How to get more fair gas prices?

Sund Energy AS
February 2015
The Energy Community is an international organisation dealing with energy policy founded by the Energy Community Treaty, which entered into force in July 2006.

The Parties to the Treaty are the European Union and eight Contracting Parties from South East Europe and the Black Sea region: Albania, Bosnia and Herzegovina, Kosovo*, former Yugoslav Republic of Macedonia, Moldova, Montenegro, Serbia and Ukraine. Georgia, Armenia, Norway and Turkey participate as Observers.

The Energy Community’s mission is to extend the EU internal energy market to South East Europe and beyond on the basis of a legally binding framework. The overall objective of the Energy Community Treaty is to create a stable regulatory and market framework in order to:

- Attract investment in power generation and networks to ensure stable and continuous energy supply that is essential for economic development and social stability;
- Create an integrated energy market allowing for cross-border energy trade and integration with the EU market;
- Enhance the security of supply;
- Improve the environmental situation in relation with energy supply in the region; and
- Enhance competition at regional level and exploit economies of scale.

For further information about the Energy Community, please visit our website: www.energy-community.org.

* This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.
How to get more fair gas prices?

- What is a fair price?
- What have other countries done?
- Advice to contracting parties in the Energy Community

Sund Energy report to the Energy Community

Oslo, February, 2015
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Abbreviations and explanations

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<th>Abbreviation</th>
<th>Explanation</th>
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<tr>
<td>BAFA price</td>
<td>German import price for gas at the border, calculated monthly as an average for all the suppliers and reported by the German Federal Office for Economic Affairs and Export Control (BAFA)</td>
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<td>BCM</td>
<td>Billion cubic meter of natural gas</td>
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<td>CP</td>
<td>Contracting parties: Ukraine, Serbia, Moldova, Bosnia &amp; Herzegovina, former Yugoslav Republic of Macedonia, Albania, Kosovo*, Montenegro</td>
</tr>
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<td>EC</td>
<td>European Commission</td>
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<td>EIB</td>
<td>European Investment Bank</td>
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<td>EnC</td>
<td>Energy Community. EU members, contracting parties, observers.</td>
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<td>FSRU</td>
<td>Floating Storage and Regasification Unit</td>
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<td>GSA</td>
<td>Gas sales agreement</td>
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<tr>
<td>Henry Hub price</td>
<td>The price for natural gas at the Henry Hub, the most liquid gas hub in the world, located in the United States</td>
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<td>JCC price</td>
<td>&quot;Japanese Customs-Cleared Crude oil&quot; - Published index of the prices of crude oil imported into Japan</td>
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<td>LTC</td>
<td>Long term contract</td>
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<td>NBP</td>
<td>The British natural gas virtual hub, wholesale price, traded at the ICE exchange</td>
</tr>
<tr>
<td>NCG</td>
<td>One of the two major German hubs</td>
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<td>Spot price</td>
<td>Price at an exchange for immediate delivery</td>
</tr>
<tr>
<td>Take-or-pay contract</td>
<td>Written agreements between a buyer and seller that oblige the buyer to pay for a contractually specified minimum quantity of output, even if delivery is not taken</td>
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<tr>
<td>TPA</td>
<td>Third Party Access - necessary for competition in market with neutral transmission system operator</td>
</tr>
<tr>
<td>TSO</td>
<td>Transmission System Operator</td>
</tr>
<tr>
<td>TTF</td>
<td>A gas hub located in Netherlands, currently the most liquid hub in continental Europe, competing with NBP for the main European gas hub.</td>
</tr>
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1. Introduction and background

The objective of this study is to give advice to the Energy Community (EnC) Secretariat on how to obtain a more “fair” gas price.

We focus on ways of improving markets and relations with import sources in being more efficient, competitive and by that obtaining more fair prices (mainly lower than today). Moreover, we highlight examples of countries that have managed to obtain better prices in their gas supplies – focusing on import and wholesale prices. As the perception of fairness often forms in society among voters, the prices to end users will also matter. We therefore include some analysis of retail prices, and how these are set in different countries.

In the first chapter, we examine important factors in gas price formation and discovery at the wholesale level. Moreover, we identify market-based wholesale price levels in a comparative manner and discuss the concept of a “fair price”. In the second chapter, we give an overview of actions taken in selected countries that have achieved lower prices, and, thus, provide the most relevant learning for the CPs. Finally, we review the nature of the different gas markets in the CPs and discuss the relevance of the different tools for each of the CPs with advice on main focus going forward.

1.1. The Energy Community and Contracting Parties

The Energy Community (EnC) treaty has many member countries (including EU members) and some contracting parties (CPs), as well as observers with which they cooperate on energy issues. The work by EnC is organised by its Secretariat. Coordination of infrastructure projects, support on implementation of EU directives related to energy, organising seminars and supporting CPs are all provided by the Secretariat.

The CPs, which will be the focus in this report, are Albania, Bosnia and Herzegovina, Kosovo*, the Former Yugoslav Republic of Macedonia, Moldova, Montenegro, Serbia and Ukraine. Georgia is an observer, but also covered briefly here. For more information on the energy community activities and investment projects, see the Appendix.

Figure 1: Share of fuel in Gross Inland Consumption in 2012

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1 Norway is also an observer, but not reviewed here
2 Annual Implementation Report, Energy Community Secretariat, 2014
2. Analysis of wholesale gas prices in Europe today

2.1. Pricing of gas in Europe

Before starting a discussion on which prices are fair, this is a description of the current pricing systems and levels of import and wholesale prices in the EU today.

In general, wholesale markets for gas in Europe fall into two categories:

- **Oil-linked contracts**: These move according to changes in oil prices, normally with a time-lag of several months. At first, these were set to meet the “market value of gas”, resulting in a starting price (P0) just below competing oil products such as fuel oil or gas oil. Increasingly, western European markets are now seeing oil links “at market level”, meaning they have been adjusted to the level of the traded markets.

- **Traded markets**: These move with the gas balance of supply and demand, lower prices when oversupplied and higher prices when the market is tight (undersupplied). The traded market could well be the fairest price – as in other commodities – if the market is liquid and well-functioning. Theoretically, demand should fall at higher prices and more supply should be attracted. This is easier with more infrastructure, elastic demand (not always the case in the short run) and price driven suppliers (more common now in the EU market, switching from the old volume-driven mentality).

Oil-linked contracts formed the basis of most natural gas imports in the world. Especially in the last few years, high oil prices and low hub prices have brought a discussion around the relevance of this link going forward. It has been seen as not fair pricing to have a commodity price linked to another commodity, especially in periods of high oil prices and a perception that these could increase further (partly due to a perception of “peak oil”).

Now there will be a decline in these prices, partly due to some renegotiations (see chapter on Germany), but also a dramatic fall in oil prices, which will impact the gas prices.

2.2. Market-based wholesale price levels

The global gas markets have all changed in the last decade, and the largest fall in level has been in the US, the first and most liquid traded gas market. Apart from a brief divergence of the two US prices in early 2014 due to a logistical issue, the prices converge and are set in the market. In general, the US market is oversupplied, allowing for low prices. US prices are compared with the other main international prices in figure 2.

Moreover, the graph shows the differences in nature of the (mainly) oil linked BAFA (especially pre 2012) and the mainly hub set prices of the UK. There is more movement/ volatility in hub prices shown here, as these are more seasonal. In general, however, if the hub price has been lower than the oil link price, oversupply exists in the market. Tighter markets will at times bring the hub prices over the oil linked price, as even prices, at times, are required to attract additional supplies.

*Figure 2: Main international gas markets and wholesale prices*

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3 European Commission
Within the EU, there has been much change with liberalisation (transparency, unbundling, TPA) as well as renegotiations in the last decade. However, there is still some variation between countries when it comes to import/wholesale prices, as can be seen from the figures 3 and 4.

**Figure 3** Comparison of EU wholesale gas price estimations 2010-2014

**Figure 4** Comparison of EU import gas prices Q2 2014

**Note:** EBP 1: Norway, EBP 2: Russia, EBP 3: Algeria, EBP 4: the Netherlands, EBP 5: Denmark

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4 European Commission

5 European Commission
2.3. Factors causing formation of gas prices at wholesale level

Gas price formation in the wholesale market has changed across Europe over the past five years - with the most significant change being the steady, structural move away from oil indexation in many continental European companies’ supply contracts. Contract renegotiations and a series of arbitration cases gave European buyers a reduced exposure to oil by more hub-related pricing or lower level of remaining oil-linked contracts.

This shift has resulted in a growing spot market in Europe with growing competition in the retail market. Several large industries became able to source gas directly at hubs, changing the monopolistic role of the importers. Gas is then picked up and priced at hubs and transportation is organised by open access transmission. This was the main reason the large importers needed to change the import terms. Growing competition in retail to other customers (not able to source from hubs) has also brought down the margins between wholesale and retail, albeit the majority of customers have not yet changed suppliers.

2.3.1. Spot markets

We are witnessing market maturity in Continental Europe, with growing liquidity in hubs like TTF, NCG and PEG. This provides trust in spot price formation, further encouraging a shift away from restrictive long-term contracts towards flexible spot arrangements for sellers and buyers.

Gas market dynamics (i.e., traders’ perceptions of supply/demand balances today versus points in the future) impact spot prices, which will generally stay within boundaries:

- **Upper boundary**: The price at which gas demand falls (i.e., when gas fired generation is less economical than coal fired generation) or extra supply comes on.
- **Lower boundary**: The price at which gas demand steps up (storage injections start, more gas fired power generation switches on) or supply turns off (price is below SRMC\(^6\) of flexible gas fields).

2.3.2. Players

Market liquidity is both a consequence of and a driving factor for an increased number of market participants. More buyers and sellers means tighter bid/ask spreads and lower transaction costs. Additionally, liquidity implies a wider array of tradable products available.

2.3.3. Price convergence

European traded markets are steadily heading towards price convergence, due to open trading agreements, interconnectivity between regions, increasing numbers of players and third party access to pipeline capacity and storage. In price converging markets, the cost of transportation is the only price difference. The price difference between time periods (for example summer months and winter months) is reflecting the cost of storage. In other words, the seasonality normally implies higher winter prices than summer prices (when there is less demand for gas for heating), making it economic to store gas in summer in order to use in winter.

2.3.4. Market liquidity in Europe

For many years, the UK hub, NBP, set prices, due to being the first European hub and being more liquid than other hubs. NBP traders included producers, large buyers (especially power, but also industry) and banks. Gradually, the European market has seen two shifts: Less trading by banks and power and more liquidity in the Netherlands (TTF). The figure 5 shows that, compared to the UK and Dutch hubs, other European hubs have very low volumes.

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\(^6\) Short run marginal cost
In figure 6, volatility and price levels at the different hubs in the EU are compared. The graph shows the similarity in hub prices at the most liquid hubs and the volatility in the less liquid hubs – often related to local issues. France and to some extent Austria have volatile prices. Italy is the outlier in the first part of this period, partly due to infrastructure bottlenecks and lack of liquidity (and market makers) at the PSV hub.

