

Barriers to gas wholesale trading
FINAL REPORT

Submitted by:



Disclaimer: This study reports on the barriers related to the operation of the European national wholesale gas markets, as identified by consulted stakeholders during October-December 2016, and does not necessarily reflect the views of the consultant.

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Final Report

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Contents

EXECUTIVE SUMMARY..... 4

1. Introduction 18

2. TASK A: Categorisation of gas wholesale trading barriers in main groups..... 20

3. TASK B: Preparation of a list of appropriate interviewees, and addressees of an eSurvey..... 26

 3.1 Preparation of the long list of eSurvey addressees..... 27

 3.2 Preparation of the list of interviewees..... 27

4. TASK C: Preparation of a list of interview Questions/ survey Questionnaires 30

 4.1 Preparation of the questionnaire..... 30

 4.2 Preparation of the Questions for the interviews 31

5. TASK D: Distribution of the survey 31

6. TASK E: In-depth interviews 32

7. TASK F: Findings of the eSurvey and interviews..... 33

 7.1 Participants to the eSurvey 33

 7.2 Main findings from the responses to the eSurvey 36

 Summary of barriers in Established Hubs 37

 Summary of barriers in Advanced Hubs..... 41

 Summary of barriers in Emerging Hubs..... 46

 Summary of barriers in Illiquid Hubs..... 50

ANNEX A –References 54

ANNEX B –Questionnaire..... 55

EXECUTIVE SUMMARY

KANTOR MANAGEMENT CONSULTANTS (KMC) were commissioned by the Agency for the Cooperation of Energy Regulators (ACER) to conduct a Study related to the gas wholesale market part of ACER's Market Monitoring Report. The purpose of the study is to identify and assess existing barriers to gas wholesale trading across the EU and in specific Member States (MS). This should include how easy or difficult it is in practice for market participants to enter, operate and exit from gas wholesale trading activities.

As part of the study, KMC:

- a) Conducted a preliminary identification of wholesale market barriers and categorised gas them in main groups,
- b) Developed an online questionnaire (eSurvey) addressed to wholesale market participants,
- c) Distributed the eSurvey to hundreds of companies (mainly suppliers/traders/shippers, industrial users) active in EU Member States,
- b) Prepared a list of appropriate interviewees,
- e) Conducted in-depth interviews,
- f) Produced a report with findings.

Our work approach and the main findings of the study are summarised in this executive summary.

Work approach

A long list of barriers was first prepared. The list was drawn from our own experience and from information sourced from previous studies. Barriers were categorised as barriers related to entry, exit and/or everyday operation of wholesale gas markets. For the sake of simplicity, entry and exit barriers were grouped under a single category.

In practice, the creation, development and further growth of European wholesale gas markets may be impeded by several reasons related to: (a) lack of interconnections between markets, MSs and regions, (b) lack of political support in market development, (c) inadequate or inefficient regulation, (d) extensive legal complexities and (e) a series of commercial barriers related to the operation of a hub or a Virtual Trading Point (VTP). Throughout the study, the term VTP refers to an entry/exit system where gas can be traded independently of its location and which offers users the possibility to transfer the title of gas and/or swap imbalances. Each VTP has an operator that tracks the ownership of traded gas and handles gas balancing aspects. Trading is facilitated by the establishment of organised exchanges and/or OTC platforms that attract traders by offering different products and services, thus creating a liquidity pull, all this constituting a gas hub.

We have arranged the long list of identified barriers so that they correspond to the five categories outlined above. Other categorisations are also possible and we discuss these within the report.

As a second step, we prepared a long list of potential participants to the eSurvey and a long-list of potential interviewees. We built the list of the eSurvey participants by compiling information published

by European gas hub operators, European exchanges and National Regulators. The list contained email addresses of EU shippers, suppliers, traders and medium and big size industrial customers.

Based on the eSurvey's list we created a shorter list of participants from 20 Member States that could serve as potential interviewees. In close collaboration with ACER, the list was built per the following general criteria:

- Overall symmetric geographical coverage, with some additional emphasis in the East and South East Europe.
- Adequate representation of producers, suppliers, traders and industrial users.
- Emphasis on companies active in more than one national market, since these were expected to be in a good position to identify barriers and shortcomings in their newer target markets.

After the eSurvey was launched, we also screened the responses of the participants. On some occasions participants explicitly noted their willingness to discuss their experiences further. On other occasions, based on the responses provided to the eSurvey, we decided to invite respondents for an interview. Through this process, we launched further invitations.

The questionnaire (eSurvey) consists of 44 fields where information could be provided. Questions were divided into five blocks. The first block included general questions, information on the market activities of the respondents, countries of activity and level of involvement (planning to enter market, entered the market in the last 3 years, operating in the market for more than 3 years, exited the market). Block two includes questions related to barriers to access natural gas infrastructure and supplies. Block three focuses on barriers related to hub operation. Block four asked for issues related to transparency and reporting. Finally block 5 called upon participants to state any additional barriers that have come to their attention and were not addressed by the questionnaire. For each question, respondents had to provide an answer per country of activity and to characterise a barrier according to its severity as *"Not an issue in market"*, *"Of minor importance"*, *"Of medium importance"*, *"Important"*, *"Severe"*. For each question, respondents could also provide comments or examples on how a barrier was perceived.

Results

A total of 56 stakeholders participated in the study out of which 31 responded only to the eSurvey, 16 were interviewed and responded to the eSurvey and 9 were only interviewed. In total, 25 interviews were held.

Figure 1: Breakdown of eSurvey responses per national market of activity

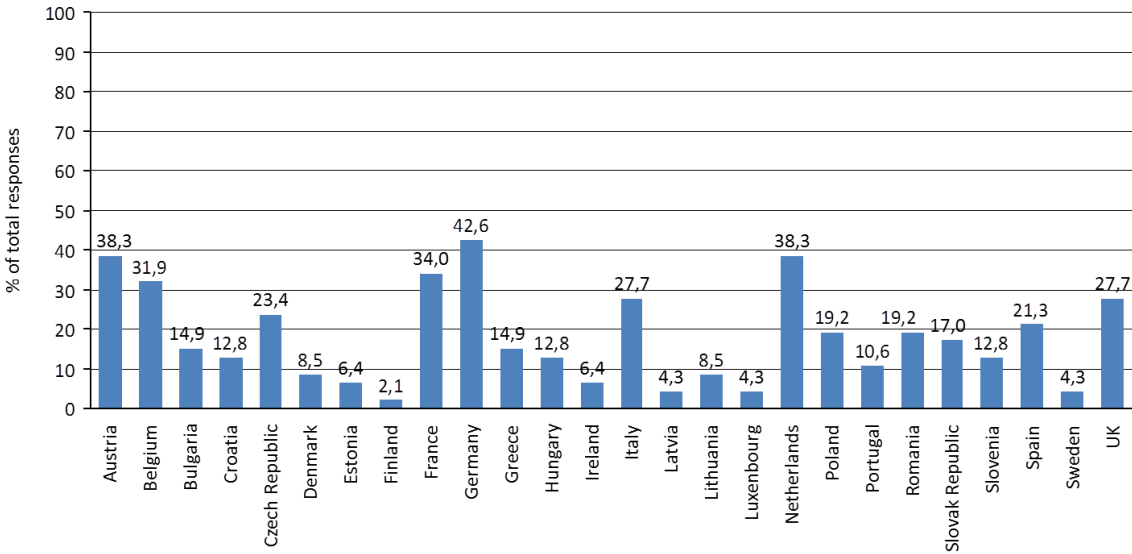
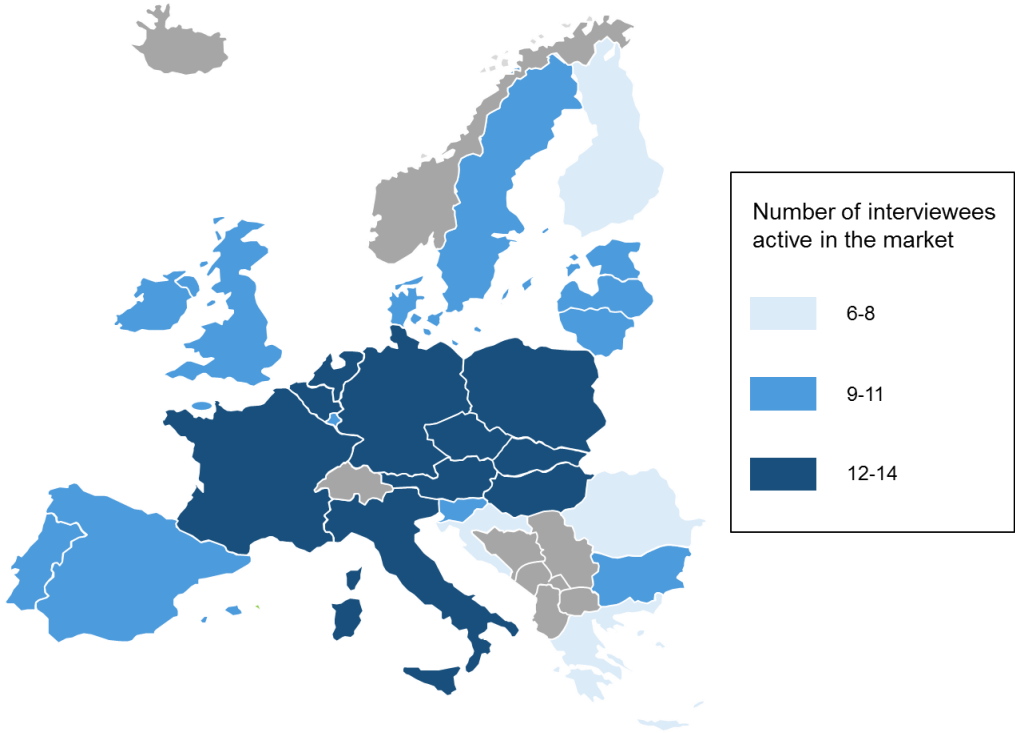


Figure 2: Geographical coverage of interviewees per market of their activity



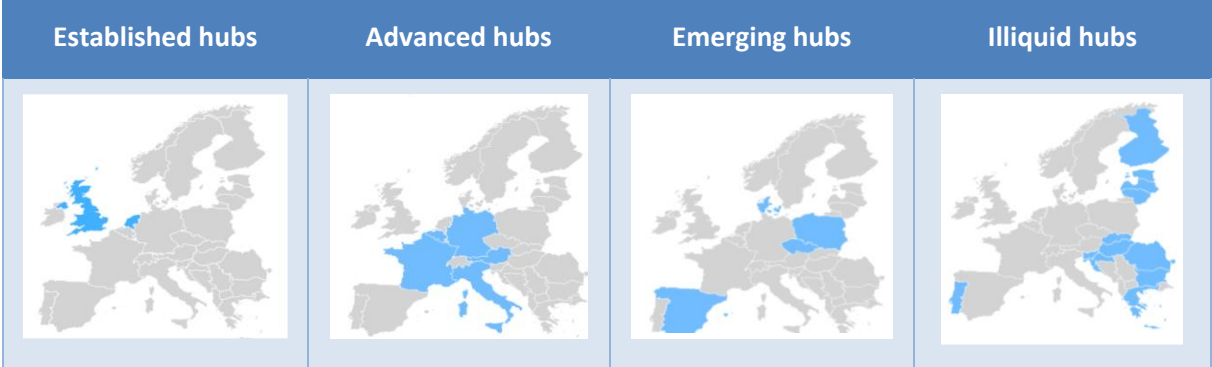
Participants included industrial users, suppliers, traders, producers, shippers, physical and financial traders, broker and their European and national associations.

Confidentiality guarantee facilitated the provision of very valuable input and helped us understand the rationale behind the responses. Market participants were eager to participate in the survey, since they considered this initiative of ACER very important.

Figure 1 and Figure 2 show that the participants to the study (eSurvey respondents, interviewees and/or both) are active in all European national gas markets.

In its 5th Market Monitoring Report¹, ACER ranked European hubs into established, advanced, emerging and illiquid as shown in Figure 3. For this report, we will follow this categorisation in the presentation of the results and we will report findings at EU level and at hub-level.

Figure 3: ACER’s ranking of EU hubs



Note: Established hubs: NL, UK; Advanced: AT, BE, DE, FR, IT ; Emerging: CZ, DK, ES, PL; Illiquid: BG, EE, EL, FI, HR, HU, LT, LV, PT, RO, SI, SK.

Table 1 shows that the ten most significant barriers², as perceived by the participants to the study, throughout EU are:

1. The level of transmission tariffs, particularly of short term products.
2. The lack of, or insufficient regulatory transparency particularly related to the tariff methodology and the calculation of the tariffs as well as to the overall changes in the regulatory framework (e.g. short consultation periods).
3. The lack or weak harmonisation between adjacent systems, particularly in relation to the level of technical capacity, the bundled and unbundled capacity on offer, the capacity contracts and tariffs upstream and downstream of the border as well as to some more operational issues (e.g. Gas Day definition).
4. The lack of, or under use of English by the regulator, the transmission system operator or other national administrative authorities.
5. The existence of long-term capacity contracts, coupled with inefficient mechanisms to deal with capacity hoarding and most importantly with the conversion of bundled/unbundled capacity.
6. The extent of national reporting obligations, which have become even more cumbersome following the implementation of REMIT.
7. The lack of political support towards the facilitation of the creation and operation of a VTP (issue is particularly relevant to SEE).
8. The lack of market based balancing procedures.

¹ Reference is made to the 5th ACER Market Monitoring Report (Gas Wholesale Market Volume).

² The term “significant barrier” refers to the barriers identified as as “important” or “severe” by the study participants.

9. The lack of interconnections and the lack of flexibility in capacity products on existing interconnections (issues are particularly relevant to SEE).
10. The existence of high financial guarantees for the participation of a supplier/shipper/trader at VTPs, exchanges, OTC transactions and balancing platforms as well as registering physical capacity and nominations with the TSO.

Table 2 presents the most significant barriers as a function of hub development.

The level of tariffs is identified to be the most important barrier **for established, advanced and emerging hubs**. Non-competitive short-term products, lack of regulatory transparency and lack of harmonisation are also considered significant barriers for these three hub groups. Long-term capacity contracts and absent or inefficient implementation of CMP are also within the list of the 5 most significant barriers for established and developed hubs. The lack of cooperation between neighbouring NRAs and TSOs is considered a significant barrier for established and emerging hubs. In summary, the results reveal that the 4-5 most significant barriers are to a great extent common for all hubs regardless of their level of development, except for the countries of the so-called “illiquid hubs” (see orange rectangles in table 2 clearly showing the difference).

The study revealed that the five most significant barriers for **illiquid hubs** are the lack of, or weak, political support to wholesale market development, the absence of an organised hub, the lack of, or insufficient, flexibility in the products offered and the lack of a reference (or at least import) price or an unclear price formation mechanism. Within this “top-five” barrier list, the only common barrier that the illiquid hubs share with the rest of the hub groups is related to the lack of regulatory transparency. Issues such as the level of tariffs, the definition of short term products and the use of English, although also important in the MSs with illiquid hubs, are shadowed by more fundamental problems directly relevant to the actual existence of a market at wholesale level.

Table 2 shows that barriers ranked from 6 to 10 in **established hubs** are fundamentally different than the respective barriers in **emerging hubs**. **Advanced hubs** share two barriers in this range (5-10 most significant) with the **established hubs** (the level of financial guarantees to access and register trades, capacity and physical nominations and the lack of use, or underuse, of English) and 2 more with **emerging hubs** (existence of long term legacy capacity reservations and/or absent or inefficient CMP and lack of use, or underuse, of English). The level of security of supply obligations seems to be a particularly important barrier in **emerging hubs**.

Table 1: The complete list of barriers identified in the eSurvey as important or severe (EU level). Results shown sorted in a function of the % of responses received -shown in descending order.

Barrier	Important/Severe [%] of total responses
1.15 Transmission tariffs are too high (e.g. capacity multipliers) and/or non transparent.	47
3.1 Lack of, or insufficient, regulatory transparency (e.g. in frequency, in duration, in minimum notice periods for changes related to consultations between market participants and the Regulator and in IT changes at the VTP, exchange etc.)	36
1.4 Not competitive short-term capacity products	35
1.3 Lack of or weak harmonisation between adjacent systems (i.e. in capacity booking and products offered at IPs, in interoperability)	32
3.3 Lack of use, or underuse, of English (e.g. access contracts, communications and interface of VTP, balancing operator, exchange, TSO's network services in VTP, TSO, Regulators' consultations in direct communications between NRA and market participants).	31
1.2 Existence of long term legacy capacity reservations and/or absent or inefficient mechanisms to deal with capacity hoarding at interconnection points	29
2.12 Lack of, or weak, political support to wholesale market development, lack of trust	29
3.5 Reporting obligations for wholesale market participants, as imposed or not by the license, too frequent, too complex, overlapping with other reporting-obligations	28
1.8 Lack of market based balancing procedures (e.g. short-term products for balancing, strictly balanced hourly nominations) and/or absence of a common balancing regime for all pressure levels	26
1.6 Lack of, or weak, virtual reverse flows and/or lack of, or weak, efficient cross-border cooperation at TSOs	26
1.1 Lack of or not enough physical capacity or interconnections (too few import routes or limited access to alternative sources of gas)	23
1.12 Lack of, or weak, regional perspective in regulatory decisions, lack of, or weak, regulatory cooperation	23
3.2 Not sufficient/not reliable information/data published by market facilitators (TSOs, SSOs, LSOs and VTP operators)	23
2.1 Lack of, or weak, gas trading mechanism (e.g. VTP, brokers, exchange)	23
2.3 Lack of, or insufficient, flexibility in the products offered in the VTP or the exchange or in other forms of non organised wholesale market (e.g. products are restricted to specific -non flexible- sizes and durations)	23
2.7 Too high financial guarantees are required to access and register trades at trading platforms (balancing platforms, VTP, OTC brokers, exchanges), to access capacity and register physical nominations with TSO/SSO/LSO	22
2.10 Existence of long term take or pay supply contracts between producers or wholesale suppliers and retailers or end users that limit hub liquidity	22
2.6 Absence of a national or regional exchange	21
2.4 Too complicated or too demanding requirements and obligations to access the wholesale gas market (e.g. in order to access the VTP, exchange, balancing platforms, interested parties are obliged to reserve capacity at interconnection or exit points and/or at Underground Gas Storages)	19
2.8 High cost of subscribing (una-tantum fees, subscription fees) and operational costs (volume fees) at trading platforms (balancing platforms, VTP, OTC brokers, exchanges)	19
1.7 Lack of standardised terms and/or inefficient conditions to access infrastructures including LNG facilities and Underground Gas Storages	19
1.9 Limited eligibility of consumers in practice and/or regulated end user prices	17
2.11 Too heavy requirements/costs for a wholesale trading license to trade at the VTP, obligation to register annually instead of once with unlimited validity	17
3.4 Lack of a reference (or at least import) price and/or unclear price formation mechanism in the gas wholesale market	17
1.11 Insufficient unbundling of the incumbent and other forms of protection of the incumbent, regulatory capture	16
1.10 Level of security of supply obligations (e.g. on storage, flows) is hampering trading	15
2.2 Lack of standardised trading contracts	15
2.5 Lack of, or weak, independence in the hub management (e.g. VTP operator, exchange operator, balancing operator)	15
1.5 Absence of entry/exit capacity booking	15
3.7 Obligations on market participants with retro-active effect (e.g. retroactive ban of trading of specific products, retroactive trading in specific platforms, retroactive changes to transmission and other fees, retroactive reporting obligations).	14
1.13 Rigid wholesale gas trading licensing process	13
1.14 Rigid wholesale gas trading licensing requirements or separate obligations for cross-border activities (VAT, branch, fees, consequences)	12
3.6 Lack of or not enough market monitoring by NRA and ACER	11
2.9 Complex clearing procedures at exchange trading	11

Table 2: The ten most significant barriers per level of hub development.

