Assessment of Transparency in the Mediterranean region and Monitoring of the MEDREG Guidelines of Good Practice (GGP) on Transparency

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PREFACE

One of the most important issues in order to achieve integrated, competitive and secure gas market in the Mediterranean region is to have certain data easy accessible on the web and without discriminatory access for participants. Transparency is one of the key issues in order to reach this.

The purpose of the report is to investigate the transparency status in the gas systems and markets of Mediterranean countries, and to monitor the guidelines and recommendations on transparency contained in the MEDREG of Good Practice (GGP), that was approved in the 8th General Assembly at 13th November 2009. In the report the results of this analysis will be presented.

The report is structured in the following way. In the first, introduction chapter, the general description of the gas and combine market characteristics were given. In the second chapter main characteristics of the problem are given, why the transparent data is important in the market etc. In the third chapter the main objective of the report is given, the monitoring and fulfilment of the guidelines for data transparency among the MEDREG countries. The forth chapter gives information about the sequence of the research, how the actions were alternating etc. In the fifth chapter information about what kind of methodology was followed in the research, and some of the assumptions that were approach to in approaching the analysis were given. In the sixth chapter information about the market infrastructure and regulatory framework among MEDREG countries in general and main characteristics about the MEDREG region countries are given. In the seventh chapter the description of the MEDREG Guidelines of Good Practice (GGP) that was followed during the research where certain data transparency was monitored. In the eight chapter the survey contained 2 phases of sending the questionnaires to the NRA's of the MEDREG countries was described, in order to get their response about their country data transparency regarding gas market. In the ninth chapter data about the sources that were used in the research and what is the current situation in the MEDREG countries regarding availability of data in English, easy access to information and no charge for information was described. In the tenth chapter the outcomes of all questions in detail are, on systems and services and on capacity situation were given. In the eleventh chapter the general results are given. In the twelfth chapter the conclusions about the results about transparency on data related to gas market in MEDREG group are given. Information about main outcomes and limitations that were appearing during the research were described in the thirteenth chapter. And in the final, fourteenth chapter some of the recommendations about the future approach to the issue of transparency for data among MEDREG countries in gas markets are given.

The main conclusion resulting from this study is that transparency and availability of information is linked to the degree of development of gas markets. The more developed a gas market is, in terms of penetration of gas consumption, openness and liberalization, the more information is found in general terms, and with a higher level of detail. For the general

transparency recommendations of MEDREG GGP Transparency, independent from the level of development of the gas market, the overall result is positive. The basic recommendation to present the information in a meaningful, quantitatively clear and easily accessible way, and free of charge, is almost always fulfilled. However, the recommendation to publish information in English, in addition to the national language/s, is not as widely fulfilled.

In view of these results, it can be stated that the transparency situation of gas markets in the Mediterranean region can be improved and some measures can be proposed pursuing to this goal. Several recommendations are made at the end of this report aiming to reach such improvement.

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1. INTRODUCTION

Today with the climate change, current energy sources depleting and proof that majority to the carbon emissions gives the energy sector, it is one of important tasks to find sustainable, clean fuel that can satisfy human desire for energy. A lot of technologies have been developed over last decades but none of them is capable yet to replace current hydrocarbon resources. Natural gas, being the least contaminated from the fossil fuels has important role today and in the future energy markets of Europe. In every future energy scenario, it seems that world will depend on fossil fuels for a long time. Renewable energy is not that easy to implement.

Natural gas is also the major fuel of electricity generation through the use of gas turbines and steam turbines. It is useful in the grid peaking power plants in electricity generation. High efficiency of natural gas use could be achieved combining gas turbines with a steam turbine in combined cycle power plants. Combined cycle power generation using natural gas is of the cleanest source available using hydrocarbon fuels (according to the IPCC Fourth Assessment Report in 2004, natural gas produced about 5.3 billion tons a year of CO_2 emissions, while coal and oil produced 10.6 and 10.2 billion tons respectively), and it can be obtained for quite reasonable costs. In that sense use of natural gas can contribute to a large extent to reduction of carbon emissions in the air that is one of the biggest concerns nowadays. Gas is a perfect fuel for the transit period. And it will have really important role in the future as well. That is why making natural gas markets more fluid will make the trade much easier in the future.

One of the gas advantages compared to electricity is that gas can be stored. In that way it is easier to manage gas consumption. Gas storage is not easy to any extent, but it is possible. It is extremely expensive to build gas infrastructure that make it natural monopoly. Difficulty of building the infrastructure and transport because of the dependence on the gas pipes routes make gas less liquid than other markets, oil or coal. Gas can be also turned into liquid at liquefaction plants and transport could be easier in that sense. But degasification process is also complicated and expensive and it is preferred for long distance, high volume of transportation gas where building infrastructure is unreasonable. It can be transported by tanks or trucks. Over shorter distances it is recommendable to use compressed natural gas (CNG). Compressors and decompression equipment are less capital intensive and might be easier economically justified.

Security of energy supply is one of the most important issues bearing in mind that natural resources are depleting. Taking this into account, smart plan of future use of natural resources and interconnection of the systems in order to make them more liquid, are crucial in order to fulfill human desire for gas, especially nowadays when gas consumption is increasing. Making one big European market is the future vision of Europe. But that goal is not that easy to achieve. In order to reach their goal, Europe has been divided into few areas, and making smaller submarkets working, one day it will be easier to combine them in the single one.

That was one of the main reasons why in 2006 it is decided to consolidate a union among Mediterranean countries in order for easier and secure energy interexchange. The permanent Mediterranean Working Group on Electricity and Natural Gas Regulation (MEDREG) was established, with the general objective "to institutionalise cooperation between the regulatory bodies of the Mediterranean region in order to achieve a consistent harmonized and investment-friendly regulatory framework aiming at providing the maximum benefits to the energy consumers of the Mediterranean region". In order to reach this goal, four Ad hoc Groups were established: Institutional issues, Electricity, Gas and Environment Renewable energy sources and energy efficiency, which will focus on specific - sectorial issues.

2. PROBLEM FORMULATION

Information has become a valuable resource, just as much as capital infrastructure and people. Information is collected on any amount of different items and is used to make strategic decisions. In a liberalized and competitive gas markets transparency of information is of key importance. Detailed availability of information regarding the availability and use of network capacity, gas regulation, and access to the network allow all gas actors to identify and seize market opportunities in short and long term. There is need to improve current transparency and enable open and transparent exchange of the information, in order to attract more investors by having clear and trustful regulation set, to accomplish security of supply to all user and protect them from possible market power abuse and to allow all market participants to identify their opportunities under the set market conditions that gives equal opportunities for everyone.

Transparency is essential condition for efficient functioning of energy market and therefore for gas markets. Having transparent market rules, access criteria to infrastructure, operation of gas systems and regulatory procedures can ensure efficient market outcomes. Spreading and applying same rules into different, smaller gas markets, making regional markets and promoting transparency in physical and financial gas markets is helping and stimulating competitiveness and opening of more markets. Transparency enhances information about gas market participants and helps in efficient decision making. It also gives more equal access and opportunity for all participants to benefit. Therefore, transparency helps in efficiency of market operation and improves confidence of economic outcome from the market. Cross border trade is essential for well functioning of gas markets. Such cross border trade can happen if all market participants have equal access to gas networks. This equal access can be

guaranteed with if reliable and transparent information about for instance capacities is provided among all network participants.

Striving to combine large areas of gas pipeline system into one market has as a goal to increase liquidity among countries by bringing together more traders and larger volumes of gas over wider geographical area while enabling trade among them much easier. However in practise not everything goes smooth like in theory.

Efforts of MEDREG group to establish a liquid gas market and to facilitate trade among countries must pass a long way in order to be successful. One of the biggest issues is that not all countries belong to the European Union, and referring to that they do not have same regulations or priorities, that is why they had to find a way to facilitate trade among the countries and combine different countries regulations together. Since Europe had a lot of experience with making European Union, where they tried to make countries work under same regulatory framework, EU has financed the project which will try to present experiences in Europe and propose a set of regulations that are currently presented in Europe. Of course all countries of MEDREG had to agree with certain requirements for gas that everyone will try to implement in order to facilitate trade. How countries are complying with the agreement is one of the main concerns of this report.

3. RESEARCH OBJECTIVE (source: MEDREG, 2011)

The Association of the Mediterranean Regulators for Electricity and Gas (MEDREG) was founded in 2006 as a working group and in 2007 as a non-profit association, and one of their general objectives were "to promote the achievement of a consistent harmonized and investment-friendly regulatory framework aimed at providing the maximum benefits to energy consumers of the Mediterranean region".

The Ad-Hoc Group on Gas (GAS AG), as stated in MEDREG Action Plan 2010-2012, has task to study possible recommendations and requirements that could lead to the development of an integrated, competitive, secure and functioning gas market in the Mediterranean region, starting from the assessment of the current status of natural gas and LNG markets, of sector regulation in the MEDREG countries and its expected evolution.

To achieve this objective of developing an integrated gas market in the region in the long-run, one of the most important requirements is to ensure that all actors involved in the energy sector – Administrations, regulators (NRAs), transmission, LNG, and storage system operators, producers and suppliers and consumers – have easy-accessible and non-discriminatory access to all the information (preferable in English) they need to perform their activities and fulfill their obligations. Therefore, transparency in the access to the information related to the gas system and the gas market is a one of key principles that each country members has to follow and that is one of the main aims of this document.

For this reason, the GAS AG established the Guidelines of Good TPA Practice (GGP) on Transparency, approved in MEDREG 8th General Assembly of 13th November 2009. These guidelines consist on a set of voluntary recommendations to ensure that transmission, LNG and storage system operators provide the information market players need on a fair and non-discriminatory basis.

Some guidelines in terms of questions will help get the information about specific issues.

Sub-Questions

- The Status review of the current situation regarding transparency in the general information on the gas system and markets in Mediterranean countries?
- What is Guidelines of Good Practice (GGP)?
- What is the questionnaire on gas market and system services following the Guidelines of Good TPA practice (GGP)?
- What is the response of the survey?
- The assessment to the Guidelines of Good Practice (GGP) on Transparency?

The above questions will lead us to prepare answer for our main research question.

Main research question: What is the transparency level of market information and services as a key factor for the promotion of integrated gas markets in the MEDREG region?

4. RESEARCH PROCESS (source: MEDREG, 2011)

One of the main goal when assessing the transparency status in the gas sector in Mediterranean countries (MEDREG group) is to obtain how transparent are countries of Mediterranean region, how they differ among themselves and what would be possible solutions in order to improve transparency among these countries. In order to accomplish this some specific processes has been applied, and can be described as follows:

- Guidelines of Good Practice (GGP) on Transparency, was established in November 2009, has been taken as the main reference document, the first step of the process was the preparation of a questionnaire on transparency with a set of questions that suppose to be addressed to *NRAs (National Regulatory Authority)*, on whether the information on gas system and services referred in the GGP is currently available in the TSO/LSO/SSO websites, or elsewhere in other sources such as the NRA or competent Ministry website. This questionnaire was approved by the GAS AG in its 6th meeting of 4 May 2010, and by the General Assembly in its 9th meeting of 28 May 2010, and it will be used in our further research.

- Next step that is done is circulation to all the NRAs of the Mediterranean region. This was done by e-mail that was addressed to all regulators in the region in May-June 2010. As a result of this step (which shall be called the "first phase" of the process), questionnaires from nine countries were received. In order to obtain complete as possible situation about transparency in the region, it was decided to carry out a research by means of a scanning of the websites of TSOs – and also LSOs and SSOs where applicable – as well as competent Ministries and regulators, and also suppliers and companies where necessary, and to complete picture about transparency among MEDREG countries. With the information found, the questionnaires were completed on behalf of these countries, indicating the most updated information and the relevant sources and links for each country. The questionnaires filled in after this research, were sent to the NRAs – or ministries – of the respective countries for confirmation, corrections or additions. This "second phase" took place between the end of December 2010 and mid January 2011. Result of it will be used and presented in the thesis paper.

5. RESEARCH METHODOLOGY AND ASSUMPTIONS (source: MEDREG, 2011)

Assessing the transparency of Mediterranean countries, following facts, criteria, assumptions and limitations were taken into account:

- This study takes into account the different levels of market development in the Mediterranean countries. There are countries without gas consumption, or with gas consumption but without a liberalized gas market. For these countries, some of the questions are not applicable. In the GGP document two different degrees of priority have been established, questions related to priority one consist of the information which should be published in all countries and the questions related to priority two consist of the information that are only relevant in developed, open markets. Beside that goal of the document is to show the level of transparency of the information among countries and it sometimes depend on degree of development, it will be tried to achieve not negative results upon countries that have not developed gas markets but also to try to stimulate them in further development. So the study is carried out from a "positive" perspective, for it intends to show the
- As the goal of this report is assessing the level of transparency of official national entities and operators in each market, only these official national websites have been taken into account in the questionnaires. This means that all the information and the sources (links) considered have been taken from the web pages of the Government or Ministry, regulator, TSOs/LSOs/SSOs, DSOs or suppliers in the country. Other web sources – sometimes external to the country – have been consulted as complementary, just for comparison or reference purposes, but they have not been listed as resources in the questionnaires.
- In some cases, the respondents have adopted different criteria (because filling up the questionnaire is subjective and questions could be misinterpreted sometimes) when answering on the topics of the questionnaire so in order to make obtained results consistent and coherent, some slight adaptations have been made in some particular questions, in most cases standardizing the answers to the most positive assessment applied.

- In some cases it has not been possible to assess the availability of some of the information referred in the questionnaire, either due to language limitations – non-English websites where it has not been possible to check out the availability of certain topics – or either in relation to the general questions. As these features can only be confirmed by the operators or regulators themselves, for some countries in the case of not confirmed questionnaire – the answer is not known.
- Finally, in the questions on the general description of system and facilities and technical capacities, countries with LNG production (liquefaction) facilities are taken into account. The questions more related to market issues or TPA access to facilities, do not concerned the countries which do not have liberalized market (only countries with LNG degasification terminals are supposed to be targeted by those questions).

6. STATUS REVIEW IN MEDREG (source: MEDREG, 2011)

6.1. Market and infrastructure

- The MEDREG region has approximately 5% of natural gas reserves in the world, which are mainly located in the North African countries. Those make slightly more than 5% of the gas production and a share of 9% of the world consumption of this resource. In contrast with the location of the reserves, the consumption is mainly concentrated in the North basin of the Mediterranean Sea.
- The consumption of natural gas of the countries within the MEDREG region varies enormously, and goes from 85 bcm that the Italian market consumed in 2007, to non consumption at all, that is the case of several countries. The average consumption during that year rose to 15, 3 bcm.
- The first supplier of the region is one of MEDREG countries, Algeria, with nearly 1/3 of the gas supplied, while the second and third suppliers are The Russian Federation, with 24% of the supplies, and Norway, with 9%. LNG represented 20% of the gas supplies in 2007. Concerning the degree of dependence from other origins of gas, there is a potential complimentarily among countries, as some of them are totally or almost totally dependent on imports, while there are others that are not only self-sufficient but also net exporters of natural gas (both LNG and natural gas).
- Concerning the supply activity, some of the countries are supplied by a unique agent, which generally is the state owned company, while others count on a diversified number of suppliers importing gas to the country. This could be justified with different circumstances in each market. Some countries have chosen to integrate the supply together with the production activity in the same agent, whereas others, with scarce gas resources, have completely liberalized this activity with the aim to promote competition among agents.

- The transmission networks (high pressure) have more than 110.000 km of pipelines, while the distribution systems have a total length of more than five times that value. There are many transit lines and important links between countries, some of them crossing the Mediterranean Sea, directly linking the producers with the consuming countries and there are also many new interconnection projects. The region accounts for a significant LNG market, with 13 LNG degasification plants and 5 LNG liquefaction plants.

6.2. Legal and regulatory framework

- It is a general practice of the MEDREG countries to make the legislation available for all the interested parties on the ministries and / or regulators web pages, although only part of them have an English version of the documents apart from the national language.
- In general, all the countries have an independent Regulatory Agency, as well as the corresponding Ministry of Energy, Industry, Economy (or others dealing with energy issues) with some exceptions. These regulatory agencies are in general new, as they have been created during the last decade. Powers and functions differ very much among regulators, although in practise most of the regulators have the role of making rules and monitoring responsibilities of the agents participating in the market or to advise the Governments or other relevant public bodies on energy issues.
- In a majority of countries in the region the infrastructures belong to State owned companies. Licenses are normally required to build and exert regulated activities (i.e. transmission, distribution, LNG and storage) and also to act as a shipper or trading company. These are very frequently granted by the governments. And concerning the unbundling of activities, although there are some countries where there is not an explicit requirement to this matter, the majority of them have enforced at least an accounting unbundling. Several countries go beyond, typically the European countries, and have put in place at least a legal unbundling requirement, according to the Directive 2003/55/EC in force.
- There is a vast majority of countries where the TPA regime to the gas infrastructures is regulated. Even if the regulated TPA regime is much extended in the region, the capacity allocation mechanisms and congestion management procedures are not very developed and, in many of the cases, they are in drafting process now.
- Although there is a great number of countries that show their intention and willingness to open the gas market to competition (retail and/or wholesale activities), the majority of them still have not a real competition in place.
- In the majority of the countries, the main body responsible for disputes settlement is the regulator, although in some cases it is the Government (through any Ministry) who has this role.

7. MEDREG GUIDELINES OF GOOD PRACTICE (GGP) ON GAS TRANSPARENCY (source: MEDREG, 2011)

The MEDREG Guidelines of Good Practice (GGP) on Gas Transparency were approved by the General Assembly of MEDREG in its 8th meeting of 13th November 2009, in Nicosia.

They consist on a set of recommendations or voluntary requirements concerning transparency in the publication and disclosure of information related to different aspects of natural gas markets, within three categories: system and services, capacity situation and other items. The questionnaire on transparency developed within the GAS AG follows very closely this structure.

In each one of the three categories, some items are identified as the most relevant data a system user should have access to, in order to be able to participate in the gas sector on a fair and non-discriminatory basis. In addition, for each item of information, a level of priority is assigned, indicating whether it should be published by any infrastructure operator in all countries, regardless of the degree of development of the national gas market (priority level 1), or if the item should be published by any infrastructure operator in those countries where there is a Third Party Access regime in place (priority level 2).

