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Country Factsheet Croatia

Accompanying the document

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INVESTMENT BANK**

State of the Energy Union

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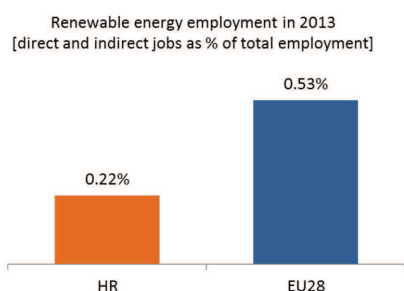
UPDATED DRAFT

Macroeconomic relevance of energy

IMPORTANCE OF THE ENERGY SECTOR

In Croatia, according to national statistics, the weight of the energy sector in total value added was slightly above the EU average in 2012 at 2.1% compared to 2%. At the same time the share of total employment that the energy sector accounts for is double that of the EU27 average, at 1.2% against 0.6.

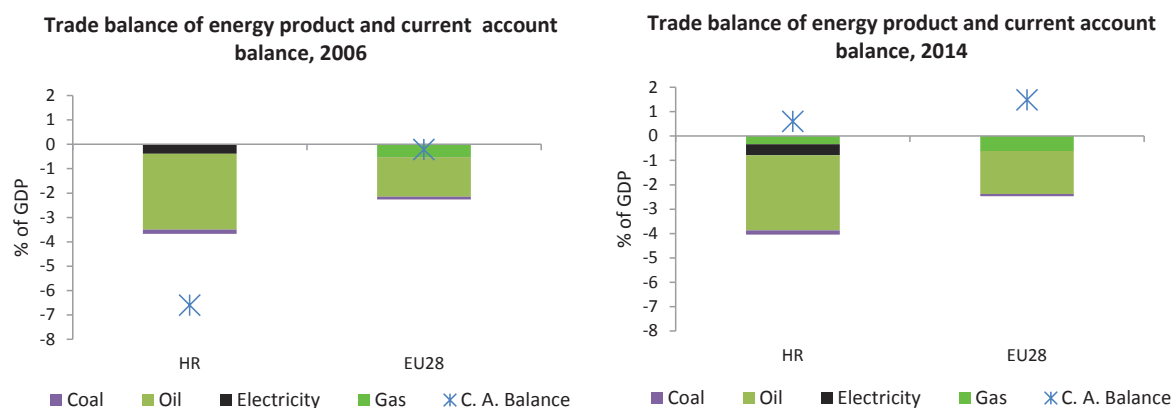
According to EurObserv'ER, in 2013, the share of direct and indirect renewable energy related employment in total employment of the economy in Croatia was at about 0.22%, below the EU average of 0.53%.



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

TRADE BALANCE OF ENERGY PRODUCTS

Croatia's energy trade deficit is significantly larger than that of the EU28 average and it has slightly increased between 2006 and 2014. The largest component remains the oil trade deficit, however the gas trade deficit has also increased over the period. In spite of the growing energy trade deficit, the country's current account has turned from a deficit of almost 7% to a small surplus of about 1% in 2014 following a sharp import contraction.



Source: EUROSTAT

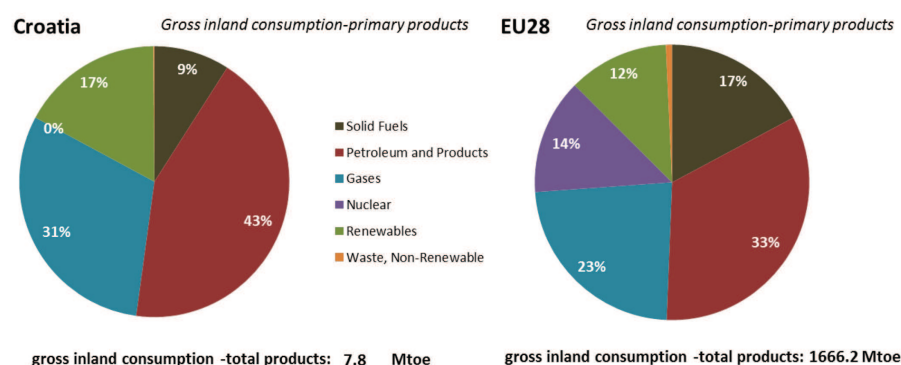
Note: Current account balance for EU28 from European Commission (AMECO)

