special Report on European Electricity Markets

Special Issue on South-Eastern Europe and the non-EU Contracting Parties and Observers of the Energy Community Treaty

Directorate-General for Energy and Transport

EUROPEAN COMMISSION

- MARKET OBSERVATORY FOR ENERGY

VOLUME 2, special issue, 2009

ANDRIS PIEBALGS
MEMBER OF THE EUROPEAN COMMISSION

Dear readers,

Securing a stable energy supply for Europe and tackling climate change, whilst creating competitive electricity and gas markets to the benefit of consumers were central tasks I undertook when I became European Commissioner for Energy in November 2004. A lot has been achieved since then, but improving the functioning of European energy markets, in particular in South Eastern Europe, continues to remain a core objective.

In July 2006, the Energy Community Treaty entered into force. The Treaty aims to create a stable regulatory framework in order to attract investment, to create an integrated energy market, to enhance security of supply and to improve the environmental situation in relation with energy supply in the South Eastern Europe.

As we now arrive at the end of 2009, we have a good occasion to remember some of milestones passed and to reflect upon challenges ahead.

The members of the Energy Community have implemented key parts of the EU legislation, including the internal market Directives and Regulations for electricity and gas, key environment Directives, in particular the Environmental Impact Assessment Directive, key Directives on renewables and biofuels as well as the main principles of the EU competition policy.

The market observatory for energy of the European Commission is, quarter on quarter, observing issues such as cross border electricity flows, price convergence and trade volumes with a view to tracking market functioning and integration. It is my great pleasure to present the observatory's special report on South Eastern Europe with a particular focus on the Energy Community members. The report demonstrates the importance of having a set of harmonised statistics which are complete, timely and reliable. It also highlights the role of trading platforms and power exchanges in providing transparent information on price signals which are accessible to all market participants. I am glad to notice that the Energy Community has started to dedicate interest and effort to these matters.

The Energy Community Treaty is expected to undergo important changes. The parties to the Treaty will adopt and implement an extension of its fields of activity to cover most of the EU legislation on energy. They will also have to mirror the evolution of the legislation, in particular the further development of the internal market rules for electricity and gas, referred to as the "Third Internal Market Package". In the Council meeting taking place at the end of 2009 in Zagreb, ministers will also discuss the accession of new members. This in my view clearly demonstrates the success of the Energy Community.

Let me commend and thank all those who invested their energy to foster the Energy Community and send you my best wishes for the meetings in Zagreb and the year ahead of us!

Yours sincerely,

Andris Piebalgs

EUROPEAN COMMISSION, B-1049 BRUSSELS - TEL. 00.32.2.298.87.47 - FAX 00.32.2.298.86.24

Market Observatory for Energy

Directorate-General for Energy and Transport

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Special issue on South-Eastern Europe

and the non-EU Contracting Parties and Observers of the Energy Community Treaty

Special REPORT ON EUROPEAN ELECTRICITY MARKETS

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A. Recent developments in the electricity markets across South-Eastern Europe

With a few exceptions, the non-EU Contracting Parties[1] and Observers[2] of the Energy Community Treaty in South-Eastern Europe are facing difficult but similar challenges in the field of energy, especially electricity: tackle the recurring problem of non technical network losses (thefts), invest in much needed generation, transport and distribution infrastructure and phase out implicit subsidies to final consumers.

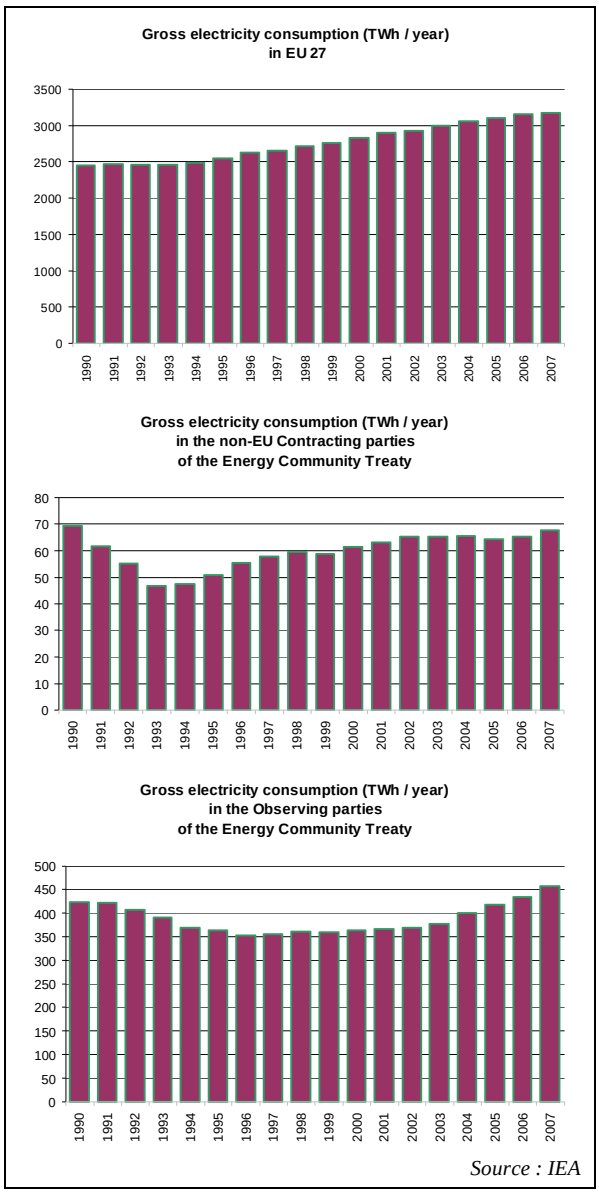
The countries will have to deal with these topics in the more general context of reinforcing energy security, building a less carbon intensive future and (for most of them) joining the European Union.

[1] Albania, Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, Montenegro, Kosovo (pursuant United Nations Security Council Resolution 1244) and Serbia.

[2] Georgia, Moldova, Turkey, Ukraine and Norway. This report is focusing only on Contracting Parties and Observers of the Energy Community Treaty from South-Eastern Europe.

Special issue on South-Eastern Europe and the non-EU Contracting Parties and Observers of the Energy Community Treaty

The EU supported approach to these problems is to restructure the electricity sector by reducing the role of the dominant company, by opening it up to competition and by creating a fully fledged regional market of electricity in South-Eastern Europe.



Source : IEA

The Energy Community Treaty is intended to streamline the efforts of the non-EU Contracting Parties. For obtaining these goals they have agreed to implement the three EU energy market directives and regulations.

The evolution of the annual electricity consumption for the period 1990 – 2007 gives a measure of the challenges facing the Contracting Parties (CP) and Observers (Obs) of the Energy Community Treaty (EnCT).

While the EU27 consumption has increased steadily by more than 1% per year in the observed period, the combined electricity consumption of CP as a group has yet to reach the levels of 1990 and the consumption of Obs has matched 1990 levels only in 2006. As all other sectors of the economy, the electricity industry was very seriously affected by the break-up of Yugoslavia and the Soviet Union and the events that followed later in the 1990s.

It is also interesting to look at more recent data for each one of the CP and Obs of the EnCT. However, the Market Observatory for Energy notes a recurring problem when dealing with energy data for countries in this region. As a rule, much of the data is incomplete and with low frequency and in some cases collected and aggregated without a common methodology.

For these reasons the data should only be looked at as indicative, especially in cases where data providers are not clearly stated. A *"Focus on"* the need of harmonization of statistical data in the CP and Obs of the EnCT is presented in part C of this report.

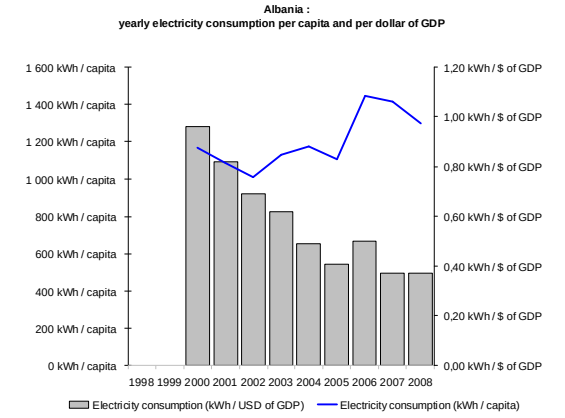
A.1 Energy balances

A.1.1 Non-EU CP of the EnCT

Albania

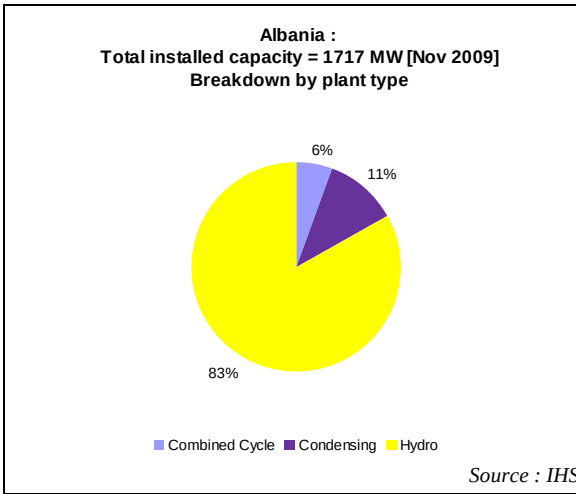
As indicated by the tariff database of the Energy Regulators Regional Association (ERRA), the energy intensity of the Albanian economy declined significantly. In 2000, approximately 1 KWh was needed for each additional dollar of the GDP. For 2008 the corresponding dollar was produced with less than 0,4 Kwh[3].

For the same period, the individual consumption of electricity increased by almost 130 KWh / year. However, the electricity consumption per capita was higher in 2006 than in 2008.



Source : Energy Regulators Regional Association (ERRA) Tariff database

These developments indicate an improvement of the overall energy efficiency of the Albanian economy and increased consumption of electricity per capita which is normally associated with higher standards of living.



Source : IHS

Looking at the generation mix of Albania, hydroelectric production accounts for more than 8 tenths, the remaining capacities spread between the plants in Fier (oil and natural gas), Cerrik (coal) and Vlore (diesel and natural gas).