The items listed within each category are the following:

- Information on **System and services**:

Priority Degree	**Transparency requirement**
1	a) a detailed description of the gas system of the TSO identifying all entry and exit points interconnecting its system with that of other TSOs, including maps, or a detailed description of the LNG and storage facilities operated by the LSO/SSO concerned, specifying the interconnection point with the transmission system;
2	b) detailed and comprehensive information about all services offered, the charges for these services and the penalties in case of over/under-utilization of the contracted capacity;
2	c) detailed and comprehensive information about the agents that can require access to the services offered, specifying licensing procedures and conditions to be an agent with TPA rights;
2	d) the different types of contracts available for the services offered and the contracting processes;
2	e) the flexibility and tolerance levels included in transportation and other services contracted, i.e. the balancing regime in place;
2	f) any flexibility offered in addition to point above and the corresponding charges;
2	g) as applicable, the network code and/or the main standard conditions outlining the rights and responsibilities for all users of the gas system of the TSO. This should at least include: - programming and nomination procedures,

	- measurement and allocation procedures, - maintenance of the infrastructures, - operation of the system under both, normal and exceptional circumstances;
2	h) in the case a network code doesn't exist yet, all the standard documents and procedures in relation to the use of the gas system of the TSO including definitions of key terms, which are being applied;
2	i) the capacity allocation, congestion management, anti-hoarding and reutilisation provisions;
2	j) the rules applicable for capacity trade on the secondary market;
1	k) gas quality and pressure requirements;

- Information on the **Capacity situation**:

Priority Degree	Transparency requirement
1	a) the maximum technical capacity (Million of m^3/h or GWh/day);
2	b) the total contracted firm and non-firm capacities (Million of m^3/h or GWh/day);
2	c) the available firm and non-firm capacities (Million of m^3/h or GWh/day);

- Additional features of **capacity-related information:**
  - TSOs/LSOs/SSOs shall publish the previous information on a quarterly basis, for the current and following years, and on a yearly basis for the next five years. They shall update the information on a quarterly basis.
  - The calculation of available capacities shall be based on network modelling and flow simulations, taking into account all relevant operational parameters for an efficient and safe operation of the system.
  - Historical maximum and minimum monthly capacity utilisation rates and annual average flows at the above points shall be published for the previous year, no later than 30th of January of the current year.
  - TSOs/LSOs/SSOs shall keep effective records of all capacity contracts and all other relevant information in relation to calculating and providing access to available

capacities. If necessary, the relevant national authorities shall have access to such records in relation to complaints about refusal of access due to lack of capacity.

8. THE SURVEY

The assessment on monitoring the GGP recommendations to the countries can be described as follows:

- The Guidelines of Good Practice (GGP) on Transparency has been approved in November 2009. That is the main reference document in the analysis and the starting point of the assessment. The first step of the process was the preparation of a questionnaire on transparency (see Annex), with a set of questions on several categories to be addressed to NRAs, on whether the information on gas system and services referred in the GGP is currently available in the TSO/LSO/SSO websites, or elsewhere in other sources such as the NRA or competent Ministry website. This questionnaire was approved by the GAS AG in its 6th meeting of 4 May 2010, and by the General Assembly in its 9th meeting of 28 May 2010, and due to that was used in the analysis.
- The next step was circulating the questionnaire to all the NRAs of the Mediterranean region. This was done through a sending by e-mail that was addressed to all regulators in the region in May-June 2010. As a result of this step (which shall be called the "first phase" of the process in this document), questionnaires from nine countries were received (see Table 1). The main findings and results for these countries were presented in the 7th meeting of the GAS AG, which took place on the 7th October 2010 in Madrid.
- After this meeting, and in order to obtain a picture as complete as possible of the transparency situation in the whole region, including those countries not having sent the questionnaire, a research was carried out for those missing countries, by scanning of the websites of TSOs – and also LSOs and SSOs where applicable – as well as competent Ministries and regulators, and also suppliers and companies where necessary. With the information found, the questionnaires were completed on behalf of these countries, indicating the most updated information and the relevant sources and links for each country.
- The questionnaires filled in after this research, were sent to the NRAs – or ministries – of the respective countries for confirmation, corrections or additions. This "second phase" took place between the end of December 2010 and mid January 2011. As a result of it, 4 answers were received, confirming or completing the information and sources found. At the same time, in order to give all NRAs the opportunity to provide information updated at the same date, the nine countries that had sent their questionnaires in the first phase were also offered the chance to update or complete it if relevant. In response to this offer, 8 NRAs answered and completed or updated their questionnaires (see Table 1).

The results of the two described phases, questionnaires surveys, in terms of level of response and contributions received, are shown in Table 1.

Table 1: Contributions received from the countries in 1st and 2nd phases

COUNTRIES		1st phase	2nd phase				
		1st phase Answer received	*2nd phase Answer received*	*Updated answer*	*No answer*	*No updated answer*	*Not delivered*
1.	Albania	☒		☒			
2.	Algeria	☒				☒	
3.	Bosnia-Herzegovina				☒		
4.	Croatia	☒		☒			
5.	Cyprus				☒		
6.	Egypt				☒		
7.	France	☒		☒			
8.	FYROM		☒				
9.	Greece				☒		
10.	Israel	☒		☒			
11.	Italy	☒		☒			
12.	Jordan		☒				
13.	Lebanon						☒
14.	Libya						☒
15.	Malta		☒				
16.	Montenegro				☒		
17.	Morocco				☒		
18.	Palestinian Territory				☒		
19.	Portugal	☒		☒			
20.	Slovenia		☒				
21.	Spain	☒		☒			
22.	Syria						☒
23.	Tunisia				☒		
24.	Turkey	☒		☒			
	Sum	**9**	**4**	**8**	**8**	**1**	**3**

It must be taken into account that a number of questionnaires have been completed directly by the drafters of this study, and only some of them have been specifically confirmed or completed by the regulator in the concerned country. Nonetheless, this document has been

circulated among all regulators or competent ministries in the region for their review, and all the comments received have been integrated.

9. THE STATUS REVIEW OF THE CURRENT SITUATION REGARDING TRANPARRENCY

In this section the general situation regarding the transparency status of gas markets in the countries will be described, in all countries in the Mediterranean region. This section focuses on some general aspects regarding information in MEDREG region: the information sources consulted for the study, the easiness and accessibility of data, the degree of availability of information in English and whether there is free access to it, all of them are giving the overall status of transparency of gas system and market information in the region.

The section shows, the sources of information that were found and used for each country in this study, indicating the role – TSO, SSO, LSO, regulator or ministry – the source plays in the respective country. In the analysis, only official websites were taken into account. Then it is explained to what extent the information is published in English, in addition to the official language/s in the country. An assessment is also made on the easiness and accessibility of the information, in the view of the drafters of the document. And finally, it is describe if the information was freely accessible (free of charge). The underlying recommendation, which is confirmed in the Guidelines of Good Practice (GGP) on Transparency is that all countries should ideally have information available in English, it should be easily accessible, on a non-discriminatory basis and free of charge, for these are basic requirements for transparency.

9.1. Sources of information

For each country, the respondents (if they responded to the sent questionnaire) – or the research carried out for this study – have provided with the relevant websites for the information on the gas system and services a user would need for taking part in the gas market. In the majority of cases, the appropriate source is the TSO/LSO/SSO website, especially for technical or TPA data, and in some cases the NRA's or Ministry website has also been consulted. Finally, in some countries it has also been necessary to check the information published by supply or production companies. The Benchmarking Report 2009 has also been used as a reference for knowing the main actors in the gas sector in each case and the responsibilities of the different entities.

The sources consulted for each country (Table 2):

Table 2: Information sources: NRA-Ministry and TSO-LSO-SSO or suppliers in Mediterranean countries

Country	Regulator / Ministry	TSO/LSO/SSO (or suppliers)
Albania	Energy Regulatory Authority (ERE): *http://www.ere.gov.al*	No gas consumption
Algeria	Regulation Commission for Electricity and Gas (CREG) : *http://www.creg.gov.dz/an/index.html*	TSO - Sonatrach: *http://www.sonatrach-dz.com/NEW/V_English/index.html*
Bosnia-Herzegovina	Regulatory Commission for Electricity in Federation Bosnia and Herzegovina **(**FERK): *http://www.ferk.ba* Regulatory Commission for Energy of Republika Srpska (REERS): *http://www.reers.ba*	TSO: BH-Gas Sarajevo, Gaspromet Pale and Sarajevo-gas Lukavica *http://www.bh-gas.ba/eng/index.htm*
Croatia	Croatian Energy Regulatory Agency (HERA): *http://www.hera.hr/english/html/index.html*	TSO: *http://www.plinacro.hr/default.aspx?id=95* SSO: *http://www.psp.hr*
Cyprus	Cyprus Energy Regulatory Authority: *http://www.cera.org.cy*	No gas consumption
Egypt	Ministry of Petroleum: *http://www.petroleum.gov.eg* Ministry of Electricity and Energy: *www.moee.gov.eg*	TSO - Egyptian Natural Gas Company (GASCO) Subsidiary of the Egyptian General Petroleum Corporation: *http://www.gasco.com.eg/td.html*, Egyptian Natural Gas Holding Company: *http://www.egas.com.eg*
France	Energy Regulatory Commission: *http://www.cre.fr*	TSO: *http://www.tigf.fr*, *http://www.grtgaz.com* LSO: *http://www.elengy.com* SSO: *http://www.storengy.com*

Country	Regulator / Ministry	TSO/LSO/SSO (or suppliers)
Fyrom	Energy Regulatory Commission of FYR of Macedonia: http://www.erc.org.mk	TSO: http://www.gama.com.mk
Greece	Regulatory Authority of Energy: http://www.rae.gr/old/en/	TSO: http://www.desfa.gr/ LSO: http://www.depa.gr/default.asp?pid=3&la=2 Public Gas Corporation: http://www.depa.gr/default.asp?pid=3&la=2
Israel	Natural Gas Authority - Ministry of National Infrastructures www.mni.gov.il	TSO: Israel Natural Gas Lines Ltd (INGL) http://www.ingl.co.il
Italy	Regulatory Authority of Electricity and gas : http://www.autorita.energia.it/it/inglese/index.htm	TSO: www.snamretegas.it LSO: www.adriaticlng.com http://www.gnlitalia.it/italiano/index.html SSO: www.edisonstoccaggi.it http://www.stogit.it
Jordan	The Ministry of Energy and Mineral Resources: http://www.memr.gov.jo http://www.lob.gov.jo/ui/main.html	TSO: Jordanian-Egyptian FAJR (*link unknown*)
Lebanon	Council for Development and Reconstruction: http://www.cdr.gov.lb	No information
Libya	Ministry of Energy: http://www.ect.gov.ly/real/	No information
Malta	Malta Resources Authority: http://www.mra.org.mt/	No gas consumption
Montenegro	Energy Regulatory Commission: http://www.regagen.co.me	No gas consumption

Country	Regulator / Ministry	TSO/LSO/SSO (or suppliers)
Morocco	Ministry of Energy, Mines and Environment: *http://www.mem.gov.ma*	National Bureau of Petroleum and Mines: *http://www.onhym.com*
Palestinian Territory	No information	No information
Portugal	ERSE: *http://www.erse.pt*	TSO - REN Gasodutos: *http://www.ren.pt/vEN/NaturalGas/Transportation/Pages/gas-natural_transportation.aspx* LSO - REN Atlântico: *http://www.ren.pt/vEN/NaturalGas/LNG%20Terminal/Pages/gas-natural_lng-terminal.aspx* SSO - REN Armazenamento e Transgás: *http://www.ren.pt/vEN/NaturalGas/Storage/Pages/gas-natural_storage.aspx*
Slovenia	Energy Agency of the Republic of Slovenia : *http://www.agen-rs.si/sl/*	TSO: http://www.geoplin-plinovodi.si/
Spain	CNE: *http://www.cne.es/cne/Home* The Ministry of Industry, Tourism and Trade: *http://www.mityc.es/energia/gas/NGTS/Paginas/NGTS.aspx*	TSO - Enagas, Gas Natural, Naturgas, Endesa: *http://www.enagas.es/cs/Satellite?pagename=ENAGAS/Page/ENAG_home&language=en* *http://www.naturgasenergia.com/home/en* LSO - Enagas, Reganosa, BBG, SAGGAS: *http://www.enagas.es/cs/Satellite?pagename=ENAGAS/Page/ENAG_home&language=en* *http://www.saggas.com/en/* *http://www.bahiasdebizkaia.com/bbg/eng/index.aspx* *http://www.reganosa.com/web/index.php?idioma=en&seccion=index&desglose=* SSO - Enagas and Ripsa: *http://www.enagas.es/cs/Satellite?pagename=ENAGAS/Page/ENAG_home&language=en*

Country	Regulator / Ministry	TSO/LSO/SSO (or suppliers)
Syria	No information	Syrian Petroleum Company: *http://www.spc-sy.com/en/main/index.php* General Petroleum Corporation: *http://www.gpc-sy.com/*
Tunisia	Ministry of Industry and Technology: *http://www.industrie.gov.tn*	TSO: STEG: *http://www.steg.com.tn* Entreprise Tunisienne d'Activités Pétrolières (ETAP) : *http://www.etap.com.tn/*
Turkey	EMRA: *www.emra.org.tr*	TSO - BOTAS: *http://www.botas.gov.tr/defaultEN.asp* LSO - EgeGaz: *http://www.egegaz.com.tr/en/default.aspx* SSO – TPAO: *http://www.tpao.gov.tr/v1.4/*

9.2. Assessment to the guidelines of good practice (GGP)

9.2.1. Availability of information in English

The statement to be confirmed in the questionnaire was: "*The information is not only published in the national language but also in English*", and the results obtained were as shown in the Figure 1. When only some information could be found in English, it is marked as 'Partial information' If not even basic general information was found in English it is marked as 'No'.

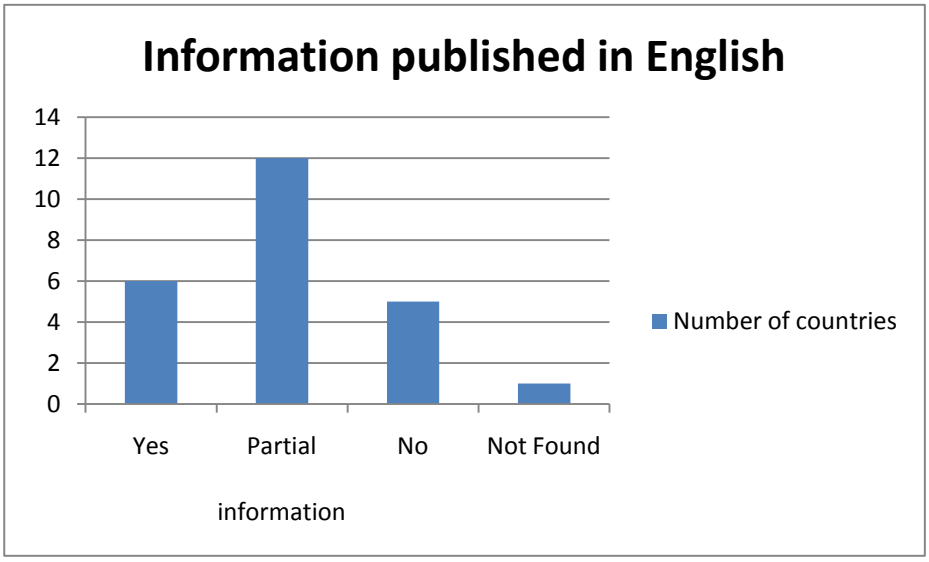

Figure 1: Information available in English or not

As shown in the graph, the results reveal that most of the countries have at least partial information published in English, either in the TSO (or LSO/SSO) websites, or in the regulator or ministry page. There is also a significant number of countries that have nearly all information in English, except some specific data. In five cases no information could be found in English. It is quite common though that regulations and legal documents are most of the times only in the national language, not yet translated into English or in process to do so. Some particular remarks can be made:

- In some countries, all or most of the information is published in English in the TSO (or LSO/SSO) website, and only some regulatory documents are not translated into this language. This is the situation in Albania, France, Italy, FYR of Macedonia, Malta and Spain.
- In some other cases, not all the information in the operators' websites could be found in English, but the most general or useful part of it was available. These countries are marked as 'partial information'. This is the case of Bosnia and Herzegovina, Croatia, Israel, Egypt, Greece, Portugal, Slovenia and Tunisia. Some other countries are also marked like this, although only general or very few information could be found in English: Morocco and Syria.
- In Algeria, the TSO website has an English version and most information is available in this language, whereas the webpage of the NRA is available only in Arabic and French.
- The Palestinian Territory is marked as 'Not Found' because no source of information about the gas consumption and infrastructure could be found.

As a conclusion, in most cases detailed or partial information was found in English, at least for the most general items, mainly in the TSO-LSO-SSO websites. The regulatory documents or laws are in many cases not translated into English.

9.2.2. Easiness and non-discriminatory access to information

To the statement: "*The information is disclosed in a meaningful, quantitatively clear and easily accessible way (on the internet) and on a non-discriminatory basis*", the results obtained were (Figure 2):

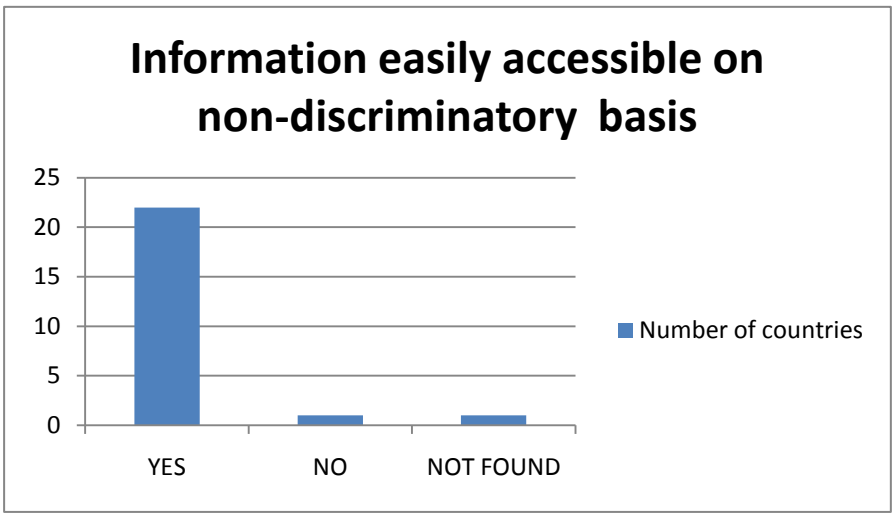

Figure 2: Information easily accessible and on a non-discriminatory basis

In nearly all cases the access to information was deemed easy and non-discriminatory. As a particular remark, Lebanon is marked as 'Yes' although very few information could be found.

The gas information in Medreg countries is in general easily accessible and non discriminatory.

9.2.3. Information free of charge

To the statement "The information is accessible free of charge", the results were (Figure 3):

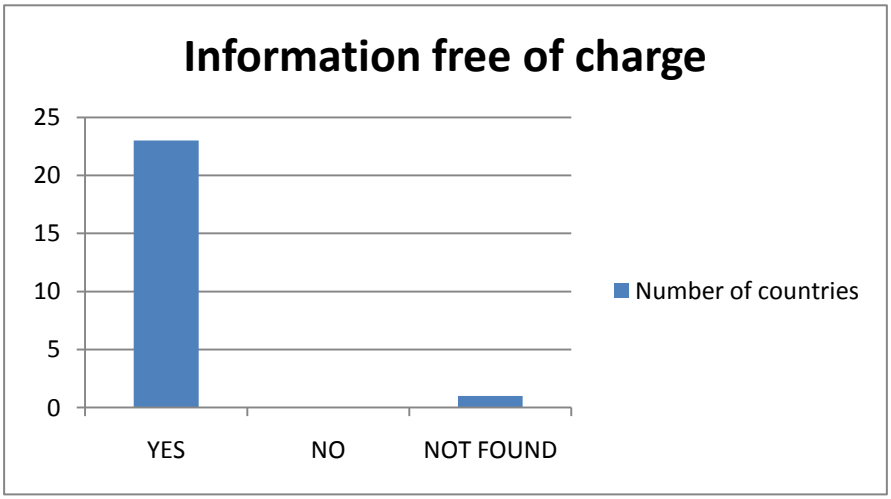

Figure 3: Information is free on charge

Nearly all information is available free of charge. Lebanon is marked 'Yes' although very few information could be found.