**Figure 6: Wholesale day-ahead prices on gas hubs in the EU**

### 2.4. Mixed markets – both hub and share of oil link

In the countries where both models are available, many large buyers have a choice between the two. The right choice will to some degree depend on ability to handle volatile prices and market expectations. If you expect the market to be short of gas, prices will be higher than if the market is oversupplied (more the case with falling demand). If you expect oil prices to fall, an oil linked deal could be a better bet. Moreover, an important factor determining the most attractive option is the starting price, or P0. This varies significantly between contracts today, and there are also other factors in the contracts which have been adjusted to reflect the current competitors to gas or introducing partial hub pricing.

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7 European Commission  
8 European Commission
Further, the two systems are impacting each other. Too large gaps will be addressed, either in renegotiations (see chapter 3.4) or in the market (if buyers can sell lower priced oil-linked gas on the hub, the hub price will fall). The price optimisation between contracts (with flexibility) and hub prices can give significant savings to large importers.

If a market does not have a liquid, traded hub, one may use another traded hub as a marker price - sometimes with an additional charge (e.g., current LNG imports to Lithuania). Many prefer oil link contracts, because they provide the opportunity to hedge prices in the oil market. However, this is now also possible in gas markets. Producers have had various strategies in the past, and (as it is with oil) and their future strategies add uncertainty to the traded markets.

**2.5. Factors determining the perception of fair pricing**

Perceptions of what constitutes a fair price differ across countries (and even within a country) due to a variety of factors. The next two sections describe the variety in perceptions and external factors that have led to various patterns of action, resulting in different prices. We discuss wholesale prices and retail prices separately.

**2.5.1. Fair wholesale prices**

In principle, a fair price is that agreed by two parties, buyer and seller, that is sustainable to both compared to alternatives and own fundamentals (reselling price and production and transportation cost). When there is a hub, in general the hub is expected to reflect what the market wants to pay for gas and the availability of gas will reflect if the sellers find that acceptable. However, there are also benchmarks related to prices in other markets (see chapter above on European import prices), and what is fair will often be a consideration in comparing cost of gas with that of similar countries. Then there are less perfect markets, where large players (buyers or sellers) have market power and can influence pricing in their favour, and it is not considered fair trading if a monopoly or monopsony dominates. When some of the long term contracts to Western Europe were signed, there was a de-facto oligopoly of suppliers and a perception that there was a shortage of gas. That gave sellers an opportunity to sell at the “highest possible price”, which was just below the competing petroleum products. The prices were set very similar in all the receiving countries with destination clauses. At that time, Eastern Europe had very low prices, which could have been seen as unfair, both to the suppliers to Eastern Europe and the buyers in Western Europe (this is also the explanation of the gradual development to “same netback” in the Eastern countries).

With hubs, removal of destination clauses and more gas available in general (as well as falling demand), the market prices in Europe are now seen as fair. This can also be used for balancing (saving some storage costs) and trading/hedging. Therefore, the eastern countries now pay higher prices than the western countries, which could also be perceived as unfair. When two parties agree on contract prices outside of hubs, both oil link and hub link are possible, and other factors such as credit risk, distance from hub, flexibility allowance (to seller or buyer) will also impact the agreed, fair, price.

In most countries the prices are not known to the public, but there are several instances where prices have been high to end users which led to protests against unfair pricing. Typically, when the UK had shortages in the winters in the past, there would be comments in the media that the “people did not want to rely on foreign, profit-oriented oil companies for gas”.

The challenge with such populist perceptions to politicians and large gas sellers is that the full picture is often not known, and that people in general want low prices/cost of energy. Many eastern countries solve this by regulating gas prices to the population – setting them at a very low level, even below the import price at times. In the UK, this is solved by informing the people about the cost structure (see *Figure 9*) and that regulations focus on competition at wholesale and retail levels (with third party access) and that the natural monopolies of infrastructure have regulated returns.

Having a liquid trading hub requires many participating parties on both sides, which in some countries have proved to be difficult. If a hub is not possible to establish in a liquid way, the price
will often be set in relation to other hubs with a “fair” differential representing transportation cost. In the LNG market there can be increasingly seen examples of countries importing gas on a formula linked to hubs in the UK, US or other – with an adjustment for transportation.

As we see in Europe today, prices vary significantly between countries, even from the same supplier, although the differences are not intuitive or cost related. Prices are often based on long term contracts and therefore negotiated at different points in time and in relation to different markets. Normally all gas sales agreements contain price review clauses. We see that the level of competition and market regulation in the westernmost markets in Europe is leading to lower prices than in the easternmost countries. This is opposite of the traditional logic where the Soviet countries had very low prices, while the prices to the western countries were higher and thus more important to the sellers.

The main driver for transition from traditional market towards hub pricing has usually been an expectation of lower price levels to consumers because of increased competition and efficient market balancing. However, full unbundling gives more levels of operations, needing to have margins for all players along the value chain in the short term. Without the cross-subsidies between sales and infrastructure businesses (present in the integrated/bundled model) the chance for periods with high prices to the end users is higher in the unbundled models than in the integrated ones. Further, external factors, such as shortage or oil prices will impact gas prices, making it difficult to explain to the population that although the market is more efficient and transparent, prices have increased in some cases (although they may be lower than otherwise). For many customers, getting a bill outlining energy, distribution, transmission and taxes only visualises that he pays more to more people (“easier with just one, regulated price”). This then becomes a political question – “is the state or the competitive market best for the consumer?”

Politicians who do not trust markets/hubs also present a risk to traders as they may limit the freedom of traders to optimise and earn a margin. Furthermore, it is important to stress that hub pricing increases the degree of uncertainty and leads to more volatile (and at times higher) prices, as illustrated in figure 7:

**Figure 7: Hub – Dutch TTF**

![Hub - Dutch TTF (€/MWh)](image)

A question has been raised whether hub deliveries will bring more “fair” prices to the CPs. The reality is more complex than often perceived: A hub price will reflect continuously the market fundamentals, balancing the supply and demand. The ideal situation for a functioning hub price is when there are a large number of players, both physical (physical buyers and sellers) and financial (e.g. traders, hedging), which would result in a high churn. Having only one supplier in a hub market is not a sustainable situation and has never worked in practice, as the monopolist has virtually unlimited market power to impact the prices. Also, liquidity – that might be considered a

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9 This was the case in Germany in 2009-2012, as hub prices were lowered by the oversupply.
10 ICAP/Montel
11 Amount of times by which traded volume exceeds actual delivered volume
driver for reaching “fairer”, i.e. more demand and supply based, prices – is not a function of traded volumes, but of players active in trade.

Security of supply is an important issue in many countries and is managed differently country by country. There may be a trade-off between cheap and secure supplies. Physical (N-1 or N-2) security relates to how to secure supplies in case a main route is down. Solutions could be reversible pipelines, diverse routes and LNG. The EU assumes that a well-developed infrastructure and well-functioning markets will solve these challenges. In other words, if there is too little supply from one source, the price will go up and attract other suppliers.

In sum, determining price method remains a dilemma to importers. Without full access to the CPs’ individual sourcing portfolio and alternatives, we may not offer specific advice as to the advisable strategy.

2.6. Fair retail prices?
In general, importers will add a margin to the imported prices. This margin could be a fixed percentage, a fixed cost or calculated using other methods. In general, the total addition is normally smaller in a country with competition than in countries with monopolies. In some countries (including some of the CPs), government regulates prices to avoid “fuel poverty” in the population. These regulated price models do not always reflect costs, but are in reality indirect subsidies. Figure 9 illustrates the elements in an energy bill to consumers in the UK. As it can be seen, the cost of wholesale gas (or electricity) is less than half the end-user annual cost. A large part is transmission and distribution, as well. Visualising this split adds to transparency and understanding of the “fairness” beyond price level. Further, there are taxes, environmental charges, operational costs and profit to gas seller (smallest element, but often criticised).

In general in Western Europe, it is considered fair that large, base load customers should have a price relatively close to the wholesale price at the hub. In some cases, the price is reduced (further) if the large buyers agree to be interrupted (helping the TSO, easing the price at the hub if the market is tight). In general, smaller gas buyers, especially households, require more distribution systems, services and metering, so they are more costly to service. Their demand is less base load and should not be turned off, even at periods of gas shortage. This higher cost of service justifies higher operational margin per unit of gas in this segment. Lower gas (and electricity) prices for industrial end-users than for households are normal in the EU, while in many eastern European countries this is not the case. Not only are the price levels much lower in general (even if wholesale prices could be higher), there is a different logic in retail pricing, as households pay far less than industry. The figures below compares EU 28 with Romania (as there was not available data from the CPs, but we assume there are similarities).
Figure 8: EU28 and Romania retail gas prices: Industry versus Households\textsuperscript{12}

Figure 9: Break-down of an average British gas bill\textsuperscript{13}

\textsuperscript{12} EUROSTAT

\textsuperscript{13} Centrica
3. Observations from countries that have achieved better prices

3.1. Choice of countries
In dialogue with the EnC secretariat, we have selected five countries that have achieved a price change in their import contracts that they see as more fair. These countries are Lithuania, Poland, Germany, Singapore and Japan. Common for all is that they have enabled competition, resulting leverage towards the previously dominant suppliers. This section describes their gas sourcing and actions that have resulted in lower prices. All countries have similarities to the CPs, with historically few alternatives and high prices, but have applied different tools to achieve better prices with main supplier. Learning from all of these countries is relevant to the CPs. Summarising the main actions taken by these example countries is summarised in the table below.

<table>
<thead>
<tr>
<th>Country</th>
<th>Main reason for action</th>
<th>Main tool(s)</th>
<th>Result from action taken</th>
<th>Main learning for CPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithuania</td>
<td>Facilitate competition (and SoS)</td>
<td>Construction of LNG terminal</td>
<td>Price discount</td>
<td>Bringing in competition can lower prices.</td>
</tr>
<tr>
<td>Poland</td>
<td>Security of supply</td>
<td>Construction of LNG terminal, interconnection, domestic production</td>
<td>Price discount, changed terms in long-term contract, alternative source of gas supply – still high price</td>
<td>Overemphasis on security of supply has less potential to reach lower prices than if main focus being competition</td>
</tr>
<tr>
<td>Germany</td>
<td>Import prices too high vs hub prices – call for hardship</td>
<td>Reengineering of contracts</td>
<td>All contracts now at market level (lower oil link or hub link)</td>
<td>Not guaranteed fair prices initially, with 3 large suppliers, but lower hub prices helped</td>
</tr>
<tr>
<td>Singapore</td>
<td>Facilitate competition (and SoS)</td>
<td>Development of LNG terminal – aggregator for supply</td>
<td>Strengthened security of supply</td>
<td>Having many suppliers in itself does not bring competition, government’s trust in market is important</td>
</tr>
<tr>
<td>Japan</td>
<td>First SoS, now lower cost of gas</td>
<td>Looking for alternative pricing mechanism and hub</td>
<td>Diversified price risk</td>
<td>Having many suppliers did not bring competition (and fair prices)</td>
</tr>
</tbody>
</table>

It is important to stress that the CPs face several challenges that could make it difficult for them to take similar action. In addition, the small (and, in some cases falling) size of the CPs gas markets could make some of these tools less relevant (at least in the short term). Finally, credit risk and flexibility are becoming more important factors for sellers.