1. Energy Security, solidarity and trust

ENERGY MIX

The energy mix of Croatia is slightly different than the EU28 average, with a lower share of solid fuels and a higher share of petroleum, gases and renewables. Compared to 1995, the share of petroleum and products decreased (from 52% to 43% of the gross inland energy consumption), while the share of solid fuels and renewable energy increased, by 6 and 3 percentage points respectively. The share of gases increased slightly, from 30 to 31% of the energy mix.

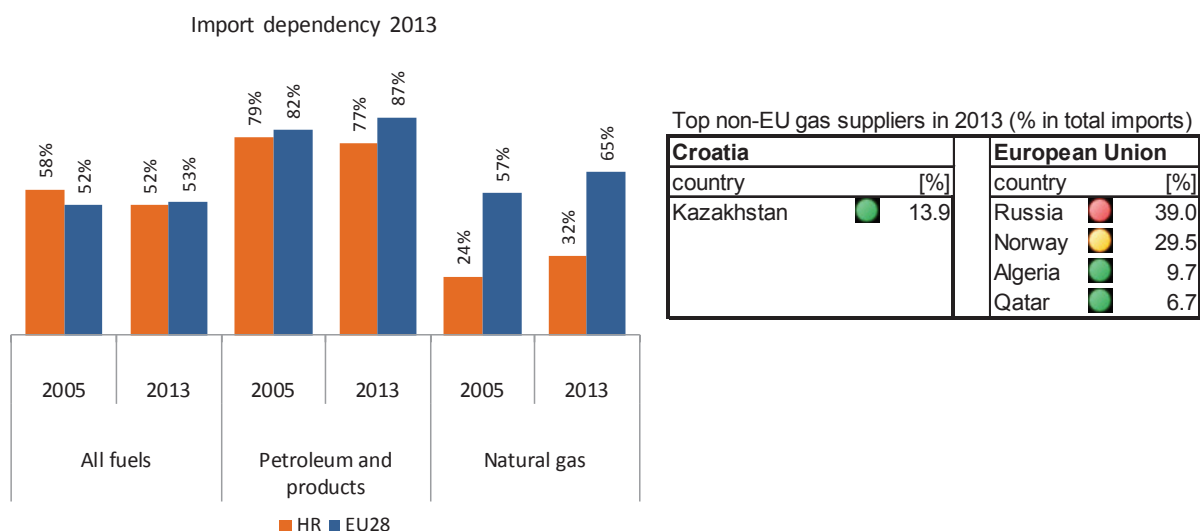
Gross inland energy consumption in 2013



Source: European Commission, based on EUROSTAT

IMPORT DEPENDENCY

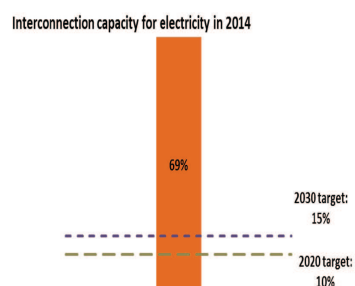
Croatia has an import dependency similar with the EU28 average for fossil fuels. The import dependency is much lower for gas, although it increased over the last 8 years. Croatia has a long tradition of gas production by which it covers slightly above 60% of its annual domestic demand. It has to be noted that domestic consumption varies significantly depending on the period of the year and that, in winter, national consumption is significantly higher than domestic production. This variability has to be taken into consideration when assessing Croatia's security of supply. The overall country supplier concentration index is relatively low. However, the energy trade deficit, expressed in percentage of GDP, is high, above the one of the EU28.



