



EUROPEAN
COMMISSION

Brussels, 18.11.2015
SWD(2015) 219 final

COMMISSION STAFF WORKING DOCUMENT

Country Factsheet Cyprus

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

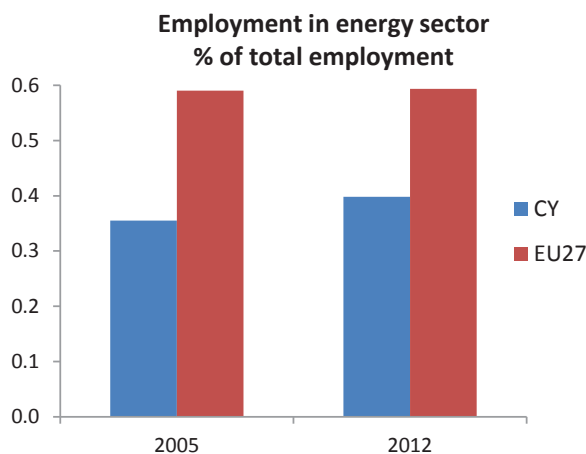
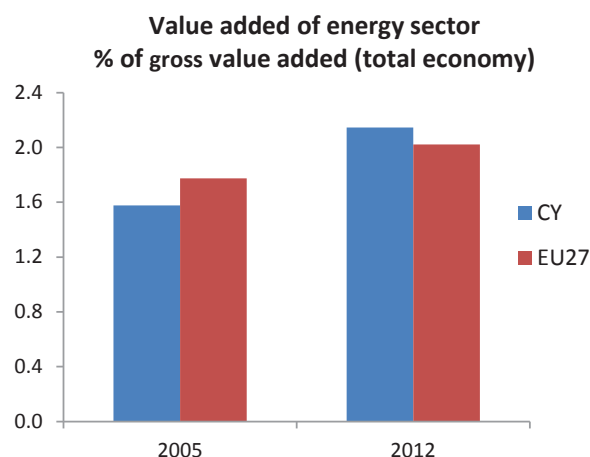
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Macroeconomic relevance of energy

IMPORTANCE OF THE ENERGY SECTOR

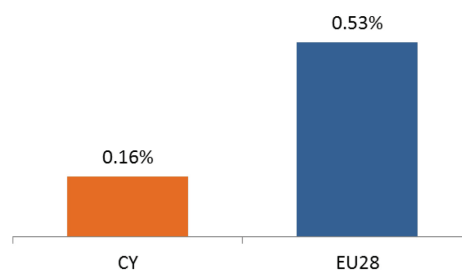
The share of the energy sector in the gross value added has risen faster in Cyprus than in the EU as a whole. In 2012, the value added in energy sector was above EU average whereas, in 2014, the value added of the energy sector declined to 1.8% of the gross value added. The energy sector's employment share also rises but remains significantly lower than the (nearly constant) EU average, possibly partly reflecting the near absence of renewable energy sub-sectors which are more labour-intensive.



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 Cyprus was at about 0.15%, below the EU average of 0.53%.

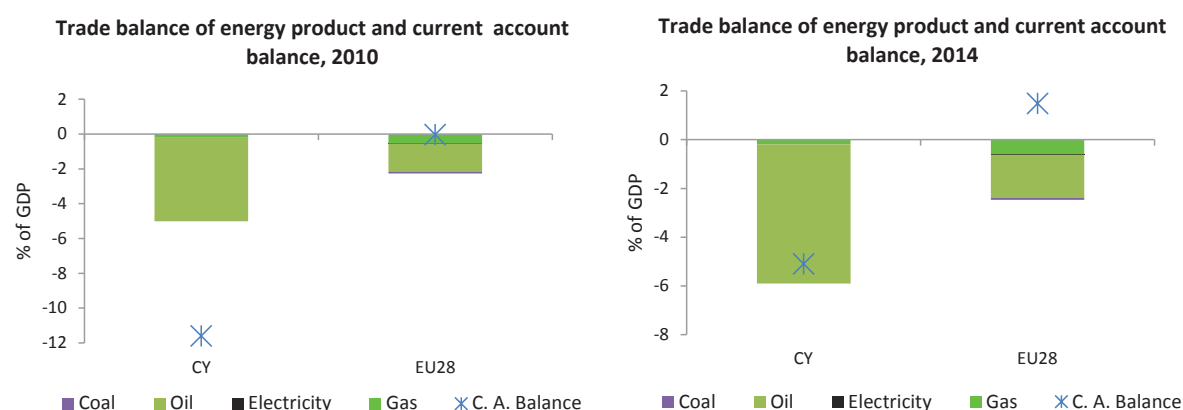
Renewable energy employment in 2013
[direct and indirect jobs as % of total employment]



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

TRADE BALANCE OF ENERGY PRODUCTS

The almost full dependence on imported oil products translates into one of the largest energy trade deficits in the EU in GDP terms.¹ The large deficit has even increased a bit over the period under consideration and hence it has continued contributing to a relatively large current account deficit. This picture is likely to change radically in the medium terms when the energy sector will succeed in being sourced from its domestic natural gas supply.