3.2. Lithuania introduced competition and received a price discount
Lithuania has historically been totally dependent on Russia for sourcing of gas, delivered by a single pipeline through the Republic of Belarus. Over the past few years, Lithuania has paid one of the highest prices in the EU, much higher than Germany.
Construction of the LNG import terminal in Klaipeda (FSRU Independence), supported by the European Investment Bank\textsuperscript{15}, has been an important initiative to facilitate more competition and eliminate sole dependence on Gazprom. The terminal, which started operating in December 2014, is owned and operated by Klaipedos Nafta, with full third party access and public tariffs. Its capacity is between 2 and 3 bcm annually - more than the country’s total demand. Hence, the capacity makes it easier to offer more flexibility to sellers, in return for lower prices. In addition, the terminal is available to other possible importers, in Lithuania and elsewhere. There are also plans to develop small-scale LNG for sales to distribution by truck or sales to ships for bunkering, to be operated by Klaipedos Nafta.

A new gas company, Litgas, has been set up to import LNG and sell it to the market. The government asked Litgas to source LNG for about 25% of national demand. In August 2014, Litgas UAB signed a five-year LNG supply contract with Norway’s Statoil for 0.54 bcm of natural gas per year to the terminal. The LNG price is linked to the UK NBP index, giving more diversified pricing.

Lithuania arguably strengthened their bargaining position towards Gazprom for long-term contracts, and Gazprom cut Lithuania’s gas price to $370 per 1,000 cubic meters in May 2014, a reported discount of about 20%, amounting to around €50 million saving per year (paying off the terminal investments in a few years). This change in prices shows that the construction of the LNG terminal and an alternative gas supply has improved Lithuania’s bargaining position. The government of Lithuania clearly links the price changes to the LNG imports. However, additional factors such as arbitration cases, political discussions and oil price changes likely played a role in lowering prices. There have also been several rounds of renegotiations leading up to the change in price. With lower oil prices, the cost of imports from Russia may fall further (as in the CPs).

In general, the new LNG terminal has been referred to as a “Game Changer” for the Baltic countries, as it could give the countries in the region access to an alternative to Russian gas and thereby improve the region’s negotiation leverage and gas security of supply. All three Baltic countries are interconnected in their gas systems, and Latvia has a large gas storage facility with developing third party access. Because the Baltic States historically have been highly dependent on Russia for sources and routes and have been isolated from the gas systems of the rest of the

\textsuperscript{14} BAFA, Eurostat, 2014

\textsuperscript{15} The LNG terminal construction and operation was financed by loans from EIB and others and underwritten by state guarantees. A complex framework of payments was put together which included the imposition of an obligation on certain electricity and heat producers to buy minimum quantities of natural gas which is imported into Lithuania through the LNG Terminal.
EU, they have been considered vulnerable “Energy Islands”. Latvia could benefit from the Klaipeda terminal with the Latvia-Lithuania natural gas interconnection, implemented to ensure security of supply and closer integration of the natural gas system in the region.

After the situation in Ukraine, the value of the LNG import as security of supply has been highlighted by many and has been part of the story and a relief for the people fearing an escalation of the situation and a possible impact on gas supplies. However, this was not the main driver. In earlier years, Lithuania and other countries considered LNG for security of supply, but it is difficult to assess the value and best form of such supplies – in other words the payability for alternative routes of gas. We suspect this is part of the reason such a project did not materialise. Also, in a mode of competition, it is natural to open the terminal for third party access and to have the gas and infrastructure managed by different companies. Had the main purpose been security of supply, more funding might have been needed as well as exemption from TPA (as we have seen in the UK and other countries).

It should be noted that exemption from third party access was not sought in respect of the LNG terminal. Instead, the LNG terminal construction and operation was financed by loans from EIB and others and underwritten by state guarantees.

Learning for EnC Contracting Parties: Lithuania showed that bringing in competing supply of gas, enough to cover a noticeable share of the demand, can lower prices. Whether the LNG terminal is the only factor, is difficult to say, as the seller may have a different official story. Another important learning point is that it is important to show sellers that the project is realistic, as many countries have mulled the idea and often not materialised their plans. This makes sellers give less attention to the buyer. Moreover, being well prepared for the negotiations is important – considering how to meet concerns of sellers regarding credit and other risks, as well as practicalities related to timing and capacity of import terminals.

Should the CPs wish to consider following the Lithuanian model they will need to take great care to comply with national state aid rules as well as Article 18(1)(c) of the Energy Community Treaty which prohibits any public aid which distorts or threatens to distort competition by favouring certain undertakings or certain energy resources to the extent it affects trade or network energy between EnC Contracting Parties.

3.3. Poland sought security supply – different approach than Lithuania

Poland has been more focused on security of supply than prices, trying to secure own transportation from fields in Norway (taking part in the Skanled project and other pipeline initiatives from Norway to Germany and Poland). Moreover, they are currently building an LNG terminal for imports (from Qatar). More than 80% of Polish gas import comes from Russia (9.6 bcm in 2013). Historically, Poland has used coal rather than gas to avoid high dependency on one supplier/imported fuel. With stricter environmental regulations, establishment of more efficient price signals stemming from emission trading certificates, and falling gas prices, this approach may change. More capacity for both pipeline gas and LNG to the country now exists. Furthermore, the current large amount of gas in transit to Germany is good for securing gas flows. If less gas flows (or it is too expensive) from the east, swaps could be made with German players.

In 2012, a gas pipeline between Poland and the Czech Republic was completed, financially supported by the European Energy Programme for Recovery (EEPR). Additionally, the flow of gas through the Yamal pipeline has been reversible since the end of 2013, connecting Poland to the western European market. The option of reverse flow is valuable as an option, even if it is not used - for competition and security of supply.

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16 According to IEA GTF monthly data, there were not registered any reverse flows through the Yamal pipeline. There might be gas being sold through this reversible pipeline, which is being netted with the volumes flowing to Germany and therefore is not reflected in the monthly physical flows. In addition there are registered flows of gas to Poland from Germany through three other border points (Lasov, Gubin and Flinkerherd) exceeding 100 mcm per month.
In order to enhance security of supply, Poland is constructing an LNG terminal in Świnoujście, expected to start operation in mid-2015.\(^{17}\) The new terminal will allow Poland to import as much as 5 bcm of gas in its first phase (about a third of its annual usage). At the time of planning the terminal, there were fewer reversible pipelines and several stranded attempts at getting more flows from Norway by pipeline. Moreover, the national gas company, PGNiG, was fully bundled and there was little competition. Now the company has commercialised and transmission is managed independently by Gaz-System. The LNG project company (established in 2007) is now a subsidiary of Gaz-system. PGNiG has signed a 20-year contract with QatarGas to buy 1.5 bcm annually. There were several discussions in the media about the pricing clause in the PGNiG-QatarGas deal. Although the details are confidential, it is assumed to be oil-linked, close to the levels of the Japanese market. PGNiG have tried to renegotiate the price, as the deal was negotiated in a period of high LNG prices and future market tightness was expected. In December 2014, PGNiG and QatarGas changed the terms in the long-term contract offering more flexibility to PGNiG\(^{18}\).

**Gas interconnection** Lithuania-Poland is another strategic infrastructure project to ensure diversification of gas supply. This interconnection, if built, would allow Poland to access new Baltic LNG facilities, although the main intention is to supply Baltic countries with pipeline gas from Central Europe. Moreover, the pipeline could be used to export to Poland. While interconnectors between countries that only have one supplier may not add competition and lower prices in themselves, they will help balancing prices (reducing costs of storage and peak supplies). Additionally, they could facilitate other suppliers reaching the market (or using swaps to achieve the same).

Yet another element in Poland’s gas security policy has been to increase domestic gas production. Poland had 100 bcm of proven reserves of natural gas at the end of 2013\(^{19}\), and has some domestic gas production. As to shale gas, initial hopes have been somewhat dimmed after disappointing results. Several big players such as ExxonMobil, Marathon, Total, ENI, and Talisman have pulled out\(^ {20}\). PGNiG (and other Polish players) are investing in gas production in other countries, such as Norway. Such gas would flow via Germany (physical or swaps).

PGNiG has had several rounds of renegotiations with Gazprom:

- In October 2010 the long-term supply contract from 1996 was amended. Most importantly, the contract period was shortened (ending in 2022 instead of 2037), and the destination clause (against re-exports) was removed\(^ {21}\).
- In February 2012, PGNiG filed for arbitration with Gazprom in an effort to amend the long-term oil-linked gas contract. The parties agreed on gas price reductions by executing an annex with new pricing terms. The price reduction was not published by the company, but was 15% according to Bloomberg\(^ {22}\).
- In 2014 the company has been seeking further price cuts arguing that the oil-linked price it pays Gazprom has become more expensive than that on European hubs. Gazprom on the other hand, argues that the indexation is needed to secure investments in infrastructure. In November 2014, PGNiG stated that unless the two companies reach an agreement concerning price renegotiation within six months, they will have the right to initiate arbitration proceedings\(^ {23}\). Unfortunately, many of the factors leading up to and coming out of negotiations and arbitration are not available to the public. Some of the information in the public is not reliable and appears very different from the two sides.

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\(^{19}\) BP, Statistical Review of World Energy, 2014

\(^{20}\) OIES Paper: NG 92, Reducing European Dependence on Russian Gas: distinguishing natural gas security from geopolitics, 2014


\(^{22}\) Bloomberg, Poland Start Talks with Russian Gazprom to Cut Gas Price, 2014

\(^{23}\) PGNiG, PGNiG commences price negotiations with Gazprom, November 2014
Learning for EnC Contracting Parties: There has been an emphasis on taking liberalisation in Poland slowly, to not upset the market too much when prices went from regulated (cap) to freer in competition (and possibly higher). There has been distrust in the gas management, both to Russia and Germany over time, which may have influenced this slowness. Converting to a free market is also a leap of faith that the market will look after the people and fix commercial as well as physical challenges in the best way. In light of this, we have also noticed that the initiative of Donald Tusk to establish a more ambitious Energy Union in the EU, including joint purchasing (still not agreed) is slightly coloured by what is popular in his country. Overemphasis on security of supply has less potential to reach lower prices than if the main focus is on competition. Often delivery terms in such projects are set very strict, making the LNG more expensive than otherwise. An impression of desperation will naturally give an opportunity for sellers to charge more. More flexible terms and focus on price might give lower prices.

3.4. Germany had a full “reengineering of contracts”

After gas discoveries in Netherlands and Soviet Union, Germany considered the potential of natural gas. In the early years, gas accounted for only a small part of the German energy mix, while oil products for heating were the main competition. Ruhrgas, the largest gas company, entered into gas supply agreements with Netherlands (’60s), Soviet Union (1970), and Norway (1977), all linked to oil prices. Today Norway, Russia and Netherlands still account for most of German gas imports and there is some domestic production and some other imports. The typical German oil-link contract would have take-or-pay obligations for the buyer and a certain degree of flexibility to nominate daily and seasonally above or below the contract quantity. Obligation to supply (and payment for non/delivered gas) was also important. The main focus of such contracts was to ensure security of supply for the buyers and secure volumes for the sellers. The German gas importers would then sell the gas volumes in the local market with a margin on the import price (back-to-back), which made the gas utility business model rather stable and profitable.