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 2030"

The interconnection capacity for electricity was 69% in 2014 for Croatia, which is above the 2020 and 2030 targets at the EU level. In electricity, there are several Projects of Common Interest (PCIs) planned in Croatia, including two electricity clusters, a high voltage transmission line between Croatia and Bosnia and Herzegovina and a high voltage transmission line between Croatia, Hungary and Slovenia. Considerable investment is expected.

In gas, 3 projects out of 33 key security of supply infrastructure projects listed in the European Energy Security Strategy (EESS) are relevant for Croatia: the LNG terminal in Krk and connecting pipelines (which would open across European North-South corridor), the reverse flow enabling gas flows from Croatia to Hungary and IAP, a new interconnector part of the Balkan Gas Ring and connected to the Trans-Adriatic Pipeline (TAP).

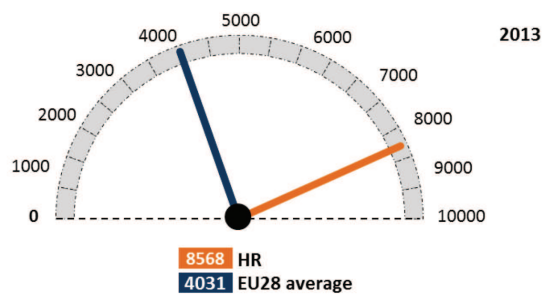
ELECTRICITY AND GAS MARKETS

Market concentration index for power generation
 (Herfindahl index – 10000 means monopoly)

Competition in Croatia's energy market is still very limited. There is currently no commodity exchange or gas hub. Wholesale gas trading is based on bilateral contracts.

Croatia should step up its efforts to deregulate wholesale prices and complete the unbundling process. It should also take the necessary steps for the removal of barriers to the export and import of gas.

Price regulation on the gas wholesale market

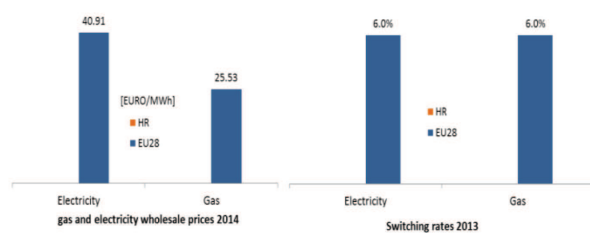


and the retail markets for households prevents market entry and competition.

Competition in the retail market for households is emerging. A new entrant achieved a market share of around 5% of household customers at the end of 2014.

Both electricity and gas prices for households are below the EU average.

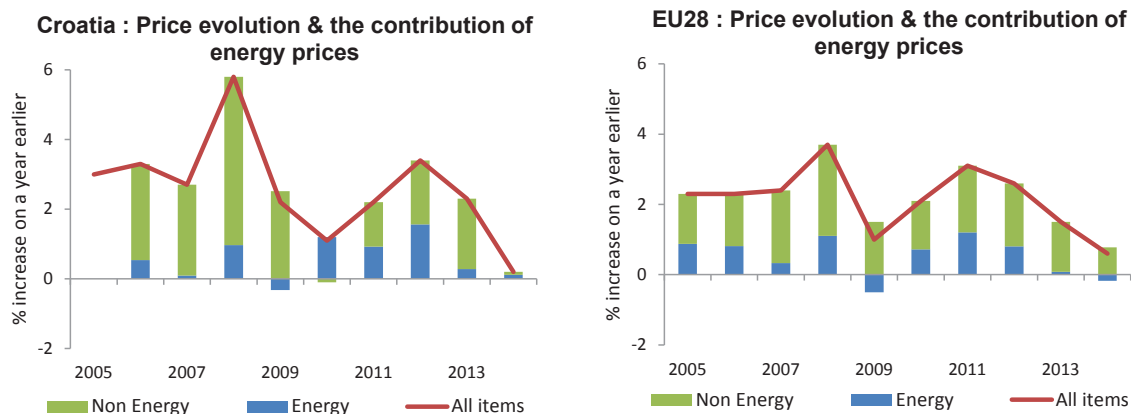
Sources: European Commission based on ESTAT, CEER and Platts Power Vision