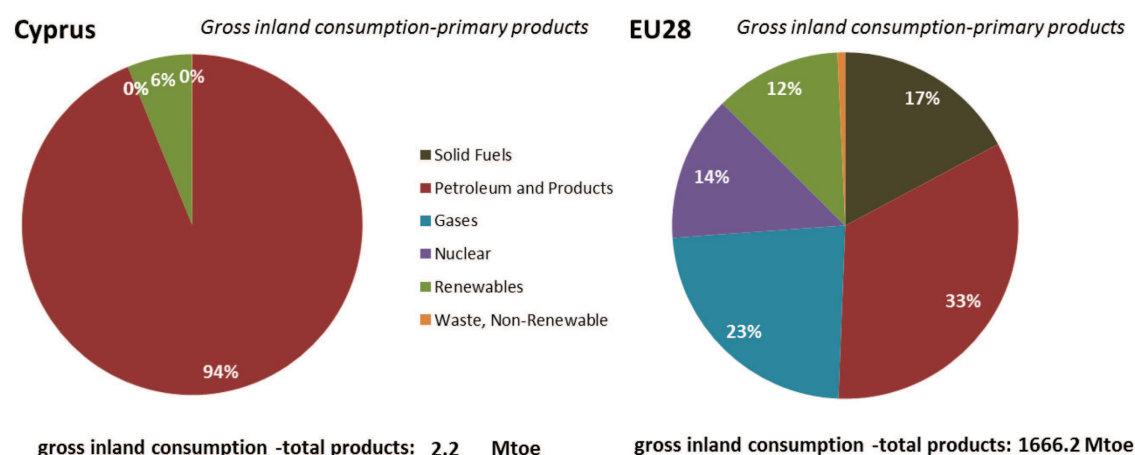


1. Energy Security, solidarity and trust

ENERGY MIX

The energy mix of Cyprus differs totally from the one of the EU-28, energy generation in Cyprus being almost exclusively from petroleum and products. Compared to 1995, the share of petroleum and products has remained at the same high level (95-99% of the energy mix).

Gross inland energy consumption in 2013

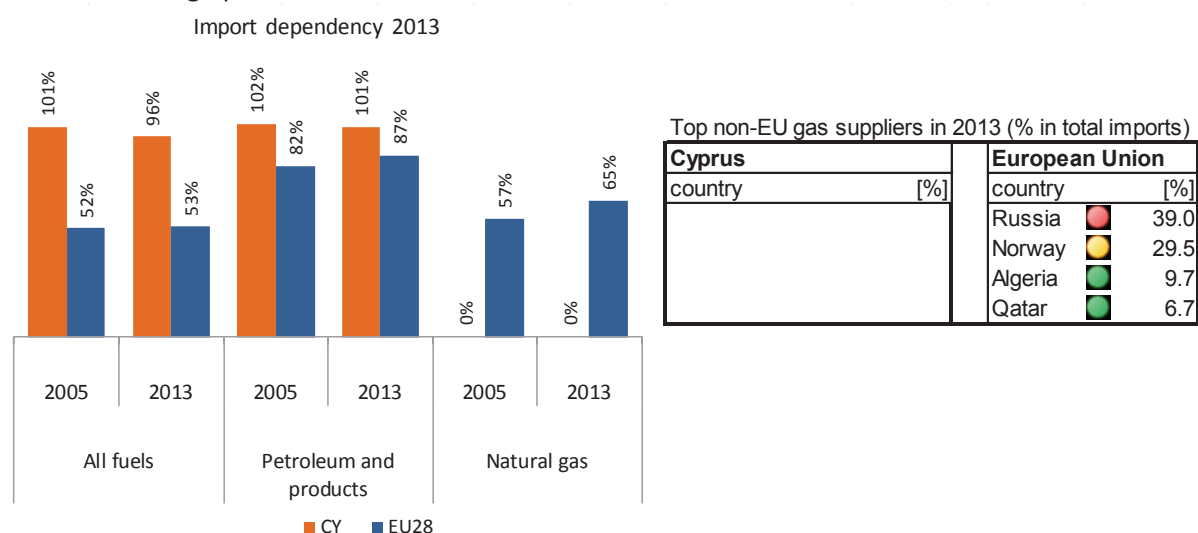


Source: European Commission, based on EUROSTAT

¹ The Eurostat trade data (COMEXT database) also reports some gas imports in addition to that of oil products. As Cyprus currently does not import natural gas for inland consumption, the recorded gas trade refers to imports of liquefied propane and butane, minor imports of other petroleum gases and hydrocarbons, liquefied.