In 2009-2010 major changes started in the gas market. Low demand, due to the economic slowdown, combined with high oil-linked gas prices compared to lower gas prices on European hubs24, led to unsustainable contracts for importers, as spot markets traded at almost half the level of import prices (BAFA). Long renegotiations with the sellers were initiated in order to achieve a lower price level. The sellers in general settled for prices at market levels, either by using hubs as the index (Statoil’s solution), or by reducing the starting price (P0) and keeping the oil link indexation (Gazprom’s solution). In return, some contractual terms have changed, in effect making the new deliveries a different product with fewer obligations on sellers and less freedom for buyers. Finally, the German buyers will optimise between contracts (and hubs), reducing total cost of gas when prices are different between the main suppliers.

Figure 12: Flows of selected gas to Germany – value of aggregating and optimising flows25

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24 Which were due to larger gas volumes originally targeting the US market being freed up for the EU market against the background of US shale gas developments.

25 BAFA 2014
Learning for EnC Contracting Parties: Although the country had several suppliers, that did not bring competition in the early years, but with liquid hubs, this brought competition to all the oil linked contracts as a means of sourcing (also for the buyers the importers sold to). Changing delivery terms could make it easier to get lower prices, as preferences around flexibility have changed.

3.5. Singapore – pushing for energy supply and competition
For years, Singapore’s demand for natural gas was predominately met by pipeline gas from the neighbouring countries Malaysia and Indonesia. With an attempt to bring in alternative sources of gas to secure gas supplies for its own growing demand as well as making gas prices more competitive, Singapore government’s Energy Market Authority (EMA) decided to develop an LNG import and regasification terminal and then to tender for the task of an aggregator for supplies to it. The terminal started operations in 2013, and BG Singapore Gas Marketing was appointed aggregator of 3 mtpa\(^{26}\) LNG for 20 years to the terminal. Moreover, commercial framework is in place for users’ access to the terminal through a Terminal and Inter Customer Agreement (TICA). BG sources and sells gas on long-term contracts (Brent-linked). The terminal capacity has expanded gradually, and currently has capacity to handle about three times the national consumption. This may expand further with a planned second LNG terminal. As in other areas of trade, Singapore is a natural hub for collecting and reselling gas.

The Asian gas market is the fastest-growing gas market in the world and long-term contracts linked to oil have dominated. Higher gas prices in Asia than in other parts of the world in recent years have increased the focus on the need for a natural gas pricing hub to obtain a more liquid spot market. Many players see Singapore as having the best potential to become Asia’s first LNG trading hub and possible exchange. Despite the high expectations, there are several challenges due to a relatively small domestic market and uncertain expansion potential.

Learning for EnC Contracting Parties: Moving towards import of LNG as a major source of energy supply has strengthened Singapore’s energy security. Even though having many suppliers in itself does not bring competition, diversity of supply and excess capacity provides better negotiation power (the country is now in a very good negotiation position due to Singapore’s diversity of supply options). Most importantly, the Singapore economy and government is very market oriented, with high trust in market mechanisms and international trade.

3.6. Japan’s gas market in transition – lower imports than expected
Historically, prices in Japanese long term LNG contracts have been based on linkage to crude oil prices through the Japan Crude Cocktail (JCC) pricing mechanism. There has also been more focus on security of supply traditionally, giving sellers an argument to set prices at a higher level than other markets. There have been some protests to this, especially at high oil prices and with reference to LNG being sold at hub prices in other regions (as there was during the overpricing of oil to Japan, earlier).

After the disaster of Fukushima in 2011, Japan’s electricity sector has undergone a rapid transformation with closure of the entire installed nuclear base, replaced largely by LNG. As an island economy with very limited domestic production (less than 3% of total demand) and without pipeline connections to other markets\(^{27}\), Japan relies almost exclusively on imported energy.

After the Fukushima accident gas import costs rose substantially, as Japan competed for supply which had some limitations in meeting this sudden additional demand. Increased concern about the high price of LNG led the Government to propose other alternatives to the JCC price mechanism, including a futures market and a market hub. Simultaneously, more LNG production is under way (partly motivated by high Japanese prices), leading to oversupply and a need to be more competitive in pricing. The first offers from the new US projects include LNG contracts based on a “Henry Hub plus”. With this new product, Japan has obtained a diversified price risk which

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\(^{26}\) 3 mtpa=4.2 bcm of natural gas per year

\(^{27}\) Many countries (especially China) see pipelines as safer routes of supply than ship transport (both oil and LNG). The import dependence is the same but diversification of route is also valuable, especially during storms or potential conflicts.
they can manage and hedge in the future market. The US contracts also allow Japanese buyers to manage their volume risk, as all buyers lift cargoes FOB\textsuperscript{28} (at the source in the US).

**Learning for EnC Contracting Parties:** Having many suppliers did not bring competition and “fair prices” to Japan, which still paid some of the highest LNG spot prices in the world. There was a perceived shortage and justification for higher prices. This was strengthened by high and growing demand in a rich country. Now demand for gas has stagnated, the economy is in recession and many new LNG producers are competing to win supply contracts, lowering prices. Again, any impression of desperation will bring prices up, while oversupply can give more competitive prices. Existing infrastructure, an organised market and trust in the market will make it easier for Japan to attract new sellers than to other markets lacking infrastructure, confidence in market structure and higher credit risk.

### 3.7. Summary and conclusion of relevant learning

Being an attractive buyer seems to be the best strategy to obtain lower gas prices. The more flexibility the seller gets the lower prices he is able to offer. Further, credit risk has a cost, so if the buyer is considered risky, prices will normally be higher than otherwise. Strict delivery terms would bring prices up. All these aspects form part of negotiations between parties, where the relative negotiating power of the parties may be the most important factor determining the outcome.

Offering flexibility is easier when storage and more interconnections exist - either pipelines or LNG. Growing markets, moreover, present flexibility as they need new gas. However, as our country cases demonstrate, new source of gas do not in themselves guarantee low prices from the incumbent supplier, but it may prevent further increases. Oil prices are currently falling, bringing down the oil linked prices. How the hub prices will develop in light of such prices depends on the supply situation. If producers hold back gas, so less is available at the hub, it may keep its margin. If “normal market behaviour” is maintained, we expect the difference to level out, bringing hub to contract level.

\textsuperscript{28} Delivered «free on board» - the buyer picks up the cargo at the liquefaction site. The alternative is that the seller delivers to the buyers’ port, normally more expensive and with lower flexibility for resale.
4. Selected tools and advice to the region

This chapter outlines selected tools and specific advice that the CPs could apply for bettering their terms with possible suppliers.

4.1. Transparency

Transparency and comparison with prices in other markets can help in negotiations on oil linked contracts. Being aware of import prices, wholesale prices (from importer to retail companies) and retail prices will make the market more informed and better at negotiating. It will also be easier to compare local prices with prices in other countries and other markets in the region. **This is perhaps the simplest and lowest cost initiative for achieving better prices.**

The Contracting Parties are obliged to follow the European Commission’s methodology for price reporting. So far, only Serbia, the former Yugoslav Republic of Macedonia and Bosnia and Herzegovina are reporting prices charged to industrial end-users as required through Directive 2008/92/EC (prices for households are collected on a voluntary basis). In general, both wholesale and retail gas prices are not easily available in public statistics, making price comparisons between countries/customer groups difficult. Reporting prices can help in assessing to what extent the price charged is perceived as fair and helps in negotiations with main supplier. In addition to reporting prices to EUROSTAT (as some CPs already do), publishing prices in EnC annual reports could be efficient to make prices easier available.

Of the CPs that report prices, the prices charged to industrial end-users are higher in the CPs than in the EU (with a few exceptions), while prices charged to households are higher in the EU than in the CPs Bosnia and Herzegovina and Serbia. Retail gas prices charged to industrial end-users and households, are illustrated below.

**Figure 10: Gas prices charged to industrial end-users and households**

4.2. Renegotiate existing contracts

The current contracts are the most obvious first step in improving the import prices, and needs to be mentioned although we realise this is already on-going, especially in Ukraine. The learning from other countries is that it is worth considering how to go beyond the normal price reviews of oil-linked contracts to ensure better prices with different terms, such as rights, obligations, flexibility to seller (rather than buyer) and better use of own flexibility (could be improved with cooperation). Finally, credit risk and having strong finances is a significant factor which sellers will consider and might impact the contract price.

Before being too vocal on wanting hub pricing (linking to TTF or other), each buyer should consider possible future prices of both oil and gas benchmarks, especially now after the fall in crude oil-linked prices may be lower than some hub prices. Therefore when choosing between oil-link or hub price, a buyers should analyse fundamentally the gas market and assess whether the gas hubs will be oversupplied in the future (more gas suppliers will sell on the hub the uncontracted

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29 Source: EUROSTAT: Prices excluding taxes and levies. These figures only include data from the CPs that report prices to EUROSTAT.
volumes and drive the price down) or undersupplied (the uncontracted volumes of the large gas sellers would be held back, keeping the spot markets high).

It is our understanding that the existing gas supply agreements in the CPs contain price review clauses. Although the terms of such clauses are confidential, we have reason to believe that such clauses typically enable a party to a contract to trigger a price review if it can show that circumstances:

- have occurred in the buyer’s energy market,
- are beyond the control of the parties, and
- have induced significant changes in the buyer’s market

Companies throughout Europe have successfully relied on these clauses to significantly reduce the price of gas.

In addition, it may be possible to invoke hardship as a basis for renegotiating the price under GSA, should the laws of the CPs provide for such a ground for renegotiating the terms of a contract. Economic hardship (which is different from force majeure, which refers to a physical impossibility to perform a contract due to an Act of God) is a ground for renegotiating the terms of the contract in a number of countries of the EU.

Accordingly, economic hardship, which has been caused by a reduction in the price of gas in the end user market of the gas buyer, has been invoked as a basis for renegotiating the terms of gas supply agreements in a number of countries\(^ {30} \). If such provisions exist under the laws of the CPs, gas buyers in such countries could also invoke these provisions to renegotiate the terms of the contracts.

4.2.1. Falling oil prices – what does it mean?
Most oil-linked gas contracts have a link to petroleum products and a time lag before implementing new gas prices. The recent fall in crude oil prices, which now seems to be sustained for a while, should have a positive impact on the CPs gas contracts. This price fall may result in sellers wanting to adjust pricing mechanisms, or not, depending on how the hub prices develop. Some of the importers will have a benefit in their markets, as long as the regulated prices do not change. However, a strategy on future pricing and cost of gas is recommended. This may vary from company to company, and as the terms are secret, specific advice is not possible to give at a general level.

4.2.2. Agreement to have similar netback
There was an agreement between Gazprom in several FSU countries that it was “fair” that Gazprom should have the same netback from them as from Germany (netback parity). As far as we can see, this is not adjusted for new prices in Germany. It was an attempt to bring all contracts to a similar level for the exporters, and should, thus, give a benefit to countries nearer the exporters. As we have not seen this agreement, we cannot give specific advice on how to adjust it, but the intentions seem to have been forgotten in later years, after the German import price fell relative to the traditional oil link.

