & Commercial	2%	13%
Waste & others	1%	3%

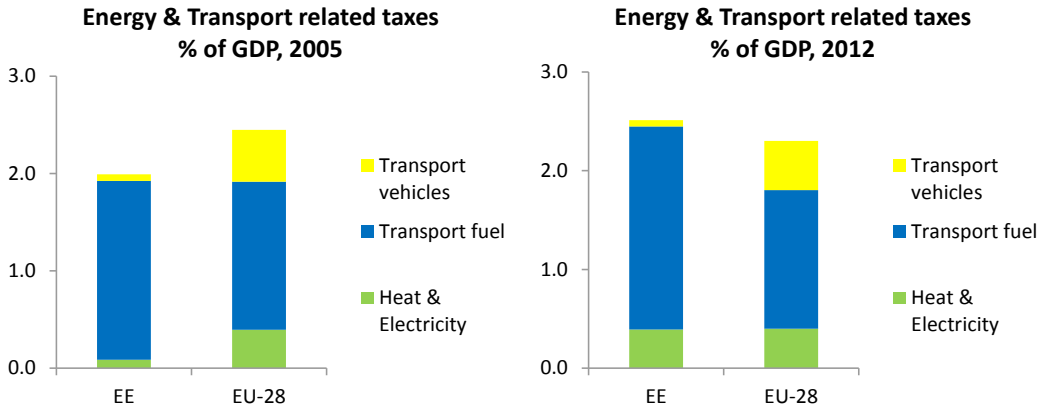
(*)Sectoral breakdown for 2013 data not available

GHG Emissions	Estonia	EU
EU ETS auctioning revenues in 2014 (EUR millions)	7.4	3205
Share of ETS emissions in 2013	73%	42%
GHG emissions/capita in 2013 (tCO_2equivalent)	16.5	8.5
Carbon intensity of the economy in 2013 (tCO_2equivalent/EUR millions)	1285	328

Source: European Commission based on EEA

ENERGY & TRANSPORT TAXATION

Energy and transport related taxes as a share of GDP are slightly above the EU-average, largely due to the high share of fuel taxation. Receipts from vehicles taxation, on the other hand, are negligible. The overall tax burden has increased since 2005, largely on account of increased receipts from heat and electricity taxation, but also from transport fuel taxation.

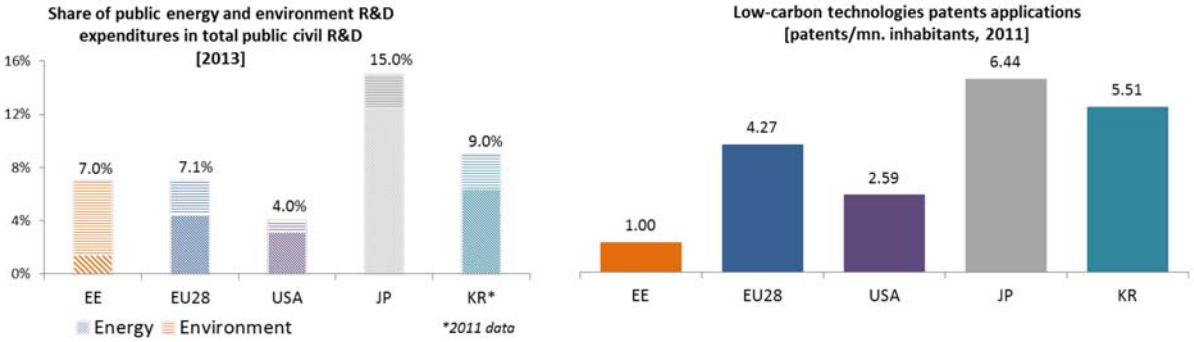


Source: Eurostat

5. Research, innovation and competitiveness

RESEARCH AND INNOVATION

Estonia is near the EU average, above the US and below Japan and South Korea in terms of public support share allocated to research and innovation in the field of energy and environment. In terms of intensity of low-carbon technologies patents, Estonia is much behind the EU average and main worldwide partners.



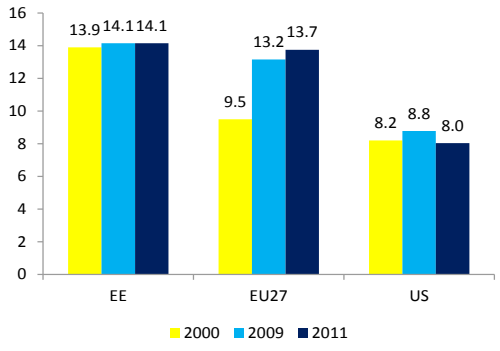
Source: European Commission based on EUROSTAT

COMPETITIVENESS

The real unit energy costs, that is the amount of money spent on energy sources in order to obtain one unit of value added, is close to the EU average but higher than in the US, and has proved to be very stable since 2000. The energy intensity[5] of Estonia's manufacturing sector is higher than the EU's and the US, which is compensated by lower real energy prices.

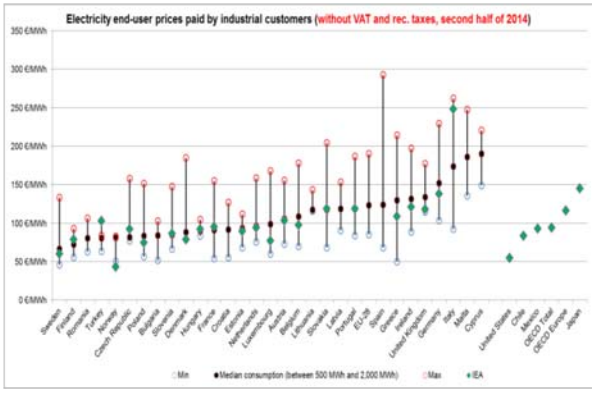
Regarding electricity and gas prices paid by industrial customers, they are slightly below EU average and more or less in line with OECD average.