IMPORT DEPENDENCY

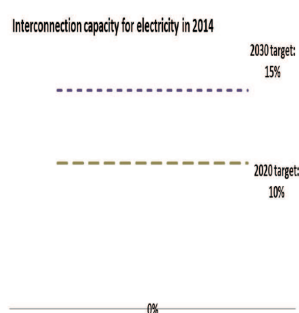
Energy dependency² remains a key issue in Cyprus, which relies heavily on imported sources (92%) for its energy needs. Consequently, this translates into a very significant energy trade deficit, expressed in percentage of GDP. The recent discovery of natural gas in the EEZ of Cyprus is expected to significantly change the energy situation of Cyprus; from exclusive energy importer to exporter. In the meantime, renewable energy could play a vital role in security of supply and should be promoted in line with its high potential.



Source: European Commission, based on EUROSTAT

2. A fully-integrated internal energy market

INTERCONNECTIONS



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

The interconnection capacity for electricity was 0% in 2014 for Cyprus. Cyprus is an energy island which is currently heavily dependent on oil products for its energy needs. A future subsea cable project called "Euroasia Interconnector" is in the feasibility phase and was included in the first Project of common interest (PCIs) list. The project will have a capacity of 2,000 MW and interconnect the Cypriot, Israeli and the Greek transmission networks.

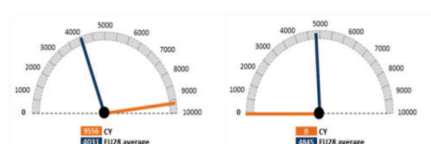
Cyprus is also planning the development of a domestic gas transmission infrastructure to support the introduction of natural gas in the country. The first step will be the connection of Vasilikos, Moni and Dhekelia power plants.

² Note: A dependency rate in excess of 100% indicates that energy products have been stocked.

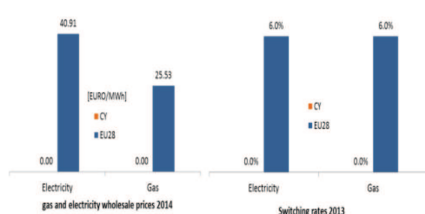
2030"

ELECTRICITY AND GAS MARKETS

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



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



Sources: ESTAT and European Commission Calculations

The concentration of the power generation market is very high in Cyprus. Currently, natural gas is not supplied to Cyprus. No wholesale market is currently operating in Cyprus. The full liberalisation of the electricity market was legally put in force on 1st January 2014, but it has not yet been implemented in practice, as EAC, a state owned enterprise, is currently the sole supplier and virtually the sole producer. Consequently, there is no scope yet for supplier switching. The Cyprus Energy Regulatory Authority (CERA) has published on 12 May 2015 a regulatory decision defining a new electricity market model, with the objective of introducing competition in the electricity market.

As regards the gas market, DEFA, the sole Cypriot gas company, has launched an invitation for an open competition for the supply of gas to Cyprus, in particular for the main power station in Vasilikos. DEFA is currently at the final stage of concluding the relevant gas supply agreement.

According to the 10th Consumer Markets Scoreboard³, the electricity services score slightly lower than the EU average in terms of consumer satisfaction. In 2014 electricity retail prices were reduced compared to 2013, but were still recorded as second highest in the EU for medium-sized industries and 5th highest for households, mainly due to high generation and supply costs, but also to VAT.

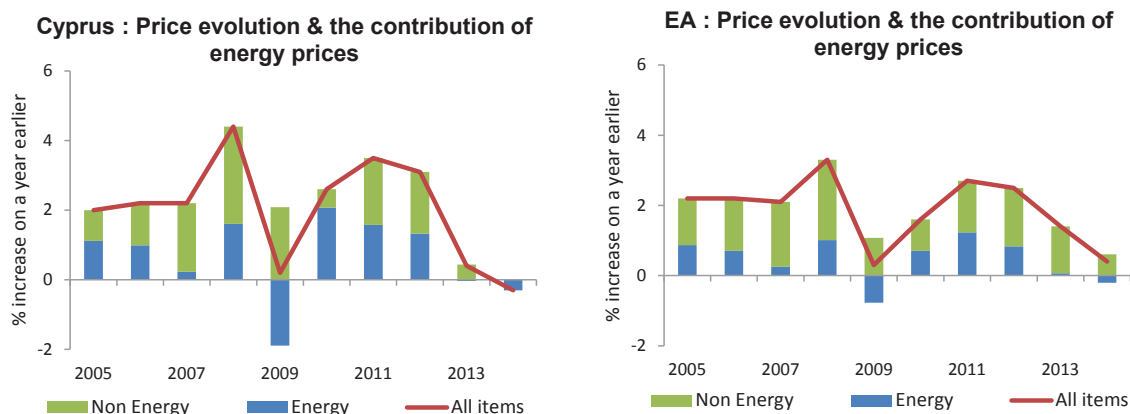
As regards smart meters, Cyprus carried out a cost-benefit assessment which turned out positive for a wide-scale roll-out. It will be further refined with input coming from a pilot project, involving the installation of 3,000 smart meters.

