

**REVIEW AND ANALYSIS OF EU
WHOLESALE ENERGY MARKETS**

Client: European Commission DG TREN

**Evaluation of Factors Impacting on Current and
Future Market Liquidity and Efficiency**

Research Findings and Conclusions

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1. Executive Summary

Scope of Research

The aims of the study were to identify and evaluate key factors impacting on the liquidity and efficiency of EU wholesale electricity and gas markets.

Between mid-January and early May 2008, MA devised and conducted a major market research programme.

Given the diverse and varied nature of wholesale energy markets, MA decided to employ a two-stage research methodology involving (a) the use of face-to-face discussions to identify and weight the relative importance of key commercial and policy issues impacting on the operation of wholesale energy markets, and (b) following this with a more detailed survey across a wider market sample to obtain quantitative and qualitative feedback on a range of specific issues arising from the face-to-face discussions. Key components of the research process were as follows:

(a) Preliminary Stakeholder Interviews

At the outset of the project, MA conducted in-depth interviews with leading stakeholder associations to canvass views on key market issues (e.g. EFET, EURELECTRIC, EUROGAS, ERGEG and IFIEC). The feedback from these initial interviews was used to formulate the focus group discussion guides.

(b) Regional Focus Groups

MA then set up and led a series of focus group discussions covering regional electricity and gas markets. A total of nine groups were held as follows:

Date Held	Group Title	Countries Involved
27/02/2008	Power – UK and Ireland	France, Republic of Ireland, UK
28/02/2008	Power – Central, South	Austria, France, Germany, Greece, Italy, Slovenia
07/03/2008	Power – Northern	Denmark, Finland, Germany, Norway, Poland, Sweden
10/03/2008	Power – Central, South West	Austria, Czech Republic, Germany, Hungary, Poland, Slovakia, Slovenia
11/03/2008	Gas – South South East	Italy, Austria, Slovakia, Hungary, Slovenia, Greece, Poland, Czech Republic
13/03/2008	Power – South West	France, Portugal, Spain
14/03/2008	Gas – South	Spain, Portugal, Southern France
17/03/2008	Power – Central West	Belgium, France, Germany, Luxembourg, Netherlands
18/03/2008	Gas – North West	Netherlands, Germany, Denmark, Sweden, Belgium, France, UK, Ireland

Altogether 113 people participated in the focus groups representing, regulators, energy exchanges, traders, generators and suppliers, shippers, TSO's, and major energy users.

(c) Online Market Survey

Following an analysis of the themes and issues discussed in the preliminary interviews and focus groups, MA prepared a detailed online survey questionnaire. The questionnaire went online on 18 April 2008 and closed on 9 May 2008. Altogether 147 regulators and market participants responded to the online survey.

Market Features

Compared with other commodity and financial markets, EU wholesale energy markets are relatively underdeveloped. Electricity is significantly more advanced than gas, but progress is not uniform and there are large variations in market liquidity and efficiency across the EU.

In addition, in the case of both electricity and gas, wholesale market trading is for all practical purposes a non-regulated activity with a large and growing proportion of energy market trading (gas, electricity and CO₂) taking place in the opaque OTC market.

The numerous themes and issues that have emerged from this research programme are evidence of the complexity of the subject. Furthermore, amongst market participants, there are diverse views on many topics, ranging from defining market liquidity to proscribing what regulators can and should do to make markets work more efficiently.

Trading Channels

There has been a significant increase in trading via exchanges and a dramatic growth in OTC trading caused partly by a shift in financial investment/trading from equities into commodities, in particular oil and other energy commodities.

Exchange prices set a benchmark for spot prices across the market and benefits of transparent prices and lower credit risk will ensure their continued success, but the vast bulk of energy trading takes place via the OTC market. The risks for investors are higher and there is little if no transparency but never the less OTC trading is seen as being more flexible, cheaper and offers more specialised products.

Market Liquidity

There are significant variations in liquidity between gas and power and between different national markets and there is a strong inverse relationship between the levels of market concentration and the degree of liquidity.

In electricity, three measures rated most highly in terms of their positive impact on future market liquidity were:

- incentives to encourage more investment in interconnectors;
- the removal of regulated end-user prices;
- harmonisation of rules relating to TPA, balancing and TSO network investment.