Barriers	level of significance									
	1	2	3	4	5	6	7	8	9	10
1.15 Transmission tariffs are too high and/or non transparent.	█									█
1.2 Existence of long term legacy capacity reservations and/or absent or inefficient CMP		█							█	█
1.3 Lack of or weak harmonisation between adjacent systems		█	█		█					
1.4 Not competitive short-term capacity products		█		█	█		█			
3.1 Lack of, or insufficient, regulatory transparency			█	█	█	█				
3.5 Reporting obligations for wholesale market participants, too frequent, too complex,			█	█	█	█				
1.6 Lack of, or weak, virtual reverse flows and/or TSO cross-border cooperation							█			
2.7 Financial guarantees to access and register trades , capacity and physical nominations								█	█	
2.8 High cost of subscribing at trading platforms and operational costs									█	
1.1 Lack of or not enough physical capacity or interconnections										█
1.5 Absence of entry/exit capacity booking										█
1.8 Lack of market based balancing procedures										█
2.4 Too complicated or too demanding requirements and obligations to access the										█
3.2 Not sufficient/not reliable information/data published by market facilitators										█
3.3 Lack of use, or underuse, of English						█	█			█
1.12 Lack of, or weak, regional perspective in regulatory decisions, lack of, or weak,					█					█
1.10 Level of security of supply obligations							█			
2.12 Lack of, or weak, political support to wholesale market development, lack of trust	█							█		
2.10 Existence of long term take or pay supply contracts										█
2.11 Too heavy requirements/costs for a wholesale trading license										█
2.6 Absence of a national or regional exchange/VTP		█								
2.3 Lack of, or insufficient, flexibility in the products offered			█							
3.4 Lack of a reference (or at least import) price and/or unclear price formation mechanism						█				
2.1 Lack of, or weak, gas trading mechanism (e.g. VTP, brokers, exchange)					█					
1.6 Lack of, or weak, virtual reverse flows and/or lack of, or weak, efficient cross-border								█		
1.9 Limited eligibility of consumers in practice and/or regulated end user prices										█

█ Established hubs; █ Advanced hubs; █ Emerging hubs; █ Illiquid hubs

Note: The table shows the ten most significant barriers ranked from number 1 to number 10 per hub development. The orange rectangle at the top highlights the most important barriers shared between the established, advanced and emerging hubs, the orange rectangle at the bottom highlights that the majority of the most important barriers for illiquid hubs are very specific to this category.

As anticipated, **illiquid hubs** are more divergent: three out of the five barriers in the 6-10 range are only present in this category (lack of a reference (or at least import) price and/or unclear price formation mechanism, lack of, or weak, virtual reverse flows and/or lack of, or weak, efficient cross-border cooperation at TSOs and limited eligibility of consumers in practice and/or regulated end user prices).

Detailed findings and participants’ expectations and suggestions

This section presents a summary of the input provided by participants on the most significant barriers outlined above and their expectations and suggestions for actions that may be taken by TSOs, NRAs, ACER and the European Commission towards the improvement of market operation.

(a) According to the majority of participants, **the level of transmission tariffs** is the most significant barrier in gas trading at a pan European level. Given the current demand trends, the risk of tariffs

being consistently above market spreads is very high and participants caution that the problem will be exacerbated at the expiration of existing long-term legacy contracts.

Some participants claim that transmission tariffs at IPs are to a great extent cross-subsidising investments and/or cost recoveries not related to the transmission of gas in the network and the network operation (e.g. gas quality conversion, balancing, storage).

On many occasions capacity is available but not commercialised due to its high cost so that the dominant position of the incumbent (with long-term capacity contracts) is reinforced. The only way to buy this capacity is on the secondary market (capacity sold by the incumbent).

According to the participants, short-term optimisation and price convergence are hampered by the lengthy times and complicated requirements established by the TSOs for the secondary trading of capacity. Participants state that the platforms for secondary trading of capacity are not liquid because of the long notice periods for the transfer of short-term capacity products, the commercial sensitiveness (participants are not anonymous) and the different procedures applied by different TSOs.

Transmission tariffs for short-term capacity products are significantly higher than tariffs for long-term capacity products. Further, tariffs for short-term products on each side of an IP can be significantly different as multipliers vary. Participants strongly point out that tariff multipliers should not prevent short-term flows, as this discourages short-term optimisation and price convergence at times when shippers are increasingly less likely to book long-term products.

Box 1: Tariffs, short term products and cost recovery: suggestions and expectations of participants

Participants suggest that short-term capacity products should be made as competitive as possible in terms of:

- Availability of short-term capacity: the best way to make capacity competitive is to offer a whole range of products from which shippers can choose. Ultimately, the objective should be to have long term and short-term firm and interruptible capacities all competing with each other for that one hour of gas flow. TSOs should not hold back in offering interruptible capacities of any duration to shippers, as this ultimately improves the attractiveness of cross-border flows;
- Price: multipliers should not prevent short-term flows by being higher than annual capacity – this discourages the short-term optimisation and price convergence from which consumers ultimately benefit;
- Price of within-day (WD) capacity: currently many TSOs charge a full day ahead price for WD capacity, even if half the day is already gone. As natural monopolies, TSOs should aim to provide their services as a perfectly competitive market would do. In the latter, it is perfectly realistic for competing TSOs to offer lower priced and more flexible products that are better tailored to market needs. The aim of gas regulation should be to provide those same standards of service.
- Cross-subsidisation: tariffs should be cost-reflective and should not include additional fees (which are taxes in reality) set to cross-subsidise investments and costs

recoveries not related to the operation of the network (strategic storage, quality conversion, strategic infrastructures, etc).

Participants call upon regulators to consider an approach that ensures the TSOs' revenues and in parallel safeguards market liquidity. They also call upon the European Commission to investigate further the level of tariffs at IPs, so that an approach that facilitates the wholesale gas market can be developed and implemented. All agree that there is a need for a thorough review of the tariff methodologies.

Some participants bring forward a suggestion of "pushing" tariffs upstream or downstream the EU MS' borders with third countries through the introduction of an Inter-Transmission System Operator Compensation (ITC) mechanism by analogy to the one already applied in the electricity sector. Such an ITC mechanism, if implemented could transfer the transmission cost to the upstream borders of Europe.

Several additional participants also address the issue of the LNG tariffs. They point out that there is a need to ensure that tariffs – including LNG tariffs - are not a barrier to trade. The LNG tariff should be more compatible with the existence of a hub. It is however recognised that cost recovery of LNG terminal costs is challenging due to low utilisation, small scale LNG is an increasing business but its effect on consumption remains marginal.

Participants also point out that TSOs revenues may be recovered through a tax on all citizens. This option is the one retained when SoS investments are directly financed by European funds.

Other participants state that there is a lot that can be easily fixed before a major redesign of the gas market is decided. A major problem identified is *"the lack of cooperating TSOs and ambitious regulators that understand the needs of the market and support the market operation"*. They call for a thorough benchmarking exercise on transmission tariffs throughout Europe. They point out that tariff setting remains a closed task between TSO and the Regulator and this needs to change. This was also raised during the EU NC TAR consultation. The Code imposes rules on more transparency; however, it remains to be seen how this is going to be implemented.

Some participants point out that TSOs need to become very efficient in the way of operating the infrastructure and that regulators should insist that this efficiency is achieved.

As national markets become more standardised and interconnected, the regulatory risk related to unpredicted tariff readjustment becomes significant. The risk is doubled when shippers are forced to become holders of bundled capacity. Participants propose that capacity should be offered as a fixed price cap, not at a floor as of today, indexed to inflation. In this sense the price is locked in the long-term but long-terms bookers will not miss out any price reductions in case the TSOs ever over-recover. This mechanism can be attractive to shippers and help TSOs sell long-term capacity to recover investments.

Suggestions for more transparency in tariff methodologies and tariff setting, a more inclusive process (*"stakeholders have things to say"*), benchmarking across Europe on the kind of revenues that can be included in the tariffs (*"there needs to be the ability of comparing costs*

included in the tariffs throughout Europe”, “it should be possible for shippers to understand the various elements of the tariffs”) have been extensively voiced. Participants call for more harmonisation in the methodologies for setting tariffs in Europe although cautioning however that the use of average tariff per unit can lead to even lower utilisation of the infrastructure.

(b) The existence of **long-term legacy capacity (LTLC)** reservations is also a significant barrier if related to absent or inefficient CMP. Participants note that some of the issues highlighted in this survey are caused by poorly implemented regulation such as:

- Reduced availability of interruptible capacity;
- Lack of cross-border coordination on CMP mechanisms;
- Lack of a well-designed standardised capacity-conversion service;
- Non-standardised secondary capacity market.

Participants underline that interruptible capacity is by far the most effective mechanism to tackle congestion whereas there are doubts on the effectiveness of the firm day-ahead use-it-or-lose-it mechanism (FDA UIOLI).

Participants agree that currently capacities reserved in LTLC contracts are greater than usual physical flows at most cross-border points on Europe. Therefore, there is no need to book additional capacity. This should lead to a zero-marginal cost for transport across most Europe. Concentration can take several paths with producers acquiring capacity on the secondary market. This buying/selling process could result in a change of the delivery points in long-term contracts. It is further noted that there are companies with long-term capacity contracts which will be expiring shortly so that there is an additional risk of this capacity being stranded.

LTLC contracts in several countries stem mostly from open seasons. Participants argue that these contracts effectively subsidise the transmission system of the respective TSOs. Some participants claim that holders of such LTLCs pay normally above the published tariffs of the respective TSOs and LTLCs curtail shipper rights and obligations that are present in standard capacity contracts (e.g. UIOLI, bundling, tariffs). Others claim that TSOs abuse their monopolistic position and discriminate between LTLC holders and other market participants and so that artificially there are two capacity portfolios in each country – LTLCs hinder bundling of capacities, block access to capacities for other market participants allowing for products which should no longer exist.

Box 2: Long term legacy capacity reservations (LTLC) and application of CMP: suggestions and expectations of participants

Participants point out that a suggestion to ACER could be that the implementation of CAM and CMP should consider in a proper way to deal with the legacy contracts. Costs created to shippers from those stranded contracts due to the change in market circumstances should be somehow addressed, no matter how non-popular this may be. If this is not done, then the risk is that shippers will not enter long-term capacity commitments anymore.

- (c) **Participants acknowledge that the implementation of the network codes is progressing.** A lot of capacity is made available through PRISMA and other platforms. This was impossible 4-5 years ago. However, several issues remain. Many of these issues are related to ***implementation of EU legislation at a national level, which can be very different from one country to another.***

Identifiable barriers concern the ***lack of common capacity calculation*** and allocation at the IPs, the ***bundling of capacity, availability of interruptible products, partial or inadequate implementation of EU NC BAL***, a few harmonisation issues and absence of effective secondary capacity trading platforms.

Lack of or weak harmonisation between adjacent systems remains an important barrier at pan-European level. Non-harmonisation is related to the definition of the Gas Day, the lack of joint method of capacity calculation at IPs (agreed between the upstream and downstream TSOs), inconsistencies in nomination windows and different implementation of CMP rules in the upstream and downstream sides of the IP (e.g. Over Subscriptions and Buy Back (OS&BB) mechanism, vs FDA UIOL). The lack of a joint method for capacity calculation and of a good conversion mechanism was discussed extensively by participants.

Box 3: Implementation of EU Network Codes: suggestions and expectations of participants

Participants suggest that a good start may be the development of a good conversion mechanism to unbundle capacity products and solve the issue with capacities mismatch. The amendment of EU NC CAM may offer a solution if the conversion mechanism is well defined.

What may be useful is to force TSOs to offer capacity partly bundled, and partly unbundled. This would answer the needs of the few shippers that wish to buy bundled capacity, would still incentivise TSOs to harmonise products.

NRAs should monitor TSOs better to ensure the implementation of EU Network Codes is (especially) according to the spirit of the rules. There is too much reliance by regulators on TSOs side when the real client is the shipper. Often, the lack of ambition by TSOs or unwillingness to change their ways is the biggest drag in introducing market reform and doing so with best results.

In turn, ACER should monitor closely the implementation of the European Network Codes in Member States.

Although harmonisation of rules and conditions facilitates hub-to-hub trading there may be occasions that harmonisation may become a barrier to entry. An example stems from the recent CEN Standard EN 16726 on gas quality. In case that the adopted CEN pertains the narrow range of the Wobbe Index included in the draft. Participants caution that harmonisation in this direction would result in a serious barrier entry barrier to the EU.

- (d) On the ***lack of, or insufficient, regulatory transparency***, participants comment that the information published on the websites of the national regulators (NRA) is often of low quality and not up to date and that it is difficult to navigate through the websites of NRAs, since their structures and designs can be rather poor; some of the documents are never published in English (consultation documents, methodologies, underlying natural gas laws) or if published, this occurs

much later than publication of the documents in local languages and is of poor quality. Some of the NRAs employees do not speak English, which makes it difficult to communicate efficiently.

The EU TSOs usually have transparency platform used for publication of data related to capacity, flows, etc. However, examples of TSOs that still do not have such a platform or they do not update their websites regularly still remain³. Lack of transparency in maintenance schedules is identified.

Shippers are increasingly less likely to book long-term capacity. As national markets become more standardised and interconnected, the role of regulatory and tariff risk becomes significant. Regulators and TSOs need to understand that no shipper is willing to book long-term capacities when regulator and TSOs decisions can be so unpredictable and costly. The risk is doubled when shippers are forced to become holders of bundled capacity.

Box 4: Lack of, or insufficient, regulatory transparency: suggestions and expectations of participants

Participants call for more transparency on the reasons for a modification of a code or on tariff methodologies. The detailed built-up of the elements in the calculation of tariffs should be made public as and detailed impact assessments need to be carried out and published.

TSOs and NRAs should have a standardised page listing and quantifying all the tariffs at all points and additional costs to be paid at each Entry/Exit point. The date of the last amendment and of the next tariff revision should be also included.

The procedure for consultation (duration, participation) should be standardised.

Merging of several national TSOs could facilitate the market operation. In turn, ACER should monitor NRAs on transparency.

(e) **National reporting obligations** are considered a barrier to trade and a duplication given the reporting obligations under REMIT. Regulators are called to reduce the reporting burden as there is a clear overlap with REMIT. The cost of data reporting (e.g. obligations at national level and REMIT) is not detrimental but it can be a burden for small companies. More coordination would decrease it.

(f) The **lack of, or weak, political support** in wholesale market development is identified in Eastern EU MS. Participants agree that there is an overall lack of political willingness for market liberalisation, with governments not sufficiently promoting market opening. At best, the development of a liquid wholesale market is of low priority in the political agenda despite its clear benefits for consumers. Participants note the **absence of a functioning VTP**, particularly in the form of an underlying short-term market (DA/WD) which is transparent and efficient (balancing rules, access to flexibility) is a major impediment to a transparent price formation.

There is a clear lack of trust in these markets which is essentially bidirectional: the interested traders/suppliers do not trust the government and/or the regulator but also governments and

³ Cases of transparency platforms not established or established but with non-reliable and/or not updated and/or missing data published were reported in Austria, Bulgaria, Czech Republic, Germany, Ireland, Ireland, Poland, Romania, Slovenia, Slovakia, Spain and the Netherlands.

regulators do not trust the potential new entrants (thus posing stringent license requirements). Given the fact that these markets are also characterised by relatively low gas demands, regulatory uncertainty and lack of political support in these MSs hinder market development.

- (g) A clear fragmentation of **Security of Supply (SoS) policies** is identified. Participants agree that national laws impose obligations that weigh heavily on traders, reduce the flexibility of the usage of storage facilities, add complexity to the system and impose additional costs on final consumers. The use of cross-border storage is often hindered and capacity in Underground Storages (UGSs) for SoS is often separated from commercial capacity creating an artificial scarcity in the market and higher prices in a number of Member States.

Participants highlight that there are many ways to meet SoS obligations and that regulators should allow the use of all options: national or cross-border storage, virtual storage (relying on third parties to access their own storage), options to LNG deliveries or even long-term gas supply contracts.

- (h) **Regulated end user prices** prevail in several EU MS. Participants agree that regulated end user prices distort competition and hinder market development. Further, in countries with end user price's regulation and own production it is customary to keep the price of own production low, below market levels. In most cases the incumbent (which also is the local gas producer), "blends" in terms of pricing locally produced gas with imported gas so that it is almost impossible for any other company to enter the market. Proposals to overcome this issue are the release of gas quantities at production level in order to decrease the incumbent upstream market's share or the unbundling of production from trading.

- (i) The **lack of efficient cross-border cooperation between TSOs** has been identified by: the lack of a jointly agreed method for capacity calculation at IPs as required in Article 6 of EU NC CAM, the lack of cooperation concerning cross-border decisions, general impediments in the conclusion of interconnection agreements thereby obstructing the realisation of virtual reverse flows and also by the lack of coordinated maintenance schedules.

Participants call for more efficient cooperation between TSOs. They also stress that cooperation between regulators should be further enhanced and decisions should be taken with a regional perspective.

They also call for improvements in the level of detail of any maintenance schedules. These should be announced early, and should be able to estimate their impact on the ability to use capacities at border points.