The information on gas in Mediterranean TSO, LSO and SSO websites is free of charge.

10. OUTCOMES OF THE ANALYSIS OF COMPLIANCE WITH MEDREG GGP TRANSPARENCY RECOMMENDATIONS

The analysis of responses obtained in the questionnaires (see Appendix A for template questionnaire) and as a result of the research carried out by the drafters of this study, provides with the results presented in this section. For each question or topic, the overall results are shown in a graph, the most remarkable conclusion is drawn out of it and any additional particular findings are listed afterwards.

As explained in the previous section, only three items are categorized under priority level 1 in the GGP Transparency document: general description of the system and infrastructure, gas quality and pressure requirements and maximum technical capacity. For these questions, three status are possible: YES (the information is fully or partly available in English or national language), NO (no information could be found) or Not Applicable (there is no gas consumption of infrastructure in the country). For the rest of the items (priority 2) recommended to be published by infrastructure operators in those countries where there is a Third Party Access regime in place, the cases where there is no TPA at present, and this is information is not available, are marked as 'NO (no TPA)'. Finally, 'Not Known' is used for those countries where no information source could be found, or for those items for which it was not possible to know the answer, because it can only be confirmed by the national NRA or TSO and such a confirmation couldn't be obtained.

10.1. Information on system and services

a) The first statement to be assessed in the questionnaire was: "*A detailed description of the gas system of the TSO identifying all entry and exit points interconnecting its system with that of other TSOs, including maps, or a detailed description of the LNG and storage facilities operated by the LSO/SSO concerned, specifying the interconnection point with the transmission system*". The results obtained were (Figure 4):

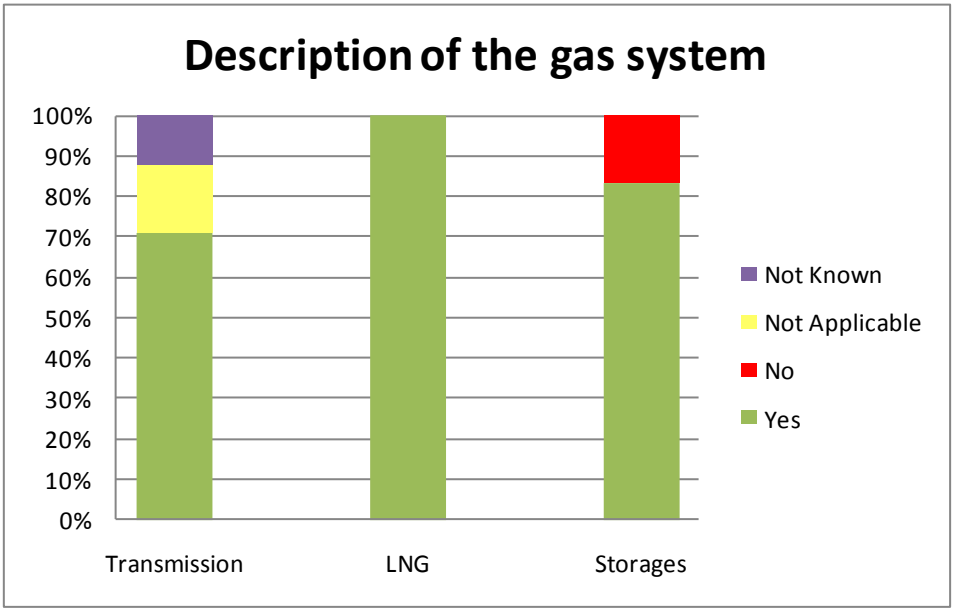

Figure 4: Information on the description of the gas system and facilities, and infrastructure maps

For this first question, categorized of priority 1, as explained only three answers are possible: 'Yes' if detailed or just only partial information was found about a country; 'No' if no information could be found; and 'Not applicable' if the country does not have gas consumption or infrastructure for transmission. The countries for which no information source could be found are marked as 'Not Known'. In the case of LNG and storage, only the countries with such facilities are analyzed.

A majority of countries are marked as ''Yes' regarding transmission, which is a positive result because this is one of the basic transparency requirements in relation to the information on the gas system. Actually, this recommendation is categorized under priority 1 in the GGP document, which means that this information should be published by any infrastructure operator in all countries, regardless of the degree of development of the national gas market. Concerning LNG and storage, the answer is in general positive, with the exception of one country marked as 'No' – Turkey in storage.

In any case, there are differences across countries in terms of the amount and detail of the information published:

- The countries having complete and detailed information, including infrastructure maps, are: Algeria, Bosnia and Herzegovina, Egypt, Greece, France, Israel, Italy, Portugal, Slovenia, Spain, and Tunisia. Croatia also has full and complete information for transmission, and Turkey for transmission and LNG facilities.
- Other countries for which only a map of infrastructures was found are Morocco and Syria, although in the Syrian map there is no precise indication of entry or exit points to the system.

- For FYR of Macedonia, there is a general description of the system, but no map was found. Also Croatia for storage facilities is in this situation.
- Jordan answered 'Yes' to this question, although no map could be found and the contents in the Ministry website – except a general report on gas demand in the country – were not available in English, but only in Arabic. The information about natural gas projects in Jordan will be added to the Ministry website soon.
- Syria is marked as 'Yes' for this question, since some general information including a description of the system was obtained. A general map was also obtained from an external source, though without a precise indication of entry or exit points to the system.
- 'Not Known' is used for those countries where no information source could be found, such as: Lebanon, Libya and Palestinian Territories.

The main conclusion would be that this first recommendation is widely – almost unanimously – fulfilled, since all the surveyed countries that have gas consumption and infrastructure – with only one exception on storage – publish at least general information about their transmission, LNG or storage systems. However, the level of detail is different for each country. Infrastructure maps are available in more than half of the countries.

b) To the second statement: "*Detailed and comprehensive information about all services offered, the charges for these services and the penalties in case of over/under-utilization of the contracted capacity*", the results obtained were (Figure 5):

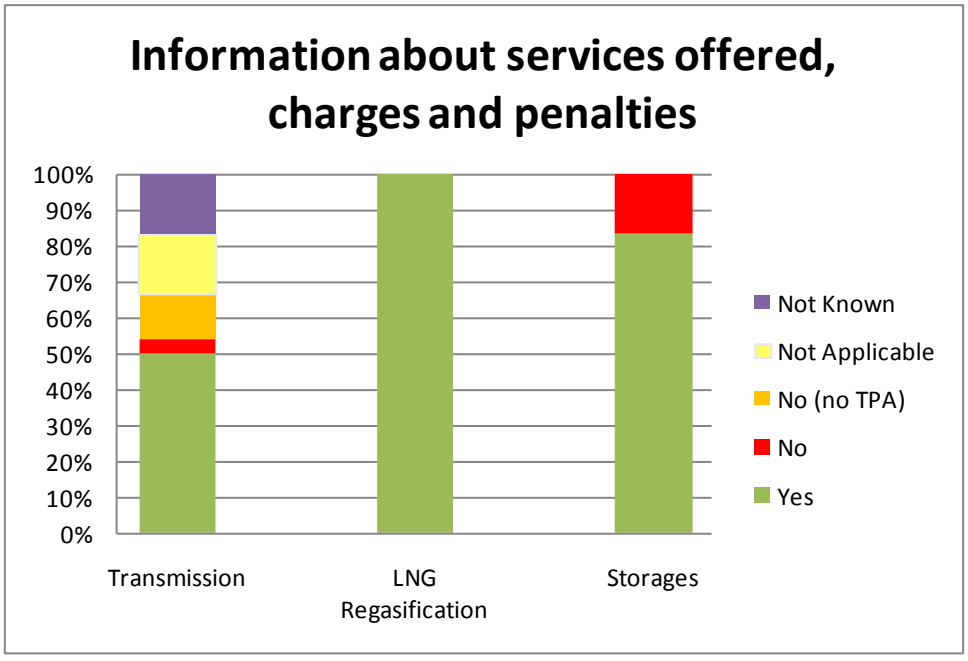

Figure 5: Information about services offered and charges, and penalties for capacity under/overuse

As explained at the beginning of this section, this question, as well as the following ones is categorized under priority level 2 in the GGP Transparency document, which means that these items are recommended to be published by any infrastructure operator in those countries where there is a Third Party Access regime in place. Therefore, the countries where there is no TPA at present, and this is information is not available, are marked as "NO (no TPA)". Countries where no information source could be found are marked as 'Not Known'. In the case of LNG and storage, only the countries with such facilities are analyzed.

Half of the 24 countries were marked 'Yes' in this statement regarding transmission, which can be considered a positive result. Three results of 'No (no TPA)' were obtained, concerning those countries not publishing this information because they don't have a liberalized gas market or TPA to infrastructures. Four countries where there is no gas consumption resulted in 'Not Applicable', since there is no point in talking about transmission services or tariffs. For LNG and storage, almost all countries with such facilities are publishing these information, with the exception of Turkey for storage, where the Storage Network Code is being prepared. 'No' results were though clearly scarce in the three activities.

'Not Known' is used for those countries where no information source could be found: Lebanon, Libya, Syria and Palestinian Territories. For these countries no information from reliable (official) sources could be found. Actually, it will be the case too for the following questions, so for all of them these countries will be tagged as 'Not Known'.

In any case, there are differences across countries in terms of the amount of information published. Some of the countries publish services, charges (including tariffs) and penalties for capacity underuse or overuse, and some others only partial information:

- Countries like France, Italy, Portugal and Spain have full and complete information about services offered, charges and penalties in case of over/underutilization.
- Countries with information about services and charges but no detailed information about penalties in case of over/underutilization are: Croatia, Slovenia and Israel. In the latter case, no information was found about penalties to under utilization of capacity, but only for over utilization. For Greece, Tunisia and Turkey, this information couldn't be identified because of language limitation.
- Bosnia and Herzegovina and FYR of Macedonia, although without liberalized markets, have information about services offered and charges. They are marked as 'Yes' for transmission.

As a conclusion, the result is moderately positive with TSOs from half of the countries disclosing information on services, associated charges and tariffs for transmission. Some of them also inform about penalties in case of over or underutilization of capacity. In LNG and storage the outcome was more positive, with this information published in all cases but one for storage.

c) The third item in the questionnaire was: "*Detailed and comprehensive information about the agents that can require access to the services offered, specifying licensing procedures and conditions to be an agent with TPA rights*". The results obtained in this case were as follows (Figure 6):

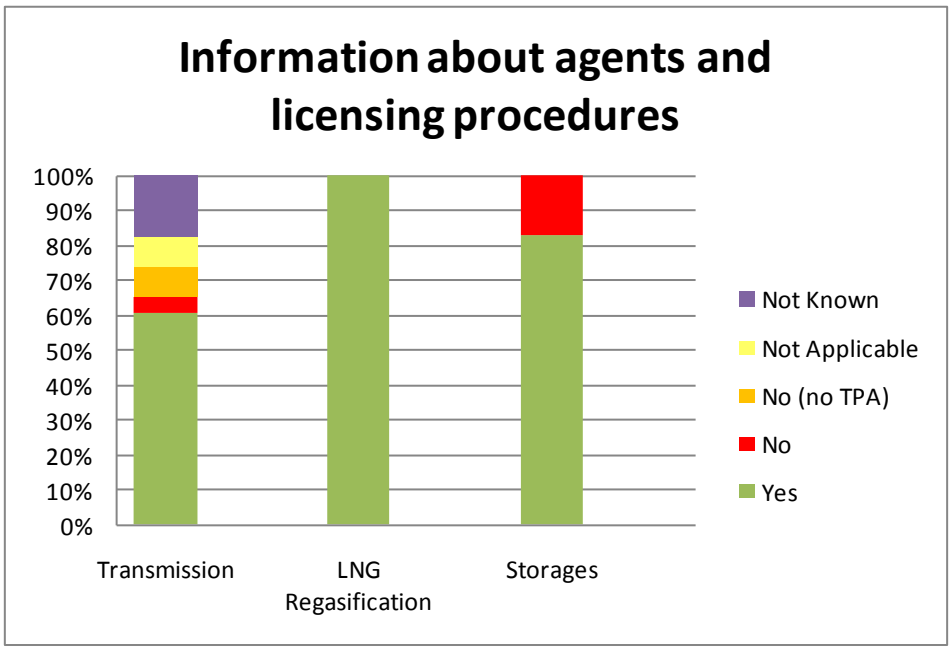

Figure 6: Information about agents and licensing procedures

A majority of countries are marked as 'Yes' regarding transmission, and 'Not Applicable' was the most frequent state for LNG and storage facilities (not existing in most countries). Where the market is not liberalized and no TPA exists, it was marked as 'No (no TPA)' and when there is no gas consumption, it was marked as ´Not Applicable´. Countries where no information source could be found are marked as 'Not Known' (Lebanon, Libya, Syria and Palestinian Territories are in this situation, as explained before). In the case of LNG and storage, only the countries with such facilities are analyzed.

Taking into account that this question refers to three different topics – agents, licenses and conditions and TPA rights – there are also here differences across countries in terms of the amount and detail of the information published:

- Countries with thorough information about agents that can require access, licenses and conditions and TPA rights are: Croatia, France, Greece, Italy, Portugal, Slovenia and Spain.
- Countries like Israel and Turkey publish information about licenses, but not about conditions and TPA rights.

- Some countries, although without a liberalized market, have published some information on this area. Bosnia and Herzegovina, Egypt and FYR of Macedonia publish information on licensing procedures, while Tunisia has not published such procedures, but those for agents that require access to the network.
- Some other countries, even without gas consumption, have published some of this information too. Malta publishes information about agents that require access to the network, and Albania has detailed information about licensing procedures and a first draft regulation about third party access.

A majority of countries – even some without a liberalized market – publish information about agents and licensing procedures, for transmission, LNG or storage.

d) Next statement to be confirmed was: "*The different types of contracts available for the services offered and the contracting processes*", and the results obtained were (Figure 7):

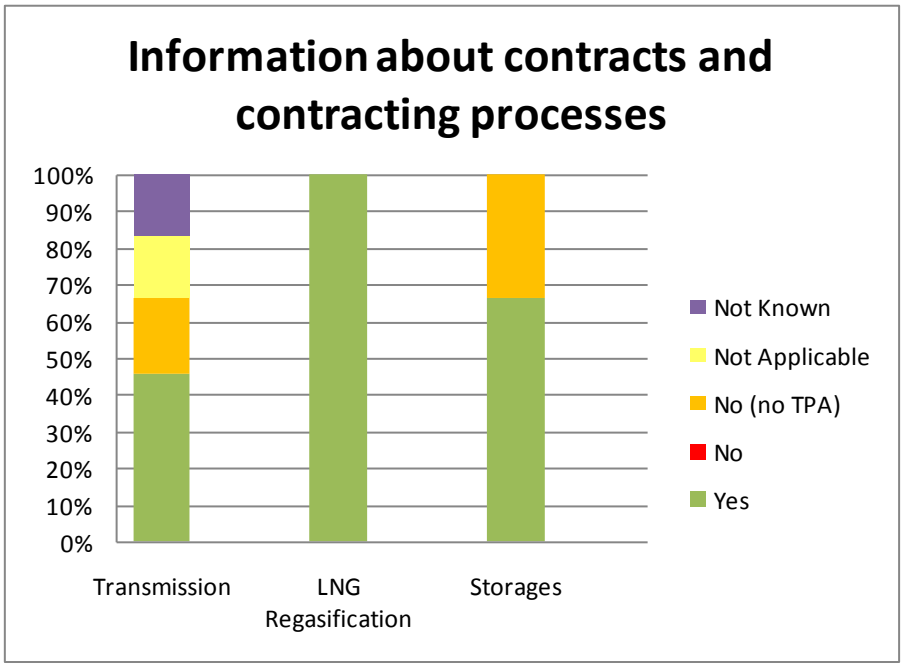

Figure 7: Information about contracts and contracting processes

As for the previous question, most of the countries in transmission , LNG and storage stated 'Yes'. Where the market is not liberalized and no TPA exists, it was marked as No (no TPA) and when there is no gas consumption, it was marked as 'Not applicable'. Countries where no information source could be found (Lebanon, Libya, Syria and Palestinian Territories) are marked as 'Not Known'.

Differences arise again across countries, in terms of the amount and detail of information published:

- The countries with the most complete and detailed information about contracts and contracting processes are Croatia, France, Greece, Italy, Portugal, Slovenia and Spain.
- Israel and Turkey have some – not full – information about contracts and contracting processes. Israel publishes in the Gas Transmission Agreement (GTA) information related to the agreement terms between shippers, TSO and consumers; and other agreements aren't approved yet. In Turkey the contracts are the same for all system users. There is a single user of the underground storage facility, that´s why they are marked as 'Yes' for transmission system and LNG and 'No (no TPA)' for Storage facilities.
- Two countries, although not having a liberalized gas market, have published some information on this area. Egypt has some information on contracting processes available for new consumers requiring gas, and Tunisia has detailed information on end-user supply contracts, although no information about access contracts could be found in any of both cases.
- Some countries that have TPA regulation but are still in the process of effective liberalisation are marked as 'No (no TPA)', such as Algeria and Croatia for storage.

The outcome is relatively positive with nearly half of the countries disclosing information on contracts and contracting processes for transmission. For LNG and storage (where they exist) most countries do it.

e) For the item: "*The flexibility and tolerance levels included in transportation and other services contracted, i.e. the balancing regime in place*", the results obtained were (Figure 8):

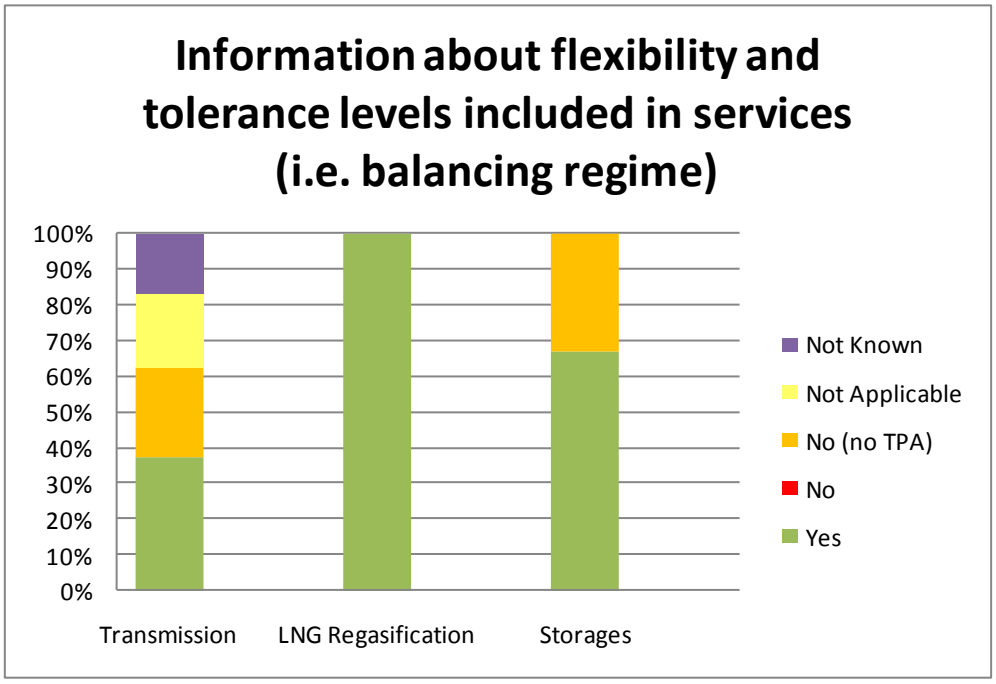

Figure 8: Information about flexibility and tolerance levels included in the services (i.e. balancing regime)

In transmission, nearly 40% of the surveyed countries do publish this information, whereas one third don't, although they don't have a liberalized market or TPA, so they are marked as 'No (no TPA)'. For the rest of countries the answer is not applicable (there is no gas consumption or infrastructure) or not known. The most frequent state for countries with LNG and storage facilities is 'Yes'. 'Not Known' is again used for those countries where no information source could be found (Lebanon, Libya, Syria and Palestinian Territories).