In gas, the three measures rated most highly in terms of their positive impact on future market liquidity were:

- incentives to invest in national and cross-border transit capacity;
- harmonisation of market rules relating to TPA, balancing etc;
- high level minimum standards for infrastructure data disclosure.

Regional Integration

With varying degrees of success the ERGEG regional market groups are addressing the following issues:

- interconnection and capacity including congestion and capacity allocation;
- transparency of supply and demand;
- integration and interoperability including balancing for gas and;
- the development of liquid trading points such as energy exchanges and hubs .

There was support for setting EU-wide market guidelines with clear steps and timescales. Many respondents took the view that REM agendas were overloaded with actions and there was a need to establish a short list of quick wins e.g. transparency and harmonising gate closure in the case of electricity.

Market Transparency

Respondents were virtually unanimous in their support for urgent action to improve supply and demand data transparency which is seen as a “quick-win” measure. However, it is felt that the Commission should not rely exclusively on TSOs to set the rules and that the transparency process needed regulatory oversight at the EU level.

The issue of greater wholesale transactions transparency prompted some extreme views ranging from (a) users who favour more stringent reporting because they see wholesale markets as being dominated by financial speculation to (b) utility traders who have welcomed the increased liquidity brought by the growth in financial trading and who fear that a more rigorous reporting to regulators could jeopardise market liquidity. Regulators were also sceptical about the benefits of tighter regulation.

Market Regulation

The study has revealed that there is strong market-wide support for (a) strengthening the independence and power of national regulators (b) providing a legal basis to underpin the ERGEG regional integration programme and (c) creating some form of regulatory oversight at the EU level to ensure consistency and delivery of common market rules.

All of these are, in principle, enshrined in the Third Package, but the devil is in the detail and there are fears that the proposed legislation could be severely diluted or delayed. But a more serious political threat in the short term to the evolution of competitive wholesale markets is that political reaction to rising energy prices could result in “retrogressive” measures.

If the political pressure “to do something” is irresistible then urgent measures requiring further investigation could include; preferred market “design” criteria, transparency rules covering all types of energy trading not just energy exchanges and joint regulatory oversight of exchanges by the proposed new ACER and securities regulators.

2. Market Research Findings

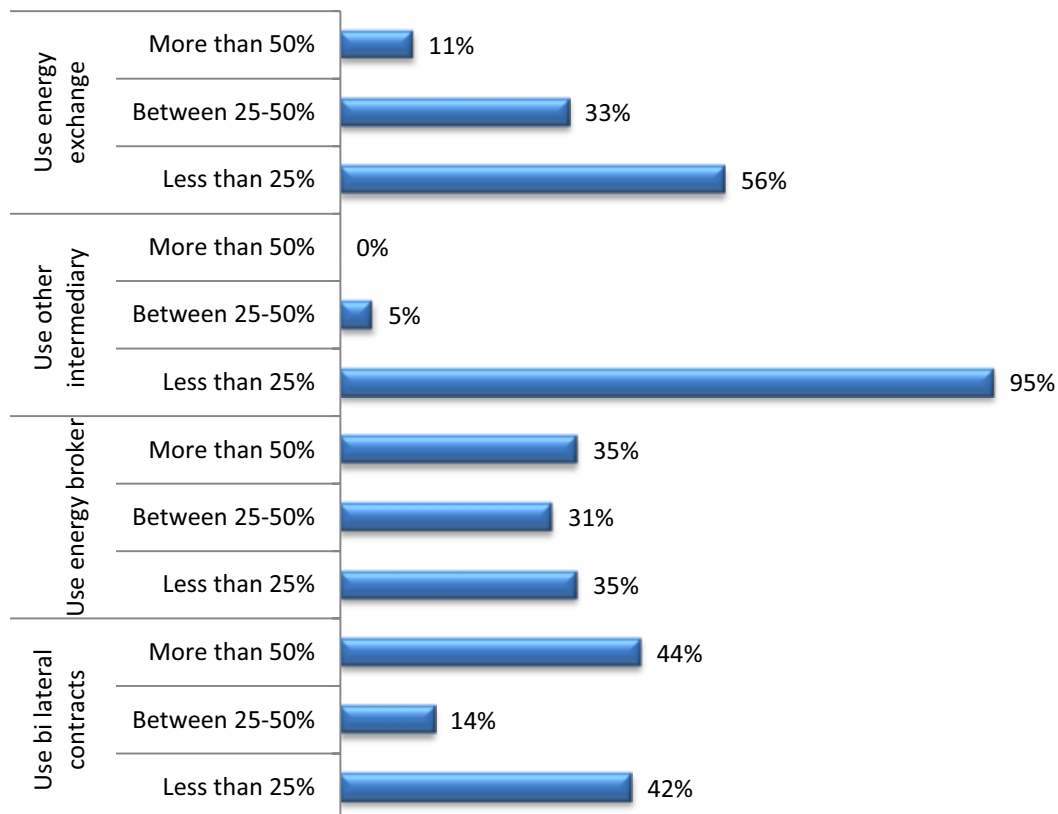
2.1 Trading Channels and Types of Contract