CONTRIBUTION OF ENERGY TO CONSUMER PRICE EVOLUTION

The almost complete dependency on imported oil products also implies a bigger impact of changes in

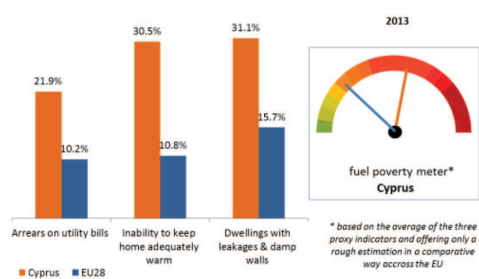
³ 10th Consumer Markets Scoreboard (June 2014), http://ec.europa.eu/consumers/consumer_evidence/consumer_scoreboards/10_edition/index_en.htm

the world oil prices on domestic inflation. This is visible from the impact of the oil price peak in 2008 and the subsequent oil price fall in the following year.



Source: DG ECFIN based on Eurostat

VULNERABLE CONSUMERS



Source: European Commission, based on EUROSTAT SILC survey

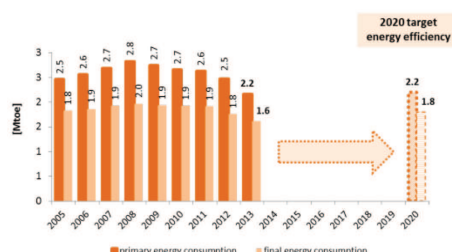
Based on a EUROSTAT survey on income and living conditions, three proxy indicators are used to assess fuel poverty. They indicate that this is a significant issue in Cyprus. Energy poverty, vulnerable consumers categories and measures to protect them were defined in a Ministerial Decree. It includes measures such as reduced prices on electricity tariffs and financial incentives for participating in a plan for installing a photovoltaic system at their house, as well as grants for upgrading the energy efficiency of their houses.⁴ More recently, temporary measures of non-disconnection were also introduced by the national regulatory authority⁵. These measures were lifted following the revised Ministerial Decree, which entered into force on 14 September 2015. The Ministerial Decree widened the categories of vulnerable electricity consumers and safeguard the continuous supply of electricity, during critical periods, to those vulnerable consumers for which uninterrupted power supply is essential for health reasons.

⁴ CERA National Report 2013

⁵ CERA issued the 22.12.2014 a provisional instruction of non-disconnection in critical times for all categories of vulnerable consumers – this was applicable till 31.03.2015 and later extended to also cover the Easter holidays. An estimated 4,000 households allegedly benefitted from this measure (ref. media reports).

3. Energy Efficiency and moderation of energy demand

ENERGY EFFICIENCY TARGET 2020 (2.2 Mtoe primary energy and 1.8 Mtoe final energy)



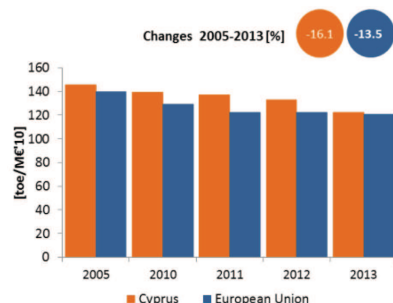
Source: European Commission, based on EUROSTAT and on national energy efficiency targets as declared by the MS under the Energy Efficiency Directive

Cyprus' 2020 energy efficiency target is 2.2 Mtoe expressed in primary energy consumption (1.8 Mtoe expressed in final energy consumption). Even if Cyprus' current primary energy consumption (2.2 Mtoe in 2013) is in line with its 2020 target, additional efforts are needed to keep the primary energy consumption at this level or to minimise its increase if the GDP increases again during the next five year period. Over half of the planned reduction should come from the massive switch from oil to natural gas in electricity generation (see above).⁶

ENERGY INTENSITY

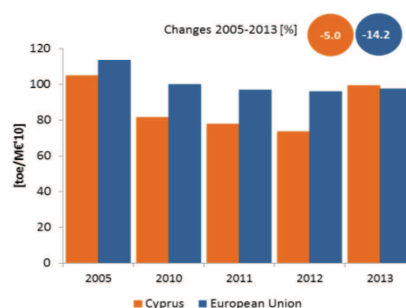
Primary energy intensity in Cyprus has decreased from 2005, at a slightly faster rate than EU average. Energy intensity in the industrial sector has increased significantly in 2013, and could be explained by sectoral shifts in economic activity. It remains in line with EU average.