Some of the countries, even with regulated TPA, do not have developed in practice a balancing system or any flexibility in access tariffs. In terms of the amount of the information published, the situation is as follows:

- There are a number of countries with detailed information about balancing or flexibility included in the services: Greece, Israel, Italy, Portugal, Slovenia, Spain and Turkey. France, although having answered Not applicable to this question on LNG, also has got some information about the flexibility included in LNG terminal tariffs in the NRA website (CRE), so it was also considered as 'Yes'.
- In some countries, even with regulated TPA, information on balancing or flexibility in services is not published, because it's not applicable or does not exist. This is the case of Algeria and Turkey. Algeria is marked as 'No (no TPA)', and Turkey as 'Not Applicable' for storage.

Nearly 40% of the surveyed countries have developed a balancing system that allows for some flexibility included in access tariffs (for transmission) and all of them do publish information about it. The rest of the countries have not developed such a system or do not have gas consumption. Almost all countries with LNG or storage have this information available, except in the case of storage for Croatia and Turkey, due to a lack of TPA in practical terms.

f) To the statement: "*Any flexibility offered in addition to point above and the corresponding charges*", the results obtained were (Figure 9):

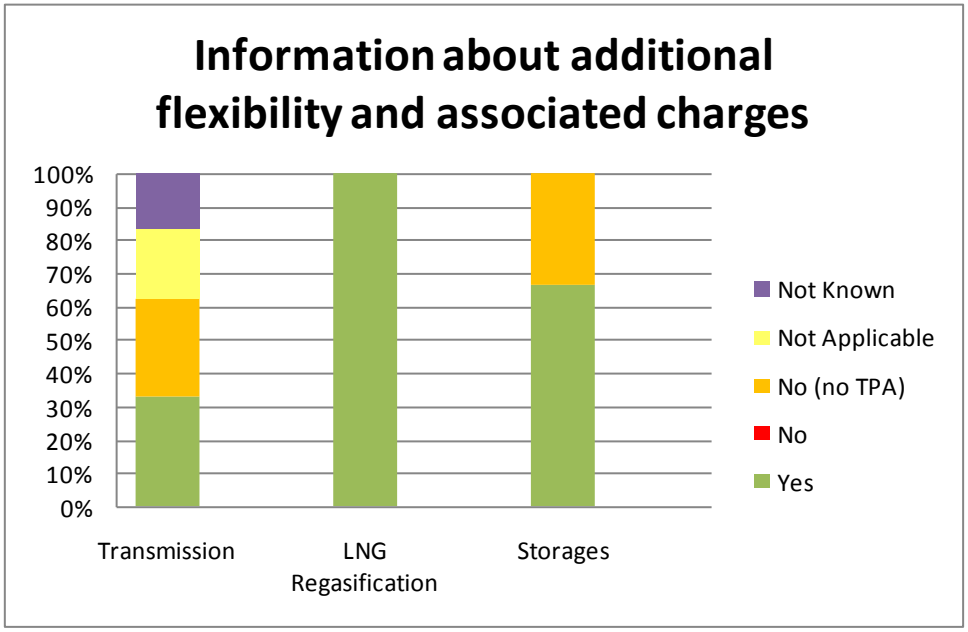

Figure 9: Information about additional flexibility and corresponding charges

Most of the countries are marked as 'Yes' for this matter in LNG and storage with a few exceptions, and there is a significant amount – about a third of all – of 'Yes' answers in transmission. The usual countries where no information source could be found are marked as 'Not Known' (Lebanon, Libya, Syria and Palestinian Territories).

There are some specific situations which are worth mentioning:

- There are a number of countries with full and complete information about corresponding charges for tolerance levels: France, Greece, Italy, Portugal, Slovenia and Spain.
- Israel also referred information on some awarded higher tolerance to shippers in order to support this emerging segment of the market, although there are no associated charges.

The countries with a highest degree of development in their gas markets provide for this additional flexibility in transmission, LNG and storage services and offer this information in the operators' websites. In the rest of the countries this possibility does not exist.

g) It was next asked whether it was available "*As applicable, the network code and/or the main standard conditions outlining the rights and responsibilities for all users of the gas system of the TSO*". In this particularly important item, the results obtained were (Figure 10):

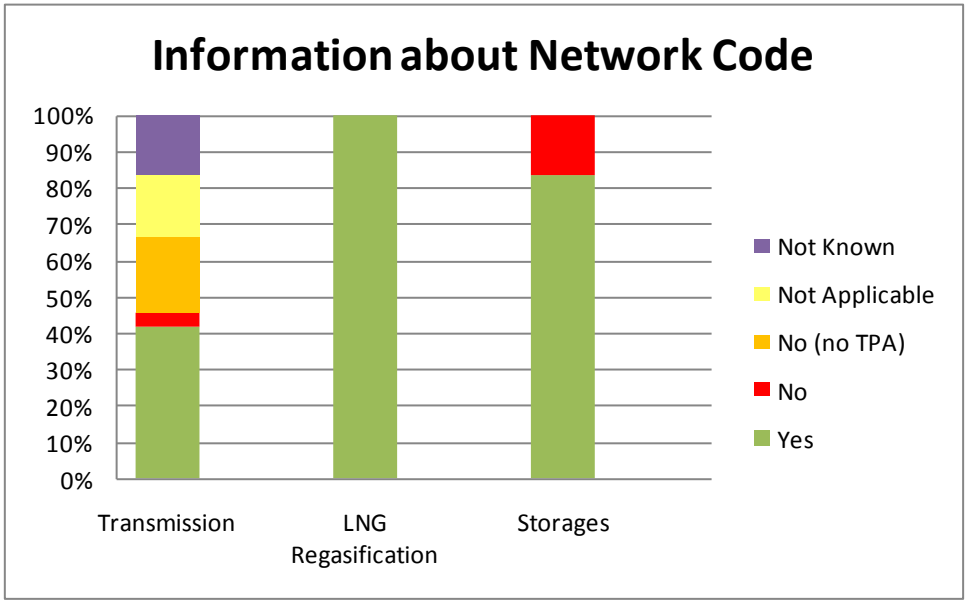

Figure 10: Information about Network Code

Most of the countries stated or were marked as 'Yes' and a there is also a significant amount of 'No (no TPA)' and 'Not Applicable' in transmission. Countries where no information source could be found are always marked as 'Not Known'. Most of the countries are marked as 'Yes' for this matter in LNG and storage, with the exception of Turkey for storage (the Storage Network code preparation is in progress.

Slovenia is marked as 'No' because the network code (called system operation instructions) does not include all the related regulation in a single document. The remaining provisions are included in other general documents, i.e. in Energy Agency acts, system operation instructions, general conditions for supply and consumption or rules of the gas transmission system operator. Other documents concerning distribution are also a reference of these contents in the Slovenian case.

In an important number of countries for transmission – and nearly in all those who have LNG or storage facilities – there is a network code, general transmission agreement or a comparable development that can be assimilated as such. In Turkey such Network code is being developed for storage. Only a few countries do not count with it, most of them because there is no TPA or liberalized gas market.

In the questionnaire, it was asked if several specific items were included in the network code[1]:

- *Programming and nomination procedures* (Figure 11)*:*

[1] Along the following specific topics, where the market is not liberalized and no TPA exists, it is marked as 'No (no TPA)', and when there is no gas consumption or infrastructure, as 'Not applicable'. Countries where no information source could be found are marked as 'Not Known'.

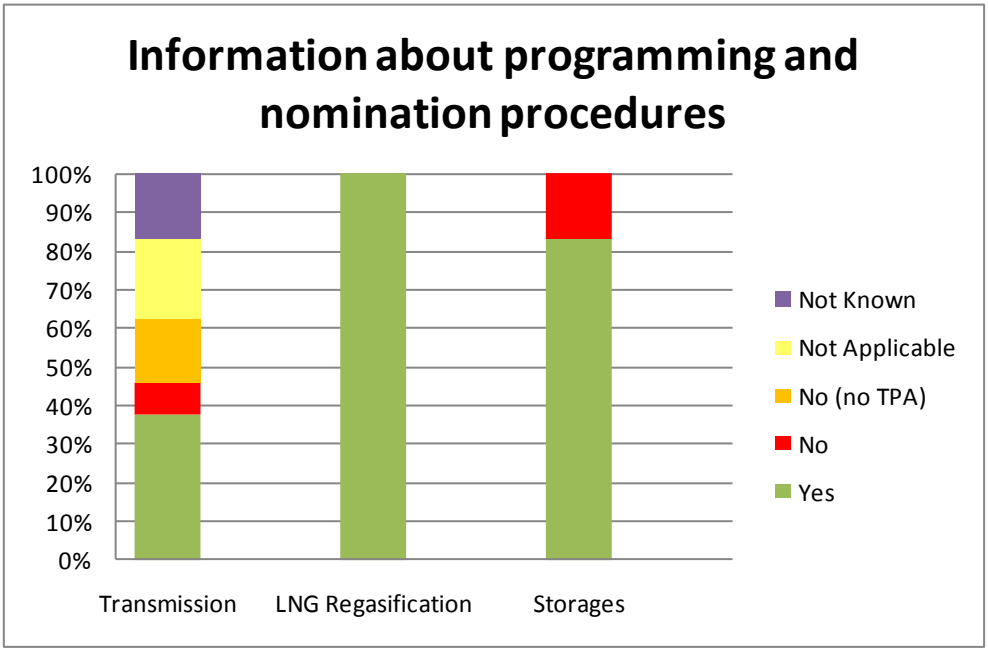

Figure 11: Information about programming and nomination procedures

Similar results were obtained in this matter. A number of countries – nearly 40% – stated 'Yes' in transmission and a significant amount of 'No (no TPA)' and 'Not Applicable' were also found. However, two of the countries with legal TPA – Slovenia and Algeria – do not have this information published. Most of the countries are marked as 'Yes' for this matter in LNG and storage, again the exception of Turkey in storage, where a Network code is being prepared as mentioned before.

Most of the countries having a network code or similar document publish information about programming and nomination procedures, and only in a few exceptions in transmission and storage this information is not available. The rest of the countries don't have a liberalized market with TPA, or even gas infrastructures or consumption.

- *Measurement and allocation procedures* (Figure 12):

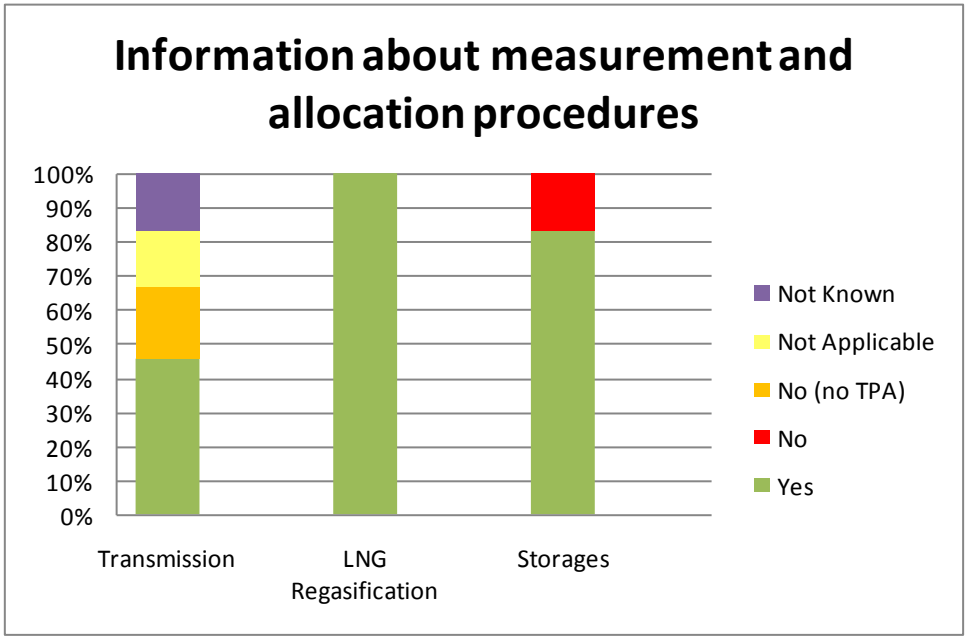

Figure 12: Information about measurement and allocation procedures

The results were slightly more positive than in the previous topic. More than 40% of countries state 'Yes' in transmission and a significant amount of 'No (no TPA)' was also found. Most of the countries are marked as 'Yes' for this matter in LNG and storage, with the exception of Turkey for storage as in previous items.

Similarly, most countries with a network code publish information about measurement and capacity allocation procedures, with only one exception, in storage. In the rest of the countries there is no liberalized market or TPA, or do not have gas infrastructures or consumption.

- *Maintenance of the infrastructures* (Figure 13):

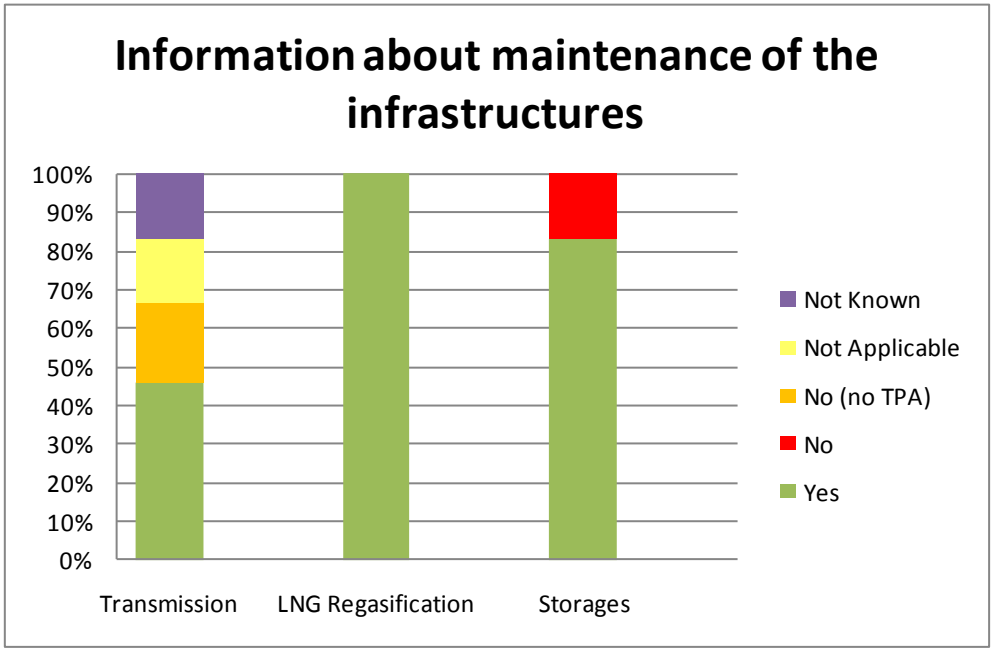

Figure 13: Information about maintenance of infrastructures

Similar results to the previous question were obtained. In transmission, nearly half of the surveyed countries were marked as **'Yes'** and a significant amount of **'No (no TPA)'** and **'Not Applicable'** also exist. 'Not Applicable' was the most frequent state for LNG and storage facilities, not existing in most countries.

As for the previous items, where a network code exists it **usually** includes a section about **maintenance** of infrastructures.

- *Operation of the system under both, normal and exceptional circumstances* (Figure 14):

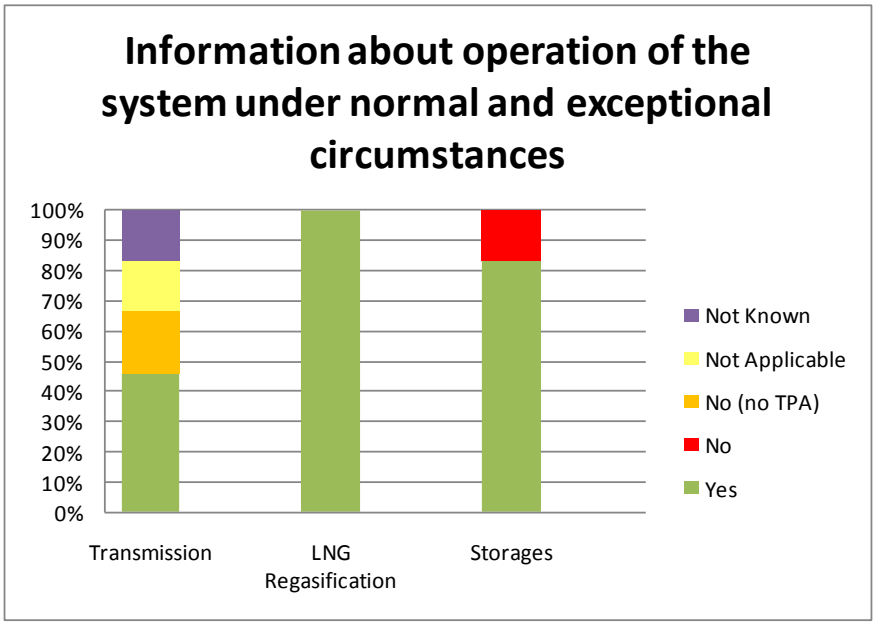

Figure 14: Information about system operation under normal and exceptional circumstances

The results were comparable to those of previous questions. Nearly 50% of the countries publish this information in the network code for transmission, while some of them don't since there is no TPA in place. Almost all countries where LNG import facilities and storage exist do publish it, with the usual exception of Turkey for storage, which is a positive result.

As for other items related to network management, almost all countries with a network code publish in it information about system operation, both in normal and exceptional circumstances.

h) The following statement in the questionnaire was: "*In the case a network code doesn't exist yet, all the standard documents and procedures in relation to the use of the gas system of the TSO including definitions of key terms, which are being applied*", and the results obtained are shown in the Figure 15.

For this question, all those countries where a network code already exists, or where there is no gas consumption or infrastructures, are marked as 'Not applicable'.