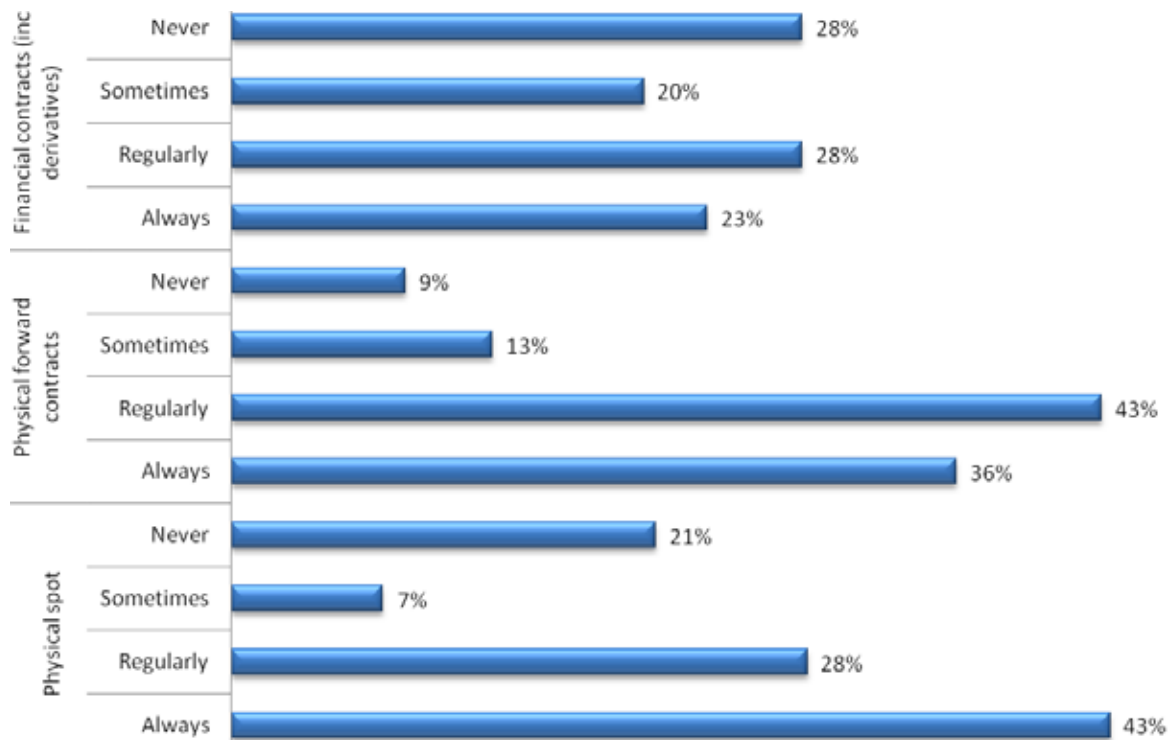
2.1.1 Electricity

Chart 1 below shows the combined feedback from energy users, traders and generators/suppliers relating to types of trading channel used and types of trading contract.

Chart 1: Trading Channels and Types of Contract

Electricity aggregate responses. (total responses 425)





In terms of channels, the volume of trading via exchanges has been increasing due to the benefits of standardised products, observable price benchmarks and reduced counter-party credit exposure.