- (j) **Financial guarantees and the cost of subscription can be significant for small players.** It is noted that the increasingly dominant position of ICE and the effective monopoly of Powernext, although contributing to the standardisation of products, increasingly leads to lack of transparency. Participants call for an assessment as to whether regulation on data transparency of energy exchanges is necessary.

Participants to this study responded very positively to our questions. Their cooperation and contributions provided valuable input to this study and is gratefully acknowledged.

Such an exercise of a systematic collection of views of market participants could be undertaken on a regular basis and expanded to other topics relevant to the development of the energy market under the ambit of responsibilities of ACER.

1. Introduction

KANTOR MANAGEMENT CONSULTANTS (KMC) were commissioned by the Agency for the Cooperation of Energy Regulators (ACER) to conduct a Study related to the gas wholesale market part of ACER’s Market Monitoring Report. The purpose of the study is to identify and assess existing barriers to gas wholesale trading across the EU and in specific Member States.

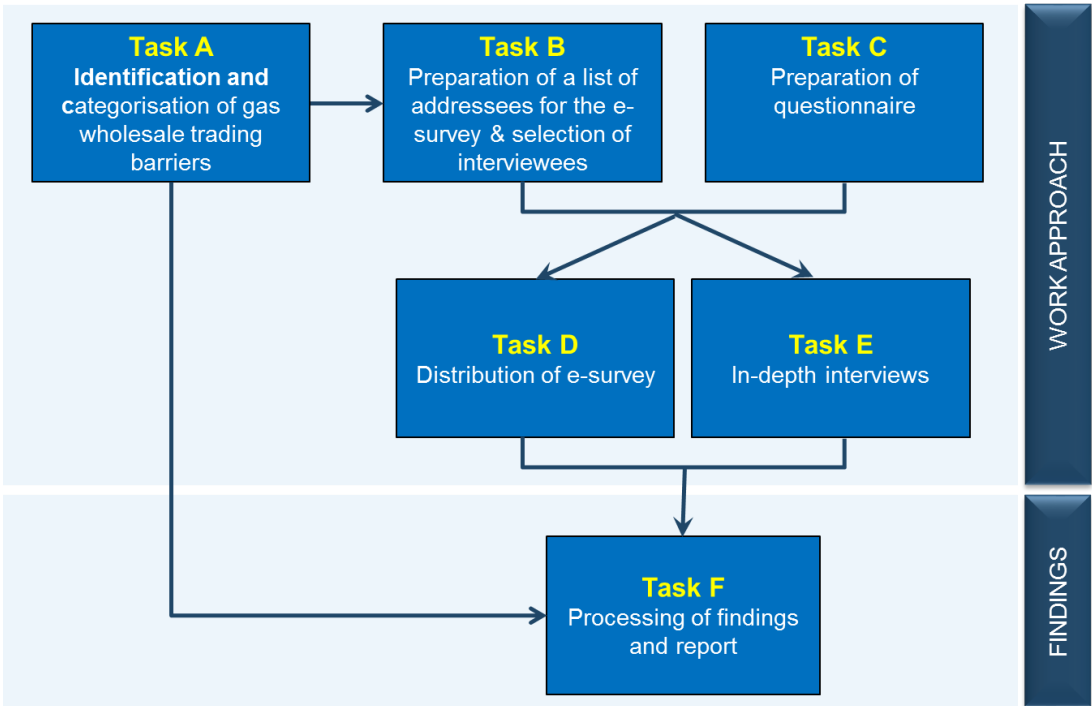
As part of the study, KMC:

- (a) Conducted a preliminary identification of wholesale market barriers and categorised them in main groups;
- (b) Developed an online questionnaire (eSurvey) addressed to wholesale gas market participants;
- (c) Distributed the eSurvey to hundreds of suppliers/traders/shippers active in EU Member States
- (d) Selected appropriate interviewees and conducted in-depth interviews
- (e) Analysed the responses obtained from the survey and the interviews.

This is the Final Report of the study. Its aim is to present the work carried out and discuss the main findings including suggestions provided by participants to the study towards the improvement of wholesale market operation.

The individual tasks of the study are summarised in **Figure 4**.

Figure 4: Tasks of the study



Section 3 discusses the methodology for the preparation of the long list of eSurvey participants and a long-list of potential interviewees. Section 4 discusses the structure and content of the questionnaire

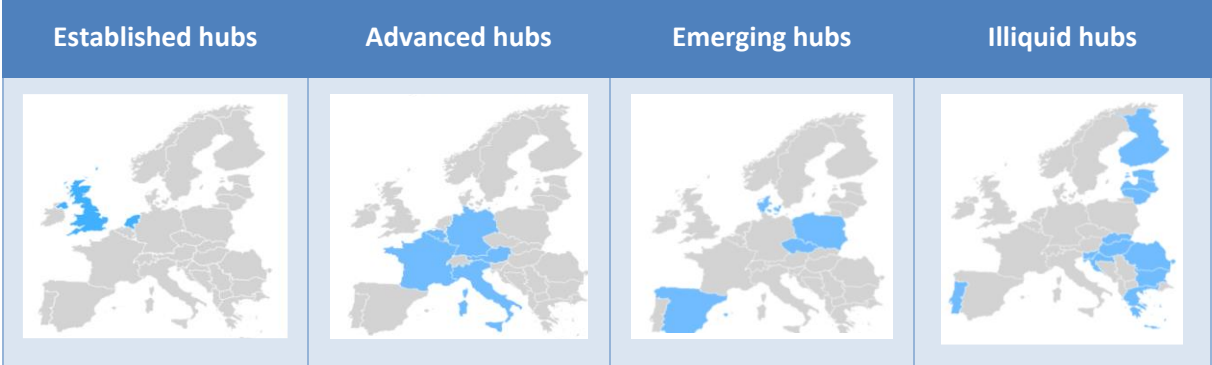
developed as part of this study and distributed to the eSurvey participants. The same questionnaire was used as a base to the interviews. Sections 5 and 6 discuss the distribution of the eSurvey and provide details on the interviews.

Section 7 summarises the main findings as drawn from the survey and interviews. In the first part of Section 7 general information on the types of participants that responded to the eSurvey is provided. The respondents’ countries of activity and their level of involvement are also presented.

Based on 2015 market monitoring results, ACER has ranked European hubs into established, advanced, emerging and illiquid. Figure 5 shows the countries included in each hub category. Barriers encountered by participants in wholesale gas markets are inarguably related to the level of hub development. In this context, we present results obtained from the eSurvey at hub region level. The second part of Section 7 presents most significant and the least significant barriers as perceived by respondents per hub region. The findings are discussed in the context of the information we have received during the interviews and the comments provided by the respondents to the eSurvey.

Section 8 summarises the main findings and lists suggestions made by the participants to the study towards the improvement of the national wholesale gas markets.

Figure 5: ACER’s ranking of EU hubs⁴



Note: Established hubs: NL, UK; Advanced: AT, BE, DE, FR, IT ; Emerging: CZ, DK, ES, PL; Illiquid: BG, EE, EL, FI, HR, HU, LT, LV, PT, RO, SI, SK.

⁴ Source:ACER, <http://www.acer.europa.eu/Events/ACER-Workshop-on-Market-Monitoring-Wholesale-Electricity-and-Gas/Documents/ACER%20Market%20Monitoring%20Report%202015%20-%20KEY%20INSIGHTS%20AND%20RECOMMENDATIONS%20-%20Presentation.pdf>

2. TASK A: Categorisation of gas wholesale trading barriers in main groups

The aim of Task A is to identify high level barriers faced by potential and currently active wholesale market participants:

- (a) In their efforts to enter and exit a European wholesale market and
- (b) During their everyday trading activities in these markets.

Figure 6 summarises the methodology applied for this Task.

In more detail:

- A long list of barriers was first prepared. The list has been drawn from our own experience, as well as from information sourced from previous studies. As a second step, the barriers identified in Step 1 above were categorised as barriers related to entry, exit and/or everyday operation. For the sake of simplicity entry and exit barriers were grouped under a single category.
- The creation, development and further growth of European wholesale markets may be impeded by reasons related to (a) the lack of interconnections between markets, Member States (MS) and regions, (b) lack of political support on market development, (c) inadequate or inefficient regulation, (d) extensive legal complexities and (e) to a series of commercial barriers related for example to the operation of a hub. We have arranged the long list of identified barriers so that they correspond to these five categories.

It is worth noting that regardless of whether barriers are related to entry/exit and/or everyday operation of a wholesale market and whether they are due to a lack of interconnection between markets and MS, lack of political support, inadequate or inefficient regulation, legal complexities or commercial reasons, they can also be categorised in a more horizontal way as relevant to

- (i) Infrastructure (in the sense of either connectivity and/or available physical capacity);
- (ii) The access to wholesale markets (organised or non-organised);
- (iii) Perceived too rigid licensing requirements;
- (iv) Extensive security of supply obligations for new and/or cross border suppliers;
- (v) Inefficient (or insufficient) TPA rules for accessing IPs and storage facilities and LNG terminals;
- (vi) Lack of (or partial) implementation of the EU Network Codes;
- (vii) Lack of (or insufficient) transparency and too heavy reporting obligations.

Figure 7 shows one more effort towards barrier categorisation.

Figure 6: Methodology for barrier categorisation

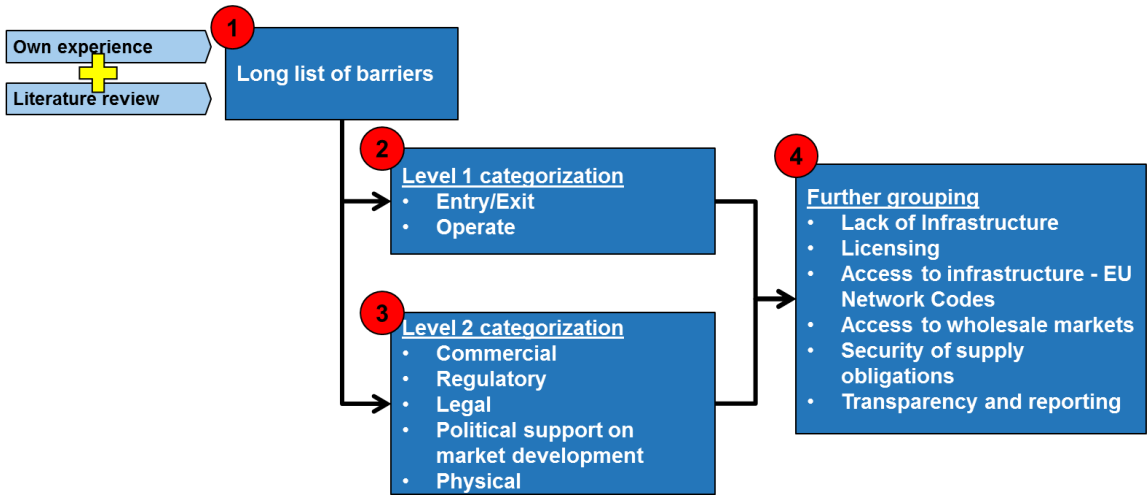
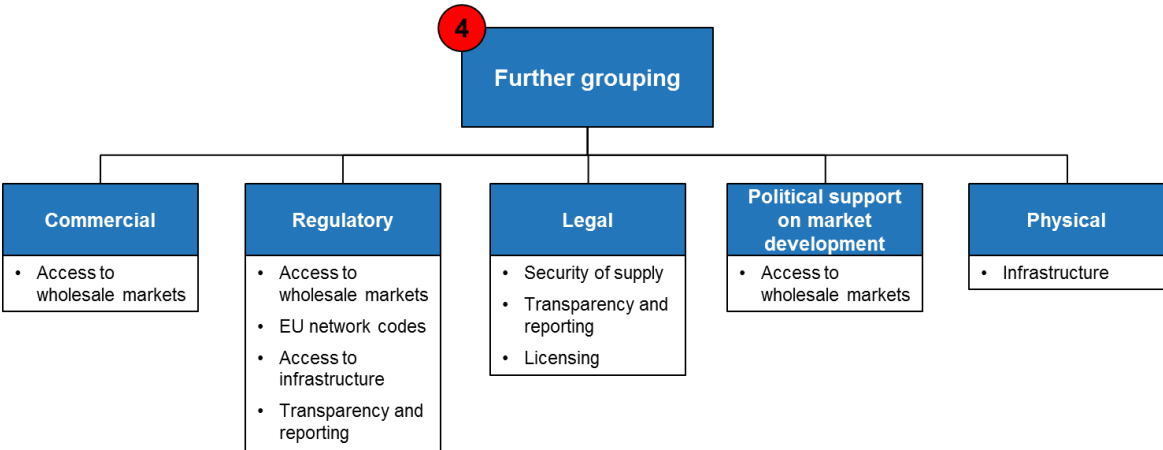


Figure 7: Further grouping towards the potential categorisation of the long list of barriers



Tables 1 to 8 present the long list of barriers built in the context of this work. These are categorised as barriers for entry/exit and operation and also according to the five categories proposed above (commercial, regulatory, legal, political support and physical). Our effort of grouping the list of barriers into further categories is also shown.

It should be stressed that the categorisation of barriers into the five main categories proposed here and the attempt for a further grouping within each category is also of practical significance towards the structuring of the questionnaires and conducting the interviews. It was also shown to be of practical significance in the grouping and analysis of the input provided by the study participants as discussed in Section 7.

Table 3: Entry/Exit Barriers-Commercial

Level of market involvement: Entry/Exit		
Type of barrier	Description	Group
1.Commercial	Lack of standardized trading contracts	Access to wholesale markets
	Wholesale market not accessible to non-physical traders	
	Long term take or pay supply contracts	
	Lack of, or weak, independence in the hub management	
	Absence of an exchange	
	Financial guarantees and other high costs of subscribing	
	Inadequate mitigation of financial risk	
	Complex clearing procedures at the exchange	
	Absence of a VTP	
	Lack of standardised terms/inefficient conditions to access infrastructures	

Table 4: Entry/Exit Barriers-Regulatory

Level of market involvement: Entry/Exit		
Type of barrier	Description	Group
2.Regulatory	Lack of market based balancing procedures	EU Network Codes
	Lack of harmonisation in adjacent systems (i.e. capacity booking, products offered, interoperability)	EU Network Codes
	Wholesale trading license	Access to wholesale markets
	Legacy long term capacity reservations	Access to infrastructure
	Lack of virtual reverse flows	Access to infrastructure
	Absent or inefficient mechanisms to deal with capacity hoarding	Access to infrastructure
	Reference price existence/formation	Transparency and reporting
	Reporting obligations	Transparency and reporting

Table 5: Entry/Exit Barriers-Legal

Level of market involvement: Entry/Exit		
Type of barrier	Description	Group
3.Legal	Security of supply obligations	Security of Supply
	Eligibility of consumers/existence of special regimes/Regulated end user prices	
	Language and Reporting obligations	Transparency and reporting
	Obligations on market participants with retro-active effect	

Table 6: Entry/Exit Barriers-Political support on market development

<u>Level of market involvement: Entry/Exit</u>		
Type of barrier	Description	Group
4.Political support on market development	Lack of political support to wholesale market development	
	Protection of the incumbent	
	Regulatory capture	
	Lack of regional perspective	
	Insufficient unbundling	

Table 7: Entry/Exit Barriers-Physical

<u>Level of market involvement: Entry/Exit</u>		
Type of barrier	Description	Group
5.Physical	Lack of capacity or connection	Infrastructure

Table 8: Operation Barriers-Commercial

<u>Level of market involvement: Operation</u>		
Type of barrier	Description	Group
1.Commercial	Wholesale market not accessible to non-physical traders	Access to wholesale markets
	Lack of flexibility in the products offered in VTP or Exchange or in other forms of non-organised wholesale market	

Table 9: Operation Barriers-Regulatory

<u>Level of market involvement: Operation</u>		
Type of barrier	Description	Group
2.Regulatory	Lack of efficient cross-border regulatory cooperation	Access to wholesale markets
	Wholesale trading/supply license requirements	
	Requirement for strictly balanced nomination profiles	
	Lack of short term capacity products	Access to infrastructure
	Entry/Exit capacity booking not in place	Access to infrastructure
	Reporting obligations	Access to infrastructure
	Lack of a Consultation Mechanism/Inadequate time for consultation/No minimum notice period for market changes	Access to infrastructure
	Delayed or otherwise inadequate/incomplete reporting	Access to infrastructure
	Inadequate market monitoring in place (NRA, ACER)	Access to infrastructure
	lack of market based balancing procedures and balancing regime for all pressure levels	EU Network Codes
	Lack of harmonisation in adjacent systems (i.e. capacity booking, products offered, interoperability)	EU Network Codes
	Not sufficient/not reliable information/data published by market facilitators	Transparency and reporting
	Language and Reporting obligations	
	Obligations on market participants with retro-active effect	

3. TASK B: Preparation of a list of appropriate interviewees, and addressees of an eSurvey

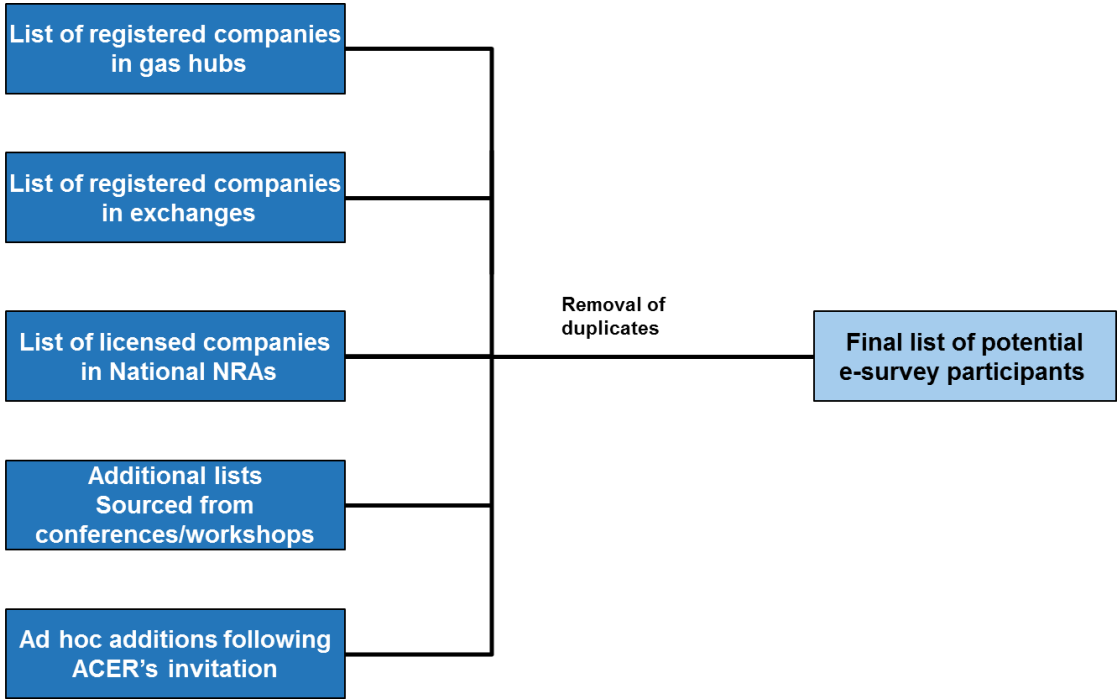
The aim of Task B is dual:

- (a) to prepare a long list of eSurvey targets,
- (b) to prepare a long list of interviewees.