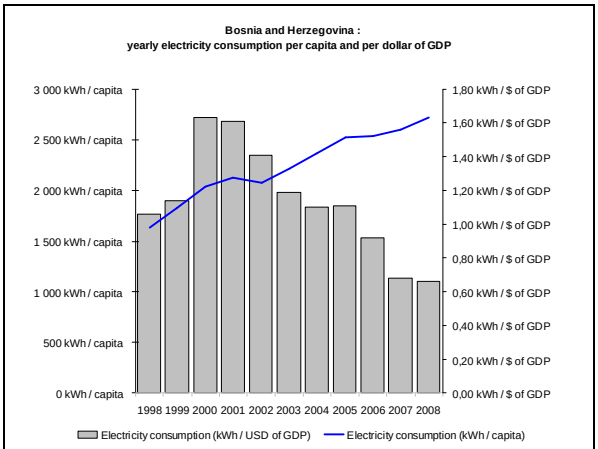
[3] Not accounting for nominal effects of the US currency for the observed period.

The seasonal pattern of the hydroelectric generation together with an increasing consumption of electricity may pose an additional strain to the Albanian electric system which is already a net importer of electricity[4].

Bosnia and Herzegovina

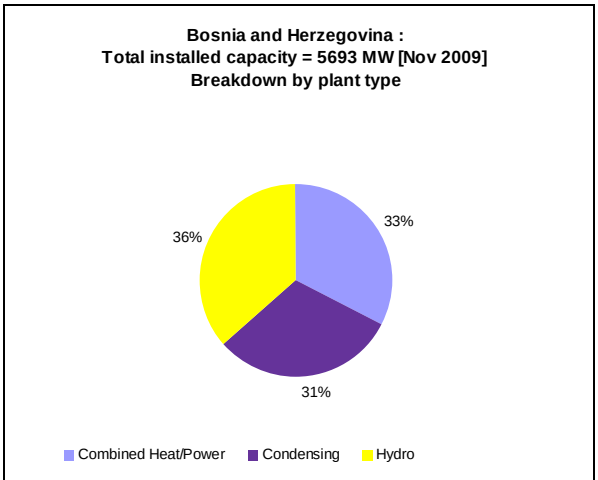
Bosnia and Herzegovina recorded similar developments of energy intensity and individual consumption of electricity.

Between 1998 and 2000 the electrical power used to produce one dollar of GDP jumped by 60 %. Then, in the following 8 years it declined from 1.6 kWh / $ of GDP to around 0.6 kWh / $ of GDP. This evolution is quite similar to the one experienced in some of the new Member States of the EU[5].



Source : Energy Regulators Regional Association (ERRA) Tariff database

With more than 3.6 GW of installed capacity in thermal plants and almost 2.1 GW in hydroelectric plants, Bosnia and Herzegovina is emerging as one of the bigger exporters in South-Eastern Europe.

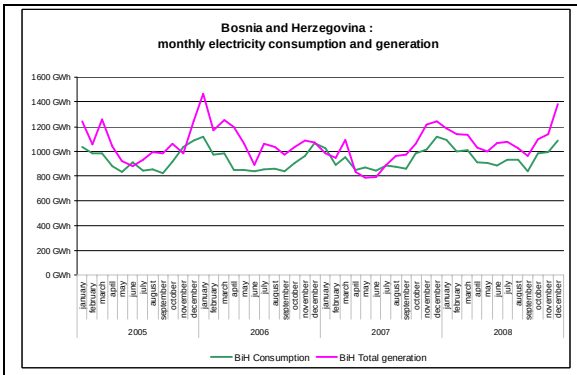


Source : IHS

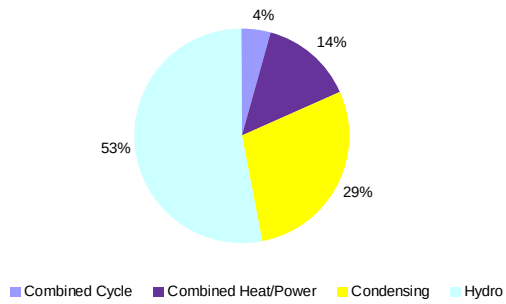
As suggested by the next Graph, there were very few occurrences since 2005 when the country was a net importer of power.

[4] According to a commercial data provider, the annual electricity imports of Albania amounted to 2.8 TWh / year in 2007 and to 2.4 TWh / year in 2008.

[5] For example, the energy intensity of Bulgaria went from 2.05 kWh / $ of GDP to 0.64 kWh / $ of GDP from 2000 to 2008. The corresponding figure for Romania was 1.18 kWh / $ of GDP to 0.3 kWh / $ of GDP.



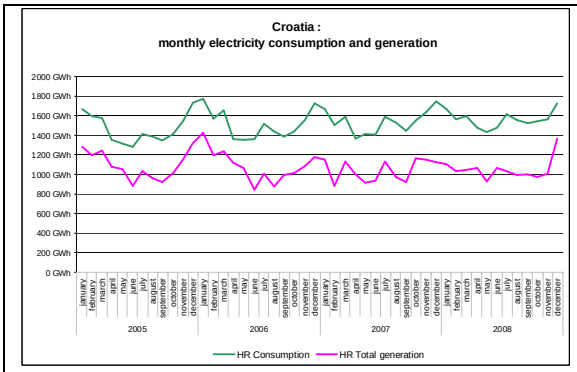
Various sources, collected and processed by a commercial data provider



Source : IHS

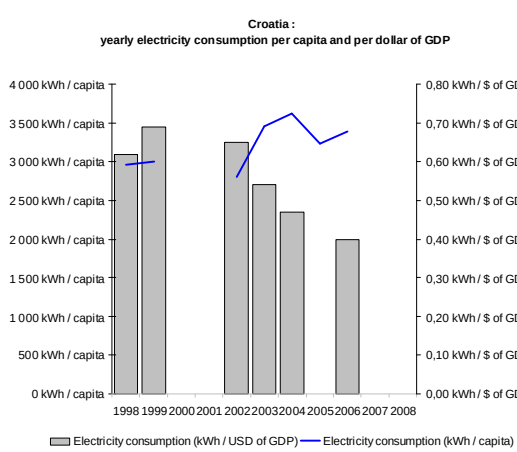
Croatia

Electricity generation is significantly lower than gross inland consumption in Croatia. With the pace of consumption outstripping the rate of new installed capacity, the country is seeing an increase of the net electricity imports. In four years the annual imports increased by more than a third, going from about 4.5 TWh / year in 2005 to more than 6.1 TWh / year in 2008.



Source : Eurostat

According to the *ENSTO-E vista* database the main trading partners are Hungary and Slovenia, but Bosnia and Herzegovina and Serbia are also exporting electricity to Croatia.

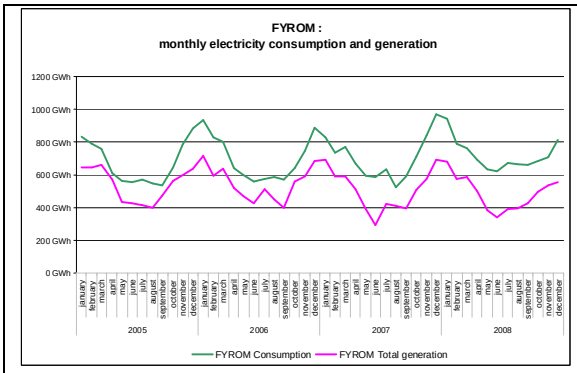


Source : Energy Regulators Regional Association (ERRA) Tariff database

The partial data from ERRA suggests that Croatia is also experiencing a reduction of its GDP energy intensity.

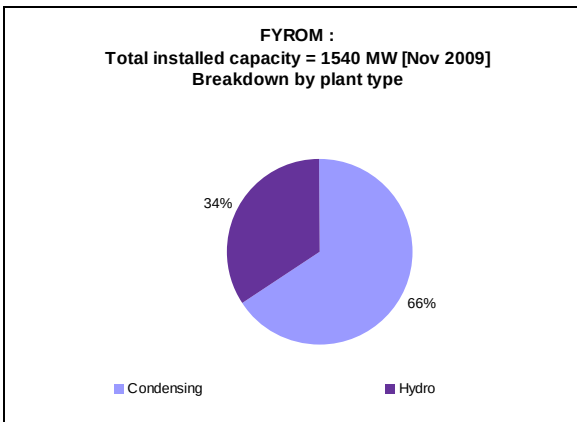
Former Yugoslav Republic of Macedonia (FYROM)

Like Croatia, the Former Yugoslav Republic of Macedonia is also a net importer of electricity.



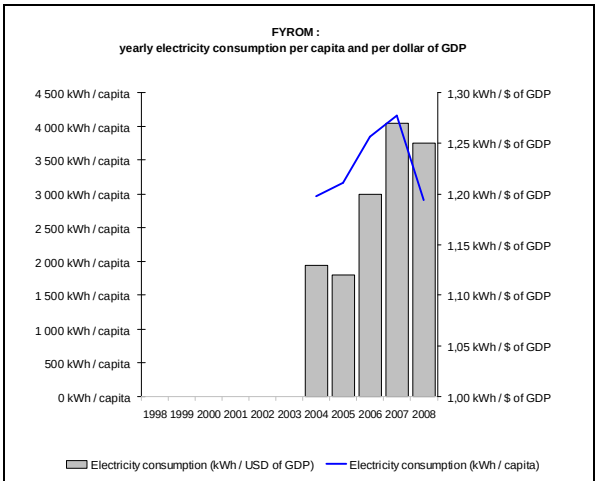
Various sources, collected and processed by a commercial data provider

For the period covering 2005 – 2008 this country has bought almost 8.6 TWh net across the border. The real import values are actually bigger since FYROM is a seasonal exporter to Greece.



Source : IHS

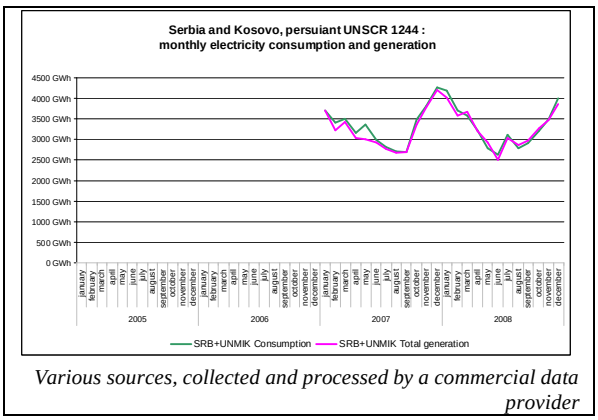
Contrary to other countries in the region, FYROM is experiencing an increase of the energy intensity of its economy. The absolute values of above 1 kWh / $ of GDP are comparable to those of Ukraine or Georgia.