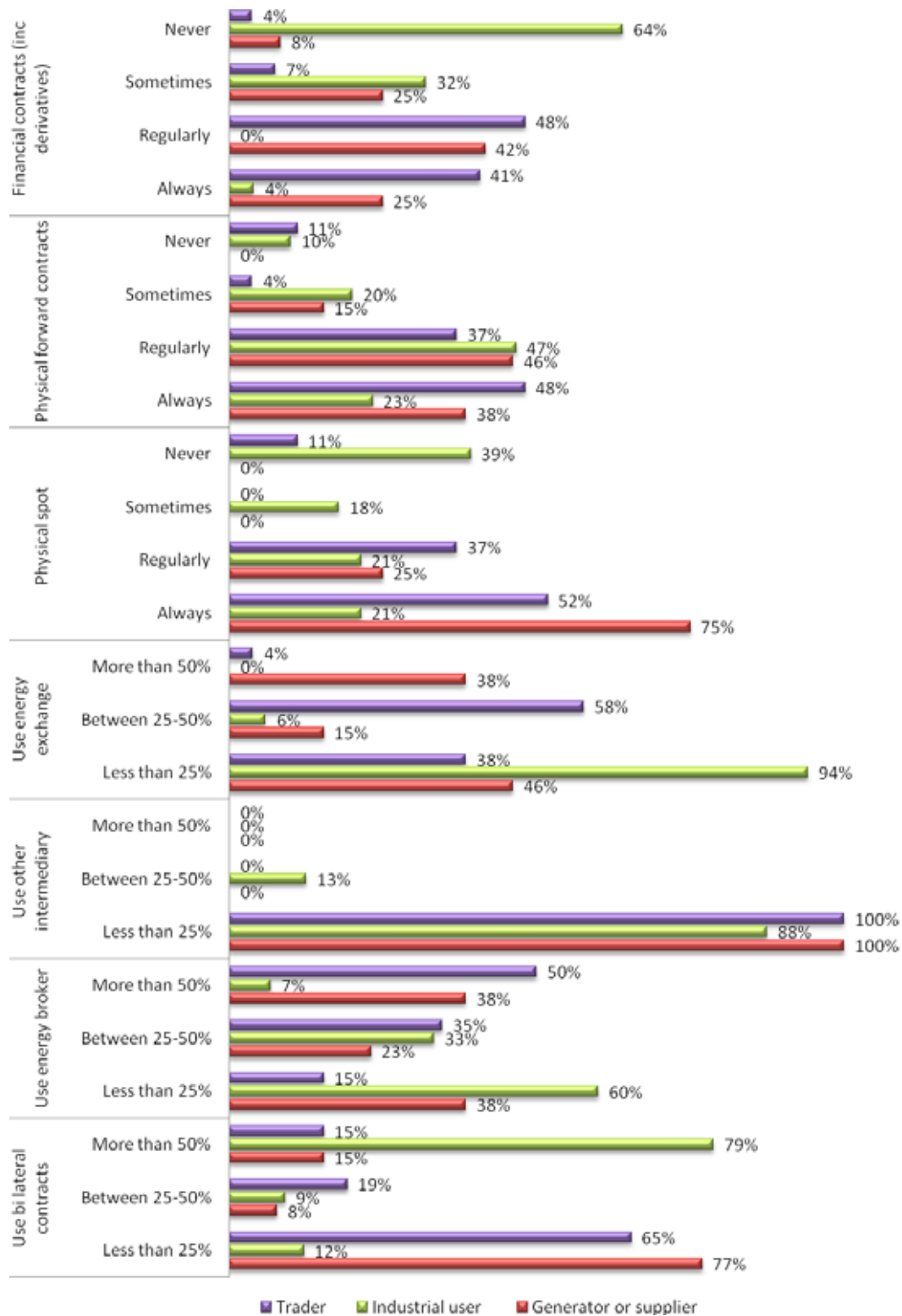
However, the bulk of wholesale trading is conducted via the OTC market. Only 11% of all respondents use exchanges for more than 50% of their trading activity, whereas 35% utilise the services of an energy broker for the bulk of their trading. Major industrial users are minor participants in power exchanges and primarily purchase power using bilateral contracts with suppliers.