Figure 8 summarises the individual steps that we followed to build the list of the eSurvey participants. In more detail:

1. The lists of registered participants published by European gas hub operators were downloaded and merged in a new list which will be referred from now on as the “*All Participants List*”. Registered participants include shippers, traders, suppliers, end-users and in some occasions also TSOs and DSOs that buy gas for balancing purposes
2. The lists of registered gas traders published by European exchanges (EEX, Powernext, ICE) were also downloaded and merged with the list of Step 1. Registered gas traders include all categories as under item 1 above
3. The NRAs of all Member States, except for Austria, Germany, Finland and Sweden, require some form of licensing for all gas suppliers/traders. A list of licensees may be found at the web site of every regulator. We downloaded these lists and merged them into the “*All Participants List*” referred to in the previous steps.
4. Since we used several different sources, it was inevitable that duplicate (triplicate or multiple entries) for the same company to be found in the *All Participants List*. Duplicates were removed leading to a list of entries corresponding to the number of companies (and their branches) active in EU Member States.
5. Each entry was searched on the internet through various sources and contact emails were identified for over half of the entries in the *All Participants List*. Further, each entry was searched within the European Register of Market Participants published by ACER under Article 9 of REMIT to ensure the validity of both the company data and the company website where information was sourced.
6. In an effort to reduce the number of entries, we retained no more than 20 companies active in NBP and up to 20 companies active in TTF and we removed the rest. Selection was random. It is acknowledged that this rule is indeed arbitrary. However, it may be argued that NBP and TTF are well established European hubs –potentially with minimum barriers in comparison to other national trading points in the EU and a sample of 20 potential participants is adequate for the present work.
7. Additional participants were retrieved from the agendas of well-known gas conferences, the Madrid forum, conferences organised by the IGU, various editions of the European gas conference, conferences organised by various energy related media, the World Forum on Energy Regulation etc.
8. ACER has also invited gas companies and wholesale users to participate in eSurvey during October 2016. An announcement was published in ACER’s website in early October. An invitation was also circulated through ACER’s newfeed.

Figure 8: Methodology for building up the long list of eSurvey participants



European and national associations of gas traders, suppliers and industrial users were also asked to distribute the questionnaire to their members and participate to the study.

3.1 Preparation of the long list of eSurvey addressees

The procedure summarised in Figure 8 has led to the creation of a long list of several hundreds of entries, each entry corresponding to a company (or its local branch) active in a national wholesale market. As anticipated, the companies in the list cover all aspects of national gas activities:

- Producers
- Suppliers
- Traders
- Financial institutions
- National and European associations, traders, suppliers
- Large and medium industrial end-users
- Distribution companies mostly from the Eastern Member States which may not be unbundled (either because they have not done so yet or because the corresponding Member States have decided to apply paragraph 4 of Article 26 of Directive 2009/73/EC according to which integrated natural gas undertakings serving less than 100,000 connected customers may choose not to unbundle distribution from supply). The survey was distributed to all identified email addresses.

3.2 Preparation of the list of interviewees

We constructed a first list of potential interviewees from the All Participants List of the eSurvey. The following general criteria were applied:

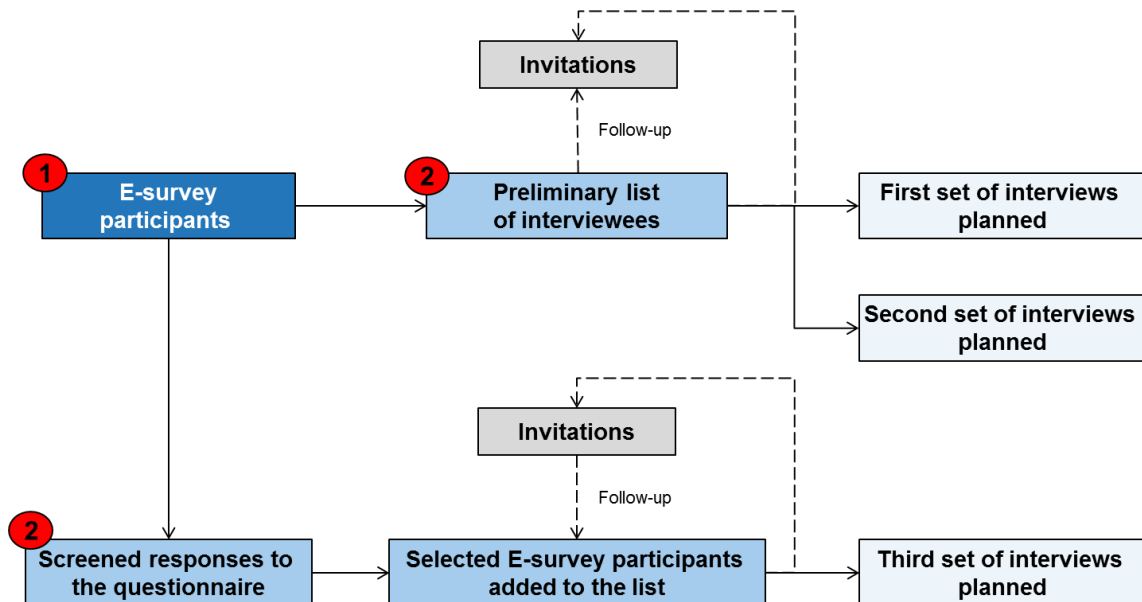
- Overall symmetric geographical coverage, with some additional emphasis in the East and South East Europe;
- Adequate representation of producers, suppliers, traders, end-users;
- Emphasis on companies active in more than one national market since they are expected to be in good position to identify barriers and shortcomings in their new target markets.

Associations of suppliers, traders and industrial users comprising several tenths of members across Europe were also invited.

On some occasions participants had explicitly noted their willingness to discuss their experiences further so we established contact and invited them for an interview. On other occasions, based on the responses received in the Questionnaire, we decided to invite selected participants for an interview. In this context, additional interviews were scheduled and carried out through this second process.

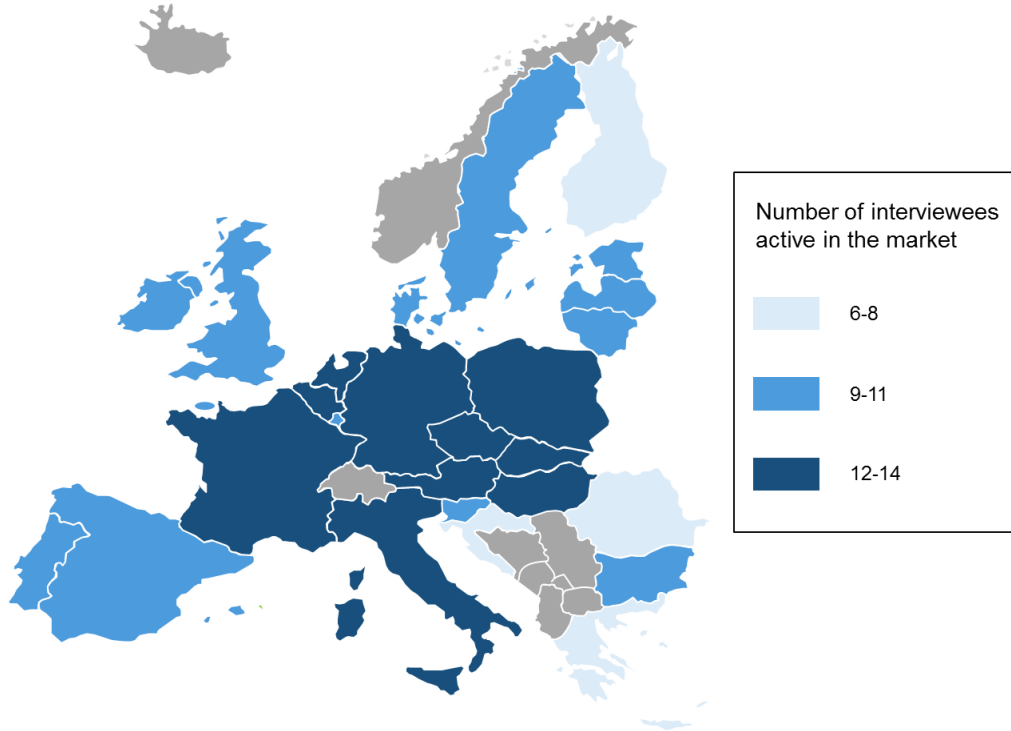
Figure 9 summarises the methodology for selecting the interviewees and the procedure to schedule an interview.

Figure 9: Methodology of preparation of long list of interviewees



Interviewees were reassured that all interviews were carried out a under strictly confidential procedure.

Figure 10: Geographical coverage of interviewees per market of their activity



4. TASK C: Preparation of a list of interview Questions/ survey Questionnaires

The aim of Task C is dual:

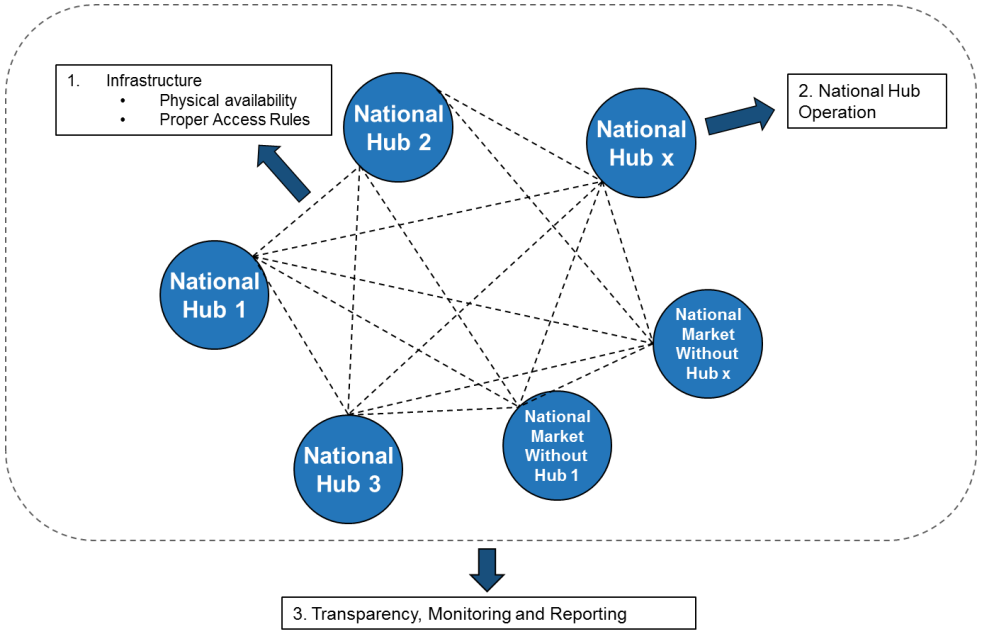
- (a) to prepare the Questionnaire for the eSurvey,
- (b) to prepare additional questions if required for the interviewees.

4.1 Preparation of the questionnaire

Striking a balance between a questionnaire targeting to retrieve as much information as possible from the potential respondents and getting potential participants to respond to the survey is a formidable task. Questionnaires must be structured, simple, allowing for speedy completion while at the same time being also flexible letting participants provide as much input as possible. As barriers experienced by market participants may well be different per market and activity, building a well-balanced questionnaire can be a challenging task particularly since we believe that it is necessary for the participants to record their experiences distinctly per national market.

To justify the structure adopted in the questionnaire, it is useful to reflect upon the basic constituents of the Gas Target Model (GTM). According to the GTM, the European gas market will consist of interconnected entry-exit zones with virtual trading points (virtual hubs). Shippers should be able to trade gas freely within each entry-exit zone, with the size of each zone being as large as the existing infrastructure allows (i.e. such that internal physical congestion does not unduly restrict gas trading within zones). Interconnection capacity needs to be easily accessible to shippers on a non-discriminatory basis, and at a transparent and fair price. The EU Infrastructure Package contributes further to the establishment of integrated wholesale markets by promoting the development of adequate cross-border transmission infrastructure.

Figure 11: Rationale for the categorisation of barriers for the eSurvey (note: national hub can also imply merged market zones)



In alignment to this vision, we initiated the structuring the questionnaire on just three simple categories of questions:

- Questions on barriers related to access to natural gas infrastructure and supplies (i.e. access to capacity)
- Questions on barriers related to the existence of a hub and its operation
- Transparency and reporting.

We then grouped all barriers around these three cornerstones of efficient wholesale market operation. Barriers were grouped in those three main categories of questions as users could be able to go fast through the long list of barriers in order to select and quantify as appropriate.

The Questionnaire is included in the Annex B of this report.

4.2 Preparation of the Questions for the interviews

We chose not to prepare different questions for the interview. Rather we preferred to structure the interviews on the Questionnaire but seeking to extract additional information per question or to use the Questionnaire as a guide on a less structured discussion as per the preferences of the interviewee. We also sought to use the discussion as an opportunity to identify other potential barriers that have not been considered during this study and to collect suggestions for potential improvements.

5. TASK D: Distribution of the survey

The eSurvey was distributed through email to the List of eSurvey participants described in Section 3 of this report and to any other interested party requesting access to the Survey.

The survey was accessible from mid-October to 31 December 2016.

All replies received were treated under strict confidentiality rules. A total of eight reminders were sent. When planning the reminders, we seriously considered parameters which could limit participation such as the date and time of the week, holidays. We also followed up on partially completed questionnaires to ensure their completion.

A total of 47 participants completed the eSurvey.

6. TASK E: In-depth interviews

In Task E, we conducted the interviews with the participants included in the List of Interviewees (see Task B). A total of 25 interviews were conducted including a number of associations of traders and/or suppliers.

Interviews were carried over the telephone and were realised in several steps. The potential interviewee was firstly invited by email. In the invitation, a letter provided by ACER was attached to further highlight to the interviewee the importance of his/her contribution. If no response was received, we followed up by an email reminder and then by telephone. We further provided clarifications on the scope of the interview by phone or email to participants that requested more information before deciding as to whether they will be responding or not. The questionnaire was also attached to the invitation.

Each interview included the following phases:

- I. The parties to the interview introduced themselves and presented the profile of the company that they represented and the markets of their activity.
- II. We discussed any potential questions/problems regarding the procedure followed during the interview.
- III. Participants were invited to give an overview of the most important barriers that they face in their everyday activity.
- IV. For those that were willing to do so, we discussed in detail each question in the questionnaire.
- V. Additional questions were asked during the interview in order to clarify the points that the interviewee has presented and better understand the reasoning and arguments for the opinions expressed.
- VI. At the end, we asked interviewees to summarise the most important topics touched upon the interview and sought their recommendations towards improving the functionality of the markets of their activity.

At the end of each interview, we synthesised the main findings (see section 7)

Interviewees were reassured on the confidentiality of their input and that the name and company of respondents would have not been disclosed.

7. TASK F: Findings of the eSurvey and interviews

This section summarises the main findings of the study and is structured as follows:

- In the first part of this Section, information is provided on: the types of participants that responded to the eSurvey, their countries of activity, and their level of involvement. For information on the interviewees the reader is referred to Section 3.2.
- The second part of this Section presents the results of both the eSurvey and the interviews at EU level and also at each level of hub development. Note that by “level of hub development” we refer to the ranking of European hubs as concluded by ACER in the 2016 Market Monitoring Report on wholesale gas markets⁵. Results are shown in terms of the most important and least important barriers at hub level. For the sake of completeness, tables listing all 34 barriers according to their significance per hub are also included.

This Section (and Subsections) is solely based on the input provided by stakeholders (eSurvey participants, interviewees or both) and does not necessarily reflect the views of the Consultant. As far as the interviews are concerned, the material presented herein is based on the notes kept by the Consultant during the interviews. Although every effort has been made for notes to be as exhaustive as possible it is likely that some information provided by the interviewees has not been reflected in the text below. Examples provided herein, with references to particular countries were also provided by participants and it is also likely that they are not exhaustive, i.e. there may be other markets and countries experiencing similar barriers which have not been brought up by the participants to the study.

7.1 Participants to the eSurvey

Figure 12 summarises the responses received per type of input, out of a total of 56 participants.

Figure 13 presents the type of participants to the eSurvey. Participants to the survey included industrial users, suppliers, producers, shippers, physical traders, financial traders, brokers and their European and national associations.

Note that on most occasions each participant undertakes more than one type of activity so that shippers are also traders and suppliers. To a lesser extent shippers/physical traders and suppliers are also traders of financial products, produces and end users.

While processing the results, we have considered each association as single participant, thereby treating their responses as equivalent to each of the other respondents. It is recognised that this approach introduces some error in the presentation of the findings, as each association represents several tenths of members. An alternative approach would have been to apply some form of weighting on the associations responses (e.g. multiply them by the number of their members). It was felt however that such an approach may be premature and distort findings whose value is more of a qualitative rather than of a quantitative nature at this stage.

⁵ ACER’s ranking of EU hubs; Established hubs: NL, UK; Advanced: AT, BE, DE, FR, IT; Emerging: CZ, DK, ES, PL; Illiquid: BG, EE, EL, FI, HR, LT, LV, HU, PT, RO, SI, SK.