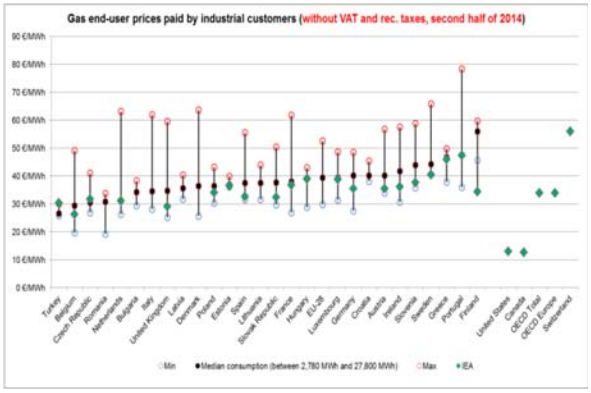
Real unit energy costs (% of value added)



Source: European Commission

[5] The energy intensity presented here is derived from Use Tables of WIOD, see "Energy Economic Developments in Europe SWD(2014)19".





Source: European Commission based on EUROSTAT and IEA

6. Post-2020 Energy and Climate policy Strategy

COMPREHENSIVE MEDIUM TO LONG-TERM STRATEGY (post-2020) FOR CLIMATE AND ENERGY

- The current *National Development Plan of the Energy Sector* (2009) covers energy and energy-related climate policy objectives for Estonia until 2020.
- A new *National Development Plan of the Energy Sector* (ENMAK 2030+) is expected to be consulted with the Parliament and approved by the Government in 2015. The new plan will include energy and climate policies and objectives for the period up to 2030, with an outlook to 2050. In the current draft it is proposed to set an indicator of 45% of renewables in final energy consumption by 2030. Final energy consumption is to remain at the 2010 level by 2030 (the same as the 2020 target) whereas it is proposed to reduce greenhouse gas emissions in the energy sector by 70% by 2030 (base year 1990). Estonia is also preparing its Low Carbon Development Strategy, to be adopted by the parliament by the end of 2016.
- More general environment and climate-related objectives for the long run are contained in the *Estonian National Strategy on Sustainable Development (2005)* and in the *National Environmental Strategy (2007)*, both covering the period up to 2030.
- The elaboration of Estonia's *Draft National Climate Change Adaptation Strategy* (NAS) and of a complementary action plan, is currently in progress. The final documents are expected to be completed by the end of 2016.
- The elaboration of the Estonian Low Carbon Development Strategy up to 2050 is currently in progress and expected to be approved by the Parliament by the end of 2016.

NATIONAL TARGETS, especially for 2030

Objectives, 2030-2050	Targets	Comments
GHG reduction	No	
Renewable energy share	No	
Energy Efficiency / savings	No	

7. Regional cooperation

Regional cooperation on infrastructure development is necessary to optimise the identification of regional infrastructure priorities and to coordinate cross-border investments. Estonia is a member of two Regional Groups which have been established under the TEN-E Regulation: the Baltic Energy

Market Interconnection Plan (BEMIP) Regional Groups for electricity and gas.

EU Member States cooperation in the energy sector in the Baltic Sea region has brought many benefits for the participating countries. The work and achievements within the framework of the Baltic Energy Market Interconnection Plan (BEMIP) agreed in June 2009 and with subsequent amendments in 2011 and 2013 respectively proved that enhanced regional cooperation can be a catalyst for positive developments both in energy infrastructure projects or market related aspects. The MoU on reinforced BEMIP was signed on 8 June 2015 with the overall goal to ensure further market and system integration of the Baltic States into European Continental network and ensure its full market functioning also strengthening the organisational structure of the BEMIP. The new MoU and Action Plan also foresees regional cooperation in new energy policy areas, including electricity and gas markets, security of supply, power generation, renewable energy and energy efficiency.

8. Cohesion policy contribution

The EU Cohesion policy provides for important investment possibilities to implement energy policy objectives in Estonia which will be complemented by national public and private co-financing, aiming at optimal leverage. It also ensures integrated territorial solutions to challenges by supporting capacity building, technical assistance and territorial cooperation, including the Baltic Sea Region macro-regional strategy in which Estonia takes part.

Energy efficiency: Over 2014-2020, EU Cohesion Policy will invest some EUR 238 million in energy efficiency improvements in public and residential infrastructure, as well as in high-efficiency cogeneration and district heating in Estonia. A further estimated EUR 232 million will be invested in supporting the move towards an energy-efficient, decarbonised transport sector. These investments are expected to contribute to around 40 000 households with improved energy consumption classification, as well as to around 110 km of reconstructed or upgraded railway lines.

Decarbonisation: Overall, the EU Cohesion Policy investments in Estonia over 2014-2020 are expected to contribute to an estimated annual decrease of GHG of around 40 000 tonnes of CO2eq. Over 2014-2020, EU Cohesion Policy will invest some EUR 10 million in renewable energy in Estonia.

Research, Innovation and Competitiveness: Over 2014-2020, EU Cohesion Policy will invest significantly in R&I and in SME competitiveness in Estonia. This will be based on the national strategy for smart specialisation. For Estonia, the strategy includes a focus on more efficient use of resources. At this stage, at least EUR 145 million is foreseen for investments in R&I and adoption of low-carbon technologies in Estonia, but this might increase further in line with the evolving content of the smart specialisation strategy.