Source : Energy Regulators Regional Association (ERRA) Tariff database

Serbia

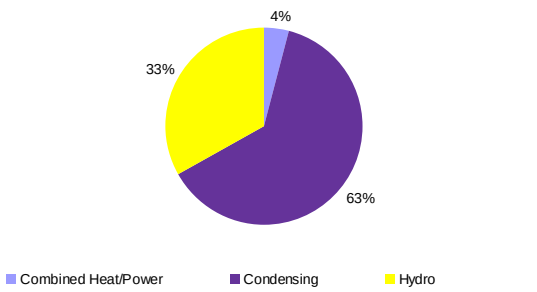
Serbia is one of the few non-EU Contracting Parties of the Energy Community with a relatively balanced set of generation and domestic electricity consumption.



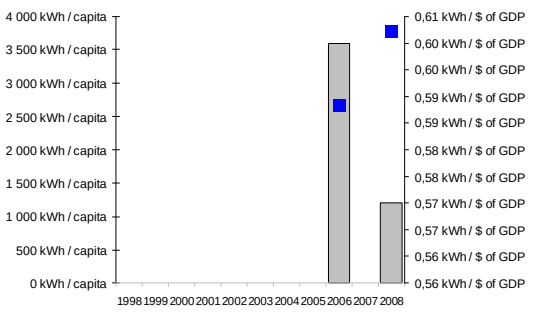
Various sources, collected and processed by a commercial data provider

With about 515 MW of installed capacity of gas fired power plants, almost 6.4 GW of coal and 3.4 GW hydro, Serbia is also showing a diversified fuel mix which. Its central position in the Energy Community

places this country as a very important player in the emerging regional market.



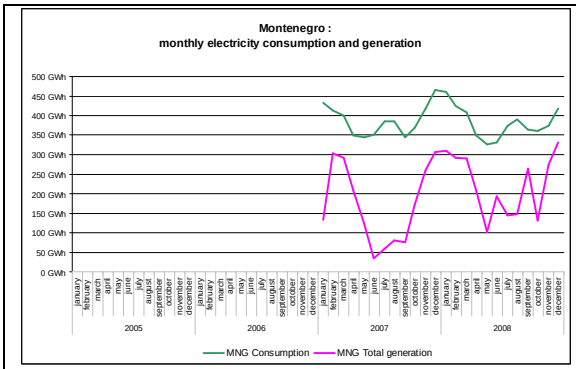
Source : IHS



Source : Energy Regulators Regional Association (ERRA) Tariff database

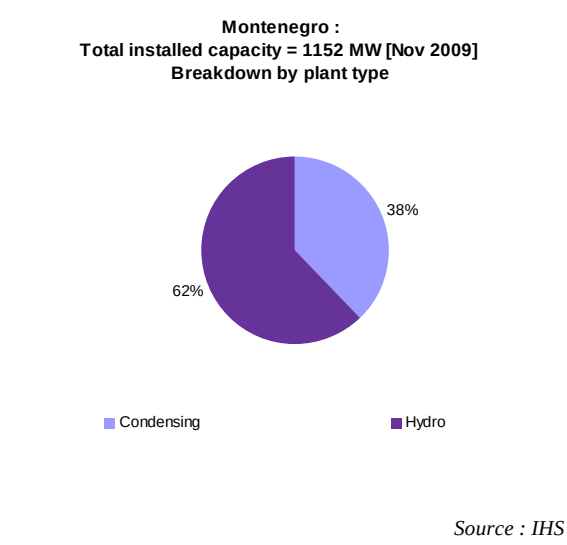
Montenegro

Montenegro is dependent on electricity exports from neighbouring countries to cover part of its inland consumption.



Various sources, collected and processed by a commercial data provider

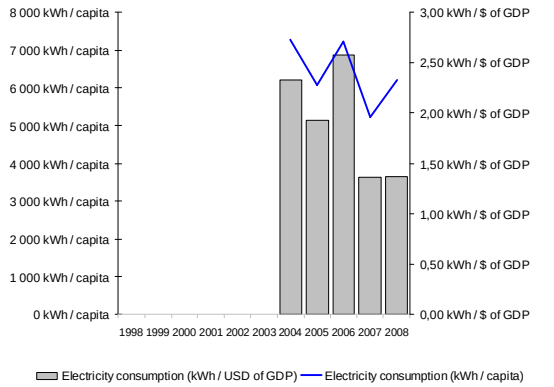
Outside of the two coal units at Pljelja which account for about four tenths of the total installed capacity, the generation mix is composed of hydro plants, meaning that the Montenegrin electricity grid is exposed to seasonal strains during periods with low levels of precipitation.



Source : IHS

The partial data from the *ERRA tariff database* suggests that energy intensity of the economy and the electricity consumption per capita are decreasing, a

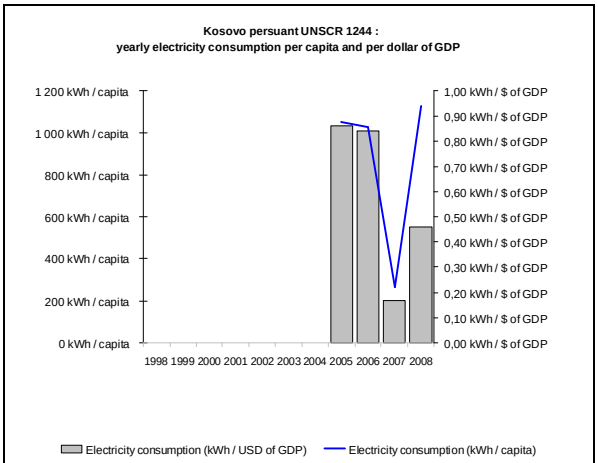
development which is somewhat different to the one observed elsewhere in the region.



Source : Energy Regulators Regional Association (ERRA) Tariff database

Kosovo pursuant UNSCR 1244

Energy balance data is not easy to find. According to one source[6], in 2006 the indigenous production covered less than a fifth of the inland electricity consumption, meaning that Kosovo had to import almost 3.5 TWh / year.



Source : Energy Regulators Regional Association (ERRA) Tariff database

Currently there is not enough data in the *ERRA tariff database* to detect any direction in the evolution of the energy intensity of the GDP or the electricity consumption by capita: data varying on a scale of 1 to 5 within the 2005 – 2008 period.

A.1.2 Observers from South Eastern Europe

As a group, the economies of the Observers of the Energy Community from South East Europe tend to be much more intensive[7] on the use of electricity than the non-EU CP, which on their turn are more energy intensive than the Member States of EU. This clearly must be seen in the historical context.

The countries from the Energy Community are now facing the challenge of reducing the carbon footprint of their energy

[6] CIA World Factbook 2009

[7] The notable exception being Turkey.

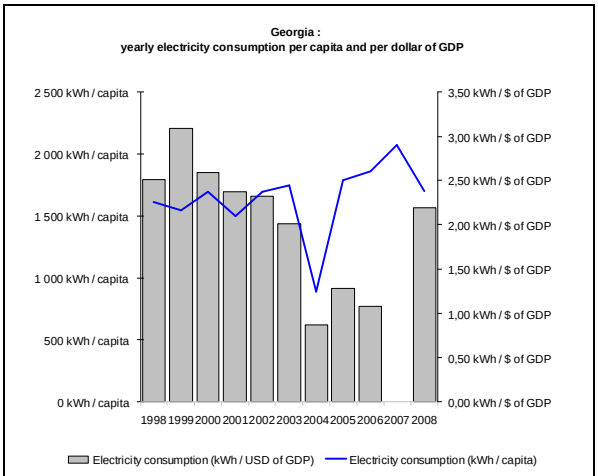
industries and opening up to the regional market with a fleet of ageing power plants which would need huge capital investments. In some instances, frequent maintenance problems are encountered.

That is why institutions such as the World Bank and the European Bank for Reconstruction and Development have special dedicated programs for the region. The Energy Community is also actively trying to attract investments and donors in power generation and networks of non-EU CP and Obs in order to ensure stable and continuous energy supply that is essential for economic development and social stability.

Georgia

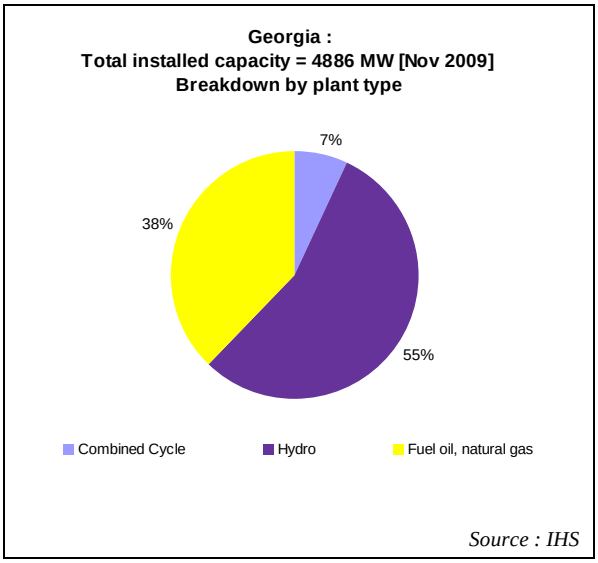
According to the *ERRA database*, Georgia seems to possess the most energy intensive economy in the Energy Community, with the 2008 value being above 2 kWh / $ of GDP. For the same period the Baltic countries, for instance, recorded values between 0.2 – 0.35 kWh / $ of GDP.

In the last 10 years the electricity consumption per capita remained stable in the 1 500 kWh / year range but marked swings were observed in 2004 and 2007.



Source : Energy Regulators Regional Association (ERRA) Tariff database

Georgia has a large fleet of flexible hydroelectric plants, together with a recent addition (2006) of a combined cycle plant in Gardabani using natural gas.