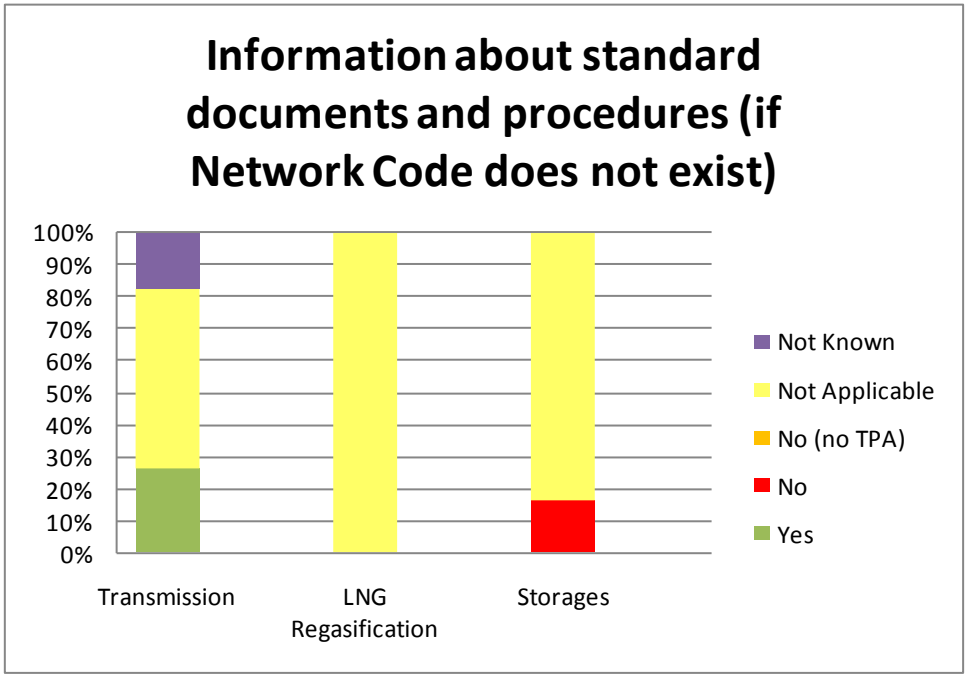

Figure 15: Information about standard documents and procedures (if Network Code does not exist)

Most are 'Not applicable' answers because, as explained, a number of countries already have a Network Code or an assimilated document. Within this category, there are also those countries without gas consumption. In LNG and storage there is also a majority of 'Not applicable', with the exception of Turkey for storage. Countries where no information source could be found (Lebanon, Libya, Syria and Palestinian Territories) are marked as 'Not Known'.

As a conclusion, where a network code – or similar document – does not exist, in general there is at least information about standard documents and procedures about the use of the gas system.

i) It was then asked about: "*The capacity allocation, congestion management, anti-hoarding and reutilization provisions*", and the results obtained were (Figure 16):

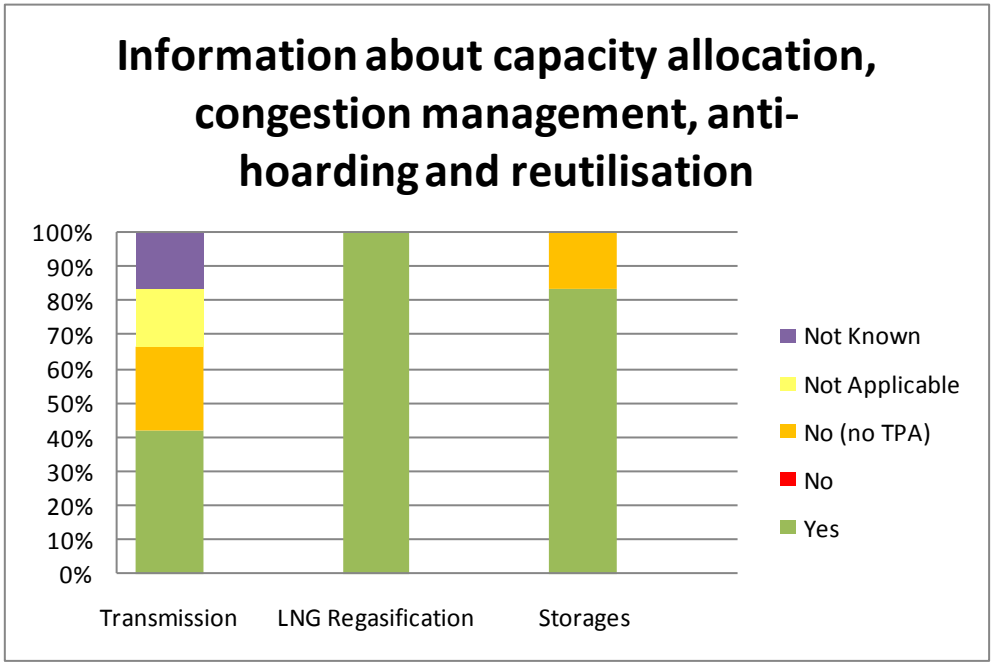

Figure 16: Capacity allocation, congestion management, anti-hoarding and reutilization provisions

In transmission these provisions were found in nearly half of the countries. Where there is no TPA or open gas market, it was not available. 'Not Applicable' was the most frequent state for LNG and storage facilities, not existing in most countries. Countries where no information source could be found (Lebanon, Libya, Syria and Palestinian Territories) are marked as 'Not Known'.

There are differences across countries in terms of the amount of the information published; some of the countries publish full information and some of the countries only partial information:

- Countries having full and complete information about capacity allocation, congestion management, anti-hoarding and reutilization provisions are: Croatia, France, Greece, Israel, Italy, Portugal, Slovenia and Spain. Turkey has all information except for storage facilities, for which it is in process of preparation.
- Some countries, even with no liberalized market or TPA, also publish some information. This is the case of the FYR of Macedonia,

In general, in the most developed gas markets the transmission, LNG and storage operators publish descriptive information on capacity allocation and congestion management procedures. Where there is no TPA or an open gas market, this information is not pertinent.

j) To the next statement: "*The rules applicable for capacity trade on the secondary market*", the results obtained were (Figure 17):

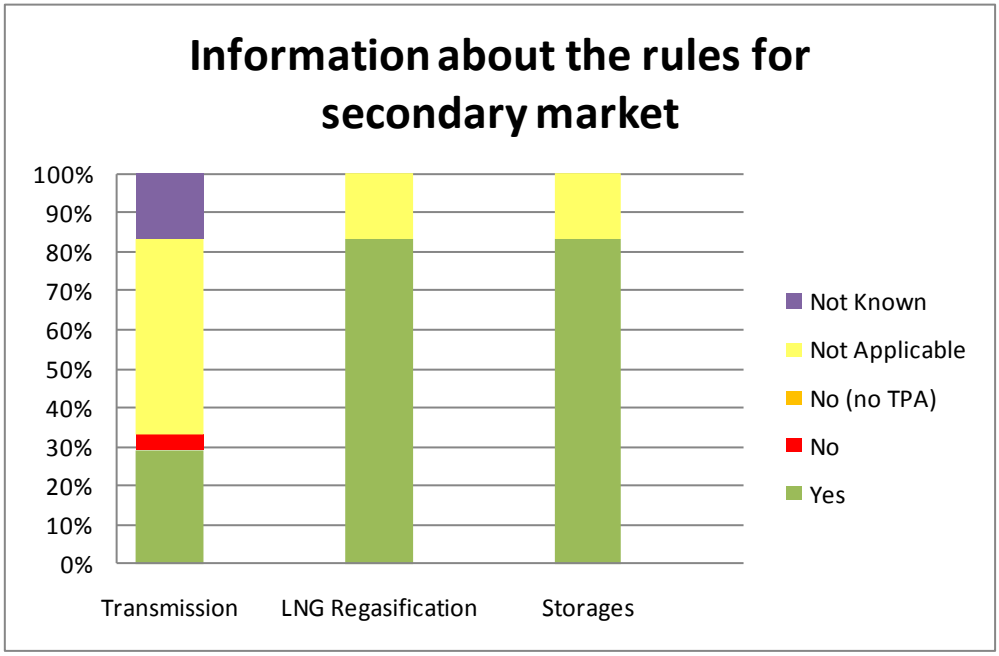

Figure 17: Information about the rules under secondary market

Regarding transmission there was a significant number of countries – nearly one third – that have, at least legally, developed such a secondary market of capacity, and have information on it available. However, most of the countries were marked as **'Not Applicable'** in this particular question, since this possibility of secondary trading does not exist yet. '**Yes**´ is the most frequent state for LNG and storage, with a few exceptions having answered ´**Not Applicable**´, because they do not have a secondary market. **'Not Known'** shows those countries where no information source could be found.

As a conclusion, it can be stated that there is information about **secondary markets** in those countries that have developed such a market (less than **one third** of all), which are basically those with a more **advanced degree of development** in their gas markets in general.

k) The next item in the questionnaire was "*Gas quality and pressure requirements*". It is categorized under priority 1 in the GGP, which means that all countries should have this information published, regardless of the degree of development of their gas market. Therefore only 'Yes', 'No', Not Applicable (or 'Not Known') answers are possible. The results obtained were (Figure 18):

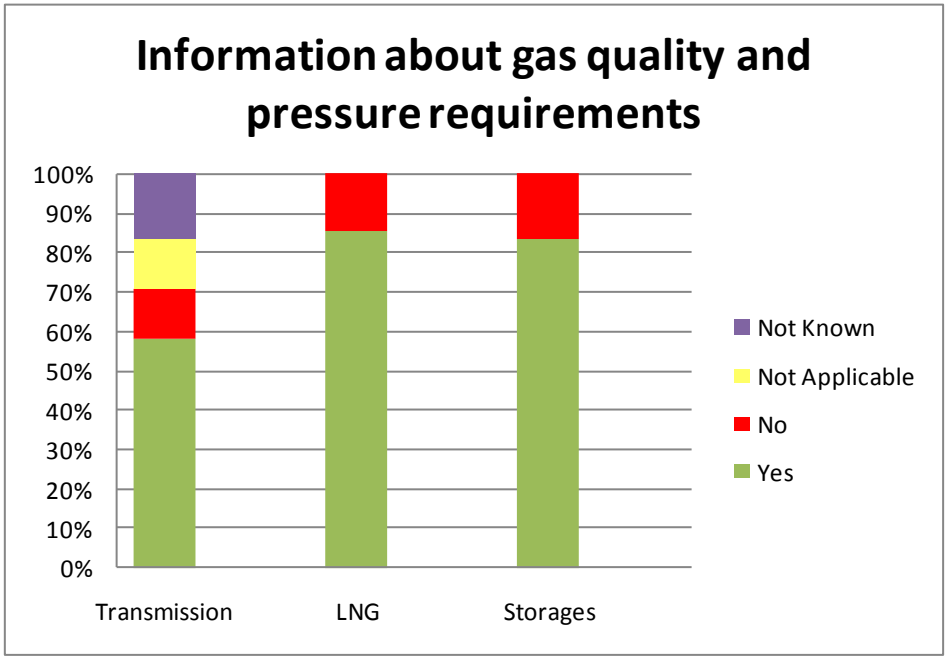

Figure 18: Information about gas quality and pressure requirements

To this statement, more than half of the countries are marked 'Yes' in transmission, but there are still three that don't fulfill the recommendation to publish this basic information. In most countries with LNG and storage facilities, the information on gas quality and pressure levels has been published, although Egypt does not do it for its LNG export terminals and Turkey is not doing it yet either for storage. 'Not Known' is used for those countries where no official information source could be found: Lebanon, Libya, Syria and Palestinian Territories.

In terms of the amount of the information published, the precise situation per country is as follows:

- The countries where full and complete information about gas quality and pressure was found, at least for the transmission system, are: Algeria, Bosnia and Herzegovina, Croatia, France, FYR of Macedonia, Greece, Israel, Italy, Malta, Portugal, Slovenia, Spain and Turkey.
- Three countries – Egypt, Morocco and Tunisia – do not have this information available for their transmission system. It was not found either for Turkey, concerning storage.
- The remaining countries and activities are marked as 'Not applicable' (or 'Not Known').
- In Jordan, gas specifications and pressure requirements are agreed between the seller and the buyer in the gas sales and purchase agreements. The information about gas specifications and pressure requirements is not available in the Ministry website, but it is available when it is requested from the Ministry by the investors. According to this information, obtained from the Ministry of Energy and Mineral Resources of Jordan, this country is marked as 'Yes'.

The results regarding the availability of information on gas quality and pressure requirements are not as positive as they should be, existing three countries where this information is not being published. In LNG and storage the situation is much better with only one country where this information was not found for storage.

10.2. Information on the capacity situation

a) The first item in this set of questions was: "*The maximum technical capacity (Million of m3/h or GWh/day)*". It is also categorized under priority 1 in the GGP, so only 'Yes', 'No', 'Not Applicable' (or 'Not Known') answers are possible. The results obtained in this case were (Figure 19):

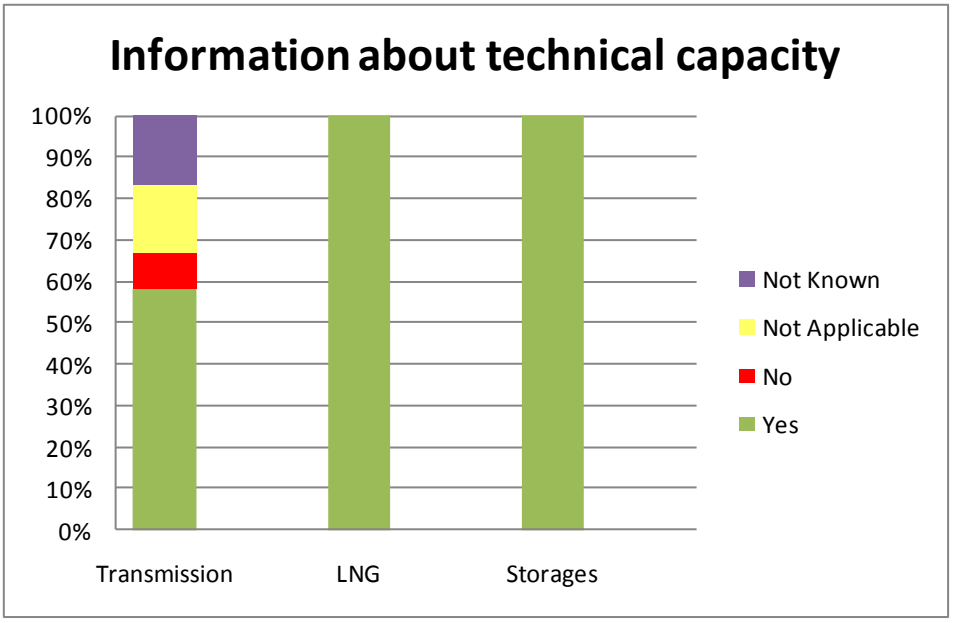

Figure 19: Information about maximum technical capacities

This topic is also categorized of priority 1 in MEDREG GGP on Transparency, meaning that every country should have this information published, regardless of the degree of development of its gas market.

A majority of countries answered or were tagged 'Yes' to this statement regarding transmission, as it could be expected, which is positive. However, for two countries this item is not published or was not found. For LNG and Storage facilities the situation is optimal, since all countries having such assets publish this information at present.

In summary, the countries can be grouped as follows in regard to the availability of this information:

- The countries where information about maximum technical capacities is fully available are: Croatia, Egypt, France, FYR of Macedonia, Greece, Israel, Italy, Jordan, Malta, Portugal, Slovenia, Spain, Tunisia and Turkey.

- Algeria and Bosnia and Herzegovina only have partial information on technical capacities, mainly for the main pipelines. Slovenian TSO Geoplin plinovodi publishes information about individual pipeline capacities, but not the maximum general transmission capacity.
- The only two countries not having this information available were Israel , which does not have this information published but provided the aggregate transmission value in the questionnaire, and Morocco, where this information couldn't be found.

As a conclusion, the basic general information about technical network capacity is published in a wide majority of countries having transmission infrastructure, but not in two of them. The situation in LNG import and storage facilities is optimal, with this information available in all countries.

b) It was also inquired about: "*The total contracted firm and non-firm capacities (Million of m3/h or GWh/day)*", with the following results (Figure 20):

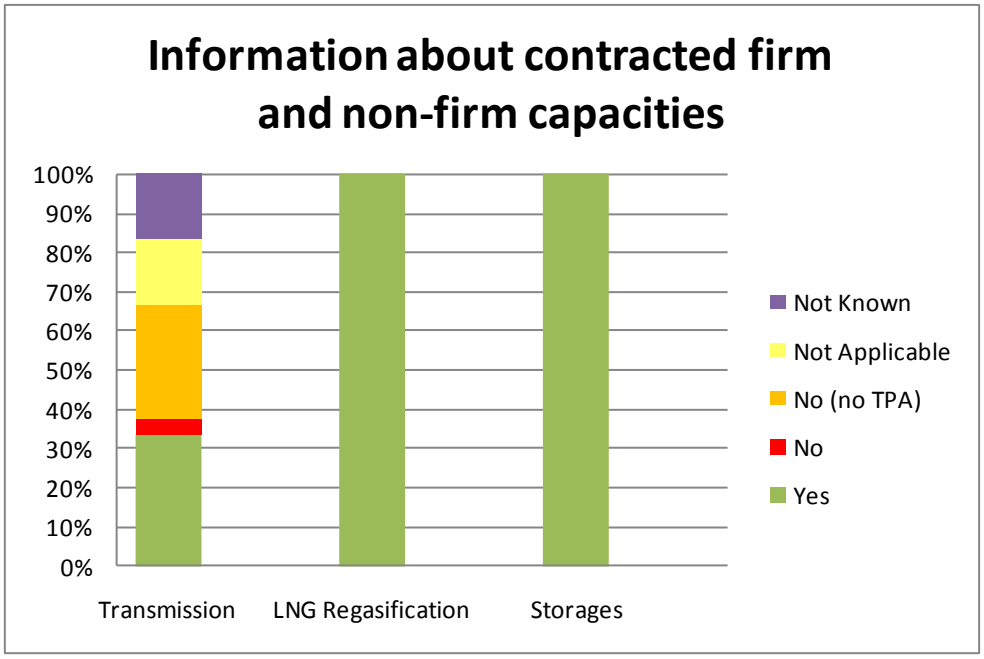

Figure 20: Information about contracted firm and non-firm capacities

This is an important item for those users willing to access to system capacities, where TPA exists. As a result of the survey and the research made, it was discovered that in almost all cases where TPA exists (around one third of all) it is published, with the exception of one. In other countries there is no TPA so there is no information, or there is no gas consumption. Where the market is not liberalized and no TPA exists, it was marked as 'No (no TPA)', and where no information source could be found, as 'Not Known'. 'Yes' was the unanimous state for LNG and storage (considering only countries with these facilities).

In summary, the situation per country is the following:

- The countries with full complete information about contracted firm and non-firm capacities are France, Italy, Portugal, Slovenia and Spain. For Greece it was available, but only in Greek.
- Croatia has only information related to contracted firm capacities. No information was found for contracted no-firm capacities because non-firm (interruptible) capacity has not been available yet.
- Information about Turkey couldn't be confirmed because of language limitations (information available only in Turkish). The 'Yes' response was taken from EMRA's questionnaire.