\(^ {30} \) This was the case for E.ON and RWE in the dialogue with Gazprom and Statoil in 2010-2012. The increasing gap between oil-link and hub pricing at the time was making utilities’ business unsustainable and would have led to enormous losses or even bankruptcies if nothing changed. The other European buyers have referred to these cases in their renegotiations as the main references to the fundamental changes in the gas market.
4.3. Trading – swaps, marker prices

In the developed gas markets geographical swaps are often used in order to optimise gas flows between regions. For a transit country of Russian gas, swaps could easily provide the same result as reverse flows, without requiring the infrastructure investments, or swaps and reverse flows could be used in parallel and in such a case the flows would be “netted” before transporting.

An example is the Interconnector UK, where gas flows between UK and Belgium. There could be nominations for both export and import on the same day. Physically the pipeline will send the net volume in the dominant direction. If a transit country sets an agreed swap price with a company further down the pipeline, for that country to receive less gas, that is more efficient (and probably cheaper) than sending the gas as transit first, and then importing a volume through reverse flow afterwards.

Clarity on swap arrangements in CPs gas markets would build confidence for diverse players. The challenge for more swap trading is that swaps are derivative products and could imply difficulties with compliance, requirement for clearing etc. Additionally, Gazprom has always been against reverse flows and, implicitly, swaps, claiming they are illegal\(^\text{32}\), although since GSAs are confidential it is difficult to confirm or deny this. The main benefit for such swap arrangements would be that the swap price could be set at market prices in the counterpart’s market, such as TTF, NCG or other - with some adjustments for transportation costs.

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\(^{31}\) Eurostat, BAFA, ICAP, Sund Energy, 2014

4.4. Focus more on regulation – low cost solution

We see the opening of gas markets, both information and flows, as the first and lowest cost option for the region. Regulation includes opening for third party access, efforts to reduce the power of incumbents, unbundling and transparency, as described in the sections below.

4.4.1. Regulations, planned, but could be faster and more wholehearted

EnC CPs have implemented SEP and EU competition law to a certain extent and the work with implementing the Third Energy Package (deadline 1 January 2015) has started. Some of the Contracting Parties are lagging behind in adapting EU rules on transparency of retail prices for industrial end-users as required through Directive 2008/92/EC, even if this could well be an efficient low cost initiative for them.

Further, unbundling of the system and introduction of competition by several competent marketers of gas to consumers, needs to be done in a realistic pace with good understanding by politicians of new decision-making and control.

4.4.2. Open for third party access

The challenge facing a country wanting to improve several areas simultaneously is to have a realistic share of risk in the different business models. It may be easier for a government to tell a national (bundled) monopoly to expand the infrastructure, than for a fully unbundled system with partly private owners that are not able to support new investments with income from gas sales. Regulated returns are common practice for infrastructure investors, but need to be high enough to justify the investment (and compensate for risks or uncertainties). In some cases, exemption from third party access is given. In mature markets, we assume it is in the pipeline operators’ interest that as many users as possible use the infrastructure, making it more cost efficient.

Existing infrastructure is being separated out from the national companies, but the next step will be a neutral operator, treating all shippers in a non-discriminatory way with tariffs set in a transparent and fair way. This applies to pipelines, new LNG and storage facilities. New shippers could include new importers, brokers or others wanting to balance markets across borders, new marketing companies and new possible producers.

4.4.3. Make CPs more competitive

Additionally, more decisive steps should be taken to reduce the power of incumbents and improving competition in the market. In most CPs incumbents have a dominant position. While this must not be considered an untypical phenomenon per se, market structures in the CPs have to be made much more competitive to allow alternative suppliers, traders and importers to enter the market. This in particular means de-regulation of wholesale and retail prices, abolishment of de facto single buyer models and introduction of market based balancing structures. Following the approach taken by the European Commission and the German competition authority in the early and mid-2000s in respect of Distrigaz and E.ON Ruhrgas, steps ought to be taken by the competition authorities of CPs to force dominant incumbents to

- offer gas volumes (gas release programmes) to the market
- allow or the cancellation of contracts and
- remove destination clauses

There is a possibility that new gas suppliers would enter the market, significantly lowering prices at wholesale and retail level if such steps were taken. Since many of the incumbents are wholly or

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33 While unbundling in general refers to the split between supply and TSO, regardless of ownership (private or state), it can be seen in practice that private owners are usually more commercial that state in their long term investment decisions, which can often endanger infrastructure expansion.
majority owned by the CPs it could be argued that these countries are themselves an impediment to fairer prices.

Based on the experience of countries such as Germany, Belgium, Spain and others after the introduction of the EU Second Energy Package, if steps are taken to reduce the power of incumbents in CPs this is likely to significantly reduce the price of gas in such countries. The approach taken by the European Commission (EC) and the German competition authority in the early and mid-2000s in respect of Distrigaz and E.ON Ruhrgas could be followed by the competition authorities of CPs to reduce the power of the incumbents. For example in the case of Distrigaz, the EC found that Distrigas NV/Distigaz SA had abused their dominant position by preventing their industrial customers from switching suppliers through the long-term gas supply contracts which they had with such customers. The EC found that the effect of these long terms contracts given their duration and the volumes of gas tied by them were to foreclose the market to alternative suppliers. In order to remedy the breach Distrigas agreed for a period of 4 years (i) to return a certain portion of the gas volumes each year to the market, (ii) not to enter into any new contract with an industrial client which was longer than 5 years, (iii) not to conclude any gas supply agreements with resellers with a duration of over two years and (iv) not to include any use, resale or destination clauses or any tacit renewal clauses in future gas supply agreements and to remove (or not enforce) any such clauses from existing gas supply agreements.

4.4.4. Focus on retail prices
Having regulated prices is quite usual in the CPs despite the fact that it often implies cross-subsidies. These could be popular in the short run, but may not be sustainable in the long run. Adjusting to more cost-related pricing at the retail level, while bringing in competition at both retail and wholesale level is a difficult process, but will in many cases make prices more “fair”, although households get higher total cost of energy in some cases, which is difficult to “sell” to voters.

4.5. Improving the infrastructure will allow new sources of gas
Building new infrastructure, even by construction of LNG terminals or new pipelines, could be an efficient tool to increase competition pressure towards main supplier and to ensure security of supply. (See appendix for current CP initiatives here).

In general, new pipelines and LNG could be effective tools for bettering of terms, especially if the market is growing and new gas is needed. Alternative pipelines have been the traditional tool for diversifying supplies in many European countries and some CPs. Cooperating on interconnecting pipeline systems, sharing storage capacity and allowing companies from one country to operate in the other country will ease the development of markets, competition and security of supply. The key issue on pipelines has traditionally been lowering transportation costs per unit of gas (economies of scale). Lately, the value of having the option to reverse flows has also been considered.

There have been several initiatives on improving interconnections between markets and even several LNG projects have been discussed (both in the Adriatic and in the black sea). The physical solutions could allow for more competition, if used actively in sourcing, but could also give better balancing and leverage in negotiations (even if they are not used at full capacity).

Traditionally LNG imports have been seen as too expensive, both the infrastructure and the gas itself. However, today many investors are finding LNG solutions (especially floating and small scale) more flexible for new markets and can be used in building up markets without pipelines etc. When the market grows or the LNG is not needed for other reasons, the equipment can be relocated to other markets. In many cases LNG terminals (and small scale) will receive support from the EU. Some larger projects may also qualify for exemption from TPA. It should be noticed that much LNG into Europe today (especially to the UK) is priced at or near hub prices, making it significantly lower priced than that to Asia, as it can be seen in Figure 15.

34 http://ec.europa.eu/competition/antitrust/cases/dec_docs/37966/37966_639_1.pdf
For LNG to be applicable in the CPs, there are several factors to consider. One is the physical location and transportation limits: There are limits to possible locations for own LNG terminals in several of the CPs, as there are only few suitable coastal locations. Also some areas can be difficult to be accessed by large scale LNG cargoes. Then there are issues with regard to ownership/investors, access to market, pricing of LNG vs gas in the market and more. It would not be impossible to cooperate among several companies to share a terminal (as was done in the Netherlands). If LNG is imported, there could be a wider benefit, if the region is seen as one, where LNG could displace other gas as base load (making more gas available in other countries from pipelines) or as an option for balancing, competition or security of supply. Further, small scale LNG could be a temporary solution in building up new markets without pipelines.

Possible solutions:

- Deliveries by trucks, containers as well as smaller ships – giving possibilities for sales to new consumers that are not connected to the gas grid. If such demand should grow, it may later justify a pipeline (more cost effective with larger volumes).
- Swaps with other players in Europe could also expand the potential for LNG – as the case where Enel (the Italian power company) sent LNG cargoes to France and received pipeline gas in the North of the country.
- Cooperation on enabling/planning/development/financing. If smaller countries cooperate with neighbours in establishing joint infrastructure, this could lower unit costs and add options for security of supply and competition. There has been several examples of regional markets (such as the Nordic electricity markets) gaining benefits in this way. However, we have also seen that in difficult periods, many countries will instruct TSOs to focus most on security of supply for own market.

4.6. Encourage on domestic/regional production

Although having a domestic gas production has been seen as a security of supply improvement, a noticeable volume would have an impact on the buyers bargaining power. However, one should be aware that own production is not necessarily competitive with the import prices. The trials of developing unconventional gas in Poland, for example, were not successful so far, making companies unwilling to commit investments. As a part of increased cooperation, the EnC Contracting Parties could take advantage in a cooperative way of the existing gas production and finds.

In the last years there have been high hopes around the potential for gas in the Black Sea. Domino 1 discovery (40-80 bcm), operated by Exxon and OMV Petrom, is estimated to hold 42 to 84 bcm.

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36 There are discussions about impossibilities of Qmax LNG cargos to pass through Bosporus strait. Currently Turkish authorities are restricting it.
of natural gas. There are of course several challenges ahead (deep water, tough geology, high costs), the project facing uncertainty also due to the postponement of upstream regulation reform in Romania.

Although it is unlikely that Black Sea gas will fully replace Russian supply anytime soon, an increased production in the region, similarly to LNG imports, can be a supply source competing with Gazprom which could lead to better pricing.

4.7. Energy Union

In wake of the Ukraine crisis in 2014, Poland’s previous Prime Minister Donald Tusk proposed the idea of creating an energy union within EU in order to reduce dependency on Russia and achieve solidarity among the EU member states. Tusk’s proposal for an energy union builds on the idea that Europe should use its common economic and political power and develop a mechanism for jointly negotiating energy contracts with Russia. Further, he suggests adopting a common template for the EU states Inter-Governmental Agreements (IGAs) where abusive and market-distorting clauses are excluded, and calls for a compulsory engagement from the European Commission in all new negotiations. Many of the EU member countries have been sceptical to the idea of establishing a mechanism for collective purchase of gas. Moreover, the legal aspect has been stressed from several stakeholders, and the gas industry has opposed the idea, arguing that it would hinder efficient competition in the market. The European Commission widely agrees with many of the elements initially proposed by Tusk, and is currently working with an Energy Union Framework Strategy, which will be published on 25 February 2015. Regarding the joint purchasing mechanism, a working group with experts from Poland and the Commission has been set up to analyse whether such an initiative could be fully in line with EU and trade law. So far the exact form of a potential energy union has not yet been made public, but the Commission has stated that it will be based on five key priorities: ensuring security of supply for Europe, deeper integration of EU national energy markets, reducing EU energy demand, reducing carbon emissions from the energy sector and promoting research and development in energy.