Figure 12: Responses received per type of input

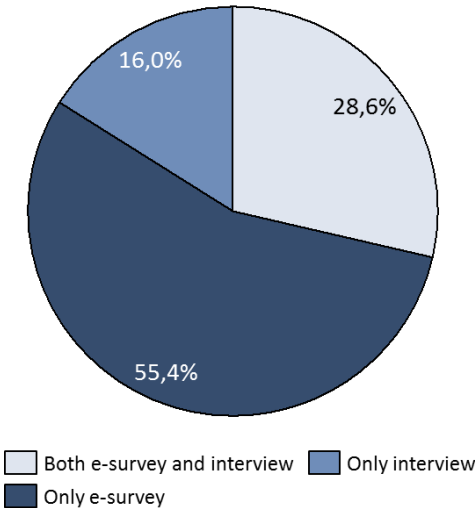
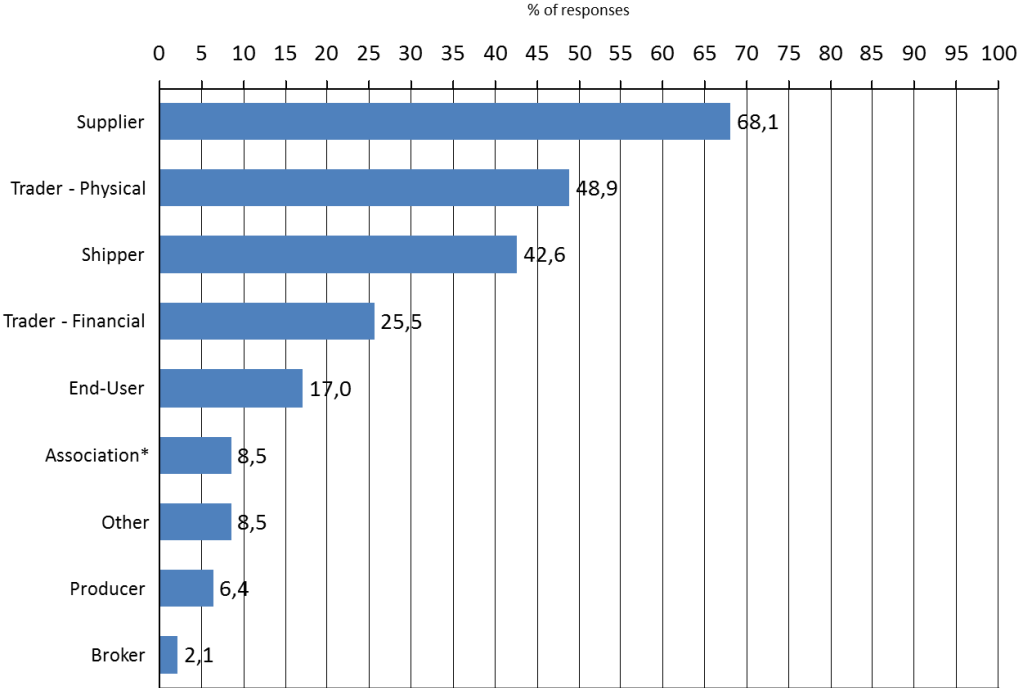


Figure 13: Breakdown of eSurvey respondents based on their activities in the gas wholesale markets.



*Includes European and national associations of industrials, suppliers, traders, producers, end users

Figure 14: Breakdown of eSurvey responses per national market of activity

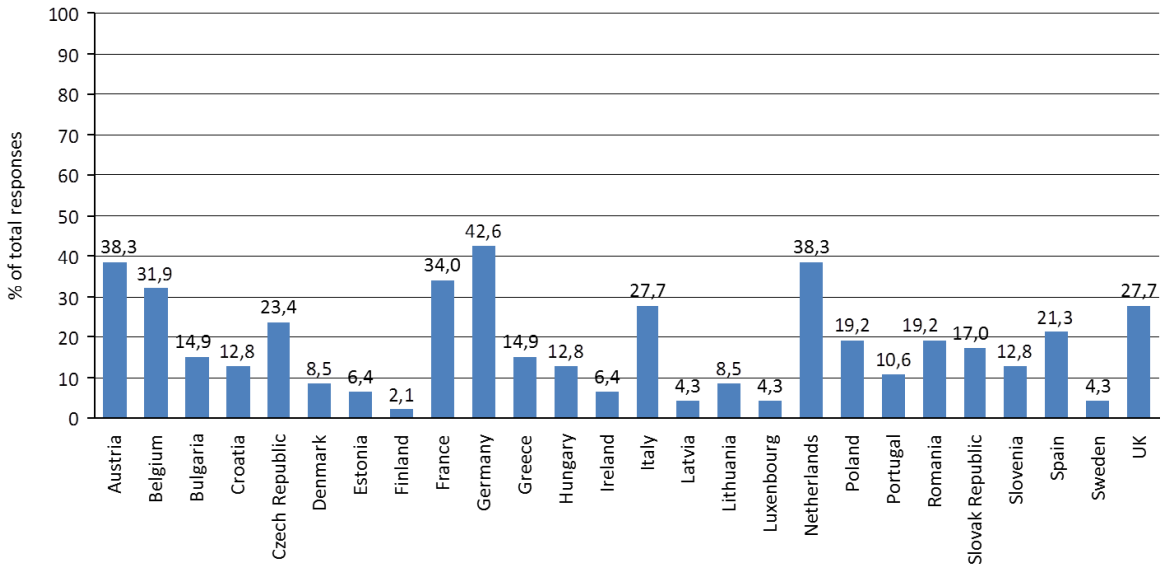


Figure 14 shows that most of the eSurvey participants (in the range from 35-46%) are active in Germany, France and Austria. Participants active in Belgium, Italy, the Netherlands and UK follow (28-34%). Participants active in the markets of Eastern Europe such as the Czech Republic, Hungary, Poland, Romania, Slovak Republic, Bulgaria, Romania and Greece represent 14 to 27%. Received input for Portugal was limited (12%) and the same holds for Denmark, Latvia, Lithuania, Luxembourg and Estonia (below 10% of all respondents).

Figure 15: Breakdown of eSurvey respondents per status of activity in each national market

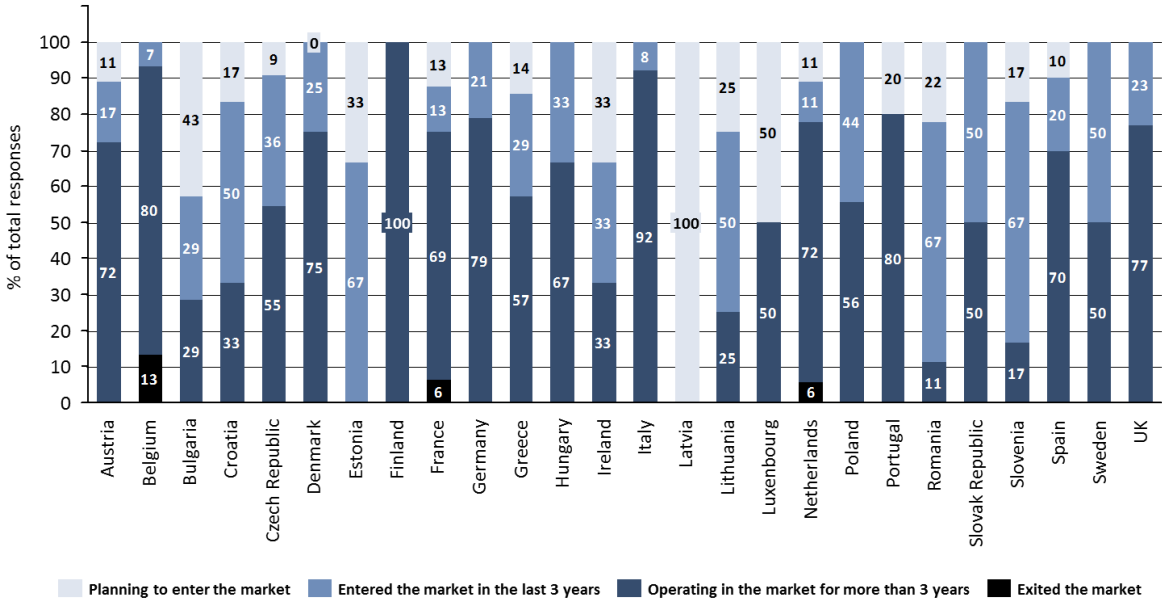
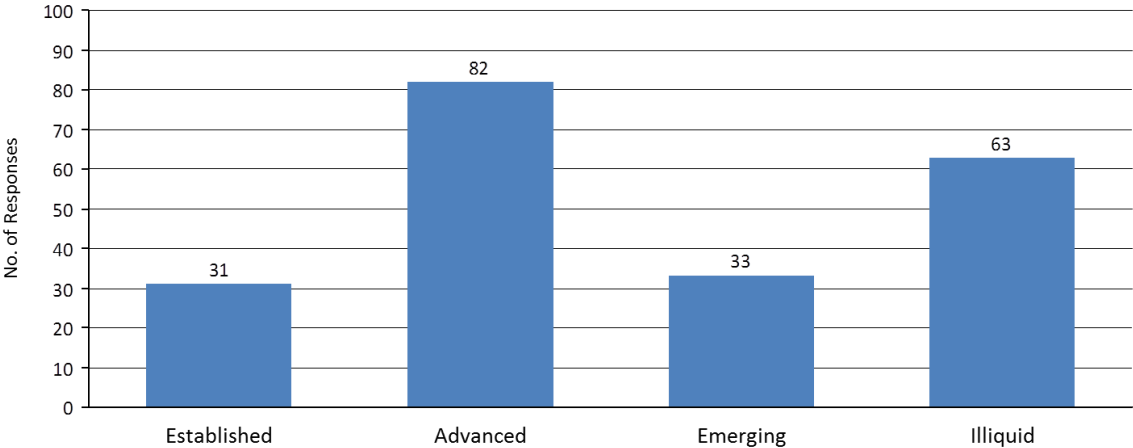


Figure 15 shows that except for Latvia, most eSurvey participants have been active in a market for more than three years. All eSurvey participants active in the markets of Estonia and Sweden and 50% or more of the participants active in Poland, the Czech Republic, Lithuania, Romania, the Slovak Republic and Slovenia responded that they are relative new entrants in the particular market.

As we will be reporting findings as a function of the level of hub development, it is useful to look into the number of responses at hub level. The figure below shows the number of responses received per group of hubs. Values exceed the number of filled in questionnaires (47) received, as each respondent can be active in more than one country and each hub group comprises at least two countries (case of established hubs) and at most 12 countries (case of illiquid hubs). Note that each respondent provides a separate response per country of activity, e.g. a respondent active in 5 countries has provided 5 separate responses.

Figure 16: Number of responses per hub group



Our initial work under Task A identified a total of 34 potential barriers. These were included in the eSurvey and participants were asked to evaluate their severity. No other barrier was added to our original list neither by eSurvey participants nor by interviewees.

7.2 Main findings from the responses to the eSurvey

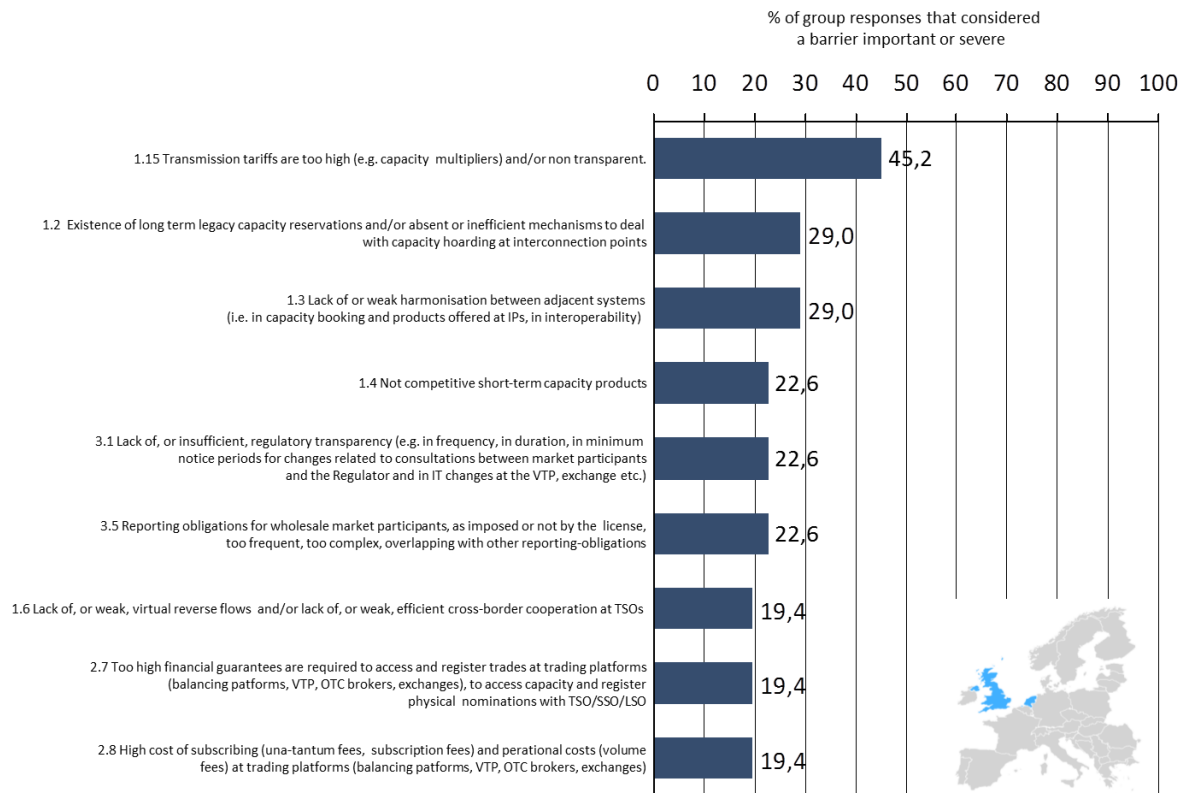
The range of figures from Figure 17 to Figure 24 below report on the barriers perceived as most important and severe by the eSurvey participants as well as the barriers perceived as less important or severe by the eSurvey participants. We will be using the term “significant barrier” to characterise both statuses (important/severe) in the remaining of this section. The figures have been drawn at hub level.

Figure 17 shows the most significant barriers identified by participants to the eSurvey for the Netherlands and the UK (established hubs), Figure 19 summarises the same information for the advanced hubs of Austria, Belgium, France, Germany and Italy, Figure 21 reports on the emerging hubs of Spain, the Czech Republic, Denmark and Poland and Figure 23 reports on the illiquid markers of Portugal, Ireland, Slovakia, Hungary, Slovenia, Croatia, Romania, Greece, Bulgaria and the Baltics. For the sake of completeness, Figure 18, Figure 20, Figure 22 and Figure 24 show per level of hub development the barriers identified as less significant and Table 10 to Table 13 present all 34 barriers included in the questionnaire. The percentage [%] of responses characterising each barrier important/severe is included in the Tables.

A summary of comments for each of the most significant barrier is included in this Section.

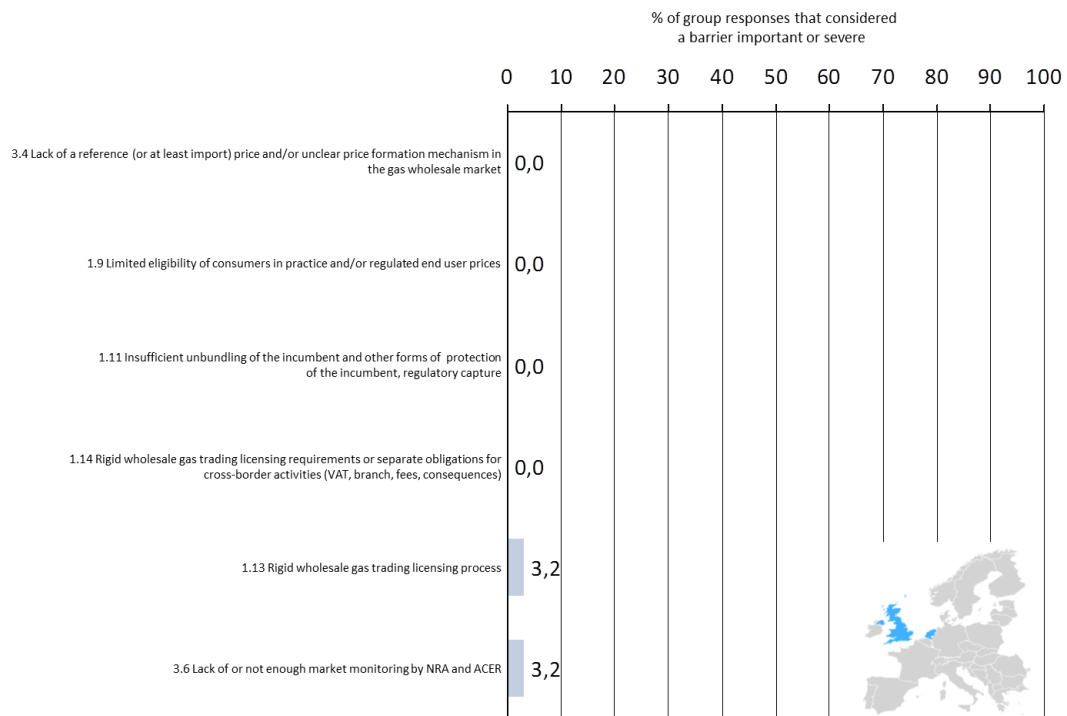
Summary of barriers in Established Hubs

Figure 17: The most significant barriers identified by eSurvey participants active in established hubs



Note: 6 barriers are equally ranked as number 10 among the most significant barriers and are not shown here, see table 11.

Figure 18: The less significant barriers identified by eSurvey participants active in established hubs



Note: 5 barriers are equally ranked as number 7 among the less significant barriers and are not shown here, see table 11.

Figure 17 shows that the most significant barriers in established hubs are:

- the levels of transmission tariffs,
- the existence of long term legacy capacity reservations and the mechanisms to deal with capacity hoarding,
- the lack or weak harmonisation between adjacent systems,
- the definition of short term products,
- the lack of, or insufficient regulatory transparency,
- the frequency and complexity of reporting obligations,
- the lack of, or weak virtual reverse flows and efficient cross-border cooperation at TSOs,
- the level of financial guarantees and the cost of subscribing with trading platforms and brokers,
- the high cost of subscribing and operational costs at trading platforms.

Participants to the eSurvey have concluded that there are no issues related to security of supply obligations, inefficient or insufficient unbundling, regulatory capture, absence of a reference price, eligibility of consumers and licensing requirements. Figure 18 clearly shows that almost no eSurvey participants consider such issues to be a significant barrier to trade in these markets.

Concerning the **level of tariffs**, participants to the eSurvey, but also interviewees, note that transmission is generally costly throughout Europe. High prices exist due to the reduction in gas demand so that the market is not committed to price the capacity properly. Transmission tariffs of short-term products often exceeds the spread between two markets. Given the current demand trends, participants to the eSurvey observe that the risk of tariffs being consistently above market spreads is very high even in established markets. In the Netherlands, **short-term capacity products** are rarely requested, as they are more expensive than annual products.