Primary energy intensity of the economy



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

Final energy intensity in industry

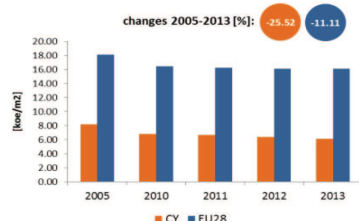


Source: European Commission based on EUROSTAT and European Commission/AMECO

Electricity demand by end consumers had been steadily decreasing in the period from 2010 to 2013, reflecting the contraction in the country's GDP. The fuel consumption per vehicle decreased from 0.7748 TOE in 2007 to 0.7080 in 2012 which reflects success of targeted measures (Vehicle Scrapping Plan and the Grant Scheme). It is however still higher than EU average. The specific energy intensity for freight transport increased between 2005 and 2010 (by 11%), i.e. from the same unit of energy fewer tonnes of good are transported and/or on shorter distances (or the filling factor of goods in freight vehicles are lower). This is also much higher than EU average, and could be explained by the geographical characteristics of Cyprus and by the lack of railways.

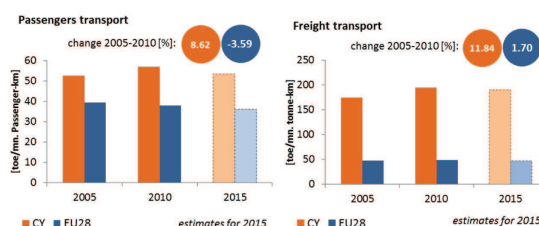
⁶ Oil burned in steam generators has a lower efficiency, i.e. 35.1%, while gas will be burned in two Combined Cycle Gas Turbine (CCGT) power units which have an efficiency of 46.1% and 46.9% respectively.

Final energy consumption per m2 in residential sector, climate corrected



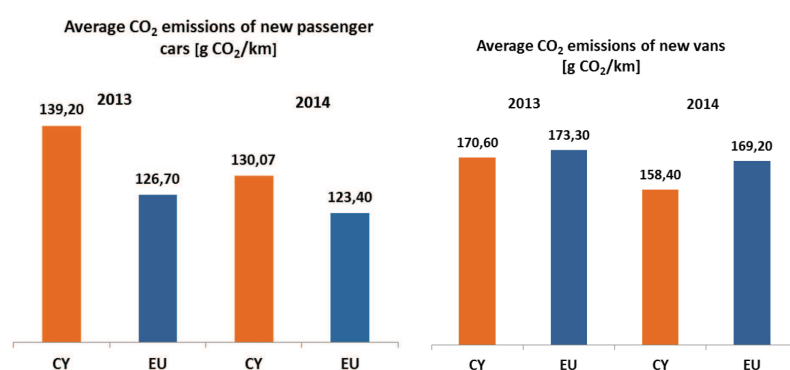
Source: EC, based on Odyssee database

Specific energy intensity for passenger cars and freight transport⁷



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

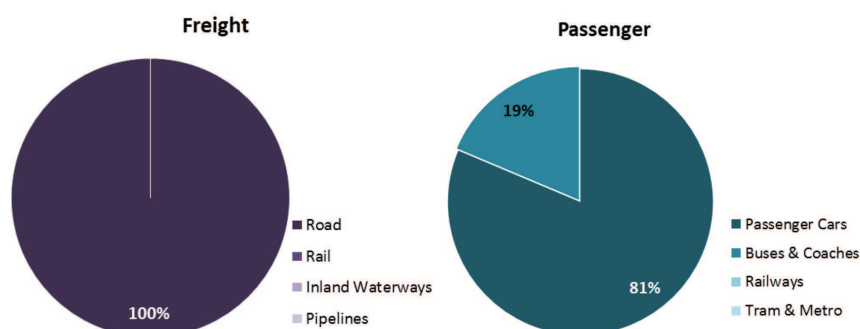
EU legislation sets mandatory CO₂ emission reduction targets for new cars and vans. By 2021, the fleet average to be achieved by all new cars is 95 grams of CO₂ per kilometre. For new vans, the fleet average is set at 147 g/km by 2020.



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 Cyprus, freight and passenger transport is completely based on road, as there is no rail infrastructure.

Modal share

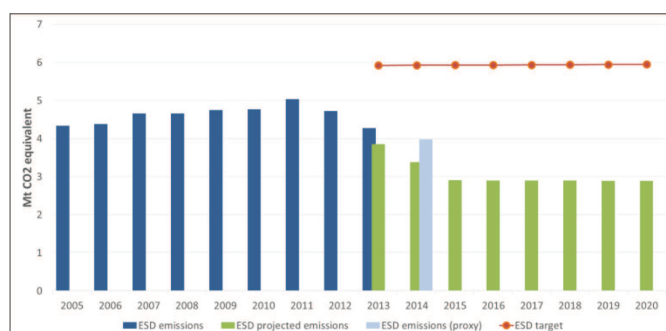


Source: Eurostat and EU transport in figures 2015. Data refers to 2013. Modal shares based on tonne-kilometres for freight sector and passenger-kilometres for passenger sector, freight data based on activity within country territory. Estimates are made when data is missing.

⁷ 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.