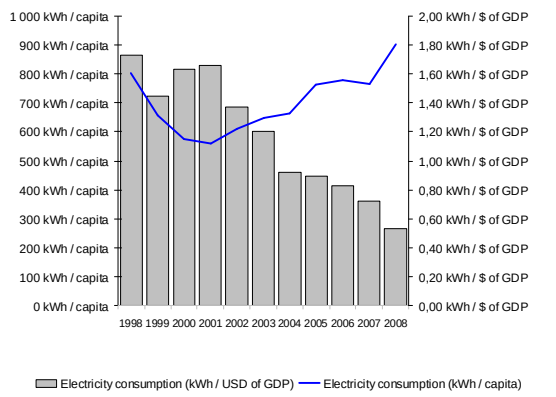


Source : IHS

Moldova

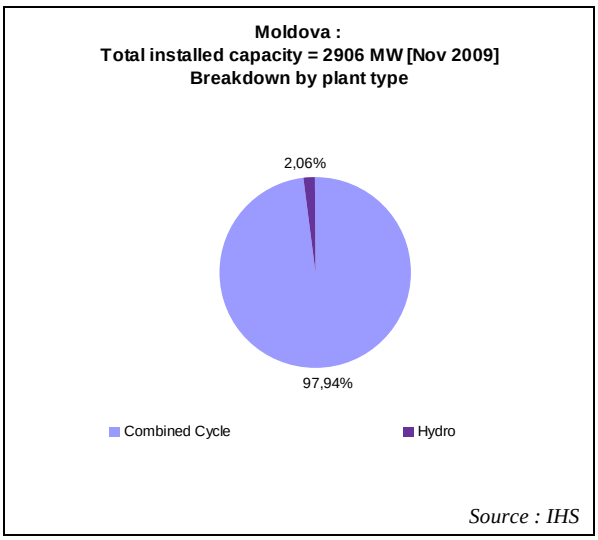
Starting from 2000, Moldova is regularly decreasing the amount of electricity used

per additional dollar of GDP. At the same time the average consumer has increased by almost a third the amount of energy consumed, suggesting a significant improvement of the productivity of the Moldovan economy.



Source : Energy Regulators Regional Association (ERRA) Tariff database

Almost nine tenths of the combined cycle electricity[8] comes from the 12 blocs in Dnestrovsk in Transnistria, Moldova, built between 1964 and 1980, the remainder coming from smaller plants in Chisinau and Balti. Moldova also possesses 60 MW installed hydroelectric capacity on the Dnestr.



Source : IHS

Turkey

Contrary to other economies of South-Eastern Europe, Turkey has not undergone the difficult transition process from planned to market economy. Its electricity intensity of the GDP is significantly lower than the other CP and Obs of the Energy Community.

However, the average consumer is using much less electricity per year than the Balkan countries. For example, the 2007 Turkish level was at 1509 kWh / year, compared to 4156 and 5223 kWh / year for FYROM and Montenegro respectively.

[8] Natural gas, fuel oil and coal.

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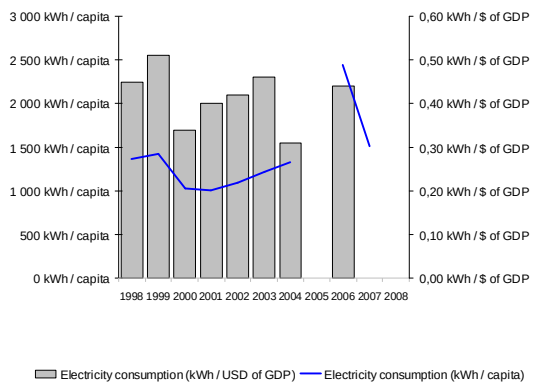
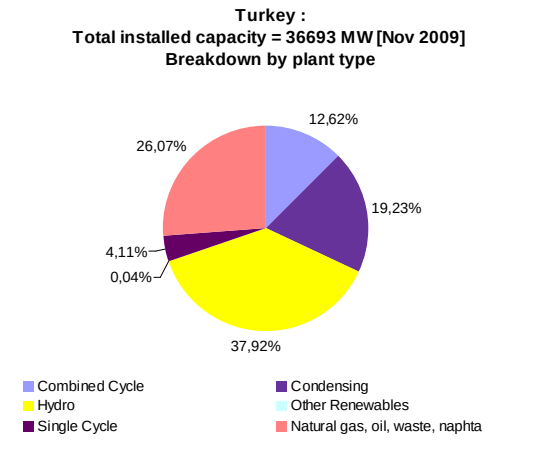


Source : Energy Regulators Regional Association (ERRA) Tariff database

The Turkish generation capacity is one of the most diversified within the Energy Community. Two nuclear tenders may further enrich the production mix in the future.

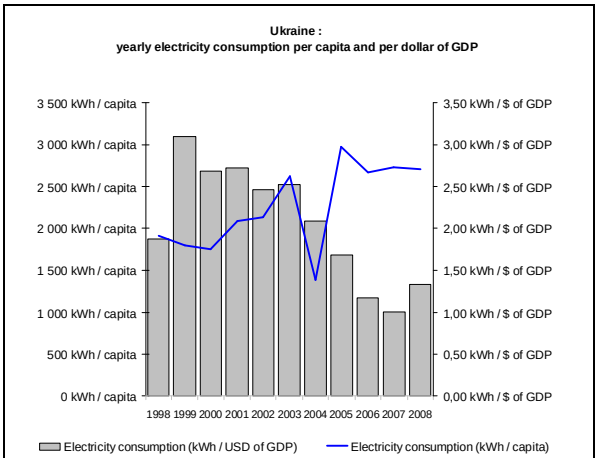


Source : IHS

Ukraine

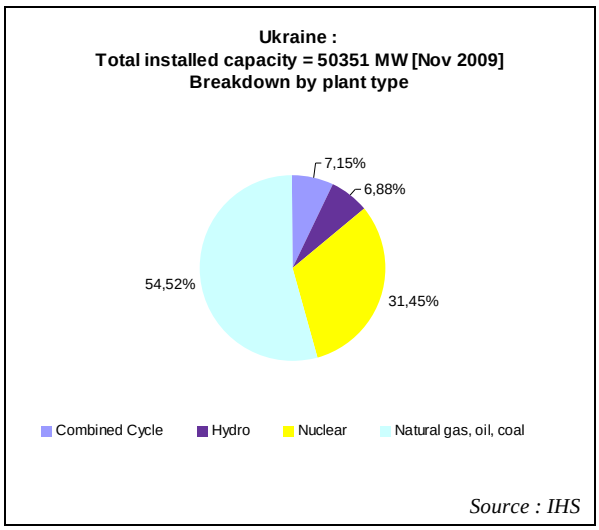
Ukraine has put significant efforts in reducing the energy intensity of its economy and managed to achieve some notable results in the last 10 years. From 1999 to 2008 the use of electricity to produce an additional dollar worth of GDP was reduced by more than half.

Compared with European standards however, Ukraine is still less efficient in using energy to produce economic wealth and its citizens are consuming less electricity for their domestic needs than their EU peers.



Source : Energy Regulators Regional Association (ERRA) Tariff database

Ukraine possesses a big and diversified complex of generation plants, placing it among the bigger electricity exporters in Eastern and Central Europe, with physical flows entering the Hungarian, the Romanian and the Slovak systems.

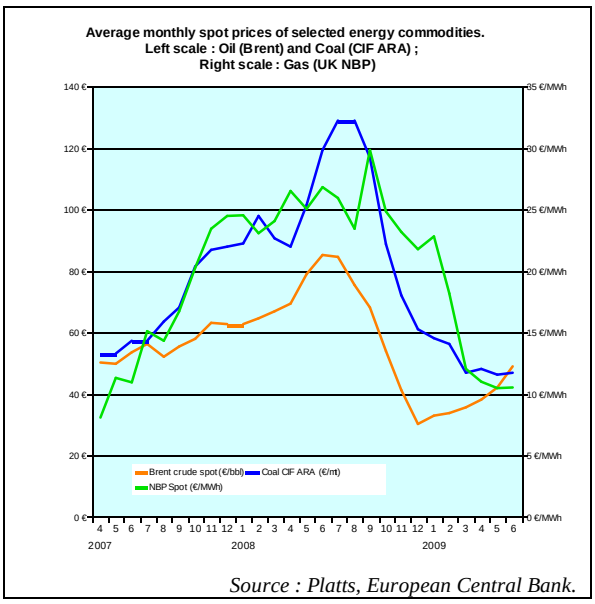


Source : IHS

A.2 Wholesale markets

A.2.1 EU wholesale markets

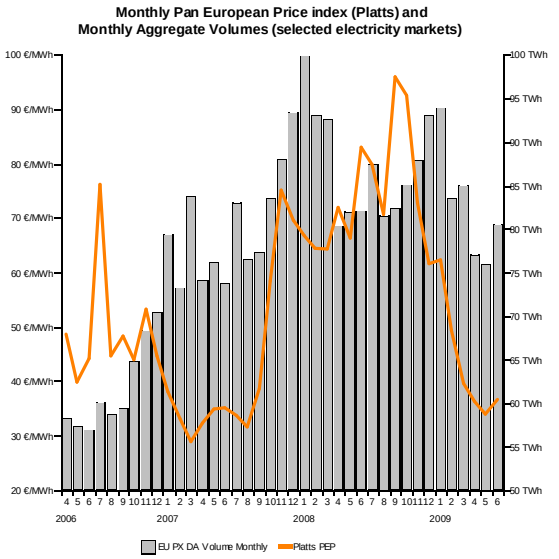
The second quarter of 2009 was a time for stabilisation of prices in the European gas and coal markets after a long period of downward movement. Whereas gas and coal prices still registered a modest fall in the April – June 2009 period, it seems that the prospect of new price corrections was not seen as an imminent threat by market participants.



Source : Platts, European Central Bank.

Global oil was among the first energy commodities to enter the bear market; it appears that it was also among the first to register a price increase, as indicated by the curve of the price of *Brent*. From its low point of December 2008 (average monthly value of € 30.13 / bbl), the spot price of Brent had increased by more than 60% by June 2009. In the second quarter of

2009 alone, the monthly average Brent price appreciated by 28%.