4.8. CP aggregator as a possible tool

In many settings, the aggregator (or single buyer) role has been promoted as a solution. Some liquid and growing gas markets have seen successful aggregators managing to buy gas on behalf of several buyers, getting market power and optimising portfolios better than each buyer otherwise would have been able to do. However, this has normally been for new contracts or for new demand. In stagnant markets with a high degree of take-or-pay volumes, this would be more challenging, as there is little volume to source for, it is more uncertain over time and there are risks related to economy, pricing, payability, and more. For an aggregator to operate across countries, and especially on behalf of national governments, there are several legal challenges in the competition law of the EU. The suggested EU Energy Union has been considered by some (especially Poland) as a possible pooling of buyers to be stronger against the much fewer sellers of gas to Europe. This would require some legal changes in competition law as well as increased trust and solidarity among the member states, and could for some mean higher import prices than today. For more on aggregator, see the appendix.

While the idea of setting up an aggregator seems to be appealing to some the CPs, it is difficult to implement in a falling market, especially since the countries are committed to

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their main supplier through their long term contracts. It could potentially work on the national level (as in the case of Singapore for relatively small volumes), but compliance with EnC and EU law is a challenge if more than one country is involved.

4.8.1. Set up an “Aggregator light” rather than a full-scale one
Meanwhile, perhaps a regional arrangement for balancing gas between the countries in the CPs (and even neighbours) may well be a starting point, both to experience more cooperation and to try out a new tool. This means that if a country is short, some extra supplies could be sourced from another country, either with more supplies than needed or with significant gas in storage. This will also be easier to materialise with more transparency of flows and storage levels (starting now in Ukraine).
5. The Contracting Parties of the Energy Community

In this chapter, there are short descriptions of the gas markets of each of the CPs, with some comparison and evaluation of the relevance of the general recommendations to the region. There is little available data, and the latest annual implementation report of the EnC is used to describe and compare the countries. This lack of data is also a reason to make transparency an overriding recommendation to all CPs as well as the EnC Secretariat. While there is some information on production, demand and import volumes, there is very little information on cost of gas, wholesale prices, transportation tariffs and retail prices. More openness and ability to compare with other countries would make it easier to discuss and achieve fairer prices in the region.

Figure 16: Contracting Parties brief overview of markets

<table>
<thead>
<tr>
<th>Country</th>
<th>Production (bcm)</th>
<th>Consumption (bcm)</th>
<th>Company</th>
<th>Import 2013 (bcm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ukraine</td>
<td>21,45</td>
<td>50,45</td>
<td>Naftogaz</td>
<td>27,97</td>
</tr>
<tr>
<td>Serbia</td>
<td>0,47</td>
<td>2,21</td>
<td>Srbijagaz</td>
<td>1,8</td>
</tr>
<tr>
<td>Moldova</td>
<td>0</td>
<td>1,03</td>
<td>Moldovagaz</td>
<td>1,03</td>
</tr>
<tr>
<td>Bosnia &amp; Hercegovina</td>
<td>0</td>
<td>0,19</td>
<td>BH Gas</td>
<td>0,19</td>
</tr>
<tr>
<td>former Yugoslav Republic</td>
<td>0</td>
<td>0,16</td>
<td>Makpetrol</td>
<td>0,16</td>
</tr>
<tr>
<td>of Macedonia</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albania</td>
<td>0,016</td>
<td>0,016</td>
<td>Albpetyl</td>
<td>0</td>
</tr>
<tr>
<td>Kosovo*</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Montenegro</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

The share of gas in gross inland consumption is most significant in Moldova (42%), which is also the country with highest energy import dependency (85%). The share of gas is also significant in Ukraine (35%) and Serbia (11%), while Kosovo* and Montenegro have not developed a gas market, yet.

5.1. Ukraine

Of all Contracting Parties, Ukraine has by far the biggest gas market with a total consumption of 50.45 bcm in 2013 (reduced by 7.9% from 2012). Gas demand is supplied by domestic production (21.45 bcm in 2013), and import (27.97 bcm in 2013). Vertically integrated Naftogaz is engaged in exploration, production and exploratory drilling, transport and storage. Naftogaz is also the owner of the natural gas transmission system operator, and supplies the majority of wholesale and retail producers in the country. The National Commission for State Regulation in Energy (NERC) is responsible for collection of price information both for households and industry. The reporting is so far not compliant with the Directive’s requirements. Ukraine is one of the few sizeable gas markets in the region which would make it attractive for even a large gas seller. Ukraine was once Gazprom’s largest export market, but it has cut imports from Moscow from 59 bcm in 2006 to just 14.5 bcm last year. This year, Ukraine’s Naftogaz plans to buy around 8 bcm from Russia. The current political situation makes any kind of commercial dialogue with Gazprom rather difficult and this situation might persist. Despite that, Gazprom stated at a conference in January 2015: "We are doing our utmost to resolve problems with (Ukraine's) Naftogaz."

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38 Annual Implementation Report, Energy Community Secretariat, 2014
Ukraine could pursue several steps in order to attract competition in a transparent way, which will lead to more negotiation power with Gazprom. The obvious steps in this sense would be: legal framework that would allow trading, equal market access, competition (Third Energy Package); investments in infrastructure (LNG terminals, interconnectors) and more cooperation with the neighbouring countries. Although the Ukrainian authorities have shown interest in towards implementing the European gas market regulation, all the challenges need to be understood and analysed carefully. A liberalization and unbundling process is a complicated transition from a known system and can have negative implications in the short term.

5.2. Moldova

Moldova has no domestic gas production, storage or LNG facilities, and is highly dependent on Russian gas, with Gazprom as the only supplier. Gas consumption has decreased from 1.1 bcm in 2012 to 1.03 in 2013. All activities are performed by the vertically integrated company Moldovagaz (50% owned by Gazprom). There have been high expectations for the construction of the interconnection with Romania. Prices are regulated, and with only one monopoly supplier switching is practical impossible. Price statistics are not compliant with requirements from the Directive.

Being one of the most import dependent countries in energy in the region and having Gazprom as the majority shareholder in the national gas company makes Moldova very vulnerable in terms of price of gas and security of supply. In other words Gazprom has a very strong position in the negotiations which allowed increasing the import price significantly in the last years.

Figure 17 Historical developments in production, consumption and import in Ukraine

Source: BP Statistical review, 2014

Romania’s case is a good example in this case. Different stakeholders are fearing an increase in the retail and industry gas prices and therefore the reform has been postponed several times: http://www.naturalgaseurope.com/romanian-gas-market-liberalization

Data from the Ministry of Economy
Although it is a smaller gas market by size, Moldova, similarly to Ukraine, could create additional options for supply of gas. The interconnection with Romania (Iasi – Ungheni) is a good on-going initiative despite the fact that Romania is also a gas importer. However, what has been done is only a first step. Integrating the interconnector with the main transmission system in Moldova is another key step which will require additional investments from the Moldovan side. In a functioning, unbundled market, such an interconnection would offer capacity for sale to different “shippers” who would then optimize price and volume between the two gas markets. Since both Romania and especially Moldova are far from market liberalization, it is not easy to agree on the commercial terms for the gas to flow through this interconnection. This would be another challenge for this project, which still carries significant political risk until it will be fully completed.

Moldova should also increase the cooperation with Ukraine, despite the current shortage of gas in Ukraine. A LNG import terminal (under discussion) or pipeline from the offshore projects (under development) in the Black Sea – projects aiming to increase the security of supply of Ukraine - could bring sizeable benefits to Moldova by only having the option to diversify gas supply further.

5.3. Balkan EnC Contracting Parties

**Serbia** has some own production of gas (decreased insignificantly from about 0.48 bcm in 2012 to 0.47 bcm in 2013). Total consumption is 2.21 bcm, with all import coming from Russia. State-owned Srbijagaz is the main player both in wholesale and retail supply, supplying all retail suppliers in the country. The vertically integrated Yugorosgaz is owned by Gazprom (50%), Srbijagaz (25%) and Central ME Energy and Gas Vienna (25%). Lack of enforcement in the legislative and regulatory framework, and refusal to unbundle Srbijagaz are considered major barriers for competition. Price statistics are under development, with the first questionnaires for collection of gas prices developed in accordance with EUROSTAT methodology.

**Bosnia & Herzegovina** has no domestic gas production, and all gas is imported from Russia (passing through Ukraine, Hungary and Serbia). Gas consumption has decreased from 0.25 bcm in 2012 to 0.19 bcm in 2013, and is about 3% of gross inland consumption. The gas market is dominated by fully bundled incumbent companies, with the dominant supplier covering over 90% of the market. All gas consumers are supplied at regulated prices. One of the main challenges in development of an efficient gas market is the complete absence of state-level gas legislation. Bosnia and Herzegovina is one of three Contracting Parties that are reporting gas price data in accordance with Directive 2008/92/EC - and prices are public available (EUROSTAT).

**The former Yugoslav Republic of Macedonia** has no domestic production, and almost all gas is imported from Russia (through Bulgaria). Gas consumption has increased from 0.14 in 2012 to 0.16 in 1013. Solid fuels account for the biggest share of gross inland production (47%), whereas gas account for about 4%. Gas is used for electricity and heat production and by industrial customers. All supply is delivered by truck transport of CNG from Bulgaria. The market is highly concentrated both at the retail and wholesale level. The work on drafting a new Energy Law compliant with the Third Energy Package started in 2013, but the Third Energy Package is not yet implemented (deadline 1 January 2015). Defining the unbundling model is crucial for developing the gas market. Natural gas prices to industrial end-users are reported in accordance with the Directive, and are public available (EUROSTAT). The former Yugoslav Republic of Macedonia has taken further steps to increase price transparency; the State Statistical Office has recently started to publish electricity and gas prices, and the Energy Regulatory Commission are publishing gas prices in their annual reports (even weaknesses in methodology - not structured by customer bands).

**Albania**’s gas market is very limited, with a gross inland consumption (mainly used in refineries/ oil and gas production) of around 0.016 bcm per year. The country has some own gas production, but this has steadily decreased and is now around 0.016 bcm per year. Many factors are hindering development of the Albanian gas market; no interconnection to neighbouring countries, lack of infrastructure, and weak legislative and regulatory frameworks. The work with a new Gas Law has started in order to speed up the process with implementation of the Third Energy package. The Trans Adriatic Pipeline (TAP) project, expected to start construction in 2016, has been one of the high priority projects to bring more gas to the region (and connections with other Contracting
Parties). Albania also has the potential for LNG terminals and underground storage (currently not used).

There is currently no gas market in Kosovo*. The energy strategy of 2008-2019 are working with development of the gas market, and gas infrastructure projects such as the Energy Community Gas Ring Project for Southeast Europe is a priority policy objective. Legal and regulatory framework were developed in 2009, but little progress has been made since 2010.

There is currently no gas market in Montenegro. The most likely option to development of the gas market is the Ionian Adriatic Pipeline (IAP) project crossing Montenegro. Another option for Montenegro is exploration of offshore gas resources in the Adriatic Sea.