4. Decarbonisation of the economy

NON-ETS GHG EMISSION REDUCTION TARGET 2020 (-5% by 2020 as compared to 2005 in the non-ETS sector)



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

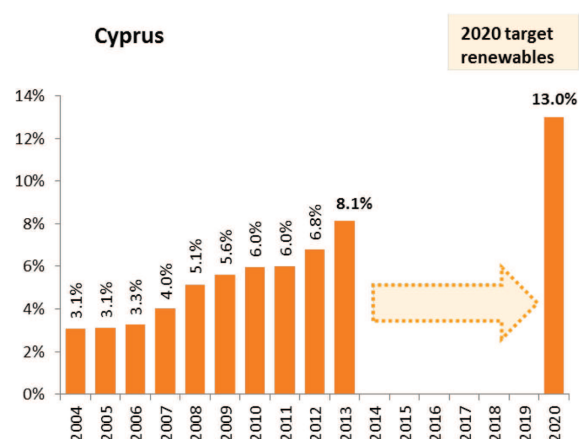
ESD (Effort Sharing Decision) emissions are the emissions from sectors not covered by the EU ETS.

Cyprus' emissions in 2014 are 31% below the 2014 ESD target (approximated data). According to the latest projections, Cyprus will overachieve its greenhouse gas emission reduction target for 2020 by a wide margin of 49% compared to 2005.

Non-ETS Emissions (vs. 2005)	Projections/proxy*	target
Projections with existing measures 2020	2.8 MT CO ₂ eq.	5.5 MT CO ₂ eq.
Proxy 2014	4 MT CO ₂ eq.	5.9 MT CO ₂ eq.

* Due to significant developments, particularly in the area of energy which are expected to be launched soon, there will be a revised submission of Cyprus GHG emissions projection.

RENEWABLE ENERGY SHARE TARGET 2020 (13%)



Source: European Commission based on EUROSTAT

With a renewable energy share of 8.1% in 2013, Cyprus is on track to reach its 13% target in 2020.

GREENHOUSE GAS EMISSION INDICATORS

In 2014 the revenues from the auctioning of ETS allowances of Cyprus amounted to EUR 0.7 million, out of which 55% are used or planned to be used for energy and climate-related purposes.

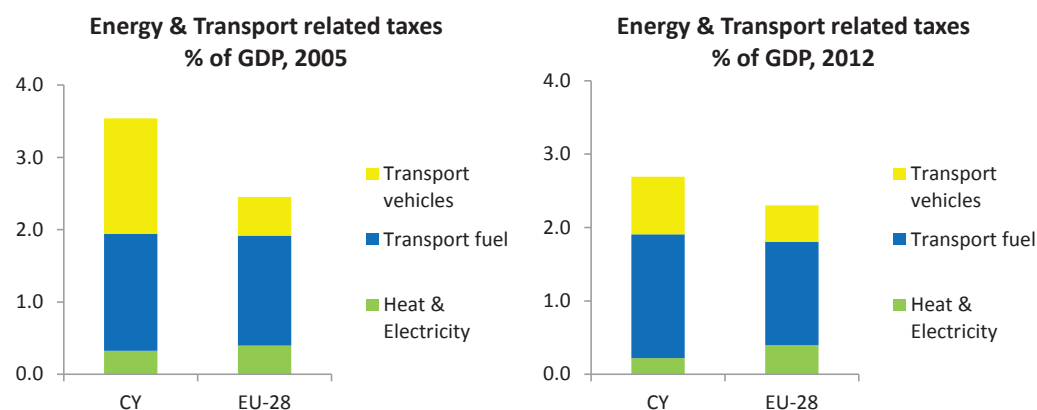
Largest Sectors of GHG Emissions in 2012 (*)	Cyprus	EU Average
Energy/power industry	38%	33%
Transport	22%	20%
Industry	14%	19%
Agriculture (incl. forestry & fishery)	10%	12%
Residential & Commercial	5%	13%
Waste & others	11%	3%

GHG Emissions	Cyprus	EU
EU ETS auctioning revenues in 2014 (EUR millions)	0.7	3205
Share of ETS emissions in 2013	49%	42%
GHG emissions/capita in 2013 (tCO ₂ equivalent)	9.6	8.5
Carbon intensity of economy in 2013 (tCO ₂ equivalent/EUR millions)	471	328

Source: European Commission based on EEA
 (*) Sectoral breakdown for 2013 data not available

ENERGY & TRANSPORT TAXATION

Over the period Cyprus' GDP share of energy and transport taxes has fallen, but remains above the stable EU average. This decline is almost fully due to the marked fall in transport vehicle tax revenues. The GDP share of fuel taxes exceeds the EU average, but it has hardly changed over the period.