Sources: ESTAT and European Commission Calculations

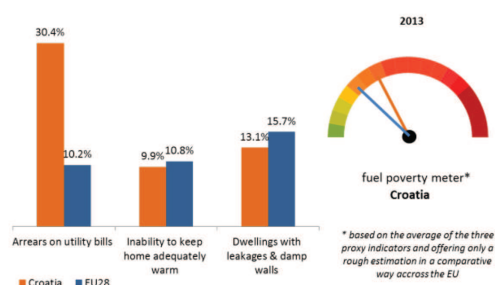
CONTRIBUTION OF ENERGY TO CONSUMER PRICE EVOLUTION

The inflation rate of Croatia has been above the average of the EU28 in the years prior to the crisis while the contribution of the energy component has been relatively small. After the crisis the contribution of the energy component remained slightly positive, while in the EU28 it became negative in 2014 due to the fall in oil prices.



Source: DG ECFIN based on Eurostat

VULNERABLE CONSUMERS

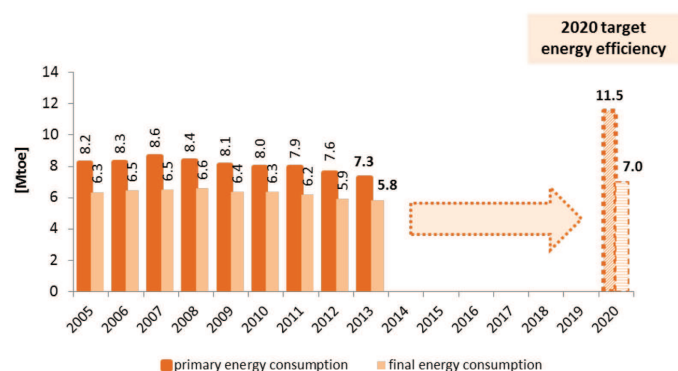


Source: European Commission, based on EUROSTAT SILC survey

Based on a EUROSTAT survey on income and living conditions, three proxy indicators are used to assess fuel poverty. They indicate a relevant issue for Croatia. In particular there is a very high share of households with arrears on utility bills.

3. Energy Efficiency and moderation of energy demand

ENERGY EFFICIENCY TARGET 2020 (11.5 Mtoe primary energy and 7 Mtoe final energy)

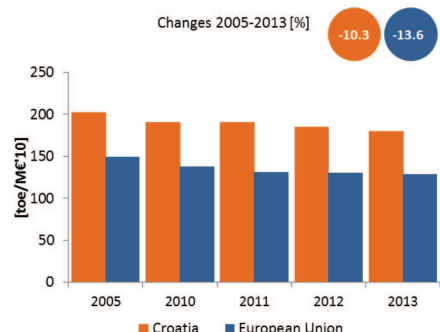


Source: European Commission, based on EUROSTAT and on national energy efficiency

Croatia's 2020 energy efficiency target is 11.5 Mtoe expressed in primary energy consumption (7.0 Mtoe expressed in final energy consumption). This target was set at a level which allows primary energy consumption to grow substantially in the coming years. Even if HR's current primary energy consumption (7.3 Mtoe in 2012) is below its 2020 target, additional efforts regarding

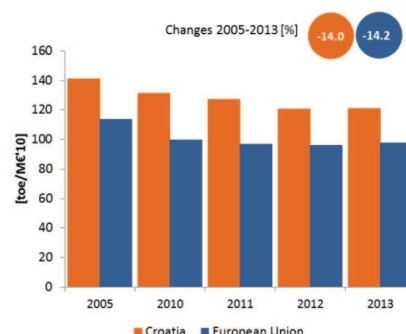
targets as declared by the MS under the Energy Efficiency Directive