**Recommendation:** The gas markets in the Balkan Energy Community Contracting Parties are extremely fragmented and the main message should be for a regional integration. Lack of cooperation, both internal and external, is a significant challenge for a better functioning market. A fragmented market is only beneficial for the monopoly supplier that can maintain its position with “unfair” pricing, as there is no competition.

The ambition of having a gas hub in the region, with proper interconnection and trading is perhaps too optimistic in the short run. Even with all infrastructure and legal framework in place, it would take time to attract other players to a new market.

The gas demand is relatively low in the area and therefore any project to supply gas to this region would be more attractive if it could target the entire region rather than one country. Due to the hopes for a mega project like South Stream or Nabucco in the region, almost no interconnection has been done so far.

The region should aim to benefit from the neighbouring gas markets in order to create some supply diversity: Romania – own gas production with potential increase in the next years from the offshore developments; Greece and Bulgaria - more interconnections under discussion, including with Serbia; Croatia – discussions around an LNG import terminal that could supply several countries in the region (even small scale LNG to areas where there is no pipeline infrastructure).

### 5.4. Georgia

Georgia has been an observer to the Energy Community Treaty since 2006, and negotiations to accede to the Energy Community were launched in February 2014. As the Ministry is still considering the possible effects of membership on the Georgian energy sector, Georgia is yet to join. Georgia has historically been highly dependent on Russian gas, but is now receiving most of its gas from Azerbaijan, both from the Shah Deniz pipeline and from SOCAR (the state owned oil company of Azerbaijan). Georgia’s role as an observer rather than a CP, and being less dependent on Russian gas, puts Georgia in a rather different position in comparison to the other CPs.

Since the country is satisfied with the current gas prices and volumes imported from Azerbaijan, there is little incentive in Georgia for any actions that would target a different gas price. This situation portrays the idea of the “fair price” concept: what the buyer really wants is a low price and perceives it as fair. A SOCAR representative was stating in 2012 that “Azerbaijan has fixed [...] a price of gas] not even good neighbourly and brotherly, but downright gift price”. In conclusion, it seems that as long as the price is low enough it is less important to have functioning market, competition and several suppliers and buyers.

Due to the lack of data it is difficult to analyse whether the import price of Georgia reflects SOCAR’s netback to other markets, but again, this does not seem to be a concern for Georgia.

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43 [http://www.azernews.az/oil_and_gas/54556.html](http://www.azernews.az/oil_and_gas/54556.html)
6. Conclusion

This report has identified several tools that can be applied to the CPs. Some are relatively easy to implement (transparency, regulation, third party access), while others are more expensive and seems more unrealistic (at least in the short term) - partly because the nature of the markets with falling demand (and long-term contracts). The described tools apply to competition at the wholesale level, but several could also have positive impacts on the retail market. Price transparency could, in particular, be applicable in the retail market, as listing of prices makes it possible for customers to compare prices from different suppliers/agreements and to "shop around".

We believe that an important starting point to obtain a “fair price” will be ensuring transparency both at wholesale and retail level. Therefore, transparency should be given great importance as it is an efficient tool to increase competition pressure and helps in negotiations at all levels. At the wholesale level, price comparisons between countries could give leverage and the buyer may be able to negotiate a better price. Price comparisons by source would be even better, as it could involve future choices – when available. At the retail level, price comparison between different suppliers could help the customers to “shop around” and thereby increase pressure on the supplier companies. Transparency has not been given a high priority in all the CPs, yet. Our understanding was also that some of the CPs expressed willingness to change, but lacked understanding of the potential benefits from more openness. Political will (and courage!) will be needed for such a transition.

While pressing for a lower price seems attractive in the short run, this could lead to lower security of supply and less efficiency in consumption in the longer run. The success that gas buyers in other countries have had in renegotiating prices under price review clauses means that if the right market environment is created in the CPs, similar outcome could be expected. Reducing the power of incumbents together with removing price controls could be key factors in creating the right market environment triggering price revisions. We believe that such reduction of power is more likely to bring about “fair” prices than setting up an aggregator. Moreover, reducing power would strengthen the market for gas whereas an aggregator would undermine such a market (and strengthen the role of incumbents).

Figure 19 Summary of suggested initiatives for CPs

<table>
<thead>
<tr>
<th></th>
<th>Transparency</th>
<th>Contract renegotiation (including netback)</th>
<th>Trading</th>
<th>Regulation</th>
<th>Infrastructure</th>
<th>Encourage production by new suppliers</th>
<th>CP aggregator as a possible tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ukraine</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>Serbia</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>N/A</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Moldova</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
<td>+++</td>
<td>N/A</td>
<td>+</td>
<td>N/A</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>+++</td>
<td>N/A</td>
<td>+</td>
<td>N/A</td>
</tr>
<tr>
<td>Former Yugoslav Republic of Macedonia</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>+++</td>
<td>N/A</td>
<td>+</td>
<td>N/A</td>
</tr>
<tr>
<td>Albania</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
<td>+++</td>
<td>N/A</td>
<td>+</td>
<td>N/A</td>
</tr>
<tr>
<td>Kosovo*</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>+</td>
<td>N/A</td>
<td>+++</td>
<td>N/A</td>
</tr>
<tr>
<td>Montenegro</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>+</td>
<td>N/A</td>
<td>+++</td>
<td>N/A</td>
</tr>
<tr>
<td>Georgia</td>
<td>+++</td>
<td>N/A</td>
<td>+</td>
<td>+</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

+ = somewhat important ++ = important +++ = very important
N/A: Not applicable
7. Appendices

7.1. Energy Community – further information

7.1.1. Legal support and coordination

The Secretariat has committed to help the CPs in removing legal and regulatory barriers, improve market integration and setting energy price levels that give investors right signals and work with the EC for funding. In addition, a High Level Reflection Group has been set up in order to make an independent assessment of the institutional set-up and working methods for the EnC. This group has recommended a number of actions to facilitate increased investments including, among others, harmonization of permitting procedures and criteria, financial and technical support, creation of an Energy Community Risk Enhancement facility and enhancement of project preparedness. Some of the proposals set by the High Level Reflection Group have already been achieved or are currently taking place. This includes:

1) Enhancing Quality and preparedness of PECIs. Western Balkans Investment Framework was set up in 2009 as an EU mechanism for blending IPA\textsuperscript{45} grant funds with loans from International Financial Institutions and preparation of documentation. Western Balkan countries have benefited from this instrument to a large extent. Moldova and Ukraine have access to similar blending mechanism (the Neighbourhood Investment Facility), created under the Eastern Partnership.


3) Financing investments in energy infrastructure, with an emphasis on PECIs. Additional funding may be needed, and other instruments that may be used include: a) Public Private Partnership, b) setting up an Energy Community Risk Enhancement Facility to address potential risks (still under consideration), and c) extended use of IPA II Grant Funds (more focus on grand funding for implementation of “mature” investment projects (not only preparation).

7.1.2. PECI – Projects of Energy Community Interests

In October 2013, EnC Ministerial Council adopted a list of 35 Projects of Energy Community Interests (PECIs), where of 10 gas infrastructure projects (including 2500 km of gas pipelines).

The Council also called on the CPs to take necessary actions to facilitate timely and effective implementations. The Secretariat developed a PECI monitoring system based on input from the Western Balkans Investment Framework (WBIF) and the Neighbourhood Investment Facility (NIF), in addition to responses to questionnaires sent to the PECI project promoters.

\textsuperscript{45} EU’s Instrument for Pre-Accession Assistance for countries engaged in the accession process
A summary of the monitoring results for gas projects is presented in table below:

**Figure 20 Monitoring results for gas projects of the CPs**

<table>
<thead>
<tr>
<th>No.</th>
<th>Contracting Party</th>
<th>Project Description</th>
<th>Estimated investment (mil. EUR)</th>
<th>Capacity</th>
<th>Commissioning year</th>
<th>Conceptual/Basic design</th>
<th>Pre-feasibility study</th>
<th>Feasibility</th>
<th>EIA Assessment</th>
<th>Investment decision</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AL-ME-HR-BH</td>
<td>Ionian Adriatic Pipeline (IAP)</td>
<td>820</td>
<td>up to 5 bcm/ya</td>
<td>2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>GR-AL-H</td>
<td>Trans Adriatic Pipeline (TAP)</td>
<td>1100 (subject to revisions due to route refinements)</td>
<td>Initial capacity 10 bcm/ya, expansion up to 20 bcm/ya</td>
<td>2019</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>AL</td>
<td>EAGLE LNG Terminal</td>
<td>700 (terminal +pipeline)</td>
<td>4.8 bcm/ya (LNG floating vessel), 215,000 m (LNG storage capacity) + 10 bcm/ya (pipeline)</td>
<td>2017</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>BH-HR</td>
<td>Interconnection Pipeline BH – HR (Sobodnica-Bosanski Brod-Zrenica)</td>
<td>84</td>
<td>up to 5 bcm/ya</td>
<td>2019</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>BH-HR</td>
<td>Interconnection Pipeline BH – HR (Zagvozd – Posuše – Novi Trnava with a main branch to Mostar)</td>
<td>16 HR</td>
<td>1.5 - 2.5 bcm/ya</td>
<td>2018 HR</td>
<td>n/a BH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>BH-HR</td>
<td>Interconnection Pipeline BH – HR (Ličica Jesenica-Trnac-Bosanska Kupa)</td>
<td>49.2</td>
<td>1 - 1.5 bcm/ya</td>
<td>2023</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>HR</td>
<td>LNG Terminal in Croatia + Pipeline Zobin-Tosjevo-Štak-Kozarac-Sobodnica</td>
<td>633.6 terminal 366 pipeline</td>
<td>6 bcm/ya (storage capacity) + 10 bcm/ya (pipeline)</td>
<td>2018 terminal 2019 pipeline</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>HR-RS</td>
<td>Interconnection Pipeline HR – RS (Sobodnica-Sotin-Bačka Nova Sela)</td>
<td>87 RS</td>
<td>6 - 7 bcm/ya</td>
<td>2023</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RS</td>
<td>Interconnection Pipeline RS (Nis-Dimitrovgrad) to BG (in rost)</td>
<td>67.5</td>
<td>1.8 bcm/ya</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>LG</td>
<td>Interconnection Pipeline RS (Nis-Dimitrovgrad) to BG (in BG)</td>
<td>47.4</td>
<td>1.8 bcm/ya</td>
<td>2016-2017</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**Note:** It is marked whether PECIs are benefiting from the technical assistance under either WBIF or NIF.

As of the PECI gas infrastructure projects, most of them appear to be on track with basic design, feasibility studies etc, but only two projects has reach the status of investment decision (see figure above). Potential obstacles for project implementation listed by project promoters where, among others, financial, social acceptance, land acquisition, availability of gas sources for new market and gas market demand, coordination between countries and companies (when cross boarder infrastructure) and high investment costs.

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Investment challenges in the CPs

Private investments is a huge challenge in the CPs, as unlike in the EU, there is limited specific funding available. The Western Balkans regional debt increased by more than 100% since 2007, with debt in Bosnia and Herzegovina, Montenegro, Serbia and the former Yugoslav Republic of Macedonia increasing by between 100% and 200%. Albania, Serbia and Montenegro have all high public debt (around 60-65% of GDP). This shrinkage of the fiscal space puts pressure on publicly funded investments (including gas infrastructure projects), and to attract private capital has been perceived as crucial. Many investors, both private and institutional, perceive most of the CPs to have a risk profile that discourages investments. Private investors’ concerns have been expressed to the Secretariat, and include concerns about functioning of the national energy markets, lack of predictability and effective regulators, low administrative energy prices and possible corrupt practices.