In terms of types of contract, the predominant form of trading is physical spot and forward contracting with 43% always trading physical spot and 36% always trading physical forward contracts. As expected, traders are more active in the financial and derivatives markets. An important feature of EU wholesale markets has been the growth in financial trading which has contributed significant additional market liquidity.

Chart 2 below shows a breakdown of trading channels and contracts by user, trader and generator/supplier.

Chart 2: Trading Channels and Types of Contract

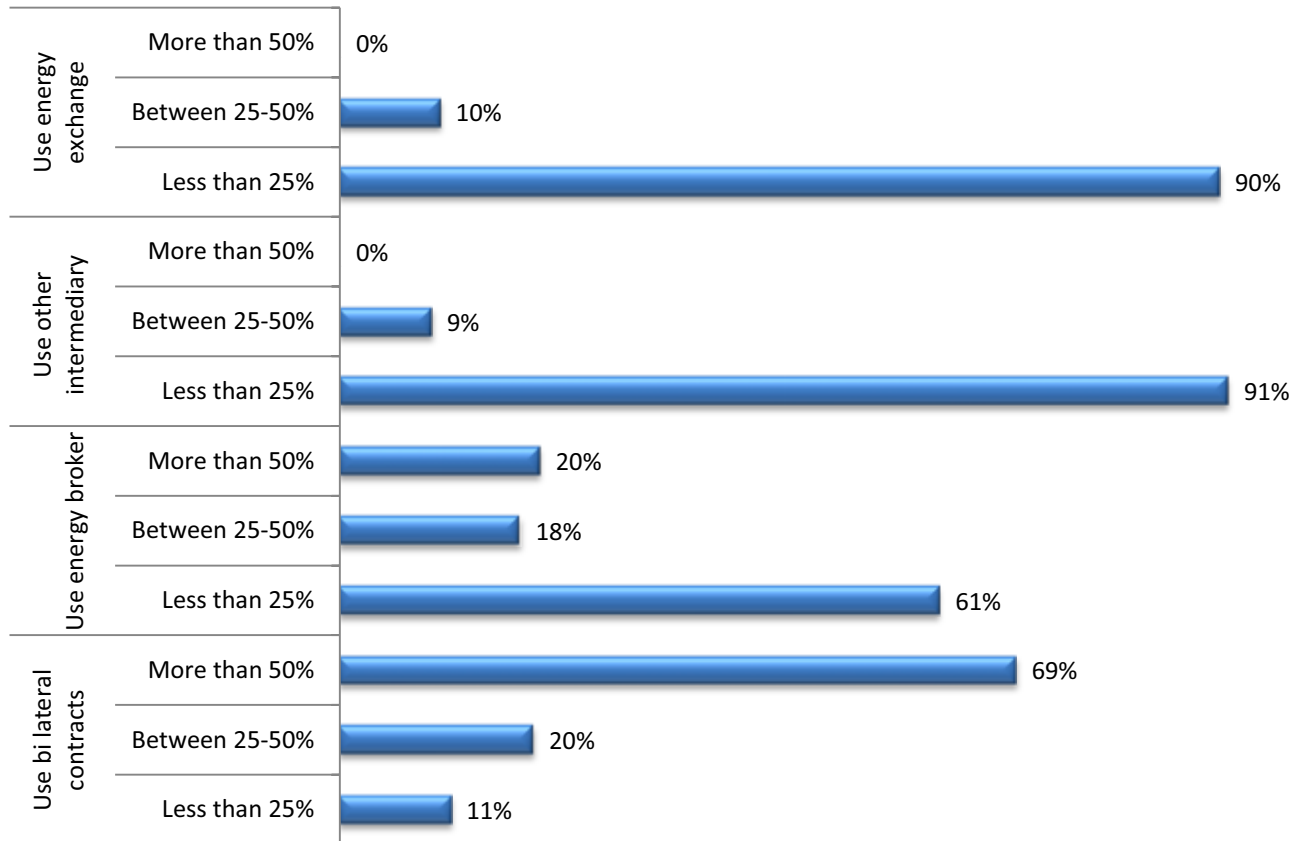
Electricity by trader, users, generator or supplier. (total responses 425)