Primary energy intensity of the economy



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

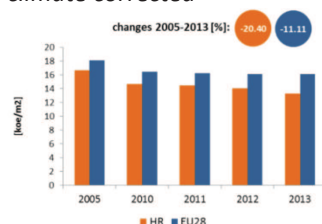
Final energy intensity in industry



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

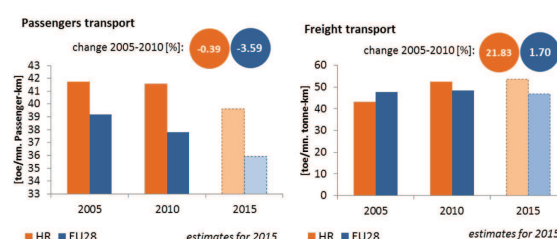
Specific energy consumption by households is below EU average and since 2005 it decreased faster than the EU average. The specific energy intensity of passenger cars remained stable between 2005 and 2010. The specific energy intensity for freight transport increased consistently between 2000-2010 (by 21%), 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).

Final energy consumption per m2 in residential sector, climate corrected



Source: European Commission based on Odyssee database

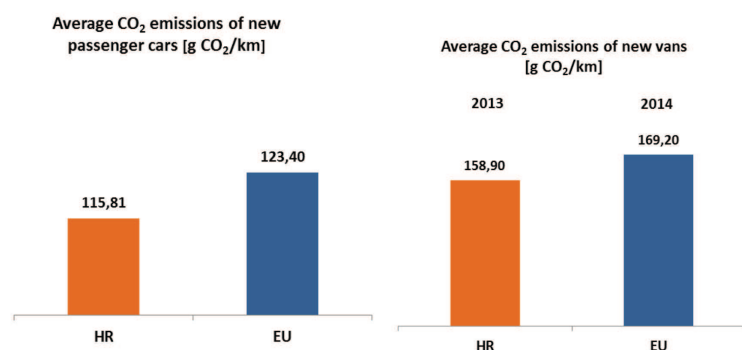
Specific energy intensity for passenger cars and freight transport¹



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.

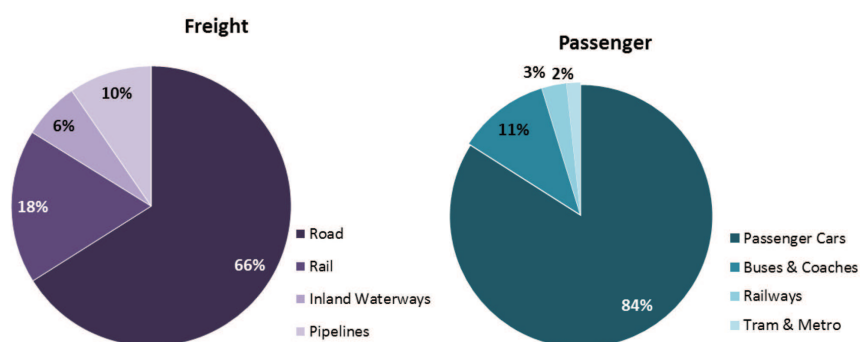
¹ Statistics on energy demand for passengers and freight transport are not available and model estimates have been used instead. These issues should be borne in mind when comparing energy intensity in freight or passenger transport between Member States, which should be regarded as merely indicative.



Source: European Environmental Agency. Values refer to 2014 and are provisional.

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.

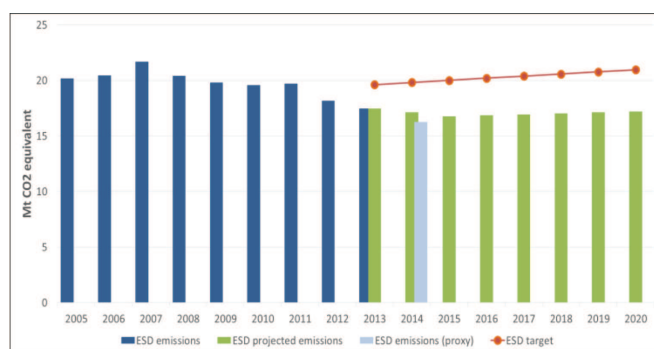
Modal shares Croatia



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 compared to the non-ETS sector)