Sund Energy has also been asked to comment on how to make these investments happen. As this is outside of the scope of work, and we have not studied the assumptions for each of the projects, our general advice is to view these infrastructure options as a portfolio and try to establish values of realising them, both for impact on demand, price competition and security of supply. When these values are established, see how the value can be translated into income to potential investors. Tariffs as well as lower risk should be considered. On the latter, one could see booking capacity, reducing political risk and other measures that could make investors more comfortable.

7.2. Gas aggregator

This chapter contains more information on the possible tool of establishing an aggregator for the CPs. However, we believe that this can only be done at a national level, and not cross-border. Aggregators are usually not state-owned and also do not take volume risk or price risk. One of the benefits would be efficiency, as a private enterprise, independent aggregator should be more efficient than a state owned monopolistic utility.

- Is the aggregator to replace all supplies, or only be sourcing for demand beyond the existing contracts?
  - Current contracts cannot be breached, but they can be prevented from being extended
  - In falling markets new entrants will struggle
  - What if demand does not grow?
- Are the countries to own the aggregator together, or is a service to be provided on a contract from an external player (from public bidding)?
  - If external – what is the payability for the service?
- Is the main purpose low priced gas or security of supply?
  - The optimal sourcing could differ here
- How wide can the scope be, before breaking competition laws of the EU? – Can an exemption be obtained under Article 101?

7.2.1. Risk model for aggregator

What kind of risk the aggregator is exposed to will depend on the risk model adopted. However, four main risks may be considered: volume risk, price risk, credit risk, and regulatory risk.

The aggregator will be exposed to volume risk if the aggregator takes title (ownership) of the gas. In a traditional ‘broker’ model (the US and UK), title is not taken, and transactions of buys and sells is performed back-to-back. However, if the key goal of the aggregator is to reach a critical mass of demand, it may be the case that the aggregator takes the volume risk in order to secure a volume at the best price from the gas supplier. Also, demand volatility and balancing may be the responsibility of the aggregator, depending on the arrangement with the supplier and network operator.

The price risk, as with volume risk, depends on the model adopted. An aggregator may negotiate a price with a gas supplier before securing sufficient demand (critical mass) to satisfy the supplier’s volume requirements. Hence, the aggregator has a price and volume exposure, and could reduce

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the cost price to the buyer in order to secure further demand. Also, if the gas supplier provides a price for a fixed term, and the buyer wants a different term or a different pricing mechanism, the aggregator may take the price risk (on the price differential / spread) in order to secure an adequate volume on the deals. Again, as with the volume risk, a back-to-back arrangement (the broker model) negates this risk for the aggregator.

When a buyer is supplied gas by an aggregator, and payment for that gas is after delivery, the aggregator is taking credit risk. Any default in payment for the gas consumed would result in a cost to the aggregator. In countries where the level of corruption is high, pre-payment via Escrow accounts is often required.

An aggregator is exposed to regulatory risk if he signs up for long-term contracts for supply or demand, and the regulator changes rules to the detriment of the aggregator before the end of the term of the contract. This could impact balancing costs, risk premium and the entire business model of the aggregator if the supply and demand contracts are not flexible enough to accommodate these changes. However, we believe this risk to be very low, and in event of a detrimental regulatory change, both buyer and seller would be exposed to the changes.

7.2.2. Other considerations
One method of mitigating volume risk is selling Take-or-Pay (ToP) contracts to buyers. This ensures that either the buyer takes the contracted volume of gas from the aggregator or else pays the aggregator a penalty. If, however, it is the aggregator who purchases volumes of gas ToP from a supplier, the entire volume risk lies with the aggregator.

To incentivise the development of infrastructure in gas markets, often Third Party Access (TPA) to pipelines and infrastructure is restricted until a suitable return on capital has been secured for the initial investor. If an aggregator is required to make a significant investment and take volume risk when undertaking the role, the aggregator may be justified in seeking a timing restriction on TPA.

If the aggregator is providing a platform for daily / hourly balancing supply and demand, the aggregator should expect higher revenues (from the authorities) for this duty as this is assisting the system operator with its core function. There could be substantial volume risk attributed to the aggregator, unless contracts on both sides of supply/demand are highly flexible.

7.2.3. Commercial challenges for aggregators
Aggregators face commercial challenges. One challenge is to choose the appropriate price level. If the selected risk model requires the aggregator to take volume risk, it is vital that the aggregator chooses an appropriate price level at which to buy from the supplier. The least risky approach for the aggregator would be a floating price level (linked to a gas hub price) which can then be back-to-back with contracts sold on to buyers. However, a situation could occur whereby there are preferential differences among suppliers and buyers as to pricing formula for selling to the aggregator. Hence, the aggregator has the challenge of managing the spread on the oil and gas hub prices, which could be undertaken through hedging the underlying contracts (a separate challenge itself).

Moreover, another challenge is to choose the appropriate price level for selling - essential to stimulate demand. The price may be based on a fixed or floating formula, but should be comparable, and generally at a discount, to competing fuels. Most likely, there will be a premium or discount to account for the value of secure supply (flexible, uninterrupted supply) or un-secured supply (rigid, Take-or-Pay, or interruptible supply).

An additional challenge for the aggregator is to find the right volume level and achieving the volume targets for critical mass. If demand develops more slowly than expected, the aggregator is short on demand volume to meet supply and may be penalised by the supplier. The aggregator will

48 An Escrow account is an account established by a broker for holding funds on behalf of the broker's principal or some other person until the consummation or termination of a transaction.
then have a difficult strategic decision – cut price to increase volume, or maintain margins and manage the supply excess.

If the volume of demand grows more quickly than expected, the aggregator may be over-subscribed for demand orders. One reason for such oversubscription may be price-setting at a lower level than a ‘fair’ market price. Another reason could be lack of availability of an alternative fuel. Nevertheless, oversubscription makes it difficult for aggregators to negotiate an increase in volume from the supplier, as the latter may seek an increase in price levels.

7.2.4. Commercial opportunities for aggregators

There are different types of commercial opportunities for aggregators. Optimising a larger portfolio where buyers’ profiles are different. When combined, the aggregator can create near baseload demand. The absence of the requirement for flexibility means a supplier should be able to offer discounts to the aggregator for guaranteed volume at a constant flow rate. This would provide value for the aggregator that could be shared by the users, who would need less storage and flexibility costs.

A second opportunity is found when there is no Third Party Access. The aggregator enjoys a monopoly on supply and demand for the market, enabling central control of the system, but only if balancing duties is also performed by the aggregator. In such cases, the market is often run efficiently. Nevertheless, this efficiency does not always have to be reflected in lower prices to the buyers. Hence, efficiency may allow for potentially higher revenues to the aggregator.

A third opportunity is that the aggregator may benefit from lighter regulation, given its role in securing supplies, which could result in lower administration costs.

Finally, in the case a country moves towards TPA, the aggregator may benefit from being centre of a new market, guiding and shaping this market. Such an opportunity may arise if the aggregator is required to undertake a market development role. In the longer-term, the aggregator is likely to benefit from the expertise and experience gained through the process of setting up the market.

7.2.5. Legal aspects of aggregator to be considered

Irrespective of which aggregator model is adopted, care would need to be taken to ensure the provisions of each CP’s competition law are complied with. We understand that the laws of each CP contain provisions of competition law similar to Articles 101 and 102 Treaty on the Functioning of the European Union (“TFEU”). Article 101 prohibits agreements between companies whose effect is to restrict competition. Article 102 prohibits unilateral conduct of a monopolist company that restricts competition. To the extent that an aggregator model would be adopted to include companies from more than one of the EU Member States, one would need to comply with provisions of Article 101 and 102 of the TFEU since such model would likely affect trade between such states.

If a Singapore-like model of the aggregator is adopted, one would need to comply with the equivalent provisions to Article 102 TFEU of the national laws of the CP in question. It should be noted that unlike in the case of Article 101 the prohibition contained in Article 102 cannot be declared inapplicable. Accordingly, one would need to ensure that the GSAs that the aggregator enters into with gas buyers do not:

(a) Directly or indirectly impose unfair purchase or selling prices or other unfair trading conditions;
(b) Limit production, markets or technical development to the prejudice of consumers;
(c) Apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage; and
(d) Make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations, which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

Similar issues would need to be considered if an aggregator is set up as a new company in which existing buyers of gas from one or more CPs were parties.

If the aggregator model is set up by way of network of contractual agreement by, which purchases would be coordinated, then one needs to ensure compliance with provisions of Article 101 TFEU. Since the aggregator assumes that actions of otherwise independent companies will be co-
ordinated, these agreements will be regarded as “restrictive agreements” failing within the ambit of paragraph 1 of Article 101. Accordingly, in order to be compatible with EU competition law and the national law of the relevant member states, the positive economic effects of these restrictive agreements as per paragraph 3 of Article 101 TFEU would need to be established.

In particular, it would need to be established that the:

(a) Agreements contribute to improving the production or distribution of goods or contribute to promoting technical or economic progress,
(b) Consumers will receive a fair share of the resulting benefits,
(c) The restrictions must be indispensable to the attainment of these objectives, and finally
(d) The agreements must not afford the parties the possibility of eliminating competition in respect of a substantial part of the products in question.

To the extent an aggregator model is adopted to include companies from a number of CPs, one needs to ensure compliance with the provisions of Article 18 of the Energy Community Treaty. Article 18 deems as incompatible with the Treaty: “(a) all agreements between undertakings, decisions by associations of undertakings and concerted practices which have as their object or effect the prevention, restriction or distortion of competition” and (b) abuse by one or more undertakings of a dominant position in the market between the EnC Contracting Parties as a whole or in a substantial part thereof,” insofar as they affect trade in gas and electricity between EnC Contracting Parties.

Irrespective of which aggregator model is adopted, care would need to be taken to ensure that the aggregator was not used only to purchase gas from Gazprom, but from any supplier of gas willing to sell gas in the market. Such efforts are pertinent since sole purchase from Gazprom could be regarded as discriminatory, and, thus, in breach of the obligations of the EnC Contracting Parties under the Energy Community Treaty, the bilateral investment treaties these countries have with Russia, and the provisions of the WTO Agreements.

Assuming the above-mentioned competition law requirements could be satisfied, (a question which cannot be answered in the abstract but only by examining a concrete proposal of an aggregator) and that no obligations of the EU and/or of EU member states under international law would be breached, it should be noted that complex legal documentation will need to be drafted to regulate the relations between the aggregator and the companies involved. Also, since companies in the SEE have weak balance sheets the off-take agreement of the aggregator would require credit support, be it by the state in which such companies are located or international financial institutions.

In addition, any aggregator model would need to comply with the requirements with the EU Third Energy Package as transposed into the law of the EnC Contracting Parties with respect to effective unbundling and third party access unless an exemption is sought under the provisions of the equivalent to Article 36 of the EU Gas Directive. Finally, the aggregator model could only be used to purchase new gas unless the existing contracts provide for early termination.