Source : Platts (price index) and selected European electricity wholesale markets (volumes). The selected markets are :
Nordpool Spot A.S ;
European Energy Exchange (EEX) ;
Amsterdam Power Exchange (APX Power NL) ;
Powernext Day Ahead S. A. ;
Belpex Spot ;
Energy Exchange Austria (EXAA) ;
Gestore del Mercato Elettrico (IPEX) ;
Mercado de Electricidad (OMEL) ;
Operator trhu s elektrnou (OTE) ;
Towarowa Gielda Energii S.A. (PolPX) ;
APX Power UK ;
Operatul Pietei de Energie Electrica din Romania (OPCOM) ;

(••••••), Hellenic Transmission System Operator

During the second quarter of 2009 the majority of European wholesale electricity **day ahead** prices experienced a reversal of the downward trend which had started back in September 2008[9]. The *Platts* monthly *Pan European Electricity Price Index* found a stable ground in the range of € 33 - € 37 / MWh. Between April and June 2009 the index actually grew by 1.1%, similar to the evolution of coal and gas prices.

Monthly aggregated volumes on the day-ahead markets of the selected countries[10] were in the range of 75 – 80 TWh in Q2 2009. One has to go back to 2007 to witness similar levels of transactions.

It is interesting to note that the reduction in traded volumes across Europe was smaller than the fall of total electricity consumption in the corresponding countries[11]. This may be considered as an indicator of a certain robustness of the power exchanges.

In periods of economic slowdown (see next Graph) the industrial demand of electricity, which is an important element of the total turnover of the power exchanges, tends to recede. However, market participants still need a reliable pricing signal and the fact that aggregated traded volume was less volatile than total

[9] Quarterly reports on the most recent developments of the gas and electricity markets in Europe can be found on the web page of the Market Observatory for Energy of DG TREN : http://ec.europa.eu/energy/observatory/index_en.htm

[10] The *Quarterly Report* intends to cover all Member States, Candidate countries and countries from the European Economic Area that have developed a functioning wholesale market for electricity. For the time being, the selected countries are: Austria (AT), Belgium (BE), the Czech Republic (CZ), Denmark (DK), Finland (FI), France (FR), Germany (DE), Greece (GR), Italy (IT), the Netherlands (NL), Poland (PL), Romania (RO), Spain (ES), Sweden (SE), the United Kingdom (UK) and Norway (NO).

[11] For the months of April, May and June 2009 the year-on-year reductions were in the range of 4% to 7%.

consumption may suggest that more and more market operators are considering the power exchanges as reliable price setters.

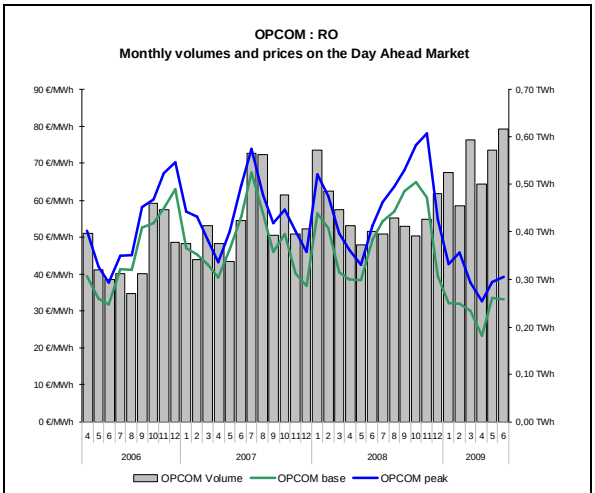
Source : Eurostat.
Selected Principal European Economic Indicators
** Gross domestic product (GDP) at market prices is the final result of the production activity of resident producer units. It is defined as the value of all goods and services produced less the value of any goods or services used in their creation. Data are calculated as chain-linked volumes (i.e. data at previous year's prices, linked over the years via appropriate growth rates). Growth rates with respect to the same quarter of the previous year (Q/Q-4) are calculated from raw data.*

The two active **day ahead markets** in **South Eastern Europe** experienced similar price developments.

Turnover on OPCOM, the **Romanian** power exchange, continued to grow vigorously, reaching an aggregated monthly level of 0.62 TWh in June 2009. This represents almost 15 % of the electricity consumption in Romania, making OPCOM one of the most liquid platforms in Central and Eastern Europe.

Compared to the same quarter of the previous year the industrial demand for electricity was decreasing as a result of the reduction in industrial production which averaged 7.6% in Q2 2009. This development could explain the evolution of the base and peak prices which lost about a third of their value from 2008 for the period from April to June.

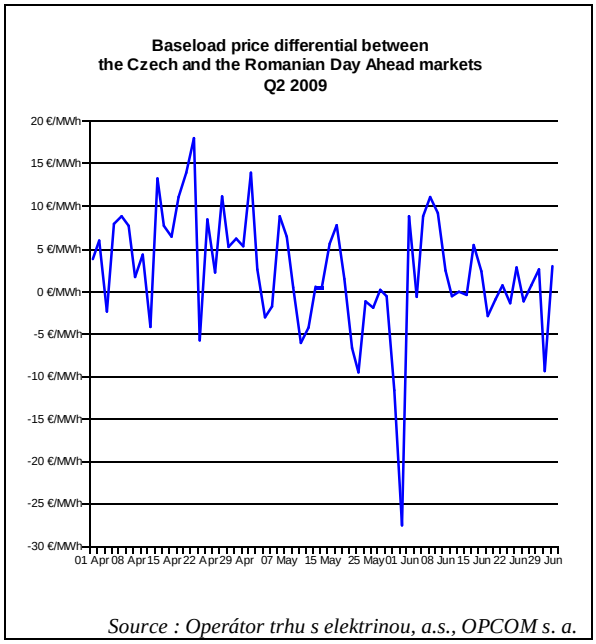
On the other hand, since March 2009, the monthly variation of industrial production turned positive in Romania which also led to increased demand for electricity. The appreciation of the Leu with respect to the Euro was also contributing to the increased price of the Romanian MWh[12]. As a result, the baseload contract gained approximately € 10 in the second quarter, reaching a monthly value of € 33.04 / MWh in June 2009.



Source : S.C. OPCOM S.A.

On average, Romanian and Czech contracts were trading at similar levels. However, on a daily basis the contracts were frequently diverging which caused big variations of the price differential.

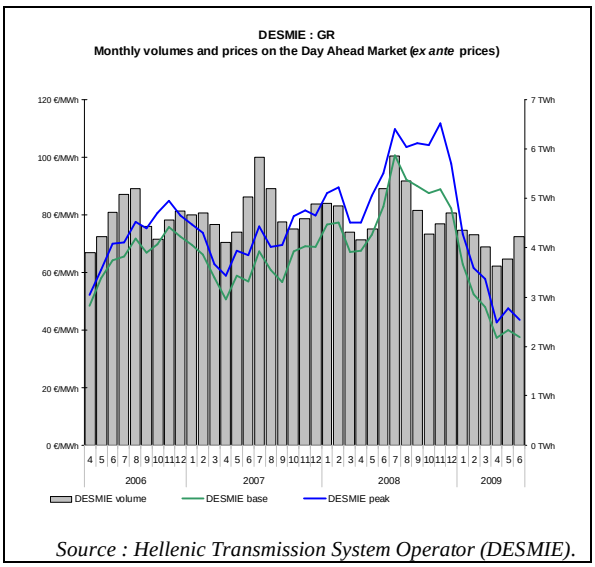
[12] From February to June 2009 the Leu went from 4,29 per Euro to 4,21 per Euro.



Source : Operátor trhu s elektrinou, a.s., OPCOM s. a.

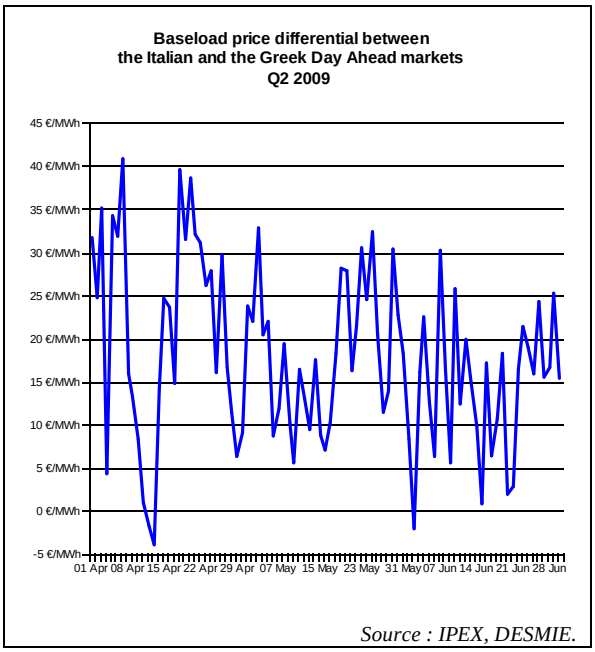
In the second quarter of 2009 the traded volume on DESMIE[13], the **Greek** wholesale electricity market, was following an evolution which was similar to the industrial production.

As a result of the economic slowdown, Greek wholesale prices lost about half of their value from the previous year in Q2 2009, reaching € 37 – 40 / MWh for the baseload. One has to go back to June 2005 to observe similar levels of the baseload.



Source : Hellenic Transmission System Operator (DESMIE).

Greek day-ahead contracts were traded at a discount of € 15 – 20 /MWh with respect to their Italian counterparts.

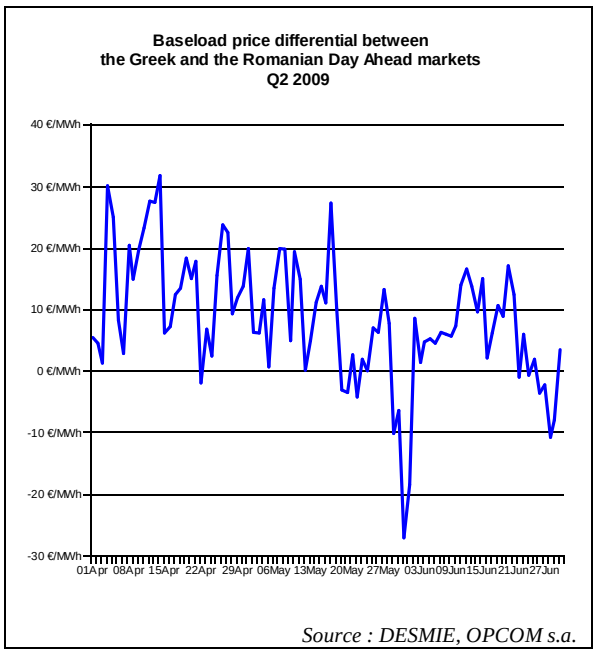


Source : IPEX, DESMIE.