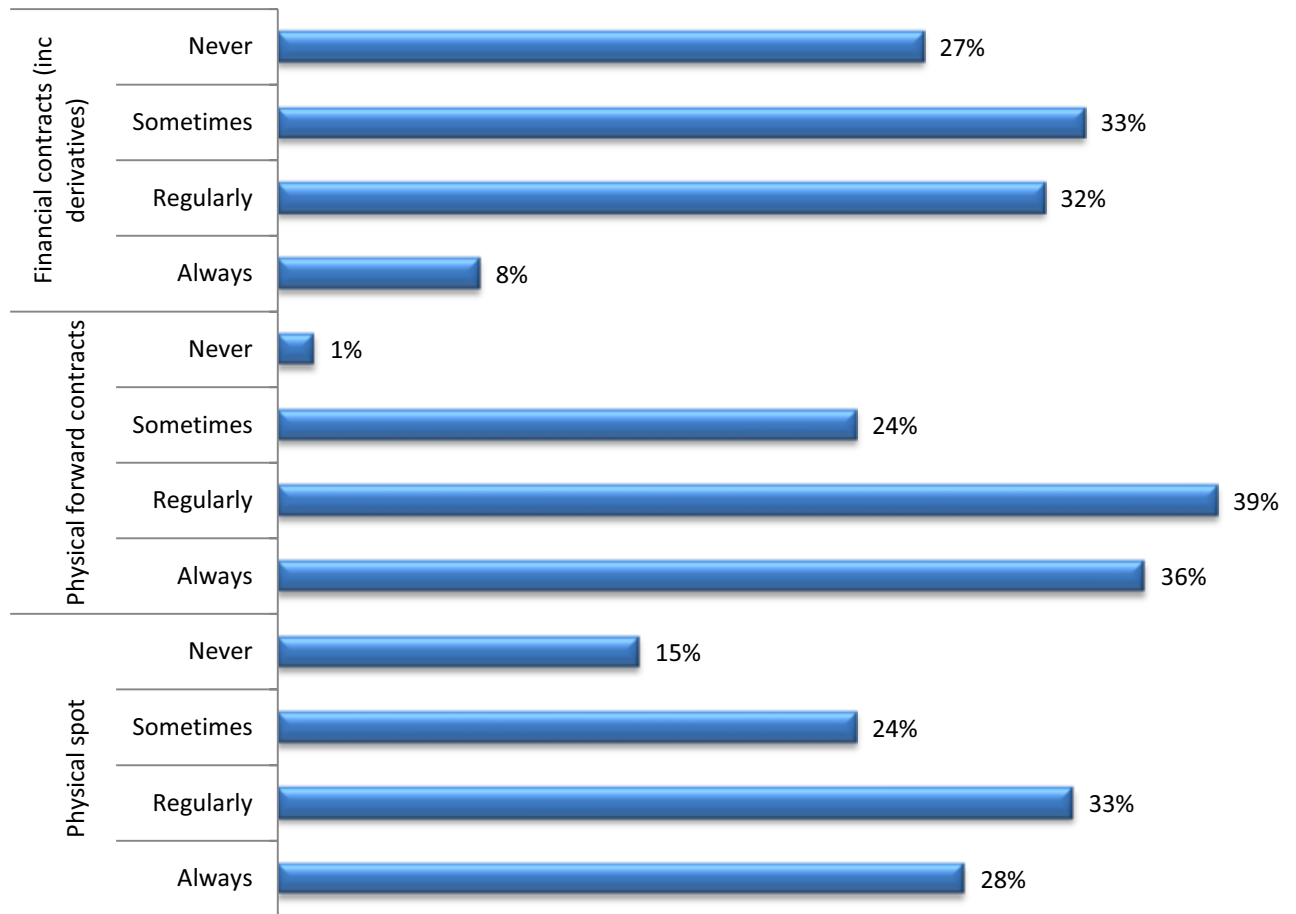


2.1.2 Gas

Chart 3: Trading Channels and Types of Contract

Gas aggregate responses. (total responses 406)