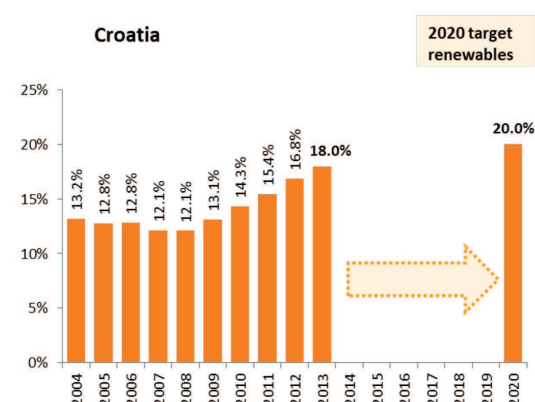
Source: European Commission based on EEA. Based on preliminary inventory data.

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

Croatia has decreased its emissions by 14% between 2005 and 2014 (based on 2014 approximated data). According to its 2015 projections, Croatia is expected to reach its 2020 target with a 20% margin as compared to 2005.

| Non-ETS Emissions (vs. 2005) | Projections/proxy | target |
|---|-------------------|--------|
| Projections with existing measures 2020 | -9% | +11% |
| Proxy 2014 | -14% | +5% |

RENEWABLE ENERGY SHARE TARGET 2020 (20%)



Source: European Commission based on EUROSTAT

With a renewable energy share of 18% in 2013, Croatia is on track to reach its 20% target in 2020.

GREENHOUSE GAS EMISSION INDICATORS

Croatia has a high carbon intensity of the economy, about 70% higher than the EU average.

| Largest Sectors of GHG Emissions in 2012 (*) | Croatia | EU Average |
|--|---------|------------|
| Energy/power industry | 28% | 33% |
| Transport | 22% | 20% |
| Industry | 22% | 19% |
| Agriculture (incl. forestry & fishery) | 15% | 12% |
| Residential & Commercial | 9% | 13% |
| Waste & others | 4% | 3% |

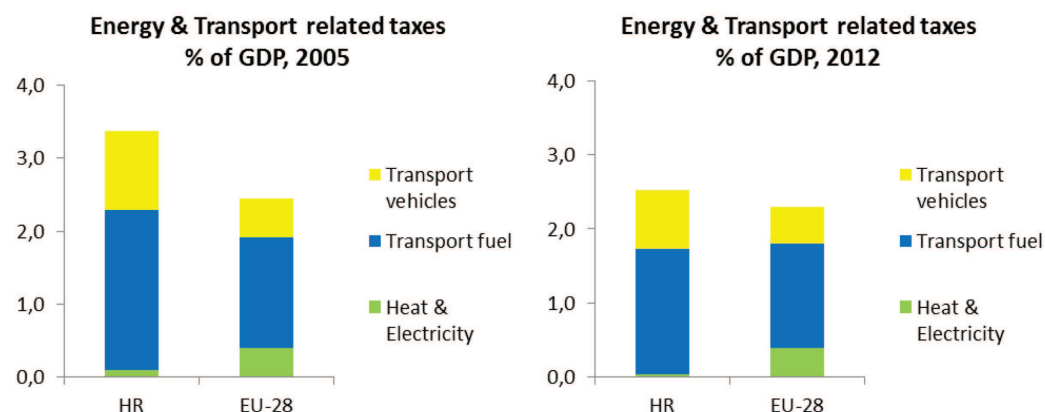
(*) Sectoral breakdown for 2013 data not available

| GHG Emissions | Croatia | EU |
|--|---------|------|
| EU ETS auctioning revenues in 2014 (EUR millions) | 0 | 3205 |
| Share of ETS emissions in 2013 | 34% | 42% |
| GHG emissions/capita in 2013 (tCO ₂ equivalent) | 6.2 | 8.5 |
| Carbon intensity of the economy in 2013 (tCO ₂ equivalent/(EUR millions)) | 606 | 328 |