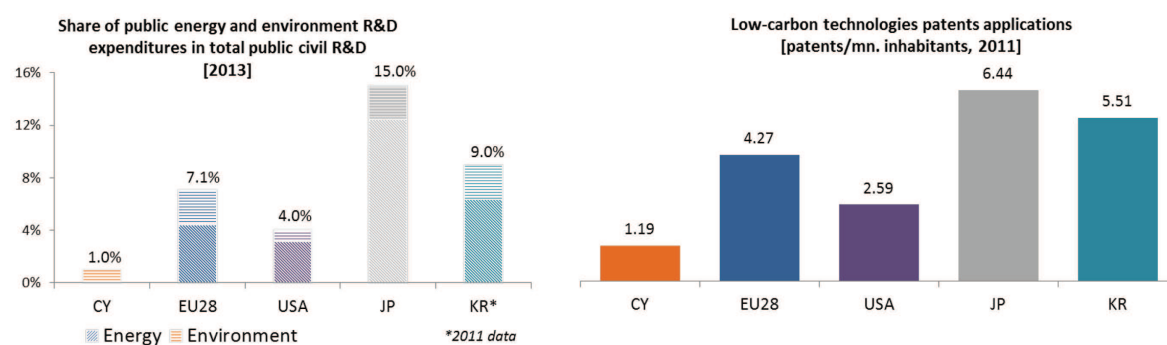


Source: Eurostat

5. Research, innovation and competitiveness

RESEARCH AND INNOVATION

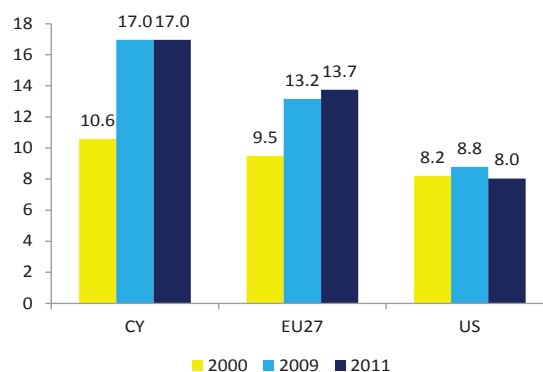
Cyprus shows very low levels in terms of public support share allocated to research and innovation in the field of energy and environment. Consequently, in terms of intensity of low-carbon technologies patents, Cyprus is much behind the EU average and main worldwide partners.



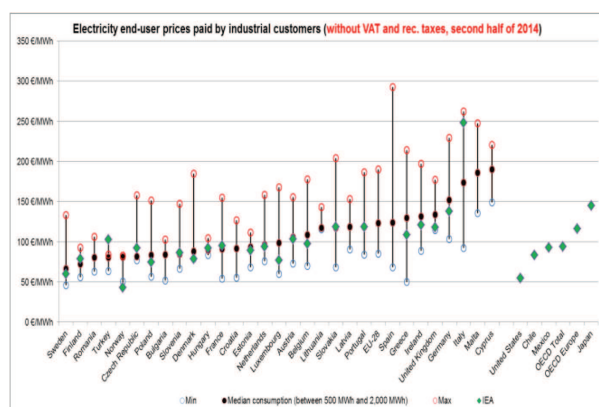
Source: European Commission based on EUROSTAT

COMPETITIVENESS

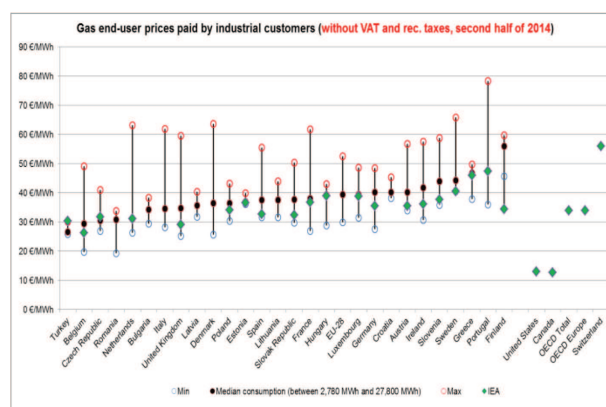
The real unit energy costs⁸ in Cyprus have increased from its 2000 level, also vis-à-vis the EU average and the US. However, a lack of data does not allow interpreting this trend in detail. Due to its peculiar energy mix, energy prices in Cyprus are dependent of oil product prices. This can partly explain why Cyprus has the highest electricity prices paid by industrial users in the EU, as well as higher prices than international competitors.

Real unit energy costs (% of value added)

Source: European Commission



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

- Cyprus has not yet finalized a comprehensive post-2020 climate and energy strategy for the medium and long run.
- An ad-hoc committee has been set up for the detailed revision of the policies and measures already in place, to streamline these into a more detailed strategy for the reduction of greenhouse gas emissions relative to the 2030 and 2050 time horizon. Several policies that are currently in place (e.g. energy efficiency and promotion of renewable energies) will continue to contribute with reductions in 2030.
- A national strategy for renewable energy and energy efficiency for 2030 is being developed with technical assistance. Cyprus is currently estimating the impact of the implemented and planned measures up to 2030, as well as the level of national target for energy efficiency for 2030. With the technical assistance from IRENA and JRC, Cyprus is currently preparing the national renewable energy roadmap aiming to determine the optimum penetration of renewable energy

⁸ This indicator measures the amount of money spent on energy sources needed to obtain one unit of value added.

for electricity supply until 2030. Recently, technical assistance was extended to cover the expansion of the roadmap up to 2040 and to include in the calculations not only electricity but also the heating, cooling and transport sectors.