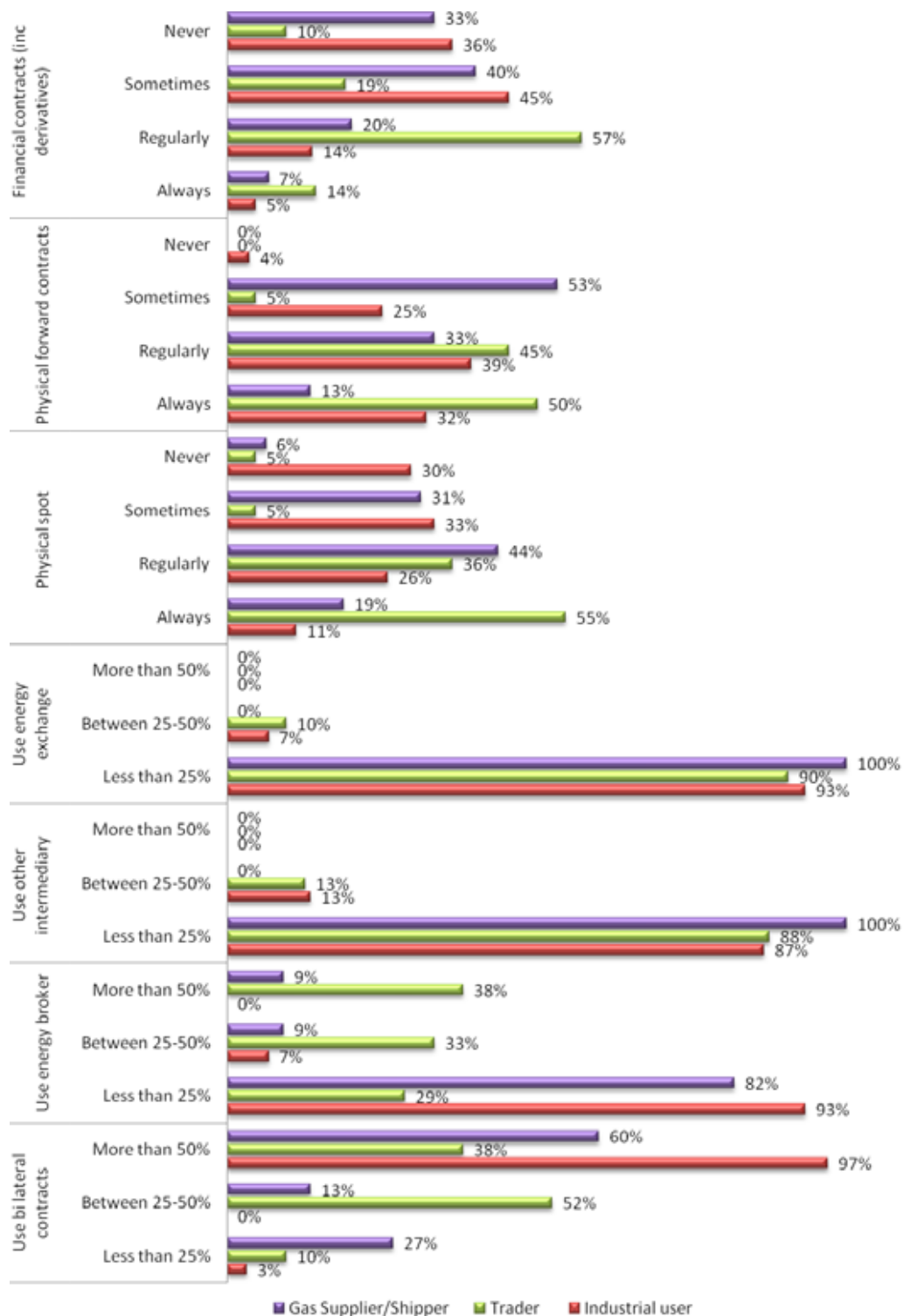


Compared with the electricity market the wholesale gas market is relatively under-developed with the market dominated by long term bilateral contracts. There is some active OTC trading with 20% of all respondents saying that they use a broker for the bulk of their gas trading. As in power, trading is focused on the physical spot and forward market with traders more active in financial contracts and derivatives markets.

Chart 4 below shows a breakdown of trading channels and contracts by user, trader and gas supplier.