Source: European Commission based on EEA

ENERGY & TRANSPORT TAXATION

In 2005, taxation of energy and transport as a share of GDP in Croatia were considerably higher than the EU28 average. The decomposition shows that while heat and electricity taxation are extremely low, the transport fuel taxation is much higher than the EU average. This difference was somewhat reduced in 2012, as transport fuel taxation as a % of GDP in Croatia were reduced by more than 20% compared to the 2005 levels. Consequently the overall energy and transport taxation as a share of GDP became more aligned with the EU average.

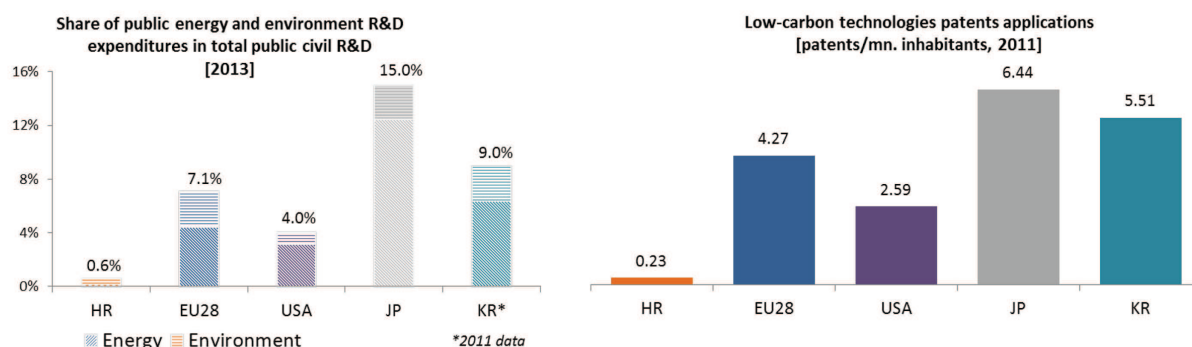


Source: Eurostat

5. Research, innovation and competitiveness

RESEARCH AND INNOVATION

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



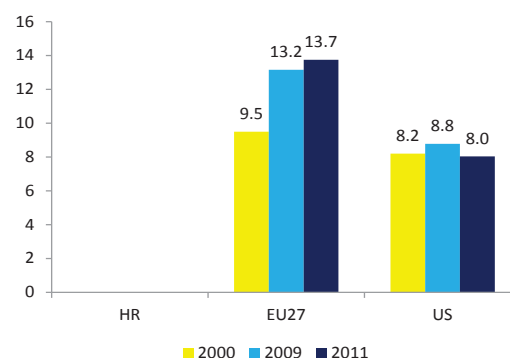
Source: European Commission based on EUROSTAT

COMPETITIVENESS

No data is available for Croatia as regards the real unit energy costs².

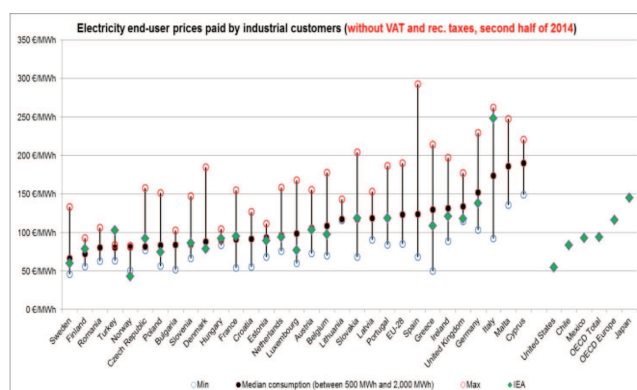
Electricity prices paid by industrial customers are below EU average and are particularly low for the largest energy consumers. As regards gas, prices are above EU average, as well as above average OECD prices.