Compared to the Romanian contract, the Greek day ahead was traded at a € 10 / MWh premium in the beginning of Q2 but

[13] Trade on the Greek mandatory pool is incentivised by regulatory means. Prior to 01/01/2009 the reported volume data represents the load forecast of DESMIE for the given period. From 2009 on, the corresponding values are as per the total declarations of market participants

as the observed period was coming to an end, the price differential was closing and there were days when the Greek day-ahead was actually cheaper.



Source : DESMIE, OPCOM s.a.

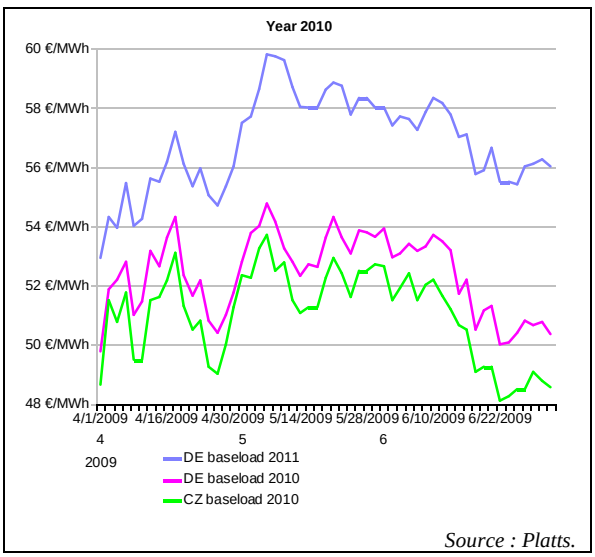
In the second quarter of 2009 market operators were exchanging **forward** contracts for delivery of electricity at various control areas in Europe on relatively calm trading sessions.

Throughout the quarter the prices were more or less stable, trading in the range of about € 5 / MWh. The usual 4 stage pattern was observed where Nordic contracts were cheapest, followed by the Iberian, Central European and British calendar contracts.

As there are few electricity forward benchmarks in South-Eastern Europe, the next graph illustrates the evolution of the German 2010 and 2011 baseload calendar forward, as well as the Czech 2010 calendar baseload.

In Q2 2009, the German forward curve remained in contango[14] as market players were expecting an early exit from the recession and an increase of demand for electricity during the phase of economic recovery.

The Czech forward continued to trade at discount to the German benchmark.



Source : Platts.

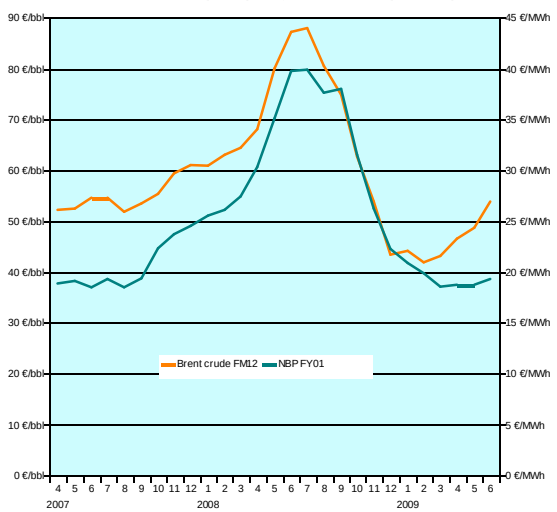
The Brent contract for the 12 month ahead delivery reached € 41.73 / bbl in February 2009, losing more than half of its July 2008 levels. After a February low point, the price started to increase again and in

[14] A situation of contango arises when the closer-to-maturity contract has a lower price than the contract which is longer to maturity on the forward curve. In contango, the forward curve is upward sloping. Backwardation occurs when the closer-to-maturity contract is priced higher than the contract which is longer to maturity.

the second quarter of 2009 it gained an additional 15.8% in value.

It seems that while market participants were bullish on the crude oil, they remained uncertain about the prospects of future gas, as suggested by the NBP year ahead contract in the figure above.

The second quarter was a period of significant divergence of oil and gas prices, which put an additional pressure on large consumers of natural gas (such as gas fired power plants) which were using oil indexed formula for pricing their supplies.

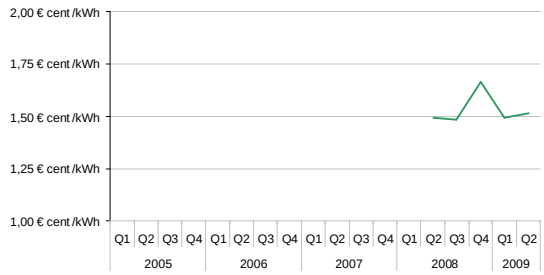


Source : Platts, European Central Bank.

A.2.2 Non-EU Contracting Parties

Albania

The government continued with the restructuring of the electricity sector. In March 2009 CEZ, the Czech energy group purchased a 76 % share of the distribution company DSO after a 5 year plan was agreed to reduce non-technical losses (thefts)[15].

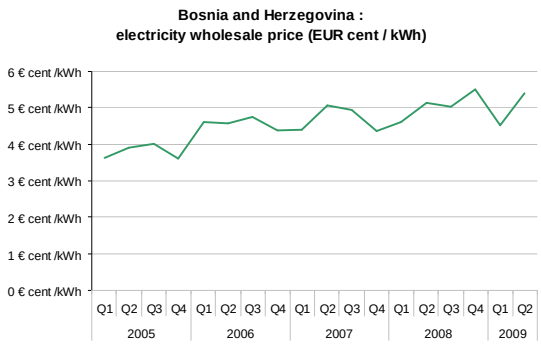


Source : European Central Bank;
Energy Regulators Regional Association (ERRA) Tariff database

Bosnia and Herzegovina

In the last 4 years electricity prices in Bosnia and Herzegovina increased gradually from 4 Euro cents / kWh to above 5 Euro cents / kWh.

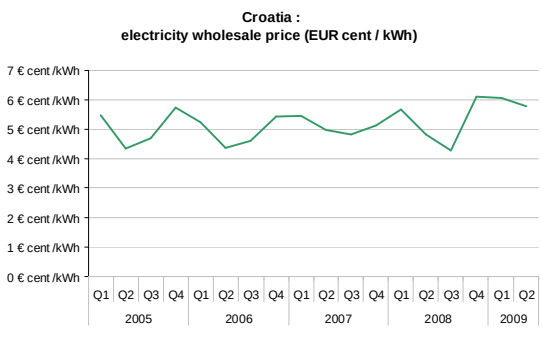
[15] There is an ongoing World Bank project on that issue. According to a recent study, more than half of the electricity consumed in Albania is not paid to the distribution company.



Source : European Central Bank; Energy Regulators Regional Association (ERRA) Tariff database

Croatia

Reported wholesale electricity prices in Croatia remained in the range of 4 – 6 Euro cents / kWh for the past four years.

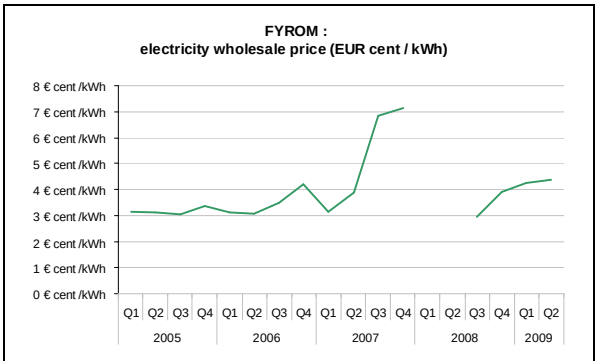


Source : European Central Bank; Energy Regulators Regional Association (ERRA) Tariff database

In October 2009 the Parliament of Croatia approved an Energy Strategy until 2020, mentioning construction of new thermal and hydro power plants in order to reduce the import dependency. The Strategy also mentions that a final decision on the construction of nuclear power plant should be reached by 2012.

Former Yugoslav Republic of Macedonia

After the peaks of the end of 2007, wholesale prices in FYROM have decreased by almost 3 eurocents per kWh. The 2009 hydro production reserves were significantly higher than in previous years due to high amounts of melting snow and sustained rainfalls.

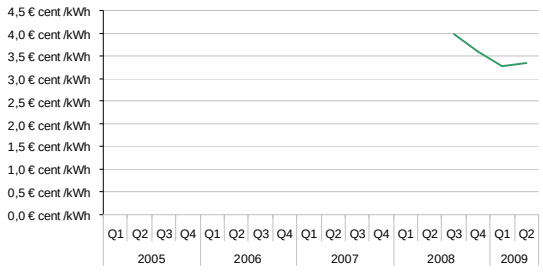


Source : European Central Bank; Energy Regulators Regional Association (ERRA) Tariff database

As elsewhere in the region, the Regulatory Commission of FYROM was facing requests for increase of the end consumer tariffs.

Serbia

Serbia unveiled plans to establish a trading platform allowing for contract settlement in the second half of 2010.

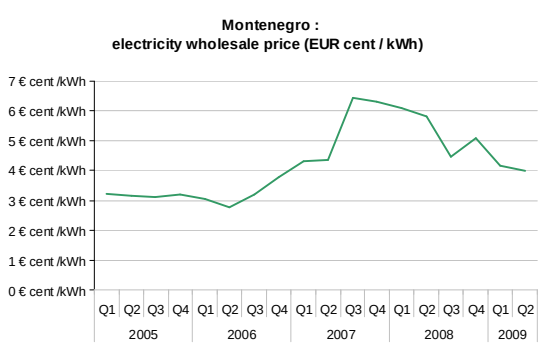


Source : European Central Bank; Energy Regulators Regional Association (ERRA) Tariff database

It was also announced in Q4 that starting from January 2010 end user electricity prices should be increased by 10 %.

Montenegro

Compared to Q1 2005, wholesale prices in Montenegro were about 1 eurocent / kWh higher in the first quarter of 2009, implying that the price increase experienced in the second half on 2007 was almost wiped off.