On the other hand, participants state that in the UK, the zero-reserve price on daily and within-day capacity products provides system flexibility and allows for maximisation of trading opportunities. However, as shippers, can pick up short-term capacity for free, they tend not to book longer-term products. Participants note that short-term capacity products are being cross-subsidised by users who needed, and booked, long-term capacity. Further, participants argue that high commodity charges (applied to all users) are a direct consequence of the discounted short-term capacity products in the UK. Participants note that these high commodity charges currently disincentives gas flows into the NBP and that the problem is expected to be exacerbated at the expiration of existing long-term legacy contracts calling for a thorough review of tariff setting methodology.

Participants further note that although capacity is generally available in the UK, given the current market conditions, monitoring of long-term capacity contracts and strict **CMP measures** remain

necessary. They also note that nominations on the TENP pipeline (NL-DE IP) are not always in line with what expected given market conditions, making flows and prices difficult to anticipate.

Although participants had selected the option important or severe when responding to the eSurvey question is there a “Lack of or weak harmonisation between adjacent systems”, in their comments (and also during the interviews) they clarified that both countries have implemented the EU Network Codes and are fully integrated in PRISMA. Nevertheless, their concern is that PRISMA is only a front-end platform running auctions and that in practice there is still a **notable lack of real common capacity allocation and lack of consistent terms and conditions to streamline the costs of hub-to-hub trading**. Naturally, participants note that this is an issue concerning not just the UK and the Netherlands but essentially all EU gas markets.

As far as the operation of hubs and exchanges is concerned participants note that charges in the form of **financial guarantees and the cost of subscription** can be significant for small players. It is also noted that the increasingly dominant position of ICE and the effective monopoly of Powernext, although contributing to the standardisation of products, it increasingly leads to lack of transparency. Participants call for an assessment as to whether regulation on data transparency of energy exchanges is necessary.

The lack of, or insufficient **regulatory transparency** (e.g. frequency, duration of consultations between market participants and the Regulator) is considered as a significant barrier in the Netherlands. It is also noted that the NRA consults in priority with the TSOs, state-owned companies and energy associations.

Participants call on ministries and regulators to repeal all **reporting obligations** as all information is reported to ACER in the context of REMIT transaction reporting.

Finally, in 1/5th of the responses, participants have noted that the barrier referred to as **“Lack of, or weak, virtual reverse flows and/or lack of, or weak, efficient cross-border cooperation at TSOs level”** is important in established markets. No specific information at country level has been provided, however at EU level participants noted that this barrier manifests itself in the lack of a jointly agreed method for capacity calculation at IPs as required in Article 6 of EU NC CAM.

Table 10 reports on the complete list of barriers identified as significant for established markets. A total of 15 barriers (out of a total of 34) have been identified as significant by over 15% of the participants. The number of responses, in where these 15 barriers were found to be significant, is in the range from 15-45% of the total responses received for established hubs.

The colour scale for each percentage level is shown in the Table below:

%	0-19	20-39	40-59	60-79	80-100

Table 10: List of barriers in established hubs in descending order.

Barrier	Important/Severe [%] of total responses
1.15 Transmission tariffs are too high (e.g. capacity multipliers) and/or non transparent.	45
1.2 Existence of long term legacy capacity reservations and/or absent or inefficient mechanisms to deal with capacity hoarding at interconnection points	29
1.3 Lack of or weak harmonisation between adjacent systems (i.e. in capacity booking and products offered at IPs, in interoperability)	29
3.5 Reporting obligations for wholesale market participants, as imposed or not by the license, too frequent, too complex, overlapping with other reporting-obligations	23
1.4 Not competitive short-term capacity products	23
3.1 Lack of, or insufficient, regulatory transparency (e.g. in frequency, in duration, in minimum notice periods for changes related to consultations between market participants and the Regulator and in IT changes at the VTP, exchange etc.)	23
2.8 High cost of subscribing (una-tantum fees, subscription fees) and operational costs (volume fees) at trading platforms (balancing platforms, VTP, OTC brokers, exchanges)	19
2.7 Too high financial guarantees are required to access and register trades at trading platforms (balancing platforms, VTP, OTC brokers, exchanges), to access capacity and register physical nominations with TSO/SSO/LSO	19
1.6 Lack of, or weak, virtual reverse flows and/or lack of, or weak, efficient cross-border cooperation at TSOs	19
1.5 Absence of entry/exit capacity booking	16
2.4 Too complicated or too demanding requirements and obligations to access the wholesale gas market (e.g. in order to access the VTP, exchange, balancing platforms, interested parties are obliged to reserve capacity at interconnection or exit points and/or at Underground Gas Storages)	16
1.1 Lack of or not enough physical capacity or interconnections (too few import routes or limited access to alternative sources of gas)	16
1.8 Lack of market based balancing procedures (e.g. short-term products for balancing, strictly balanced hourly nominations) and/or absence of a common balancing regime for all pressure levels	16
3.2 Not sufficient/not reliable information/data published by market facilitators (TSOs, SSOs, LSOs and VTP operators)	16
3.3 Lack of use, or underuse, of English (e.g. access contracts, communications and interface of VTP, balancing operator, exchange, TSO's network services in VTP, TSO, Regulators' consultations in direct communications between NRA and market participants).	16
3.7 Obligations on market participants with retro-active effect (e.g. retroactive ban of trading of specific products, retroactive trading in specific platforms, retroactive changes to transmission and other fees, retroactive reporting obligations).	13
2.9 Complex clearing procedures at exchange trading	13
1.7 Lack of standardised terms and/or inefficient conditions to access infrastructures including LNG facilities and Underground Gas Storages	13
2.11 Too heavy requirements/costs for a wholesale trading license to trade at the VTP, obligation to register annually instead of once with unlimited validity	13
2.5 Lack of, or weak, independence in the hub management (e.g. VTP operator, exchange operator, balancing operator)	13
2.10 Existence of long term take or pay supply contracts between producers or wholesale suppliers and retailers or end users that limit hub liquidity	13
2.3 Lack of, or insufficient, flexibility in the products offered in the VTP or the exchange or in other forms of non organised wholesale market (e.g. products are restricted to specific -non flexible- sizes and durations)	13
2.12 Lack of, or weak, political support to wholesale market development, lack of trust	13
1.10 Level of security of supply obligations (e.g. on storage, flows) is hampering trading	6
1.12 Lack of, or weak, regional perspective in regulatory decisions, lack of, or weak, regulatory cooperation	6
2.2 Lack of standardised trading contracts	6
2.1 Lack of, or weak, gas trading mechanism (e.g. VTP, brokers, exchange)	6
2.6 Absence of a national or regional exchange	6
3.6 Lack of or not enough market monitoring by NRA and ACER	3
1.13 Rigid wholesale gas trading licensing process	3
1.14 Rigid wholesale gas trading licensing requirements or separate obligations for cross-border activities (VAT, branch, fees, consequences)	0
1.11 Insufficient unbundling of the incumbent and other forms of protection of the incumbent, regulatory capture	0
1.9 Limited eligibility of consumers in practice and/or regulated end user prices	0
3.4 Lack of a reference (or at least import) price and/or unclear price formation mechanism in the gas wholesale market	0

Summary of barriers in Advanced Hubs

Figure 19 shows that significant barriers in advanced hubs are:

- the level of tariffs and the definition of short term products,
- the lack or weak harmonisation between adjacent systems,
- the frequency and complexity of reporting obligations,
- the lack or weak regional perspective in regulatory decisions,
- the lack of or underuse of English
- the lack of or insufficient regulatory transparency
- the existence of long term legacy capacity reservations and the mechanisms to deal with capacity hoarding,
- the too high financial guarantees to access and register trades at trading platforms
- the lack of market based balancing procedures.

Trading contracts are standardised, a reference price and a price formation mechanism are available and there are no notable issues related to inefficient unbundling, dependence of the hub operator and regulatory capture. Further there are no issues related to consumer eligibility. Figure 20 summarises the barriers that are considered significant by only the fewest participants in the survey.

Figure 19: The most significant barriers faced by participants active in advanced hubs

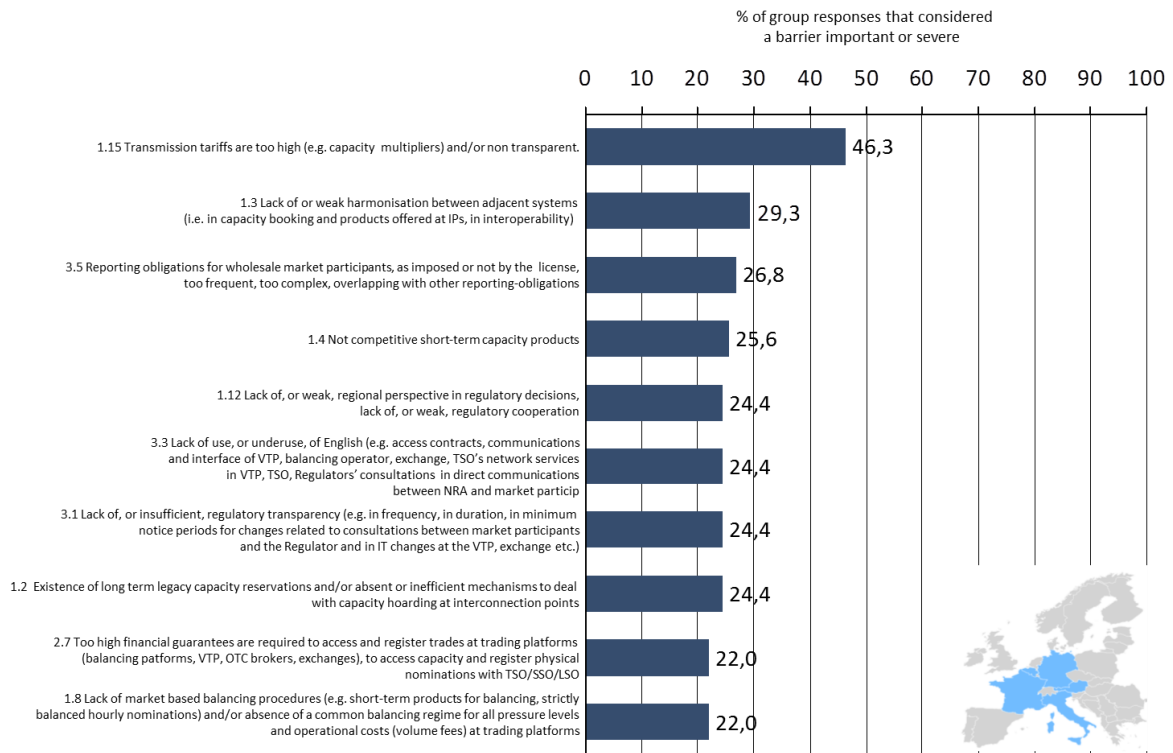
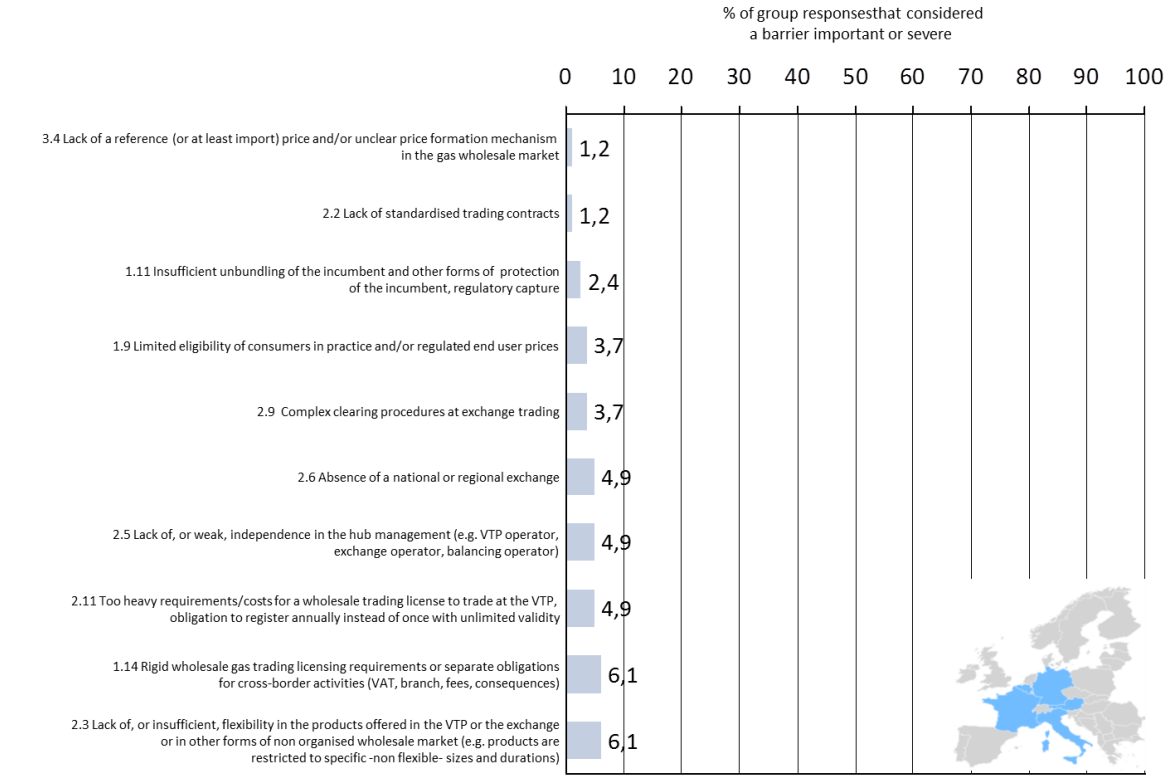


Figure 20: The less significant barriers faced by participants active in advanced hubs



The **level of tariffs**, is again considered as a significant by most participants which note that the risk of tariffs being consistently above market spreads is very high throughout Europe. Participants argue that high multipliers do not allow for maximisation of cross-border flows and hinder arbitrage opportunities in Austria, Germany, France, Italy. Further, in Belgium, the conversion capacity of L-H gas is offered at

set tariffs and there is no market-based allocation. In Germany, a shipper buying half day capacity pays for a whole day product. Transparency issues related to the regulated asset base as well as on the overall level of remuneration are identified in Austria.

Capacity is generally available at the corresponding interconnection points however participants note that monitoring of long-term capacity contracts and application of **congestion management measures** remains necessary. Participants note that as is the case in the NL-DE IP of the TENP nominations at the BE-DE IP, especially for the low-calorific gas zone, are not always in line with what could be expected given market conditions, making flows and prices difficult to anticipate.

Despite the progress made in **harmonisation**, as part of the implementation of the EU Network Codes, several issues remain in the region. For example, there are different nomination windows between Austria and Italy, Germany and Austria that apply the firm-day-ahead UIOLI regime, while their adjacent markets (e.g. TTF) are free of it, as it is not necessary, in Italy the definition of Gas Day is different than in its neighbouring countries and non-compliant with the European Network Code on Capacity Allocation.

Participants note that **cooperation between regulators** should be further enhanced and decisions should be taken with a regional perspective. An example, is drawn from the so called the German BEATE rules related to storage. For their implementation, participants claim that extended cooperation between the German regulator and its neighbouring NRAs is necessary.

Issues related to the **implementation of the EU NC BAL** and to the available flexibility for balancing are identified in all five national markets. Participants claim that balancing rules in Austria are not market-based as established by the Network Code, there is a lack of flexibility for L-gas in Belgium, there is some lack of transparency in France and Italy and an artificially expensive imbalance price for the larger H-gas area in Germany.

Almost one quarter of participants indicate **the absence of, or insufficient regulatory transparency** as an important barrier to gas wholesale trading. Participants claim further that delays in publication of information and some lack of reliability are identified in Austria where not all TSOs maintain a platform related to capacity and daily flows⁶. Participants note that the transparency provisions provided for in the new EU NC TAR could substantially improve the situation. Low publication frequency and delays are also identified in Germany and Italy. **Underuse of English** in main documents published by the regulators and the TSO is perceived as a barrier of equal importance. Participants claim that the Austrian, German and Italian regulators scarcely publish documents translated in **English**.

National reporting obligations are considered a barrier to trade and a duplication given the reporting obligations under REMIT.

⁶ Note from E-Control: There are two TSOs in Austria and both of them maintain a platform related to capacity and flows. GCA: https://mgm.gasconnect.at/gca_mgm/mgm/visualisation.do?type=entry_exit&reset=true&lang=en (data for the whole market area) and TAG: [http://www.taggbh.at/en/transportation-capacities/..](http://www.taggbh.at/en/transportation-capacities/)

Participants also argue that **financial guarantees**, required to access and register trades at trading platforms as well as to access capacity and register physical nominations with TSO/SSO/LSO can be costly and complex to attain and maintain. For example, the guarantees required by GME in Italy can be cumbersome, or even impossible, for small companies to attain⁷. Such companies often are obliged to provide a physical guarantee (i.e. natural gas in storage⁸).

Table 11 reports on the complete list of barriers identified as significant for advanced markets. A total of 16 barriers (out of a total of 34) have been identified as significant by over 15% of the participants. The number of responses, in which these 16 barriers were found to be significant, is in the range from 15-46% of the total responses received for advanced hubs.

The colour scale for each percentage level is shown in the Table below:

%	0-19	20-39	40-59	60-79	80-100

⁷ Note from AEEGSI: Guarantees are proportional to the trade activity.

⁸ Note from AEEGSI: Booking storage capacity as a guarantee is not an obligation. It is just one of the available possibilities.