Real unit energy costs (% of value added)

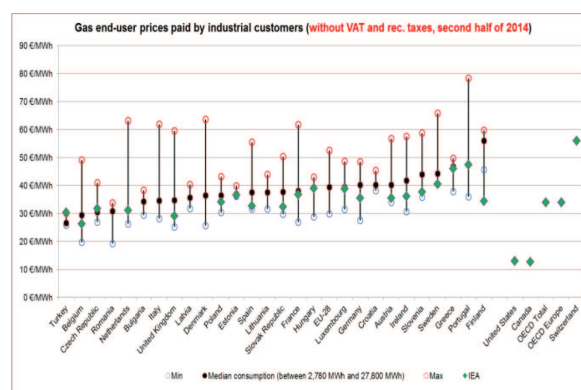


Source: European Commission

² This indicator measures the amount of money spent on energy sources needed to obtain one unit of value added.



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

- Croatia has not yet established a medium to long-term climate and energy strategy for the post-2020 period. The *Energy Strategy*, adopted by Croatia in 2009, includes both energy and climate-related objectives and covers the period up to 2020.
- A comprehensive *Low Carbon Development Strategy* for the period until 2030, with a view to 2050, is planned to be adopted in 2015. The strategy is expected to set targets and measures necessary to achieve medium-to-long-term energy and climate-related objectives.
- In 2014 the Croatian Parliament has adopted a new legislative package on energy efficiency including the *Energy Efficiency Act*. The Ministry of Construction and Physical Planning drafted a proposal of the "Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia" to encourage investment in the refurbishment of the national building stock by 2050.

NATIONAL TARGETS, especially for 2030

| Objective, 2030-2050 | Targets | Comments |
|-----------------------------|---------|----------|
| GHG reduction | No | |
| Renewable energy | No | |
| Energy Efficiency / savings | No | |

7. Regional cooperation

Croatia is a member of the Regional Groups North-South electricity and gas Interconnections in Central Eastern and South Eastern Europa.

Croatia is a member of the High Level Group on Central East South Europe Connectivity (CESEC) together with Austria, Bulgaria, Greece, Hungary, Italy, Romania, Slovak Republic and Slovenia. The objective of the High Level Group is to establish a regional priority infrastructure roadmap and advance its implementation in order to develop missing infrastructure and improve security of gas supplies.

8. Cohesion policy contribution

The EU Cohesion policy provides for important investment possibilities to implement energy policy objectives in Croatia 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 and territorial cooperation, including the Danube Region and Adriatic and Ionian Region macro-regional strategies in which Croatia takes part.

Internal Energy Market: Over 2014-2020, EU Cohesion Policy will invest some EUR 20 million in smart electricity distribution grids in Croatia. These investments are expected to contribute to around 5 800 additional users connected to smart grids.

Energy efficiency: Over 2014-2020, EU Cohesion Policy will invest some EUR 402 million in energy efficiency improvements in public and residential buildings and in enterprises, as well as in high-efficiency cogeneration and district heating in Croatia. A further estimated EUR 810 million will be invested in supporting the move towards an energy-efficient, decarbonised transport sector. These investments are expected to contribute to around 10 000 households with improved energy consumption classification and a decrease of around 55 100 000 kWh per year of decreased primary energy consumption of public buildings, as well as to around 80 km of reconstructed or upgraded railway lines and 250 km of improved inland waterways.

Decarbonisation: Over 2014-2020, EU Cohesion Policy will invest some EUR 95 million in renewable energy in Croatia.

Research, Innovation and Competitiveness: Over 2014-2020, EU Cohesion Policy will invest significantly in R&I and in SME competitiveness in Croatia. This will be based on the national strategy for smart specialisation. For Croatia, the draft strategy includes a focus on energy and sustainable environment as well as transport and mobility among the selected priorities. At this stage, at least EUR 40 million is foreseen for investments in R&I and adoption of low-carbon technologies in Croatia, but this might increase further in line with the evolving content of the smart specialisation strategy.