Almost all countries where TPA exists – one third of all – publish data on contracted firm and non-firm capacities for transmission. Only one country with TPA does not have this information available. The countries with gas consumption or infrastructure but no TPA – another third of all – do not have these data. All countries with storage and LNG regasification terminals are publishing this information.

c) Finally, the third capacity item was: "*The available firm and non-firm capacities (Million of m3/h or GWh/day)*", and the results were (Figure 21):

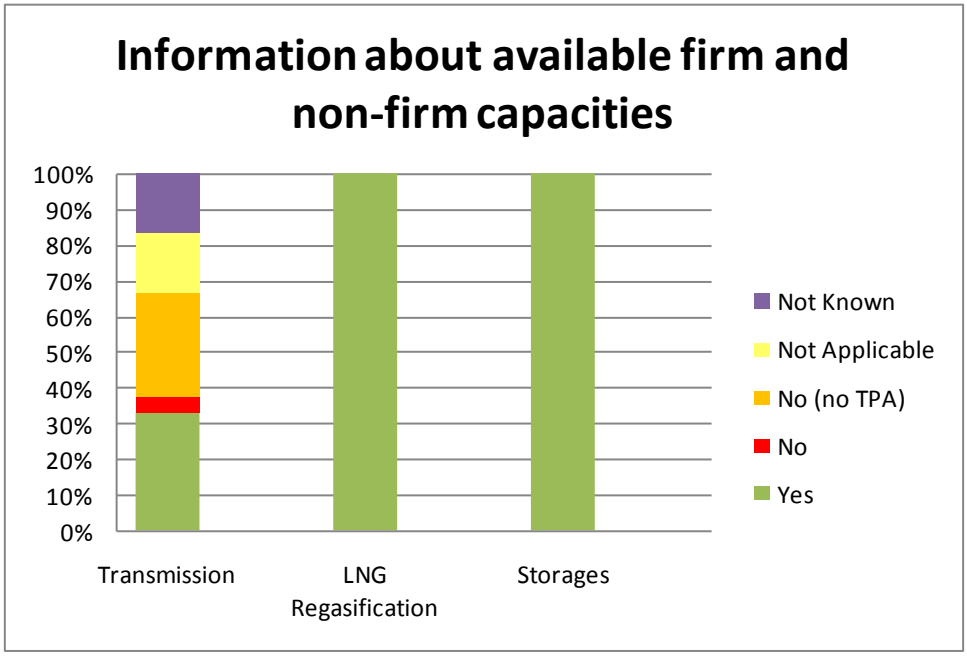

Figure 21: Information about available firm and non-firm capacities

Similarly, this is a very important item – maybe the most important one – for those users willing to access to system capacities, where TPA exists.

Again, almost all countries having TPA, with the exception of one, publish this information (about one third of all countries), whereas those countries without TPA do not have this information. For LNG and storage facilities (not existing in most countries), where such facilities exist, the information on available capacities is published.

Some particular comments can be made:

- The countries with full information about available firm and non-firm capacities are: France, Italy, Portugal, Slovenia, Spain and Turkey. For Greece it was available only in Greek.
- Croatia only has information about available firm capacities, but not on available non-firm capacities because non-firm (interruptible) capacity has not been available yet. Information about Turkey is uncertain, and it couldn't be checked because of language limitations (it is available only in Turkish), so the answer was taken directly from EMRA's questionnaire.
-

Nearly all countries with TPA – users being able to access and contract capacity – **have** this information available in their TSO websites. Only in one country this is not happening. The countries where there is no TPA this information is not available.

10.3. Additional questions on capacity related information (publication, calculation, use rates, contract records)

For the following questions a particular assumption was made, due to the specificity of the information asked and the impossibility in some cases to find out whether the requirement is being fulfilled or not. This is motivated by the fact that, for those countries that did not send their questionnaires either in phase 1 or in phase 2, and who didn't confirm either the questionnaire completed in the drafters' research, it was not possible to know if the calculation of capacities is based on network modeling and flow simulations, or whether operators keep records of capacity contracts, or if the information published is updated on a quarterly basis. These facts can only be confirmed by regulatory authorities or by operators themselves, and therefore, where no answer or confirmation was obtained, they are marked under the category '**Not known**' to reflect this uncertainty. For other cases, the result is based exclusively on the response of the NRA in the questionnaire, and it couldn't be confirmed either. In any case, category 'Not applicable' is always used when there is inexistence of gas infrastructure. For the questions regarding LNG and storage, only countries with such facilities are concerned. 'Not applicable' for LNG and storages means then that the question is not applicable because there is no liberalized market or not actual TPA.

The first statement to be confirmed in this part of the questionnaire was: "*The previous information is published for the current and following years and on a yearly basis for the next five years*", and the results obtained were (Figure 22):

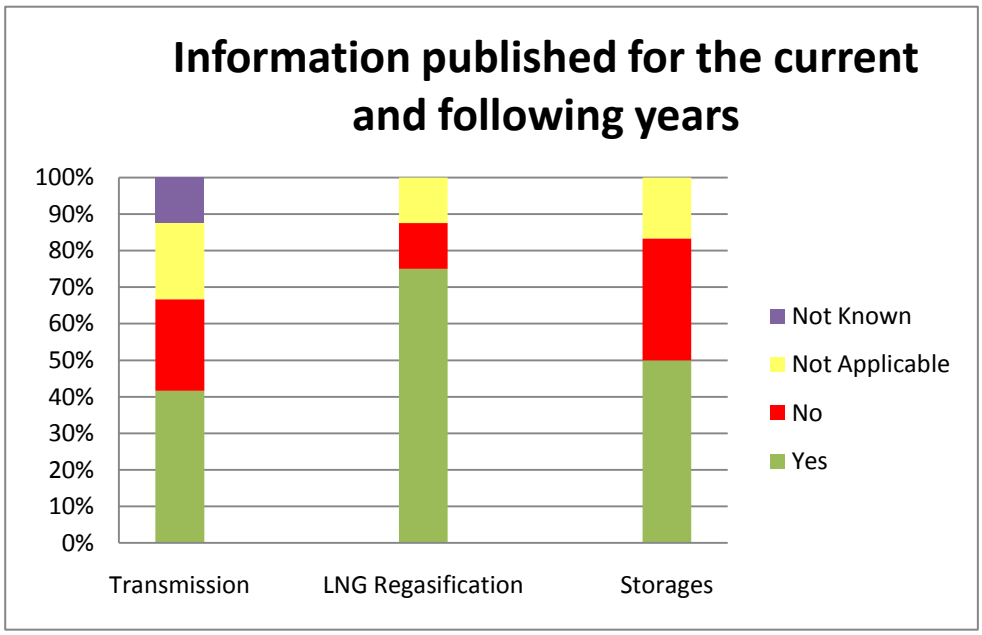

Figure 22: Information published for the current and following years

According to the responses received and to the own research, less than half of countries would be publishing the information on transmission capacities for the current and following years. Another 20% do not do it. Countries with no gas consumption or transmission assets, or without any information source, were categorized as 'Not Applicable' or 'Not Known', respectively. For LNG, most of the countries publish this information. In storage, half of the countries do it.

The particular situation in Mediterranean countries on this topic is the following:

- Only three countries have complete information on capacities published for the current and following 5 years: France, Italy and Spain.
- A second set of countries do have information published for the current and/or following years, but less than 5. Croatia and Slovenia are publishing data for 18 months to come. According to their Regulation. Portugal is publishing data for the following year. Finally, FYR of Macedonia, Israel and Turkey are publishing data just for the current year.
- Greece is marked as 'Yes' although no confirmation was received from the Greek regulator but we could find information on the transmission operator´s web site, only in Greek.
- Jordan and Israel are marked as 'Yes' for this answer for transmission, based on the questionnaire provided, although the information couldn't be confirmed on the TSO or Ministry website.

The level of compliance of the recommendation is improvable. Less than half of the surveyed countries complied with, or half of those for which any information could be found. It is not being fulfilled in five countries with gas consumption. In LNG and storage the degree of compliance is higher.

The next statement to be confirmed was: "*The previous information is updated on a quarterly basis*". The results obtained here were (Figure 23):

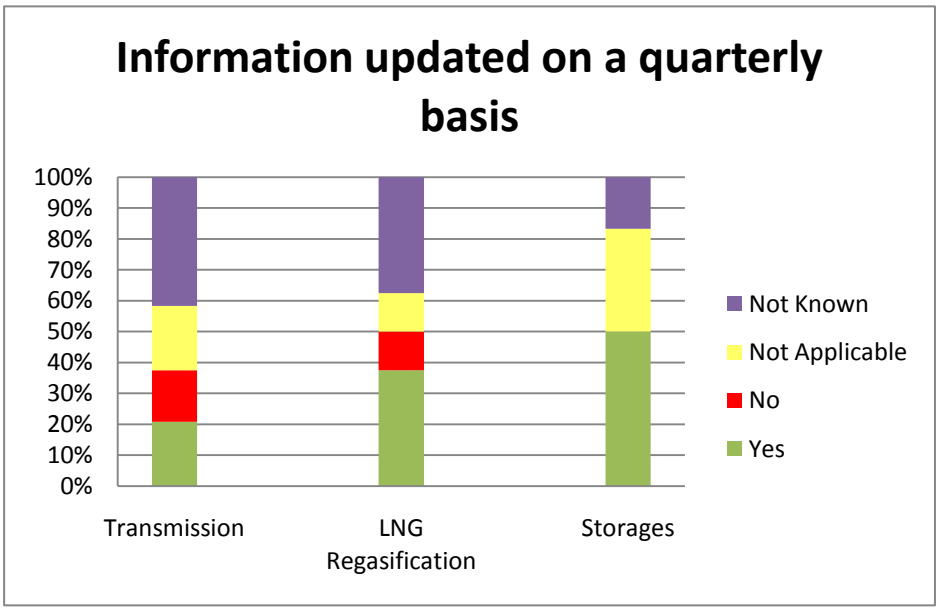

Figure 23: Information updated on a quarterly basis

A significant amount of countries are marked as 'Not Known' here, because no information or confirmation could be obtained. There is less than 30% of 'Yes' answers, and for two countries there is certainty that this quarterly update is not carried out. The remaining countries are marked as 'Not Applicable' or 'Not Known', used for those countries where no information source could be found (Lebanon, Libya, Syria and Palestinian Territories) and for those which didn't respond to the questionnaire: Bosnia and Herzegovina, Egypt, Greece, Italy (that didn't provide specific link for this item), Morocco and Tunisia. Regarding LNG and storage, where only countries with these facilities were considered, although the rate of positive answers is slightly higher, especially for storage, there is a significant amount of answers marked as 'Not Known' for LNG and 'Not Applicable' for storage.

In this situation, the situation country by country is the following:

- The countries where capacity information is updated on a quarterly basis and it could be consulted in the TSO website are France, Portugal, Slovenia and Spain.
- Countries with information updated less than quarterly are: FYR of Macedonia, which updates this information twice a year, and Israel, which is doing so annually.

For a number of countries it couldn't be known whether the capacity information is actually updated on a quarterly basis, due to the lack of feedback in some cases. However it has been verified that some countries, mostly with a high degree of development in their market, are carrying out this quarterly update.

The next statement was: "*The calculation of available capacities is based on network modeling and flow simulations, taking into account all relevant operational parameters for an efficient and safe operation of the system*". As explained at the beginning of this section, such a statement can only be confirmed by the regulator, ministry or operator himself. The results obtained were (Figure 24):

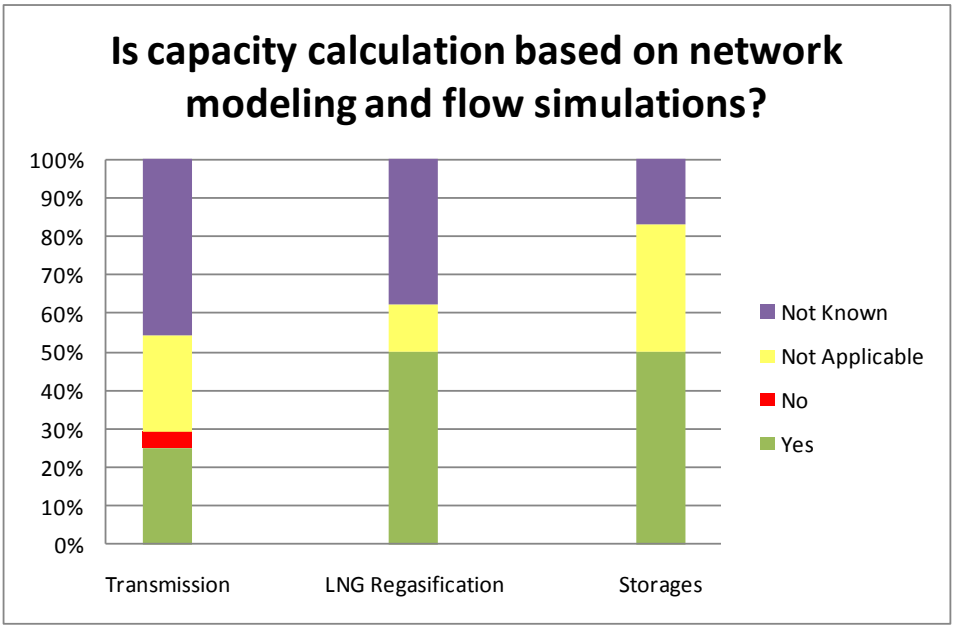

Figure 24: Capacity calculation based on network modeling and flow simulations

The situation was quite similar than in the previous question. Capacity calculation is based on network modeling and flow simulations in about 30% of the countries. Only one 'No' statement was found, for transmission. Finally, a 40% of the surveyed countries – 10 out of the 24 – this assessment couldn't be made, due to absence of response or confirmation, so they were marked as 'Not Known'. This is the case of Lebanon, Libya, Syria and Palestinian Territories (for which no information from reliable official sources could be obtained), Bosnia and Herzegovina, Egypt, Greece, Italy (that didn't confirm this point), Morocco and Tunisia. Regarding LNG and storage, where only countries with these facilities were considered, again the rate of positive answers is slightly higher than for transmission, but there is still a significant amount of answers marked as 'Not Known' for LNG and 'Not Applicable' for storage.

In any case, there are differences across countries in terms of the amount and detail of the information published:

- The countries where capacity calculation is based on network modeling and flow simulations, according to the responses in the questionnaires, are France, Portugal, Spain and Turkey.
- In the FYR of Macedonia capacity calculation would be done manually, and there is no developed network modeling.
- Jordan and Israel are marked as 'Yes' for transmission, although no website or document was provided in order to confirm this, so the answer in the questionnaire prevailed.
- Slovenia is marked as 'Not known' for this question, but this information couldn't be confirmed with the TSO (Geoplin plinovodi, d.o.o.).

There is also here a high degree of uncertainty, since in a number of cases it couldn't be confirmed whether capacity calculation is being based on network modeling and flow simulations. Only in a few cases there is sureness that such a calculation method is being performed.

The next statement was the following: "*The historical maximum and minimum monthly capacity utilization rates and annual average flows at the above points is published for the previous year, no later than 30th of January of the current year*". To this, the findings were (Figure 25):

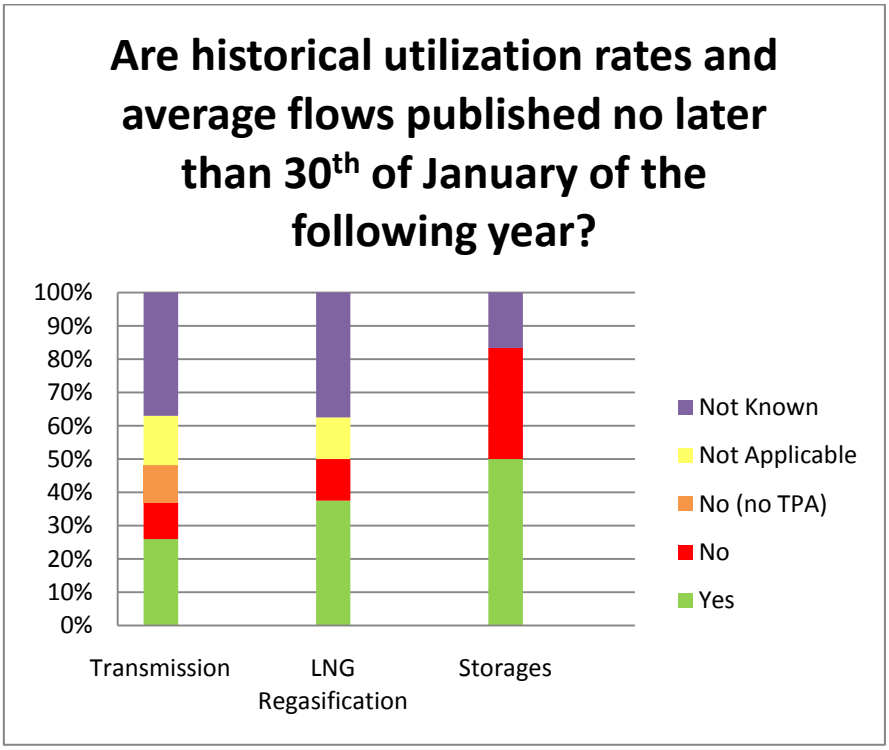

Figure 25: Publication of maximum and minimum utilization rates and annual average flows

According to the answers received and the research performed, about 25% of Mediterranean countries would be fulfilling this recommendation regarding transmission at present. On the

other hand, other six countries are not doing it, among which two that have TPA. For LNG and storage, the rate of positive answers is once more slightly higher than for transmission, although with some answers as 'Not Known' for LNG and 'Not Applicable' for storage.

There are again an important number of countries tagged as 'Not Known'. For some of them no information source could be found (Lebanon, Libya, Syria and Palestinian Territories); and others didn't respond or confirm the information in the questionnaire: Bosnia and Herzegovina, Egypt, Greece, Italy, Morocco and Tunisia.

For the countries where there is available information, the situation is:

- In Croatia, Slovenia and Spain full and complete information about maximum and minimum utilization rates and annual average flows was found.
- France was also marked as 'Yes' because TSOs, SSOs and LSOs publish figures which can be used to calculate monthly capacity utilisation rate and annual average flows.
- Two countries make this information available, but not before 30th of January of the following year. FYR of Macedonia may publish it until 31st of March, and Portugal can do so until mid September of the current year, because gas year in Portugal is from 1 July to 30 June, being the referred data published 45 days after at the latest.
- Israel is marked as 'Yes', based on the answer provided in the questionnaire, although no published data were found to confirm such a statement.

This recommendation is not being widely fulfilled and in some countries, including two with TPA, these utilization rates and average annual flows are not available in TSO websites.