Table 11: List of barriers in advanced hubs in descending order

Barrier	Important/Severe [%] of total responses
1.15 Transmission tariffs are too high (e.g. capacity multipliers) and/or non transparent.	46
1.3 Lack of or weak harmonisation between adjacent systems (i.e. in capacity booking and products offered at IPs, in interoperability)	29
3.5 Reporting obligations for wholesale market participants, as imposed or not by the license, too frequent, too complex, overlapping with other reporting-obligations	27
1.4 Not competitive short-term capacity products	26
1.2 Existence of long term legacy capacity reservations and/or absent or inefficient mechanisms to deal with capacity hoarding at interconnection points	24
3.1 Lack of, or insufficient, regulatory transparency (e.g. in frequency, in duration, in minimum notice periods for changes related to consultations between market participants and the Regulator and in IT changes at the VTP, exchange etc.)	24
3.3 Lack of use, or underuse, of English (e.g. access contracts, communications and interface of VTP, balancing operator, exchange, TSO's network services in VTP, TSO, Regulators' consultations in direct communications between NRA and market participants).	24
1.12 Lack of, or weak, regional perspective in regulatory decisions, lack of, or weak, regulatory cooperation	24
2.7 Too high financial guarantees are required to access and register trades at trading platforms (balancing platforms, VTP, OTC brokers, exchanges), to access capacity and register physical nominations with TSO/SSO/LSO	22
1.8 Lack of market based balancing procedures (e.g. short-term products for balancing, strictly balanced hourly nominations) and/or absence of a common balancing regime for all pressure levels	22
2.8 High cost of subscribing (una-tantum fees, subscription fees) and operational costs (volume fees) at trading platforms (balancing platforms, VTP, OTC brokers, exchanges)	18
1.6 Lack of, or weak, virtual reverse flows and/or lack of, or weak, efficient cross-border cooperation at TSOs	16
1.1 Lack of or not enough physical capacity or interconnections (too few import routes or limited access to alternative sources of gas)	16
3.2 Not sufficient/not reliable information/data published by market facilitators (TSOs, SSOs, LSOs and VTP operators)	16
3.7 Obligations on market participants with retro-active effect (e.g. retroactive ban of trading of specific products, retroactive trading in specific platforms, retroactive changes to transmission and other fees, retroactive reporting obligations).	16
1.7 Lack of standardised terms and/or inefficient conditions to access infrastructures including LNG facilities and Underground Gas Storages	15
2.4 Too complicated or too demanding requirements and obligations to access the wholesale gas market (e.g. in order to access the VTP, exchange, balancing platforms, interested parties are obliged to reserve capacity at interconnection or exit points and/or at Underground Gas Storages)	12
1.10 Level of security of supply obligations (e.g. on storage, flows) is hampering trading	12
2.10 Existence of long term take or pay supply contracts between producers or wholesale suppliers and retailers or end users that limit hub liquidity	10
2.12 Lack of, or weak, political support to wholesale market development, lack of trust	10
3.6 Lack of or not enough market monitoring by NRA and ACER	10
2.1 Lack of, or weak, gas trading mechanism (e.g. VTP, brokers, exchange)	9
1.13 Rigid wholesale gas trading licensing process	9
1.5 Absence of entry/exit capacity booking	7
2.3 Lack of, or insufficient, flexibility in the products offered in the VTP or the exchange or in other forms of non organised wholesale market (e.g. products are restricted to specific -non flexible- sizes and durations)	6
1.14 Rigid wholesale gas trading licensing requirements or separate obligations for cross-border activities (VAT, branch, fees, consequences)	6
2.11 Too heavy requirements/costs for a wholesale trading license to trade at the VTP, obligation to register annually instead of once with unlimited validity	5
2.5 Lack of, or weak, independence in the hub management (e.g. VTP operator, exchange operator, balancing operator)	5
2.6 Absence of a national or regional exchange	5
2.9 Complex clearing procedures at exchange trading	4
1.9 Limited eligibility of consumers in practice and/or regulated end user prices	4
1.11 Insufficient unbundling of the incumbent and other forms of protection of the incumbent, regulatory capture	2
2.2 Lack of standardised trading contracts	1
3.4 Lack of a reference (or at least import) price and/or unclear price formation mechanism in the gas wholesale market	1

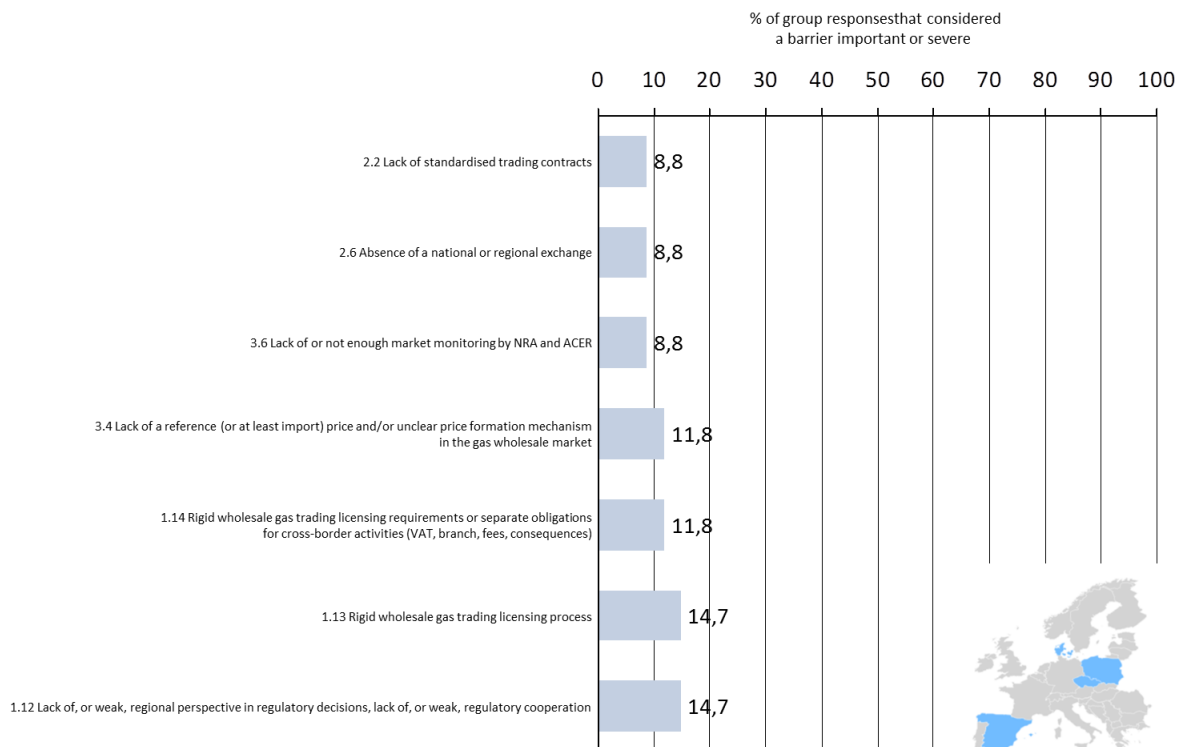
Summary of barriers in Emerging Hubs

Figure 21: The most significant barriers faced by participants active in emerging hubs



Note: 2 barriers are equally ranked as number 10 among the most significant barriers.

Figure 22: The less significant barriers faced by participants active in emerging hubs



Note: 4 barriers are equally ranked as number 8 among the less significant barriers and are not included here, see Table 12.

Figure 21 shows that the most significant barriers in emerging hubs are:

- the level of tariffs and the definition of short term products,
- the lack of/or insufficient regulatory transparency,
- the frequency and complexity of reporting obligations,
- the lack or weak harmonisation between adjacent systems,
- the lack or underuse of English,
- the security of supply obligations,
- the lack of political support to market development,
- the existence of long term legacy capacity obligations and the mechanisms to deal with capacity hoarding,
- the existence of long-term take or pay supply contracts,
- the too heavy requirements/costs for a wholesale trading licence to trade at the VTP

The **high level of tariffs on short-term capacity products** is once more identified as the most significant barrier in this market. Participants note once more that given the overall decline in gas demand, there is a high risk of tariffs being consistently above market spreads. The problem is postulated to become more severe at the expiration of existing long-term legacy capacity contracts. Some participants and interviewees call for a thorough review of the tariff setting methodology. Others request a detailed study on the EU gas transmission tariffs taking also into account the provisions of EU NC TAR.

Participants and interviewees argue that the recently imposed **security of supply obligations** (storage obligations) on all imports in Poland is a substantial barrier to entry particularly considering that storage capacity is offered at high prices and monopolised by a subsidiary of the incumbent supplier. Holding storage in another EU country (e.g. Germany) in addition to firm transmission capacity into Poland may be possible but still costly especially tariffs at IPs are taken into account.

A third of the eSurvey participants consider that lack of **political support** and **limited use of English** are significant barriers to wholesale market development in this region. All eSurvey participants noted that there is lack of political support in market development in Poland. Participants also acknowledge that the gas trading mechanisms in Poland are weak.

Further, all eSurvey participants noted a lack of, or insufficient, **regulatory transparency** in the Polish wholesale gas market. Over half of the participants and several interviewees, when citing their experiences in the Polish market, noted that English is significantly underused and several regulatory documents (consultation documents, methodologies, underlying natural gas laws) are either never published in English, or only published with considerable delay. Lack or underuse of English is also a significant barrier in the Spanish market.

Over 75% of the eSurvey participants responded that **reporting obligations** in Poland are a significant barrier to trade, 50% of the participants noted the same for Spain. In general, most participants consider that national reporting obligations overlap with REMIT reporting.

Almost one third of participants (circa 30%) consider the existence of **long-term legacy capacity obligations and the absence or inefficiency of mechanisms** to deal with capacity hoarding at interconnection points as a significant barrier in emerging hubs. Participants responded that although capacity is generally available in current market conditions, monitoring of long-term capacity contracts and strict anti-hoarding measures are necessary. Respondents refer to the IP Hora Sv. Kateriny which is dominated by long-term legacy contracts from OPAL to Gazela with existing wheeling and freely allocable capacity and volumes without booking at IP. The offered wheeling product and other services are no longer available or allowed for shippers under EU regulation.

An equal share of participants mention that **the dominant position of the incumbent**, more than the existence of long-term take or pay supply contracts between producers or wholesale suppliers and retailers or end users, limit hub liquidity and is also a wholesale market barrier. A comment provided for all markets in this hub category is that “liquid swing contracts are generally made available. The problem to be tackled is the dominant position of incumbents, not the existence of long-term contracts (or oil-indexation) especial for low-calorific value gas zone”.

Licensing requirements are also identified as a significant barrier in the countries of this hub category. Licensing in Poland is cumbersome and requirements could be an issue for smaller players. There are at least two significant barriers regarding the licensing procedure in Poland: one is the fact that everything needs to be submitted in the Polish language⁹; the second is the extensive number of administrative documents requested (that need to be translated in Polish), whereas in some of them the issuance date cannot be more than 3 months old. As a consequence, more than two years could not even be a sufficient period of time in order to obtain a license in Poland. In Spain the wholesale licensing process might last for 12 months¹⁰.

Table 12 reports on the complete list of barriers identified as significant for emerging markets. A total of 29 barriers (out of a total of 34) have been identified as significant by over 15% of the participants. The number of responses, in where these 23 barriers were found to be significant, is in the range from 15-56% of the total responses received for established hubs.

The colour scale for each percentage level is shown in the Table below:

%	0-19	20-39	40-59	60-79	80-100

⁹ Note from URE: all documents need to be in the Polish language as this is a requirement by law.

¹⁰ Note from CNMC: Concerning the wholesale activity itself, the national law states that the only requirement for traders and shippers (not suppliers) is to constitute the economic guarantees and communicate it to the Ministry and CNMC. For suppliers already having a supplying license in another European country, it is not necessary to undertake the licensing process in Spain. It is almost automatically granted after the constitution of the economic guarantees and the communication to the Authorities. Note from URE: licensing does not take two years.

Table 12: List of barriers in emerging hubs in descending order

Barrier	Important/Severe [%] of total responses
1.15 Transmission tariffs are too high (e.g. capacity multipliers) and/or non transparent.	56
1.4 Not competitive short-term capacity products	50
3.1 Lack of, or insufficient, regulatory transparency (e.g. in frequency, in duration, in minimum notice periods for changes related to consultations between market participants and the Regulator and in IT changes at the VTP, exchange etc.)	44
3.5 Reporting obligations for wholesale market participants, as imposed or not by the license, too frequent, too complex, overlapping with other reporting-obligations	41
1.3 Lack of or weak harmonisation between adjacent systems (i.e. in capacity booking and products offered at IPs, in interoperability)	38
3.3 Lack of use, or underuse, of English (e.g. access contracts, communications and interface of VTP, balancing operator, exchange, TSO's network services in VTP, TSO, Regulators' consultations in direct communications between NRA and market participants).	38
1.10 Level of security of supply obligations (e.g. on storage, flows) is hampering trading	35
2.12 Lack of, or weak, political support to wholesale market development, lack of trust	35
1.2 Existence of long term legacy capacity reservations and/or absent or inefficient mechanisms to deal with capacity hoarding at interconnection points	29
2.10 Existence of long term take or pay supply contracts between producers or wholesale suppliers and retailers or end users that limit hub liquidity	29
2.11 Too heavy requirements/costs for a wholesale trading license to trade at the VTP, obligation to register annually instead of once with unlimited validity	29
2.7 Too high financial guarantees are required to access and register trades at trading platforms (balancing platforms, VTP, OTC brokers, exchanges), to access capacity and register physical nominations with TSO/SSO/LSO	26
2.8 High cost of subscribing (una-tantum fees, subscription fees) and operational costs (volume fees) at trading platforms (balancing platforms, VTP, OTC brokers, exchanges)	26
2.4 Too complicated or too demanding requirements and obligations to access the wholesale gas market (e.g. in order to access the VTP, exchange, balancing platforms, interested parties are obliged to reserve capacity at interconnection or exit points and/or at Underground Gas Storages)	26
2.1 Lack of, or weak, gas trading mechanism (e.g. VTP, brokers, exchange)	26
1.8 Lack of market based balancing procedures (e.g. short-term products for balancing, strictly balanced hourly nominations) and/or absence of a common balancing regime for all pressure levels	24
3.7 Obligations on market participants with retro-active effect (e.g. retroactive ban of trading of specific products, retroactive trading in specific platforms, retroactive changes to transmission and other fees, retroactive reporting obligations).	24
1.7 Lack of standardised terms and/or inefficient conditions to access infrastructures including LNG facilities and Underground Gas Storages	24
2.3 Lack of, or insufficient, flexibility in the products offered in the VTP or the exchange or in other forms of non organised wholesale market (e.g. products are restricted to specific -non flexible- sizes and durations)	24
1.11 Insufficient unbundling of the incumbent and other forms of protection of the incumbent, regulatory capture	24
1.6 Lack of, or weak, virtual reverse flows and/or lack of, or weak, efficient cross-border cooperation at TSOs	21
1.1 Lack of or not enough physical capacity or interconnections (too few import routes or limited access to alternative sources of gas)	21
3.2 Not sufficient/not reliable information/data published by market facilitators (TSOs, SSOs, LSOs and VTP operators)	21
1.5 Absence of entry/exit capacity booking	18
2.5 Lack of, or weak, independence in the hub management (e.g. VTP operator, exchange operator, balancing operator)	18
2.9 Complex clearing procedures at exchange trading	18
1.9 Limited eligibility of consumers in practice and/or regulated end user prices	18
1.12 Lack of, or weak, regional perspective in regulatory decisions, lack of, or weak, regulatory cooperation	15
1.13 Rigid wholesale gas trading licensing process	15
1.14 Rigid wholesale gas trading licensing requirements or separate obligations for cross-border activities (VAT, branch, fees, consequences)	12
3.4 Lack of a reference (or at least import) price and/or unclear price formation mechanism in the gas wholesale market	12
3.6 Lack of or not enough market monitoring by NRA and ACER	9
2.6 Absence of a national or regional exchange	9
2.2 Lack of standardised trading contracts	9

Summary of barriers in Illiquid Hubs

Figure 23 shows that the most significant barriers in illiquid hubs are related to the absence of an organised functioning wholesale market, the lack of political support towards the development of such market and to the lack of regulatory transparency. In detail, the most significant barriers identified by the participants to the eSurvey are:

- the lack of, or weak political support in wholesale market development,
- the absence of a national or regional exchange and/or of a functioning VTP,
- the lack, or insufficient, regulatory transparency,
- the lack of flexibility of products offered,
- the lack of a reference price or a price formation mechanism,
- the lack of, or weak gas trading mechanisms,
- lack of competitive short-term capacity products
- the lack of, or weak virtual reverse flows and cross border cooperation between TSOs,
- transmission tariffs are too high and/or non-transparent
- limited eligibility of consumers in practice and/or regulated end user prices
- lack of use or underuse of English

The most important barrier in the countries of this category is related to the ***lack of, or weak, political support*** in wholesale market development and is identified in all countries of the region. Most of participants claim that there is a lack of political willingness for market liberalisation, with governments not sufficiently promoting market opening. At best, the development of a liquid wholesale market is of low priority in the political agenda. Participants highlight that there are notable examples (e.g. Hungary) where there is an even an attempt to restore large enterprises back to state ownership. Participants further point out that a notable evidence of political unwillingness towards market opening is that end-user regulated prices remain in several MSs.

Over half of the responses received for this region highlight the ***absence of a functioning VTP***. Although participants have also responded to the question related to the absence of a national and regional exchange as being a severe barrier for the region we interpret their responses as more referring to the absence of a VTP rather than to the absence of an organising exchange for the trading of financial products. Participants clarify that the lack of trading, particularly in the form of an underlying short-term market (DA/WD) which is transparent and efficient (balancing rules, access to flexibility) to allow transparent formation of price, is a major impediment to the market. Also, almost 50% of the participants claim lack of ***flexibility in capacity products***.

More than half of the participants claim that ***regulatory transparency*** is insufficient, consultation periods are short, the use of English in the official website of certain NRAs is limited, tariffs methodologies and the calculation of tariffs lack in transparency.

The lack of a reference price or a price formation mechanism in the gas wholesale market is another important barrier, very much linked to the absence of a credible balancing mechanism and once more to the absence of a VTP is also identified in several countries including the Czech Republic, Hungary, and Slovakia.

The lack of, or weak virtual reverse flows and cross border cooperation between TSOs is identified as a significant barrier. The Bulgarian and Greek TSO have concluded only a temporary interconnection agreement which will be revisited in February 2017.

Participants further note that **transmission tariffs** are non-transparent, at levels that hamper market development and constitute a significant barrier for the region. Specific examples include the “Gazprom-compensation” segment in Lithuania, the combined LNG gasification and Entry tariff in Greece which make the usage of LNG as uncompetitive, the level of transparency in the calculation of tariffs in countries like Bulgaria, Greece, Romania and Slovakia.

Eligibility of consumers in practice and/or regulated end user prices is also a significant barrier in many countries in the region including Lithuania, Bulgaria, and Romania.

Lack of use or underuse of English is also a significant barrier recognised in over 40% of the responses received. For the region. Participants comment that the information published on the websites of the national regulators (NRA) as well as the websites of NRAs is of low quality with limited, or outdated publications in English.