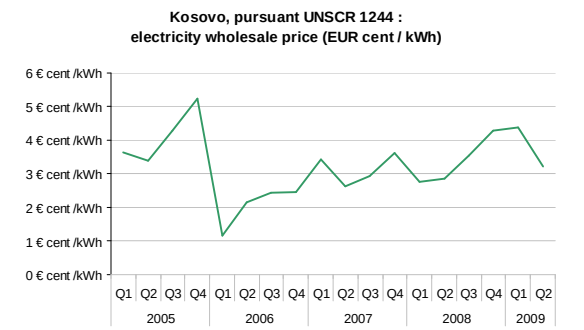


Source : European Central Bank; Energy Regulators Regional Association (ERRA) Tariff database

As distribution losses remain above 20% and that the collection rate of electricity bills is relatively low, the power utility of Montenegro (EPCG) is considering the purchase and installation of electricity meters via a loan from the EBRD.

Kosovo pursuant UNSCR 1244

As the electricity system of Kosovo is significantly dependent on imports from neighbouring electricity areas, wholesale prices varied significantly in the last four years, according to the *ERRA tariff database*. For example in the period from Q4 2005 to Q1 2006 the wholesale prices were divided by 4.5.



Source : European Central Bank; Energy Regulators Regional Association (ERRA) Tariff database

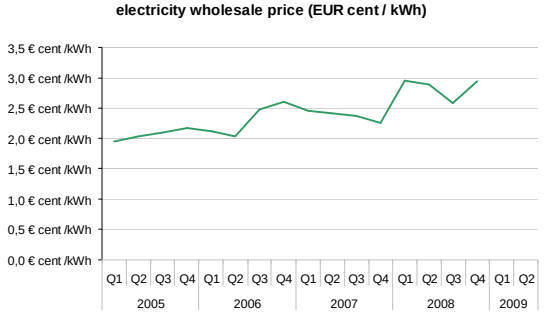
According to the 2007 annual report of KOSTT, the transmission system operator of Kosovo, the “transmission” losses amounted to 3 %, but the volume of non technical distribution losses (economic theft) remains significant.

A.2.3 Observers from South Eastern Europe

Georgia

Georgia displays the lowest reported wholesale prices in the Energy Community which may explain the reason why it is one of the most energy intensive countries.

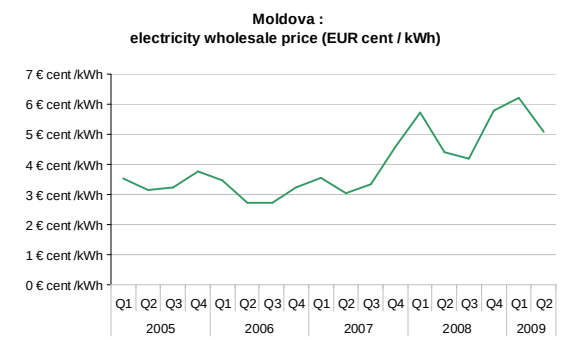
In recent years prices started to increase gradually from levels of about 2 eurocents per kWh in 2005 to about 3 Euro cents / kWh by the end of 2008.



Source : European Central Bank; Energy Regulators Regional Association (ERRA) Tariff database

Moldova

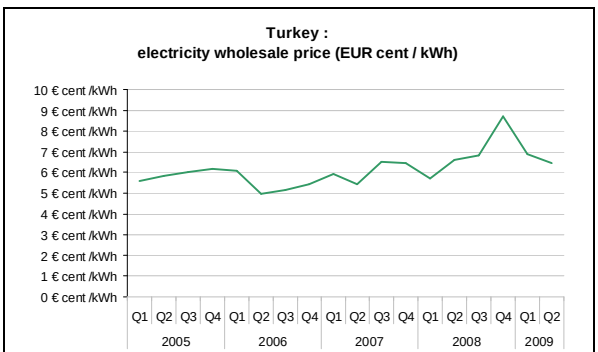
Prices for big industrial users in Moldova increased on an annual basis from 3 Euro cents / kWh in 2005 to 5 Euro cents / kWh in mid 2009.



Source : European Central Bank; Energy Regulators Regional Association (ERRA) Tariff database

Turkey

Turkish wholesale prices are among the highest for the non-EU members of the Energy Community, with levels comparable to those observed in Hungary and Slovakia, for example.



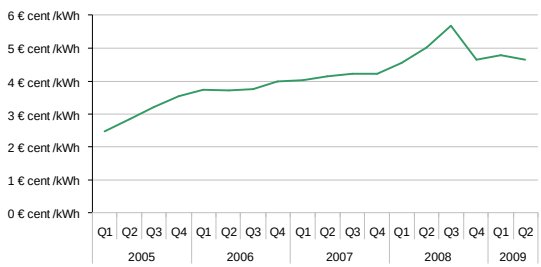
Source : European Central Bank; Energy Regulators Regional Association (ERRA) Tariff database

The recent fall of prices may be linked to the decrease of industrial demand resulting from the economic slowdown.

Ukraine

From 2005 to the end of 2008 the Ukrainian electricity prices for wholesale users more than doubled, registering a peak of 5.7 eurocents per kWh in Q3 2008. Part of this price increase may be attributed to the combined effect of high inflation and devaluation of the hryvna, the Ukrainian national currency with respect to the Euro.

Since then the prices fell by about 1 eurocent but the current economic recession may further reduce demand from big industrial consumers.

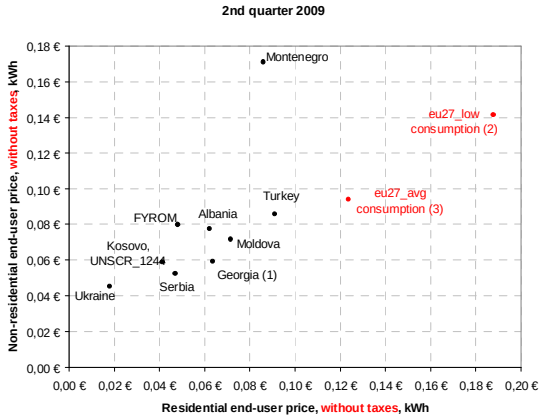


Source : European Central Bank;
Energy Regulators Regional Association (ERRA) Tariff database

A.3 Retail markets

A.3.1 End-user prices by Contracting Parties and Observers of the Energy Community

The next graph presents the Q2 2009 average residential end-user prices (net of taxes) for the members of the Energy Community[16].



Source : Eurostat;
Energy Regulators Regional Association (ERRA) Tariff database
Notes: (1) Data for Georgia is for Q4 2008
(2) EU 27 low consumption data is for the first semester of 2009. The range for annual consumption is :
Household band Da : [0 kWh – 1 000 kWh] ;
Industry band Ia : [0 MWh – 20 MWh]
(3) EU 27 average consumption data is for the first semester of 2009. The range for annual consumption is :
Household band Dc : [2 500 kWh – 5 000 kWh] ;
Industry band Ic : [500 MWh – 2 000 MWh]

As a group, the non-EU members of the Energy Community display residential and non-residential average prices which are

[16] According to the definition of *ERRA*, the displayed values may also represent the revenue incurred from sales to residential consumers, divided by the quantity sold.

much lower than the corresponding EU27 counterparts.

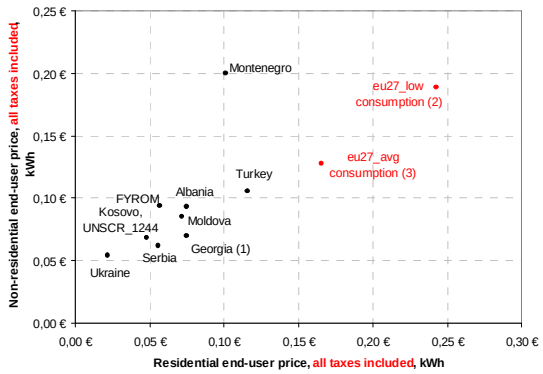
For example, in Ukraine, which is the cheapest area in the Community, domestic users are paying 6.8 times lower prices than the average EU27 price while the industrial users are paying only 2.1 times less.

ERRA is not collecting data in national currencies but it is possible that when prices (net of taxes) are expressed in purchasing power standards, the observed price discrepancy between EU and non-EU members may be less pronounced.

Montenegro is a notable exception to the pattern of more competitive end-user electricity prices in CP and Obs. According to the *tariff database* of *ERRA*, its non-residential prices are much higher than the EU27 average industrial prices. In fact they are even higher than the prices paid by the group of industrial users with the lowest consumption.

When all taxes are included into the end-user price, Montenegro is still represented by an outlying point in the scatter plot. However, the measure of misalignment with respect to EU and other non-EU member prices is reduced.

For the other Contracting Parties and Observers, the dispersion on the plot changes little when taxes are introduced. The one notable modification is that the residential prices in Moldova with taxes are cheaper than those in Albania and Georgia which is not the case for prices net of taxes.



Source : Eurostat;
Energy Regulators Regional Association (ERRA) Tariff database
Notes: (1) Data for Georgia is for Q4 2008
(2) EU 27 low consumption data is for the first semester of 2009. The range for annual consumption is :
Household band Da : [0 kWh – 1 000 kWh] ;
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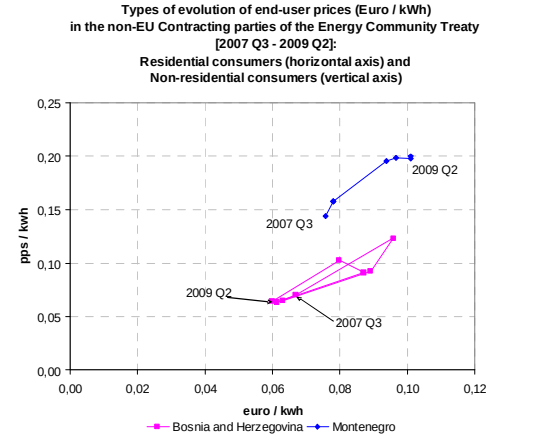
(3) EU 27 average consumption data is for the first semester of 2009. The range for annual consumption is :
Household band Dc : [2 500 kWh – 5 000 kWh] ;
Industry band Ic : [500 MWh – 2 000 MWh]

Two types of price developments can be observed within the Contracting parties of the Community for the 8 quarters spanning from 2007 Q3 to 2009 Q2.



Source :
Energy Regulators Regional Association (ERRA) Tariff database

The first type is displayed by the end-user price evolution in Bosina and Herzegovina but is also relevant for FYROM and for Kosovo, pursuant UNSCR 1244. This case is characterised by a somewhat cyclical movement of end consumer prices, meaning that the combination of residential and non-residential prices (all taxes included) were very similar at the beginning and at the end of the 2 year period.