Finally, the last statement in the questionnaire was: "*The operators keep effective records of all capacity contracts and all other relevant information in relation to calculating and providing access to available capacities (accessible for the relevant national authorities in case of needed)*". This is a statement that can only be confirmed as well by the regulator, ministry or operator himself. The results obtained, based exclusively on the questionnaire responses, were as follows (Figure 26):

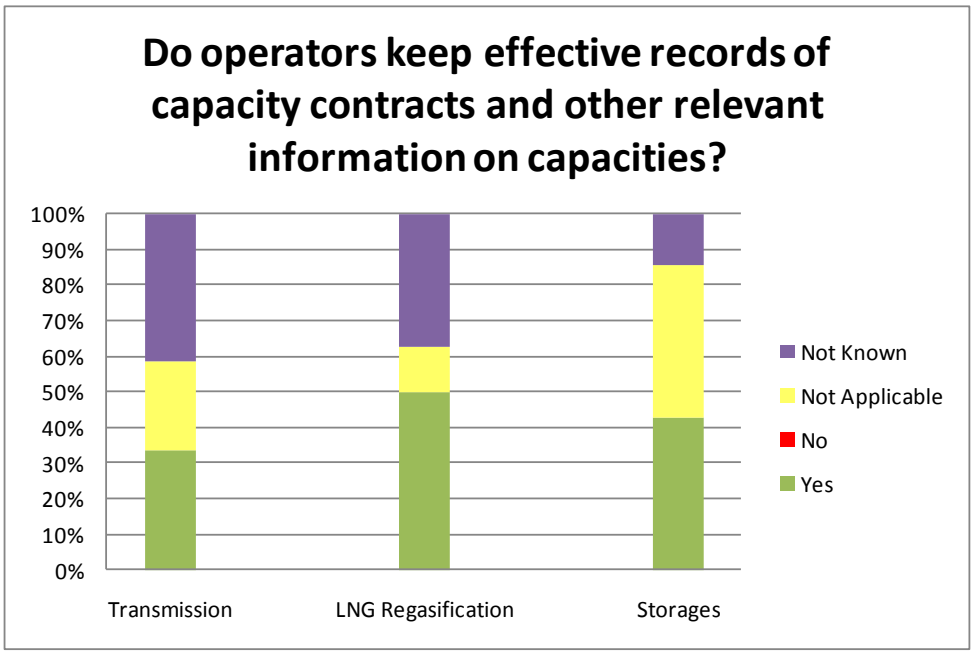

Figure 26: Effective records of all capacity contracts and relevant information for available capacities

In about one third of the countries the TSOs would be keeping contract records and make them accessible to NRAs if needed. In another third it would be considered as 'Not applicable' by the respondents – basically due to the inexistence of TPA – and the situation is unknown in the remaining third part of the countries. Once more the rate of positive answers is higher for LNG and storage than for transmission, although with some answers as 'Not Known' for LNG and 'Not Applicable' for storage.

The countries where this recommendation is being fulfilled according to the answers in the questionnaires are France, FYR of Macedonia, Israel, Jordan, Portugal, Slovenia, Spain and Turkey.

This last statement couldn't be confirmed either in many cases, although according to the responses received the recommendation for operators to keep effective records of access contracts would be currently respected in a number of countries.

11. RESULTS

The figures in the following pages show the aggregate results per country and activity, based on the findings presented in the previous sections.

Figure 27 shows the aggregate results on transparency of the information on system and services and on the capacity situation (sections 3.2.1 and 3.2.2). Figure 28 shows the compliance with the additional recommendations on capacity-related information (section 3.2.3). Figure 29 shows the overall results, per country and activity, as the percentages of Yes/No/Not applicable/Not known out of all the questions relevant for each activity. Finally, Figure 30 shows the overall aggregate results per country, as the percentages of Yes/No/Not applicable/Not known out of all the questions relevant for the country, all activities together. Figure 31 shows the overall degree of transparency among the countries in MEDREG group.

The list of country abbreviations used for the graphs is the following (Table 3):

Table 3: List of country abbreviations

Country	Abbreviation
Albania	AL
Algeria	DZ
Bosnia-Herzegovina	BA
Croatia	HR
Cyprus	CY
Egypt	EG
France	FR
FYR of Macedonia	MK
Greece	GR
Israel	IL
Italy	IT
Jordan	JO
Lebanon	LB

Libya	LY
Malta	MT
Montenegro	ME
Morocco	MA
Palestinian Territory	PS
Portugal	PT
Slovenia	SI
Spain	ES
Syria	SY
Tunisia	TN
Turkey	TR

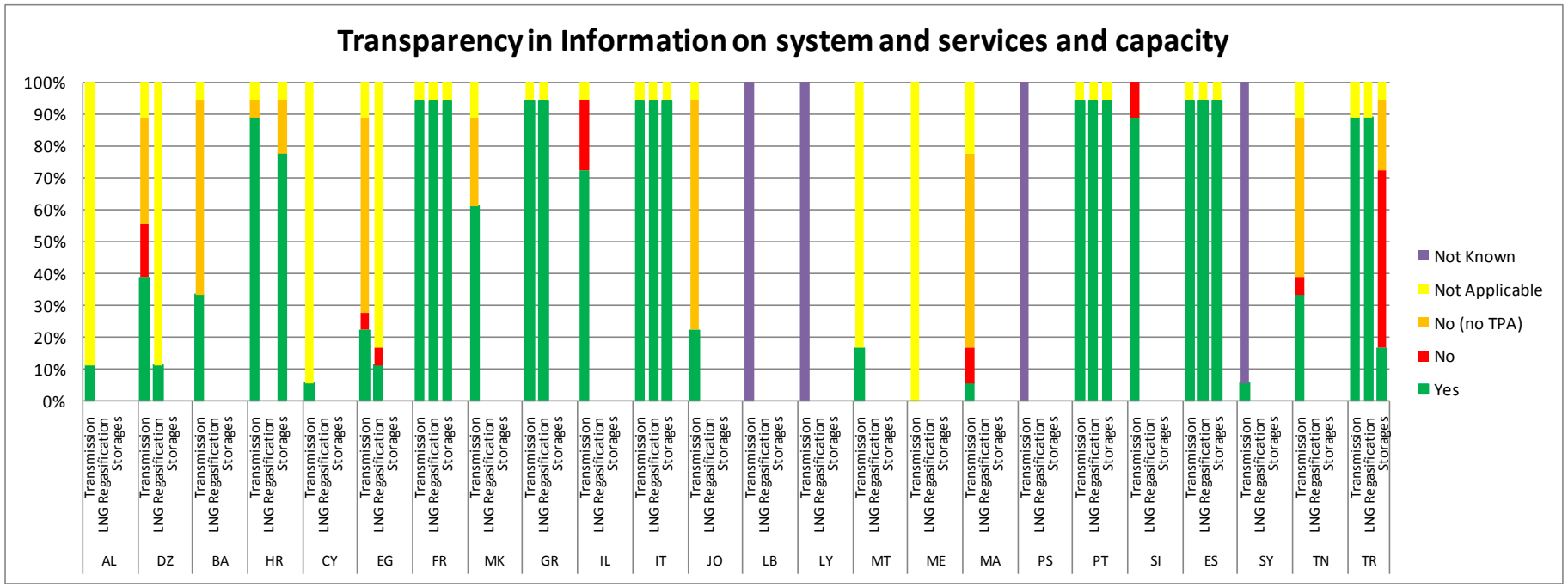

Figure 27: Transparency in information on system and services and capacity

As a general comment it can be stated that the overall availability of the items referred in the GGP Transparency is satisfactory. The results are mostly positive in those countries with more developed and open gas markets. In the graph it is easy to see also that there is a high correlation in transparency levels corresponding to the different gas activities existing in a country. Where there is a high level of information on transmission, there is usually a similar level in LNG and/or storage. Exceptions to this would be Turkey – in process of elaboration of the network code for underground storage – and Algeria and Egypt, although for these cases LNG transparency was only assessed for LNG production facilities in general questions. For some countries it was not possible to assess compliance, due to the inexistence of a gas market or the unavailability of reliable information.

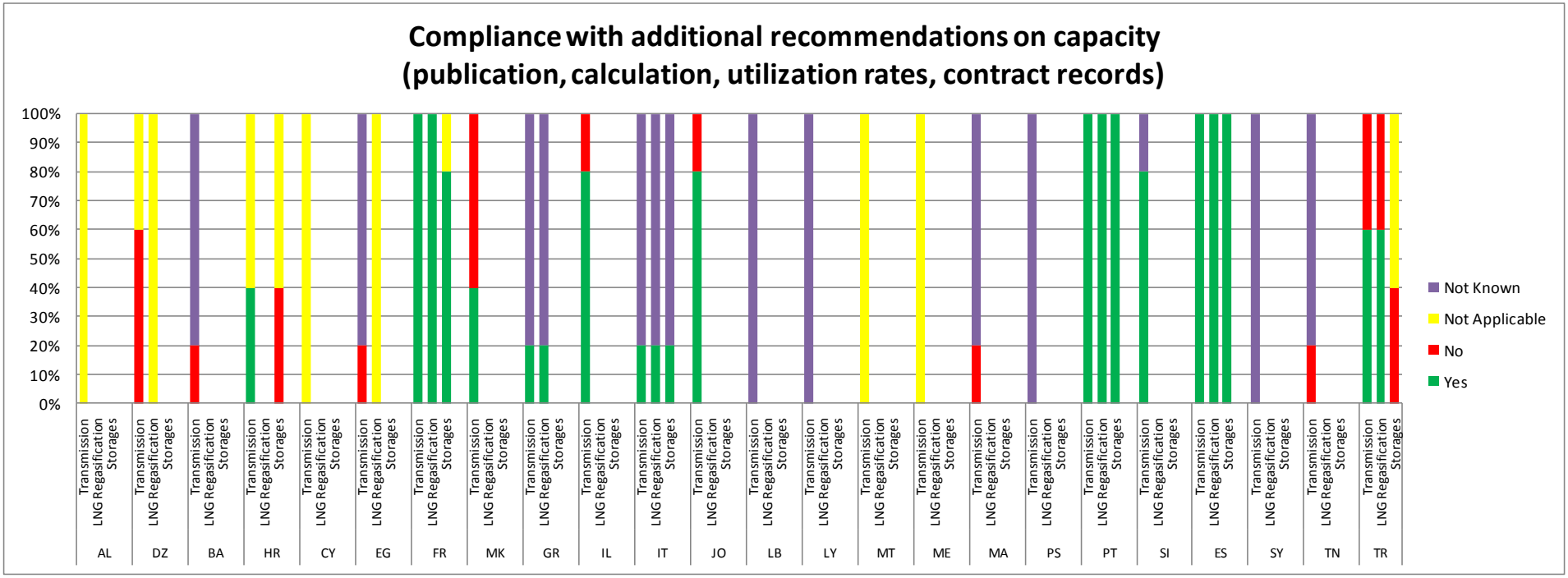

Figure 28: Compliance with additional recommendations on capacity (publication, calculation, utilization rates, contract records)

The graph shows the high degree of uncertainty encountered when assessing the degree of compliance with the additional recommendations on capacity-related information: publication, update and calculation of capacities, utilization rates and record-keeping of capacity contracts. In many cases it was not possible to know if operators and/or regulators are fulfilling these recommendations. In any case, the results are, once more, most positive in the countries with more developed gas markets.

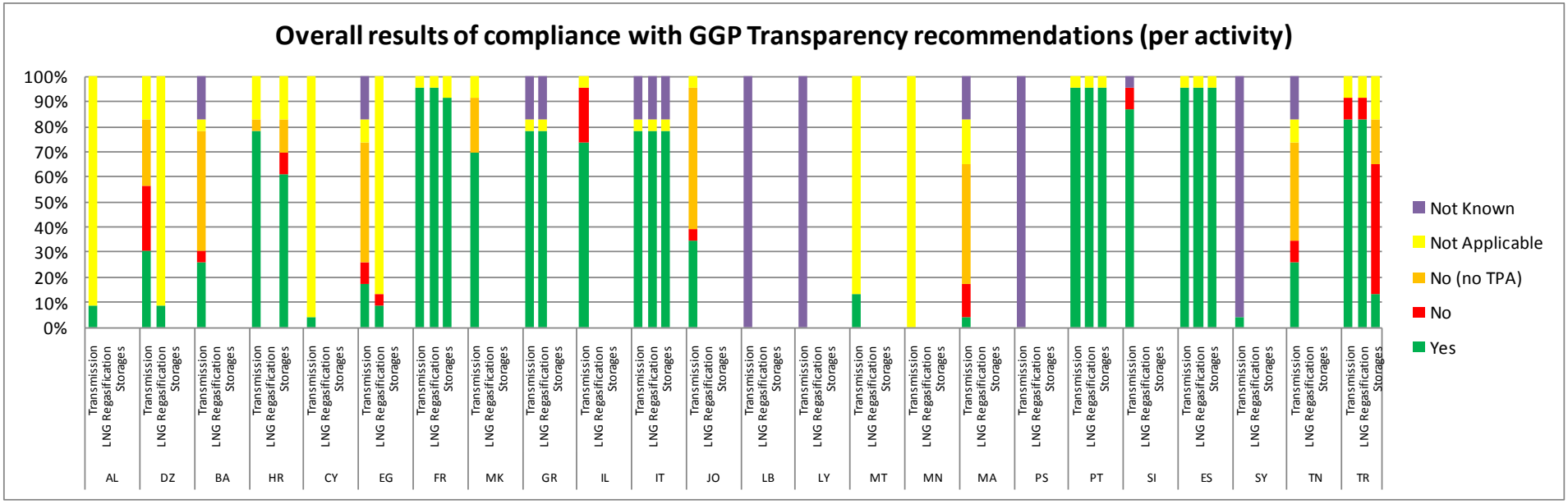

Figure 29: Overall results of compliance with GGP Transparency recommendations, per activity

The aggregate results of all the topics and questions stated in the survey confirm the findings issuing from the previous separate analyses. The overall degree of compliance is satisfactory, especially in those countries with TPA and open markets. The highest the degree of development of the gas market in a country, the highest the degree of transparency and the availability of information. Transparency in transmission, LNG and storage seems to be much correlated in countries where several services exist.

When aggregating the results for the different activities from the previous separate analyses in a single result per country, the picture is as follows:

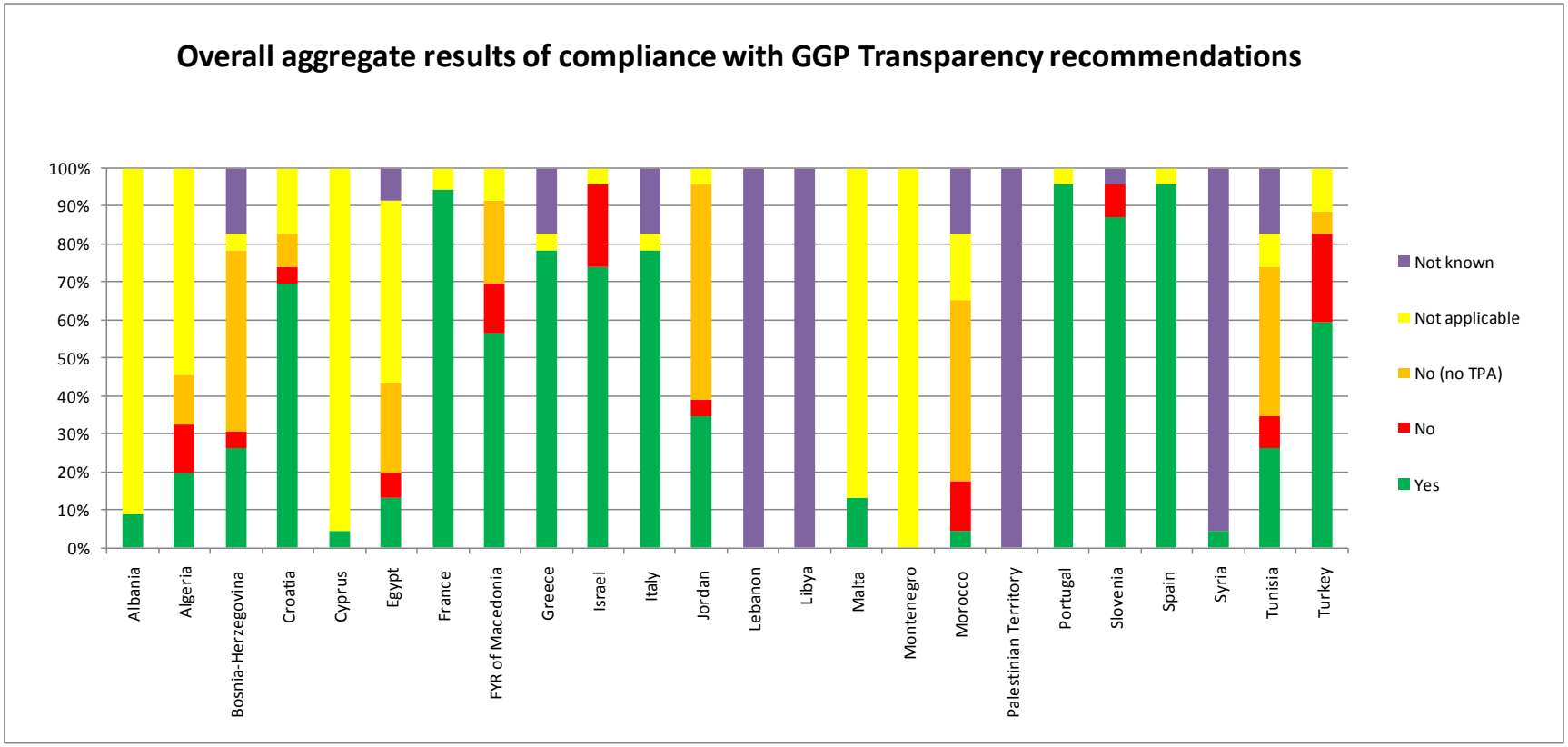

Figure 30: Overall aggregate results of compliance with GGP Transparency recommendations

These overall results can also be presented in a map format, with a code of colours indicating the overall level of availability of information and compliance with GGP recommendations. The following figure shows the map of transparency in Mediterranean countries in this visual format. The different shades of green show the percentage of topics from the GGP that are found in the operators' websites. The countries where there is no gas consumption of infrastructure are marked in white. The four countries in dark grey are those for which no reliable information could be found.