Figure 23: The ten most significant barriers faced by participants active in illiquid hubs

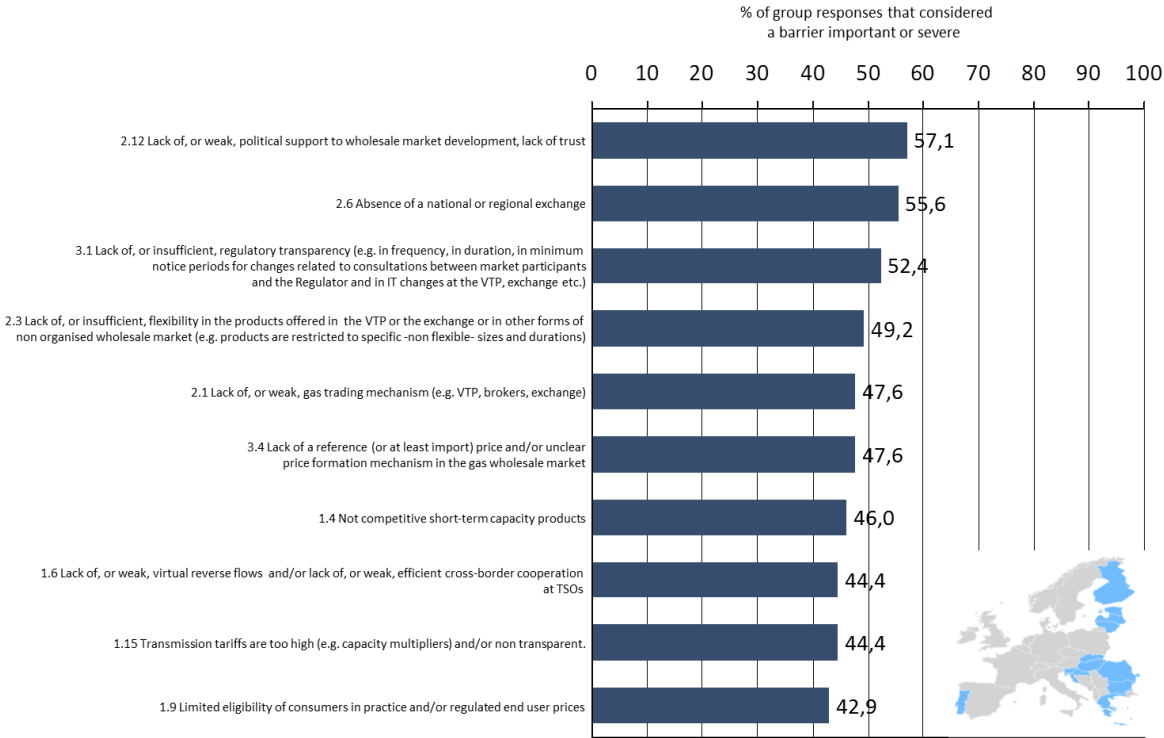


Figure 24: The ten less significant barriers faced by participants active in illiquid hubs

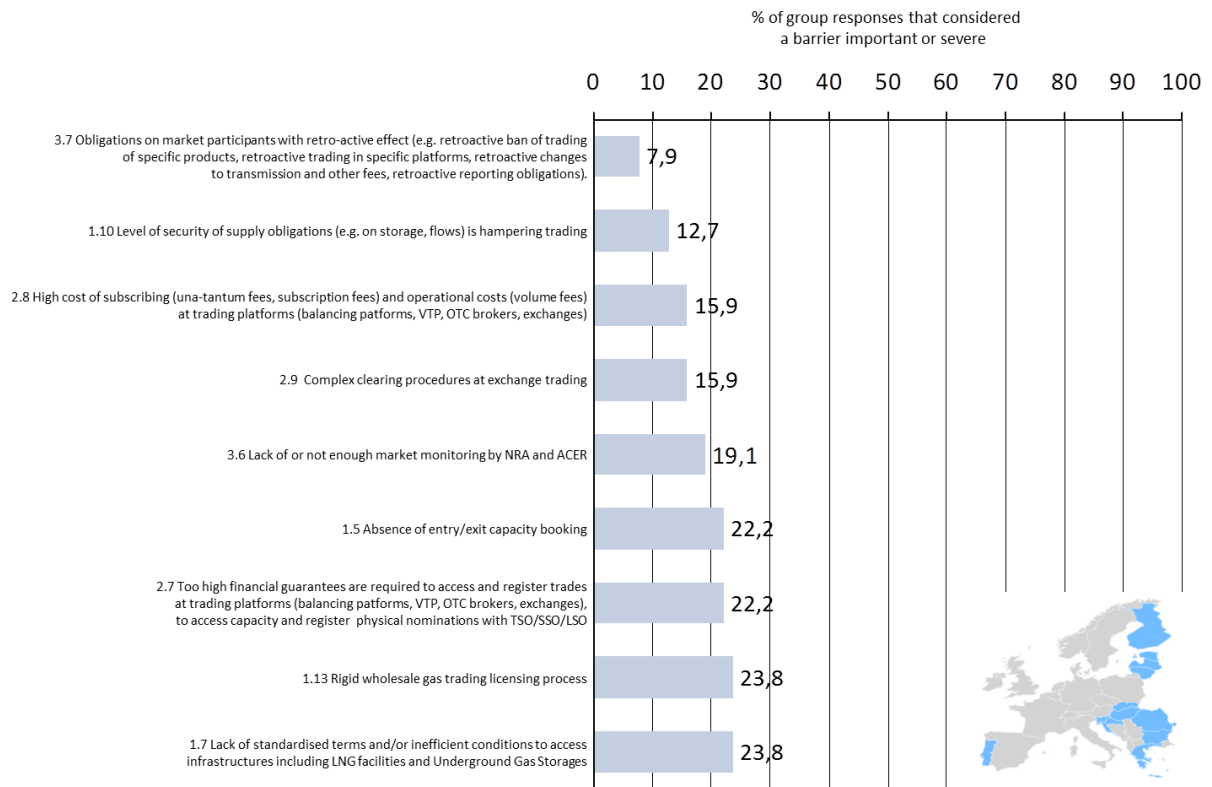


Table 13: List of barriers in illiquid hubs in descending order

Barrier	Important/Severe [%] of total responses
2.12 Lack of, or weak, political support to wholesale market development, lack of trust	57
2.6 Absence of a national or regional exchange	56
3.1 Lack of, or insufficient, regulatory transparency (e.g. in frequency, in duration, in minimum notice periods for changes related to consultations between market participants and the Regulator and in IT changes at the VTP, exchange etc.)	52
2.3 Lack of, or insufficient, flexibility in the products offered in the VTP or the exchange or in other forms of non organised wholesale market (e.g. products are restricted to specific -non flexible- sizes and durations)	49
2.1 Lack of, or weak, gas trading mechanism (e.g. VTP, brokers, exchange)	48
3.4 Lack of a reference (or at least import) price and/or unclear price formation mechanism in the gas wholesale market	48
1.4 Not competitive short-term capacity products	46
1.6 Lack of, or weak, virtual reverse flows and/or lack of, or weak, efficient cross-border cooperation at TSOs	44
1.15 Transmission tariffs are too high (e.g. capacity multipliers) and/or non transparent.	44
1.9 Limited eligibility of consumers in practice and/or regulated end user prices	43
2.2 Lack of standardised trading contracts	41
3.3 Lack of use, or underuse, of English (e.g. access contracts, communications and interface of VTP, balancing operator, exchange, TSO's network services in VTP, TSO, Regulators' consultations in direct communications between NRA and market participants).	41
1.1 Lack of or not enough physical capacity or interconnections (too few import routes or limited access to alternative sources of gas)	38
1.8 Lack of market based balancing procedures (e.g. short-term products for balancing, strictly balanced hourly nominations) and/or absence of a common balancing regime for all pressure levels	38
2.10 Existence of long term take or pay supply contracts between producers or wholesale suppliers and retailers or end users that limit hub liquidity	38
3.2 Not sufficient/not reliable information/data published by market facilitators (TSOs, SSOs, LSOs and VTP operators)	38
1.11 Insufficient unbundling of the incumbent and other forms of protection of the incumbent, regulatory capture	37
1.12 Lack of, or weak, regional perspective in regulatory decisions, lack of, or weak, regulatory cooperation	35
1.2 Existence of long term legacy capacity reservations and/or absent or inefficient mechanisms to deal with capacity hoarding at interconnection points	33
1.3 Lack of or weak harmonisation between adjacent systems (i.e. in capacity booking and products offered at IPs, in interoperability)	33
2.5 Lack of, or weak, independence in the hub management (e.g. VTP operator, exchange operator, balancing operator)	29
2.11 Too heavy requirements/costs for a wholesale trading license to trade at the VTP, obligation to register annually instead of once with unlimited validity	27
1.14 Rigid wholesale gas trading licensing requirements or separate obligations for cross-border activities (VAT, branch, fees, consequences)	25
2.4 Too complicated or too demanding requirements and obligations to access the wholesale gas market (e.g. in order to access the VTP, exchange, balancing platforms, interested parties are obliged to reserve capacity at interconnection or exit points and/or at Underground Gas Storages)	25
3.5 Reporting obligations for wholesale market participants, as imposed or not by the license, too frequent, too complex, overlapping with other reporting-obligations	25
1.7 Lack of standardised terms and/or inefficient conditions to access infrastructures including LNG facilities and Underground Gas Storages	24
1.13 Rigid wholesale gas trading licensing process	24
1.5 Absence of entry/exit capacity booking	22
2.7 Too high financial guarantees are required to access and register trades at trading platforms (balancing platforms, VTP, OTC brokers, exchanges), to access capacity and register physical nominations with TSO/SSO/LSO	22
3.6 Lack of or not enough market monitoring by NRA and ACER	19
2.8 High cost of subscribing (una-tantum fees, subscription fees) and operational costs (volume fees) at trading platforms (balancing platforms, VTP, OTC brokers, exchanges)	16
2.9 Complex clearing procedures at exchange trading	16
1.10 Level of security of supply obligations (e.g. on storage, flows) is hampering trading	13
3.7 Obligations on market participants with retro-active effect (e.g. retroactive ban of trading of specific products, retroactive trading in specific platforms, retroactive changes to transmission and other fees, retroactive reporting obligations).	8

ANNEX A –References

This Annex lists the reference used for Task A (identification of barriers)

	Publication	Author/Affiliation or issuing body
1	ACER Market Monitoring Report (2015)	ACER
2	ACER workshop on the launch of updated the Gas Target Model (2015)	ACER
3	3rd ACER Gas Target Model Workshop (2014)	ACER
4	ACER 2016 Report on Congestion at IPs in 2015	ACER
5	Second ACER-ENTSO-G Report on the status of the implementation of the Balancing Network Code (2015)	ACER & ENTSO-G
6	Capacity booking platforms assessment (2015)	Baringa for EU NRAs and ACER
7	CEER Benchmarking report on removing barriers to entry for energy suppliers in EU retail energy markets (2016)	CEER
8	National Reports of EU MSs (2015)	CEER
9	Final Advice on the Introduction of a Europe-wide Energy Wholesale Trading Passport (2011)	CEER
10	Quarterly reports on European gas markets (2015-2016)	Market observatory for Energy-DG Energy
11	EFET European Gas Hub Development Study (2014)	EFET
12	Consultation on gas market development (2016)	EFET
13	EFET Response to the ACER public consultation on potential “FG rules for trading related to technical and operational provisions of network access services and system balancing (FG RfT)” (2013)	EFET
14	Core Principles for Energy Markets (2011)	EFET
15	Wholesale gas price survey 2016 edition	IGU
16	The EU Third Package for Gas and the gas target model: major contentious issues inside and outside the EU (2013)	The Oxford Institute for Energy Studies
17	The evolution of European traded gas hubs (2015)	The Oxford Institute for Energy Studies
18	Wholesale market functioning: GTM1 criteria (2014)	Frontier Economics (presented at 2nd ACER Workshop on Gas Target Model review and Update)
19	Study on “Barriers to cross-border entry into retail energy markets” (2014)	E-bridge consulting (by order of ACER)
20	Barriers to Developing Competition in the Polish Electricity and Gas Market (2012)	Sylwia Słupik, International Business Research; Vol. 5, No. 8; 2012
21	Examining Barriers to More Efficient Gas Markets (2015)	Australian Government Productivity Commission
22	Wholesale gas market (2015)	Working Group report to the All Party Parliamentary Group on Energy Costs
23	Analysis of competition on the Danish wholesale market for natural gas (2016)	Energitilsynet-Danish Energy Regulatory Authority
24	Review and analysis of EU wholesale energy markets (2008)	ECORYS Nederland BV (by order of DG TREN)
25	Study on Entry-Exit Regimes in Gas - Part A: Implementation of Entry-Exit Systems (2013)	DNV KEMA-KOWI
26	Study on Entry-Exit Regimes in Gas - Part B: Entry-Exit Market Area Integration (2013)	DNV KEMA-KOWI

ANNEX B –Questionnaire

* Name

* Department

* Company

* Address

* E-mail

* Please specify the company's activities in the gas sector (multiple answers possible)

- Producer
- Transmission System Operator
- Distribution System Operator
- Storage/LNG Operator
- Supplier
- Shipper
- Trader - Financial
- Trader - Physical
- Broker
- End-User
- Other, please specify
.....

* Please indicate in which of the following national wholesale markets is your company currently active or has been active in the past or is interested in becoming active in the next 3-5 years? (multiple answers possible)

- Austria
- Belgium
- Bulgaria
- Croatia
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary

- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Netherlands
- Poland
- Portugal
- Romania
- Slovak Republic
- Slovenia
- Spain
- Sweden
- UK

* Please provide further information on the level and type of involvement per country

	Planning to enter the market	Entered the market in the last 3 years	Operating in the market for more than 3 years	Exited the market
Your country/countries of activity ¹¹				

There are four categories of questions in the Survey. Hit **Next »** to continue :

Barriers to access natural gas infrastructure and supplies

Barriers related to hub operation

¹¹ This column is filled in automatically depending on your response in question 7

Barriers related to transparency and reporting

Other types of barriers, where your input is required.

Which of the following do you think are barriers to access natural gas infrastructure and supplies in the countries of your activity? Please rate each statement below according to its impact on your trading activities

1.

* Lack of or not enough physical capacity or interconnections (too few import routes or limited access to alternative sources of gas)

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

2.

* Existence of long term legacy capacity reservations and/or absent or inefficient mechanisms to deal with capacity hoarding at interconnection points

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

3.

* Lack of or weak harmonisation between adjacent systems (i.e. in capacity booking and products offered at IPs, in interoperability)

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

4.

* Not competitive short-term capacity products

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

5.

* Absence of entry/exit capacity booking

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

6.

* Lack of, or weak, virtual reverse flows and/or lack of, or weak, efficient cross-border cooperation at TSOs

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

7.

* Lack of standardised terms and/or inefficient conditions to access infrastructures including LNG facilities and Underground Gas Storages

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Example
Your country/countries of activity							<input type="text"/>

8.

* Lack of market based balancing procedures (e.g. short-term products for balancing, strictly balanced hourly nominations) and/or absence of a common balancing regime for all pressure levels)

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

9.

* Limited eligibility of consumers in practice and/or regulated end user prices

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

10.

* Level of security of supply obligations (e.g. on storage, flows) is hampering trading

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

11.

* Insufficient unbundling of the incumbent and other forms of protection of the incumbent, regulatory capture

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

12.

* Lack of, or weak, regional perspective in regulatory decisions, lack of, or weak, regulatory cooperation

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

13.

* Rigid wholesale gas trading licensing process

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples

Your country/countries of activity								
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14.

* Rigid wholesale gas trading licensing requirements or separate obligations for cross-border activities (VAT, branch, fees, consequences)

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							

15.

* Transmission tariffs are too high (e.g. capacity multipliers) and/or non transparent.

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							

Which of the following do you think are barriers to the operation of the Virtual Trading Points in the countries of your activity? Please rate each statement according to its impact on your trading activities

16.

* Lack of, or weak, gas trading mechanism (e.g. VTP, brokers, exchange)

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

17.

* Lack of standardised trading contracts

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

18.

* Lack of, or insufficient, flexibility in the products offered in the VTP or the exchange or in other forms of non organised wholesale market (e.g. products are restricted to specific -non flexible- sizes and durations)

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples

Your country/countries of activity								
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19.

- * Too complicated or too demanding requirements and obligations to access the wholesale gas market (e.g. in order to access the VTP, exchange, balancing platforms, interested parties are obliged to reserve capacity at interconnection or exit points and/or at Underground Gas Storages)

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							

20.

- * Lack of, or weak, independence in the hub management (e.g. VTP operator, exchange operator, balancing operator)

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							

21.

* Absence of a national or regional exchange

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

22.

* Too high financial guarantees are required to access and register trades at trading platforms (balancing platforms, VTP, OTC brokers, exchanges), to access capacity and register physical nominations with TSO/SSO/LSO

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

23.

* High cost of subscribing (una-tantum fees, subscription fees) and operational costs (volume fees) at trading platforms (balancing platforms, VTP, OTC brokers, exchanges)

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

24.

* Complex clearing procedures at exchange trading

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

25.

* Existence of long term take or pay supply contracts between producers or wholesale suppliers and retailers or end users that limit hub liquidity

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

26.

* Too heavy requirements/costs for a wholesale trading license to trade at the VTP, obligation to register annually instead of once with unlimited validity

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

27.

* Lack of, or weak, political support to wholesale market development, lack of trust

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

Which of the following do you think are barriers related to information and transparency in the countries of your activity? Please rate each statement according to its impact on your trading activities.

28.

* Lack of, or insufficient, regulatory transparency (e.g. in frequency, in duration, in minimum notice periods for changes related to consultations between market participants and the Regulator and in IT changes at the VTP, exchange etc.)

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples

Your country/countries of activity								
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29.

* Not sufficient/not reliable information/data published by market facilitators (TSOs, SSOs, LSOs and VTP operators)

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							

30.

* Lack of use, or underuse, of English (e.g. access contracts, communications and interface of VTP, balancing operator, exchange, TSO's network services; in VTP, TSO, Regulators' consultations; in direct communications between NRA and market participants).

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							

31.

* Lack of a reference (or at least import) price and/or unclear price formation mechanism in the gas wholesale market

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

32.

* Reporting obligations for wholesale market participants, as imposed or not by the license, too frequent, too complex, overlapping with other reporting-obligations

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

33.

* Lack of or not enough market monitoring by NRA and ACER.

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

34.

* Obligations on market participants with retro-active effect (e.g. retroactive ban of trading of specific products, retroactive trading in specific platforms, retroactive changes to transmission and other fees, retroactive reporting obligations).

	Not an issue in market	Of minor importance	Of medium importance	Important	Severe	I do not know	Comments/Examples
Your country/countries of activity							<input type="text"/>

* Do you see other barriers which have not been covered by the questions above?

Other comments