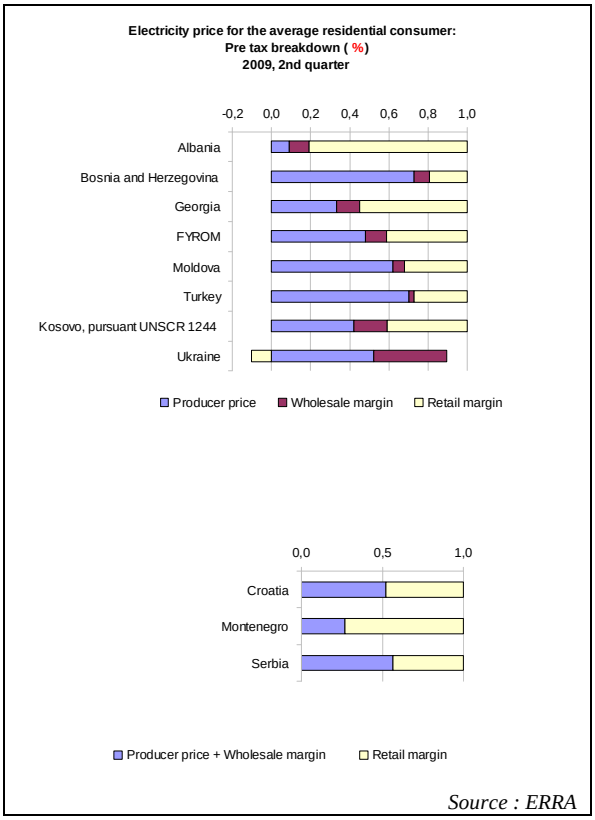
On the other hand, the case of Montenegro, which is also common for Albania, Serbia and Croatia show a tendency of gradual appreciation of the price, pushing it closer to the EU27 average.

It should be noted that a longer price history is needed in order to see if this tendency may be confirmed in the longer run.

A.3.2 Breakdown of residential prices

The pretax breakdown of the residential prices shows that significant differences exist between members of the Energy Community.

For example, the retail margin in Albania accounts for more than 80% of the pretax price, while it represents only about a quarter of the price in Turkey. Ukraine is a special case with a negative retail tax, according to the *ERRA tariff database.*

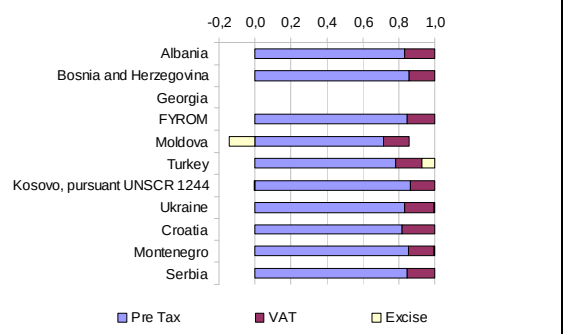


Source : ERRA

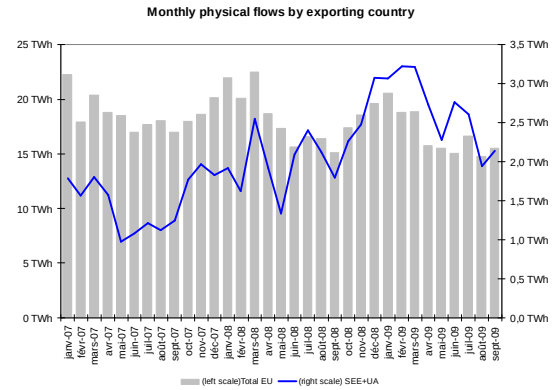
The relative part of taxes in the final electricity price for residential consumers on the other hand is quite aligned in the

Contracting Parties and observers of the Energy community.

The majority of Community members do not levy an excise duty on the final price[17]. The VAT varies from 14% in Turkey and Kosovo (pursuant UNSCR 1244) to 20% in Moldova.



Source : ERRA
Note: Data for Georgia is not available



Source : ENTSO-E, etsovista.
Note. Data on IE, MT and CY is missing. Data on EE, LT and LV is available from September 2008. Data on physical flows from and to LU is incorporated in LU's neighbouring countries : DE, BE, FR.
Data for a number of countries is still partial (Slovenia, Greece, Bulgaria, Romania, Croatia, Albania, Former Yugoslav republic of Macedonia, Serbia and Ukraine) or missing (Bosnia and Herzegovina, Montenegro, Kosovo, pursuant UNSCR 1244, Moldova, Georgia).

B. Building an internal market for electricity: cross border flows and trade

Based on physical flows data from ENTSO-E, which is still incomplete for some countries from South-Eastern Europe, it seems that the cross-border exchange of energy in the Energy Community was strongly affected by the economic slowdown, as elsewhere in Europe.

With regard to the larger electricity regions in Europe, the South East plus Ukraine is more or less a balanced group, with net exports amounting to 4.4 TWh of electricity in the 12 months preceding September 2009.

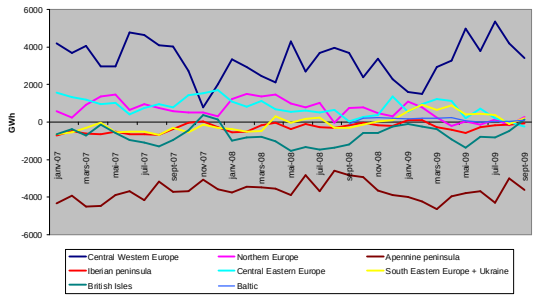
Interesting results emerge if the members of the Energy Community are regrouped in three categories[18] and if the total amount of net electricity exports of the last 10 years is taken into consideration (see the second table of the next column).

The EU27 is a well balanced electricity zone. The net imports amount to about 6 TWh / year which is approximately 0.1% of the EU gross inland consumption.

[17] The exceptions being Turkey with 8% and Moldova with a 20% negative excise duty.

[18] EU Member States, Contracting Parties and Observers.

Special issue on South-Eastern Europe and the non-EU Contracting Parties and Observers of the Energy Community Treaty

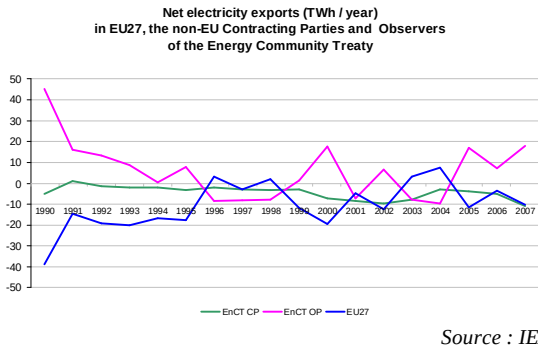


Source : ENTSO-E, etsovista.

European countries are grouped in the following regions :

Central Western Europe	*DE, NL, FR, BE, AT, CH*
Nordic	*SE, FI, DK, NO*
Apennine peninsula	*IT*
Iberian peninsula	*ES, PT*
Central Eastern Europe	*PL, CZ, HU, SK*
South Eastern Europe	*SI, GR, BG, RO, HR, AL, FYROM, RS, UA*
British Isles	*UK*
Baltic	*EE, LT, LV*

The non-EU Contracting Parties are importing about 6 TWh / year which is more than 9 % of its consumption. The relatively small size of the group as well as the unbalanced situation of some of its members may help to explain this significant number.



Source : IEA

Finally, the Observers of the Energy Community export about 35.7 TWh / year which represent 8% of their electricity consumption.

C. *"Focus on the harmonization of statistical data in the Contracting Parties and Observers of the Energy Community Treaty"*

"Detailed, complete, timely and reliable statistics are essential to monitor the energy situation at a country level as well as at an international level. Energy statistics on supply, trade, stocks, transformation and demand are indeed the basis for any sound energy policy decision."[19]

Significance of sound and reliable energy statistic was recalled by the Ministerial Council of the Energy Community[20], who entrusted the Energy Community Secretariat with the task to develop a common approach for energy statistics in the Energy Community as a necessity for implementing the Treaty.

To fulfil its task, the Secretariat organized a workshop attended by statisticians from official statistical agencies and other institutions and various relevant experts from ministries, regulatory agencies and other institutions interested in energy statistics, with active participation of energy statistics experts from Eurostat, IEA, EC – DG TREN, ERGEG, E-control and other.

At the workshop held on the 29th and 30th of October 2009 in Vienna, the current status of energy statistics in the Energy Community was presented, based on findings from independently conducted studies and from assessments of relevant experts from Contracting Parties.

The Workshop participants agreed to present the findings and recommendations to the PHLG for consideration of necessary steps to improve the current status.

The first recommendation was that a common platform should be based on IEA/EUROSTAT/ENECE format for basic energy data, which should be collected and submitted in a prescribed format by all Contracting Parties to the IEA. In addition to that, CPs should endeavor to implement Regulation No 1099/2008 on energy statistics, EU Directive 2008/92 on transparency of energy prices and the EUROSTAT methodology defining energy indicators relevant for implementation of the Treaty with a view to upgrade in accordance with the expected

[19] International Energy Agency: Energy Statistics Manual.

[20] The general objective of the Energy Community is to create a stable regulatory and market framework in order to 1) Attract investment in power generation and networks in order to ensure stable and continuous energy supply that is essential for economic development and social stability ; 2) Create an integrated energy market allowing for cross-border energy trade and integration with the EU market ; 3) Enhance the security of supply; 4) Improve the environmental situation in relation with energy supply in the region and 5) Enhance competition at regional level and exploit economies of scale.

reconciliation of definitions and reporting requirements between international statistic institutions.

A sequence of necessary steps to upgrade the current status include measures such as adequate support to energy statistics development, improvement of administrative capacity, capacity building, development of statistic databases and technical assistance. Action plans will contain detailed timetables and assigned responsibilities. These action plans should have a minimum of commonly agreed content and format, as well as mutually agreed deadlines for implementation of each commonly accepted activity.

The Energy Community Secretariat is responsible for defining guidelines and templates for the preparation of action plans, for coordinating activities among Contracting Parties and with international energy statistic agencies, for monitoring the implementation of action plans, for coordinating communication flows with EC and donors' and for assisting in the definition of regional projects to upgrade energy statistics.