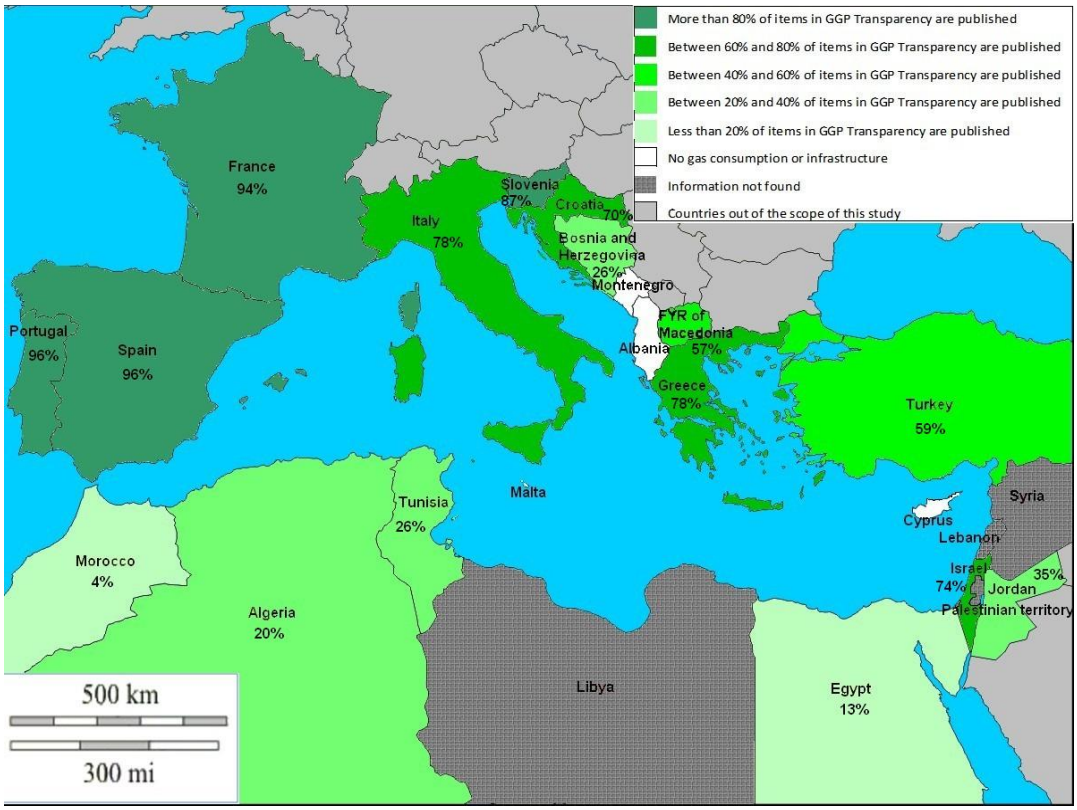

Figure 31: Overall degree of transparency in gas markets of Mediterranean countries

As a conclusion, it can be stated that there are several groups of countries according to the degree of compliance with GGP Transparency recommendations:

- In a first group of countries – France, Portugal, Slovenia and Spain – operators publish all or nearly all the information recommended – more than 80% of surveyed items – and therefore they are in full or almost full compliance with the GGP in terms of items published.
- In a second set of countries – Croatia, Greece, Israel and Italy – information was found for between 60% and 80% of the analysed topics. There is hence a good level of compliance with GGP recommendations. Greece and Italy are in this group because some of the additional recommendations on capacity calculation and publication couldn't be confirmed with NRAs.
- In a third level there would be FYR of Macedonia and Turkey, with a fair degree of compliance with the GGP: between 50% and 60% of their topics are available in the operators' websites.

- In a fourth level there would be Algeria, Bosnia-Herzegovina, Jordan and Tunisia. Their TSOs are currently publishing between 20% and 40% of the topics in the GGP.
- Finally, in Egypt and Morocco the transmission system operators would be publishing less than 20% of GGP items in their websites.
- In the remaining countries, either there is no gas consumption or infrastructure – case of **Albania**, **Cyprus**, **Malta** and **Montenegro** – or not enough information was found for integrating them in this study – **Lebanon**, **Libya**, **Palestinian Territory** and **Syria**.

12. CONCLUSIONS

12.1.Main general conclusions

- As a preliminary comment, it is necessary to state again that several limitations and difficulties have been encountered when carrying out this study, which has prevented the results to be more detailed or complete. First and most important, not all the regulators have responded or at least confirmed the questionnaires for their countries. Second, in some cases language problems have arisen when consulting the websites, which has made it difficult to identify some of the searched items, and has led to some uncertainty due to a possible misinterpretation. And third, it has not been possible to assess the availability of information in some countries for the questions in section 2 ("Information on the capacity situation"), as these features can only be confirmed by the operators or regulators themselves.

  In four of the surveyed countries, no reliable information sources could be identified and therefore no information was found. It is the case of Lebanon, Libya, Syria and Palestinian Territories. These countries are tagged as 'Not Known' in all statements.

- The main conclusion of this monitoring exercise is that transparency and availability of information are linked to the degree of development of the gas market. The more developed a gas market is, in terms of penetration of gas consumption, openness and liberalization, the more information is found in most cases, and the higher the level of detail. This is clearly shown in the graphs and the map of the summary of overall results in section 4 of this report. It can then be stated that transparency is at the same time cause and consequence of market development and it fosters competition and accessibility for new market entrants.

  Other wider development factors that may be influencing the availability and specially the accessibility to information are the overall economic development or the extension of use of internet in each country.

- Another paramount factor that is obviously influencing the level of transparency is the existence of a legal obligation to publish information of the gas system and market. In general, the countries complying with the recommendations of Medreg GGP on Transparency are those where the operators are already obliged to publish a similar set of items by their applicable legislation, namely EU countries, bound by Regulation EC/1775/2005 and Regulation EC/715/2009, whose Annex establishes transparency guidelines similar or more detailed than those recommended by the Medreg GGP.

  In the absence of such legal requirements, the compliance with Medreg GGP recommendations is voluntary and may depend on the own operators' interest and the capacity and powers of regulators to have an influence on their information disclosure policies.

12.2.General transparency information

- For the basic general transparency recommendations of Medreg GGP Transparency, which do not depend on the level of development of the gas market, the result is in general positive.

  The basic transparency recommendations for network information to be disclosed in a meaningful, quantitatively clear and easily accessible way, and on a free and non-discriminatory basis, have been proved to be widely and almost unanimously accomplished, which is a very positive finding. However, the recommendation to publish information in English, besides national language/s, is not as widely respected, which makes it difficult in some cases to find information on specific items.

12.3.Information on System and Services

- Within the first set of topics referred in the GGP Transparency – information on System and services – for most of the topics the results are in general positive.
- In almost all countries TSOs are publishing general information on the system organization and network description, including maps in more than half of the countries. The level of detail is however different and depends mostly of the level of development and the enforceability by the regulatory framework.
- TSOs from half of the countries are disclosing information on services, associated charges and tariffs for transmission. Some of them also inform about penalties in case of over or underutilization of capacity. Concerning agents and licensing procedures, the results are more positive and a majority of countries – even some without a liberalized market – publish information. On contracts and contracting processes for transmission, the outcome is relatively positive with TSOs from nearly half of the countries publishing them in their sites.
- Only one third of the surveyed countries have developed a balancing system that allows for some flexibility included in transmission access tariffs. All of them publish information about it. The rest of the countries have not developed such a system or do not have gas consumption. The TSOs in countries with a higher degree of development also provide for additional flexibility in their services and offer this information in their websites.

- In a relevant number of countries there is a transmission network code, general transmission agreement (GTA) or a comparable development that can be assimilated as such. Only a few countries do not count with it, most of them because there is no TPA or liberalized gas market. Most countries with it publish information about programming and nomination procedures, measurement and capacity allocation procedures, maintenance of infrastructures and system operation in normal and exceptional circumstances, with a few exceptions in transmission and storage. Where a network code or similar document does not exist, in general there is at least information about standard documents and procedures for the use of gas.
- Regarding capacity allocation and congestion management, in the most developed gas markets operators are in general publishing descriptive information. Where there is no TPA or open access to capacity, this information was not deemed pertinent.
- Similarly, there is information about secondary markets in those countries that have developed such a market (less than one third of all), which are those with a more advanced degree of development in their gas markets.
- Finally, the results regarding the availability of information on gas quality and pressure requirements are not as positive as they should be, existing three countries where this information is not being published.
- For all these items, the results for LNG and storage and the degree of compliance with GGP recommendations are more positive than for transmission, likely because countries with such facilities have more developed markets and are bound by more detailed transparency obligations. However, in some cases respondents did not consider some of these requirements applicable to their market, in spite of its existence and its level of development.

  There may also be a link between transparency in transmission and these other two activities, since in many cases LNG and storage operators are the same companies as for transmission.

12.4.Information on the Capacity Situation

- Within the second set of topics from the GGP Transparency – information on Capacity situation – the results are in general positive in those countries with TPA, but this information is not available in non-liberalized markets without TPA.
- Basic general information about technical network capacity is published in a majority of countries with transmission infrastructure, with two exceptions.
- Almost all countries where TPA exists – one third of all – also publish data on contracted firm and non-firm capacities for transmission.
- Similarly, nearly all countries with TPA – users being able to access and contract capacity – have information on available capacities in their TSO websites, with only one exception.
- In the case of storage and LNG, the level of compliance with the GGP recommendations is however optimal, with all countries with such facilities publishing this information.

12.5. Additional capacity-related information (publication, calculation, use rates and contract records)

- For these final questions, there is a high degree of uncertainty, due to the difficulties in obtaining reliable information. Some of the statements can only be confirmed by the regulators or the operators themselves, and this confirmation could not be received in many cases.
- According to the information obtained, less than half of the surveyed countries are complying with the recommendation to publish information for the current and following years and on a yearly basis for the next five years, In LNG and storage the degree of compliance is higher.
- For a number of countries it couldn't be known whether the capacity information is actually updated on a quarterly basis, due to the lack of feedback. However it has been verified that in some countries with a high degree of market development it is being done.
- There is also here a high degree of uncertainty on whether capacity calculation is being based on network modeling and flow simulations. Only in a few cases there is sureness it is.
- The recommendation to publish utilization rates and average annual flows is not being widely fulfilled and this information is not often available in TSO websites.
- Lastly, it couldn't be confirmed in many cases if network operators keep actually keep record of capacity contracts, although according to the responses received this recommendation would be currently followed in a number of countries.

13. DISCUSSIONS

In the Discussion chapter 3 things shall be pointed out. The first one is to explain the meaning of the results from the research analysis and the report and the main purpose of it. The second is to point out the limitations of the research and the proposition of how it should be approach to the further research in order to improve it.

13.1. The main outcomes of the research

It is important to see the current degree of development of the gas market in each country, which is of great importance to determine the level of information that is expectable to be published in each case, and focuses on some general aspects of information disclosure in the region: the information sources consulted for the study, the easiness and accessibility, the degree of availability of information in English and whether there is free access to it, all of them results of interest to know the overall status of transparency of gas system and market information in the region.

Understanding that besides this different degree of market development and openness along the region, different legal provisions exist regarding the transparency obligations in each

country. Whereas the EU and accessing countries are bound by EU regulation on this matter – transparency guidelines laid down in Regulation EC/715/2009, and Decision of 10 November 2010 that amends it – in the other countries national regulation provides for different obligations and transparency requirements, adapted to the current degree of development of the market in each case.

The results are in general positive in those countries already bound by legal transparency obligations, but improvable where they do not exist. A natural recommendation arising from this fact would be introducing further transparency obligations in the countries where they do not exist at present, always in a proportional way to the degree of development of their gas market.

Analyze of process of data transparency according to the GGP adopted at the General MEDREG Assembly, is called bottom up approach, and it is done according to the European regulatory process. According to these type of process access and interaction of each country and independence is analyzed, and this kind of approach is perfect when political compromise is needed to achieve. As in the case of MEDREG group, where countries with so many differences are involve, many of them are not in EU and do not even have liberalized gas market nor consumption. But this kind of approach in turn has lack of vision because of the mismatching of the differently regulated countries. Because of this issue not all countries could have the same type of involvement in the group (ERGEG, 2010).

13.2.Limitations

In some cases, the respondents have adopted different criteria (because filling up the questionnaire is subjective and questions could be misinterpreted sometimes) when answering on the topics of the questionnaire so in order to make obtained results consistent and coherent, some slight adaptations have been made in some particular questions, in most cases standardizing the answers to the most positive assessment applied.

In some cases it has not been possible to assess the availability of some of the information referred in the questionnaire, either due to language limitations – non-English websites where it has not been possible to check out the availability of certain topics – or either in relation to the general questions. As these features can only be confirmed by the operators or regulators themselves, for some countries in the case of not confirmed questionnaire – the answer is not known.

Finally, in the questions on the general description of system and facilities and technical capacities, countries with LNG production (liquefaction) facilities are taken into account. The questions more related to market issues or TPA access to facilities, do not concerned the countries which do not have liberalized market (only countries with LNG degasification terminals are supposed to be targeted by those questions).

13.3.Possible improvements and further recommendations

As a good practice additional recommendation, it would be helpful to have in each country a website centralizing the access to all the market and system information, with a general explanation and links to TSO/LSO/SSO websites. This would make much clearer and easier the access to relevant information for network user and market participants. In some countries the energy regulator or competent Ministry is already performing such centralization.

A further, more ambitious step would be setting up a transparency platform for the whole region, where all the information could be either gathered or at least accessible through links to the operators' websites in Mediterranean countries. Medreg website could be a suitable host for such a platform. Similar experiences have already been implemented in the past by other TSO or power exchange organizations, such as GTE+ (today ENTSO-G) or EEX in Europe.

At the regional level, a relevant reference would be the Transmission Transparency Platform on gas, set up by TSOs in the North-West gas regional initiative of ERGEG, a project where a number of TSOs from the region committed to publishing information on capacity availability and gas flows at cross-border interconnection points in the region.

One of the ways to improve future transparency is to divide information of market participants, TSOs/LSOs/SSOs and regulatory authorities. The information that was investigating in this report about system and services, capacity situation etc is the information that is usually found at the web sites of TSOs/LSOs/SSOs. But it is extremely important finding new investors and new markets, to improving liquidity and availability of information at the market, and that could be done with increasing the availability of information for all relevant actors in the system. For instance, observation from the regulators, and clear and stable regulation could attract new investors at the market.

Market participants need information about the development in order to act economically rational. Insight for instance in the price development by having information on trades, amount of gas in and out of the storage, give the opportunity to the market participants to make an optimal business decision. Lack of the information bring uncertainly and increase risk.

Besides information about wholesale markets, market participants need information about gas network, in order to have information about storage capacities, capacities, balancing markets etc.

As well for market participants is important to have clear and univocal regulation, and also to know the procedures in certain circumstances. Regulatory uncertainty may cause potential entrants off the market and bad investment climate.

A possible alternative for achieving a higher degree of transparency in these cases could be introducing also some sort of incentives for increasing the amount and quality of information published.

14. RECOMMENDATIONS

The first action that is proposed to be taken after the approval of this report is publishing it in MEDREG website, together with the country questionnaires on transparency in their final most updated version.

In addition to this, among the aforementioned proposals for improvement, there is one which is considered to be within reach of MEDREG regulators and it could be a relevant step forward in order to foster transparency in the gas markets in the region: setting up a transparency platform.

As explained, centralizing the access to all information in a single point – namely MEDREG website – would allow users to have updated, easy-accessible and homogeneous information from gas systems and markets in all Mediterranean countries. There would be a range of different configurations for such a platform, from a basic directory of links to the websites of regulators, ministries and TSOs, LSOs and SSOs from all countries, to more sophisticated options like country profiles with updated information on the gas sector main features. IERN, ARIAE and ERRA websites are good examples of this. Ideally, it could even become a space where transmission, LNG and storage operators would directly publish information – or provide with direct access links – to the information in their websites related to particular items, as described in the GGP Gas Transparency: network maps, access contracts, licensing procedures, capacity information (De Jong, 2009).

This Transparency platform project could be led and coordinated by MEDREG regulatory authorities, and it would naturally require the participation of the transmission, LNG and storage operators in the region, so it would be a good opportunity to involve them in a common project NRAs-operators. A joint working group could be set up with gas infrastructure operators to establish a basis for cooperation on this matter. Alternatively, MEDREG could just request from them a confirmation on the websites and links collected in this report, to have them updated before publication in MEDREG web page.

Finally, such a platform could include not only gas information, but also sources and data from electricity and renewable energy sources, being extended to the other energy sectors covered by MEDREG activities.

15. REFERENCES

1. ERGEG (2010) "Towards a target model for the European natural gas market" in ERGEG Workshop presentation, Vienna

2. De Jong M. (2009) "Toward a single European electricity market" at TU Delft, Netherlands

MEDREG documents used in report:

3. MEDREG (2011) "Status review on Transparency in the Mediterranean region and monitoring of MEDREG Guidelines for Good Practice (GGP) on Transparency"

4. MEDREG (2009) "Benchmarking assessment report – Ad HOC Group on Gas"

5. MEDREG (2009), "Guideline for Good TPA Practice on Transparency"

APPENDIX

A. TEMPLATE QUESTIONNAIRE ON TRANSARENCY

TRANSPARENCY STATUS - Monitoring of the compliance degree with GGP Transparency

COUNTRY

Instructions:
Please fill this questionnaire by indicating ***Y*** *(yes)* ***N*** *(not) or* ***NA*** *(not applicable) in the corresponding cells for transmission, LNG and Storage infrastructures (columns D, E and F).*
In case of using the NA option for any requirement, please justify why that rule is not required.
In the last column (G) add the link to the website where the information is available. Add also any additional comment you consider relevant in this section.

Priority Degree	Transparency requirement	Transmission system	LNG infrastructures	Storages	Link to the website where this information is available/ Comments	
	1. Information on system and services					
1	**a)** a detailed description of the gas system of the TSO identifying all entry and exit points interconnecting its system with that of other TSOs, including maps, or a detailed description of the LNG and storage facilities operated by the LSO/SSO concerned, specifying the interconnection point with the transmission system;				Comments	
					Link	
2	**b)** detailed and comprehensive information about all services offered, the charges for these services and the penalties in case of over/under-utilization of the contracted capacity;				Comments	
					Link	
2	**c)** detailed and comprehensive information about the agents that can require access to the services offered, specifying licensing procedures and conditions to be an agent with TPA rights;				Comments	
					Link	
2	**d)** the different types of contracts available for the services offered and the contracting processes;				Comments	
					Link	
2	**e)** the flexibility and tolerance levels included in transportation and other services contracted, i.e. the balancing regime in place;				Comments	
					Link	
2	**f)** any flexibility offered in addition to point above and the corresponding charges;				Comments	
					Link	
2	**g)** as applicable, the network code and/or the main standard conditions outlining the rights and responsibilities for all users of the gas system of the TSO. This should at least include:				Comments	
	- programming and nomination procedures,					
	- measurement and allocation procedures,					
	- maintenance of the infrastructures,					
	- operation of the system under both, normal and exceptional circumstances;				Link	
2	**h)** in the case a network code doesn't exist yet, all the standard documents and procedures in relation to the use of the gas system of the TSO including definitions of key terms, which are being applied;				Comments	
					Link	
2	**i)** the capacity allocation, congestion management, anti-hoarding and reutilisation provisions;				Comments	
					Link	
2	**j)** the rules applicable for capacity trade on the secondary market;				Comments	
					Link	
1	**k)** gas quality and pressure requirements;				Comments	
					Link	

	2. Information on the capacity situation					
1	**a)** the maximum technical capacity (Million of m3/h or GWh/day);				Comments	
					Link	
2	**b)** the total contracted firm and non-firm capacities (Million of m3/h or GWh/day);				Comments	
					Link	
2	**c)** the available firm and non-firm capacities (Million of m3/h or GWh/day);				Comments	
					Link	
Is the previous information published for the current and following years, and on a yearly basis for the next five years?						
Is the previous information updated on a quarterly basis?						
Is the calculation of available capacities based on network modelling and flow simulations, taking into account all relevant operational parameters for an efficient and safe operation of the system?						
Are the historical maximum and minimum monthly capacity utilisation rates and annual average flows at the above points published for the previous year, no later than 30th of January of the current year.?						
Do the operators keep effective records of all capacity contracts and all other relevant information in relation to calculating and providing access to available capacities? (accesible for the relevant national authorities in case of needed)						
3. Additional questions						
The information is not only published in the national language but **also in English**						
The information is disclosed in a meaningful, quantitatively clear and **easily accessible way (on the internet)** and on a non-discriminatory basis						
The information is accessible **free of charge**						