- Cyprus is preparing a comprehensive post-2020 climate and energy strategy for the post 2020 period: “The Low Carbon Development Strategy of Cyprus”. The strategy sets five principal objectives with respect to climate change which are: a) fulfilment of Cyprus international and European obligations according to the UNFCCC, the Kyoto Protocol and the legal framework of the EU, b) reduction of greenhouse gas emissions with emphasis on reducing the use of fossil fuels, c) increase of carbon sequestration from the atmosphere, d) foster research and innovation in fields related to climate change affairs, and e) invest in raising public awareness for reducing emissions.
- Cyprus will finalize the post 2020 low carbon strategy in an integrated manner, as soon as the final national contribution (emission reductions) will be decided in the new Effort Sharing Decision (ESD) based on the relevant Council conclusions.
- The electricity sector has a crucial role to play in the long-term decarbonization of the Cyprus economy as it makes up a significant share of Cyprus emissions. Apart from reducing GHG emissions, the integrated low carbon strategy will be structured appropriately in order to bring further benefits such as less pollution, green jobs and reduced dependence on energy imports.

NATIONAL TARGETS, especially for 2030

Objective, 2030-2050	Targets	Comments
GHG reduction	No	For the post 2020 period the target has not been decided yet.
Renewable energy share	No	Cyprus has prepared a roadmap regarding the penetration of renewables in the electricity production by 2025. Based on these calculations, the national target for the penetration of renewable energy to the electricity grid could reach 21% by 2025. This roadmap is now under revision.
Energy Efficiency / savings	No	

7. Regional cooperation

Cyprus electric system is not interconnected with any other MS or third country and there is no gas system. This leaves scope for regional cooperation. To that effect, Cyprus promotes initiatives for regional cooperation with EU and/or non-EU countries. There are already two projects (East Med pipeline, and the EuroAsia Interconnector) which have qualified as Projects of common interest (PCIs) on the basis inter alia of their cross-boundary effect.

In the hydrocarbons sector, Cyprus concluded Delimitation Agreements with Egypt in 2003, with Lebanon in 2007, and with Israel in 2010. A Framework Agreement concerning the joint development of potentially common hydrocarbon reservoirs was signed with Egypt in 2013, and similar agreements are under negotiation with Lebanon and Israel.

In addition, Cyprus is actively pursuing wider (trilateral) regional cooperation in the energy sector. The Memorandum of Understanding between Cyprus-Greece-Israel in August 2013 and the Cyprus-Greece-Egypt Declaration adopted in November 2014 are sound examples.

Furthermore, Cyprus is promoting regional cooperation initiatives to interconnect natural gas infrastructures in the region. In relation to the Aphrodite gas discovery in the Cyprus EEZ, the

regional pipeline option from Cyprus to Egypt seems to be commercially the most viable option. This will consist of a Floating Production, Storage & Offloading standalone unit at the Aphrodite Field connected with a gas export pipeline directed to Egypt and a parallel gas pipeline supplying natural gas to the Cyprus domestic market.

8. Cohesion policy contribution

The EU Cohesion policy provides important investment possibilities to implement energy policy objectives in Cyprus 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.

Energy Efficiency: Over 2014-2020, EU Cohesion Policy will invest some EUR 45 million in energy efficiency improvements in public and residential buildings and in SMEs, as well as in high-efficiency cogeneration and district heating in Cyprus. These investments are expected to contribute to around 3 500 households with improved energy consumption classification and a decrease of around 3 000 000 kWh per year of decreased primary energy consumption of public buildings. A further estimated EUR 82.25 million will be invested in the transport sector, of which EUR 55.5 million will be used to support the move towards an energy-efficient, decarbonised transport sector.

Decarbonisation: Overall, the EU Cohesion Policy investments in Cyprus over 2014-2020 are expected to contribute to an estimated annual decrease of GHG of around 3 104 000 tonnes of CO₂eq. No EU Cohesion Policy investments in renewable energy infrastructure envisaged in Cyprus over 2014-2020; research and innovation in the area of renewable energy might be supported.

Research, Innovation and Competitiveness: Over 2014-2020, EU Cohesion Policy will invest significantly in R&I and in SME competitiveness in Cyprus. This will be based on the national strategy for smart specialisation. For Cyprus, the Strategy⁹ includes a focus on sustainable energy. At this stage, the allocations foreseen for investments in R&I and adoption of low-carbon technologies in Cyprus are not specified, but should become available in line with the evolving content of the smart specialisation strategy.

⁹ "Smart Specialisation Strategy for Cyprus S3CY", adopted by the CY Government on 26 March 2015.