Chart 4: Trading Channels and Types of Contract

Gas by trader, users, shipper/supplier. (total responses 406)



2.2 Key Energy Price Determinants

2.2.1 Electricity

In the last few months, there has been a dramatic shift in market sentiment regarding future power prices. Expectations are that power prices will rise significantly in the next 12/18 months.

Key electricity price drivers are:

- rising gas prices due to oil price link and increase in demand for gas as a result of the switch from coal and the need for reserve gas power to support intermittent wind;
- rising coal prices – doubled from \$70t to \$140t in the last 12 months – due to rapid increasing Asian demand;
- firmer CO₂ price in Phase Two of the EU ETS – average price of 40 plus euros/m/t forecast with rising gas price feeding further rises in the CO₂ price;
- increasing capital costs of generation – which have increased by 30-40% in the last 4-5 years.

Online survey results (**see Charts 5 and 6 below**) confirm the upward momentum in power prices with 65% of all respondents believing that gas prices will be the dominant influence in the next 2 years, closely followed by CO₂ and oil prices. Looking further ahead to the next 5 years, the CO₂ price takes over from gas as the most important upward influence on power prices.

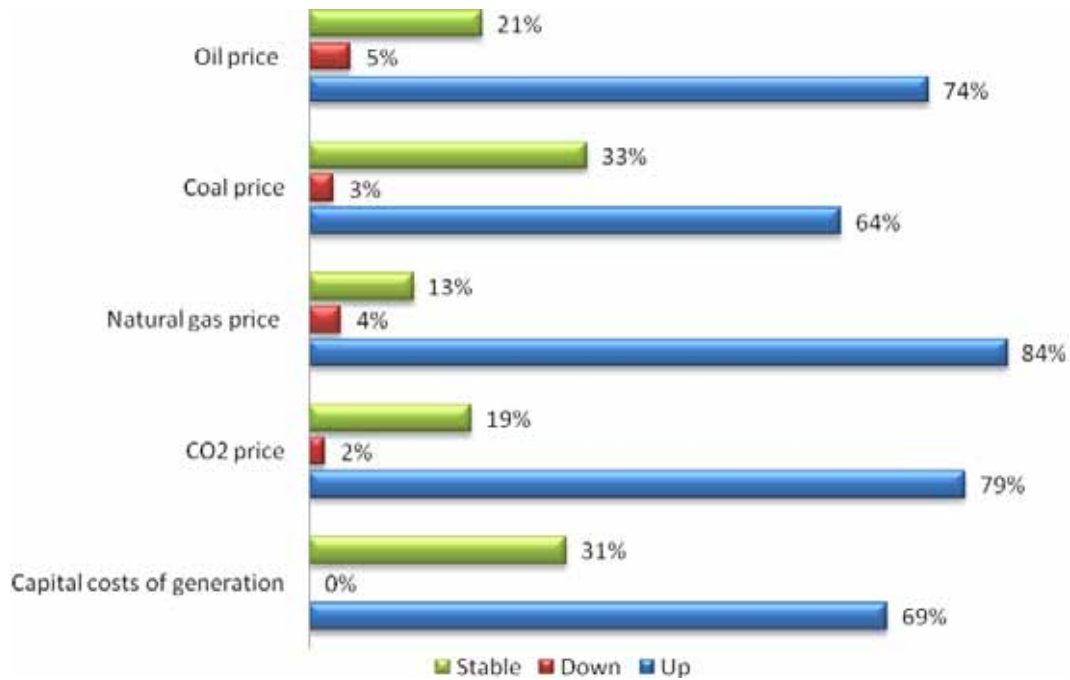
About 40% of focus group participants believe that fluctuations in fossil fuel prices have a positive impact on traded volumes and market liquidity with the balance saying the impact is neutral. As regards the impact of CO₂ fluctuations, the positive influence is lower - between 32 and 38% - with the balance saying the impact is neutral. Clearly, in a rising market financial speculation has been increasing.

For more details on focus group feedback see section 2.5 below.

Chart 5: Key Energy Price Determinants – Electricity

Duration and impact next 2 years. (total responses 1019)

Direction 2 yrs



Impact 2 yrs

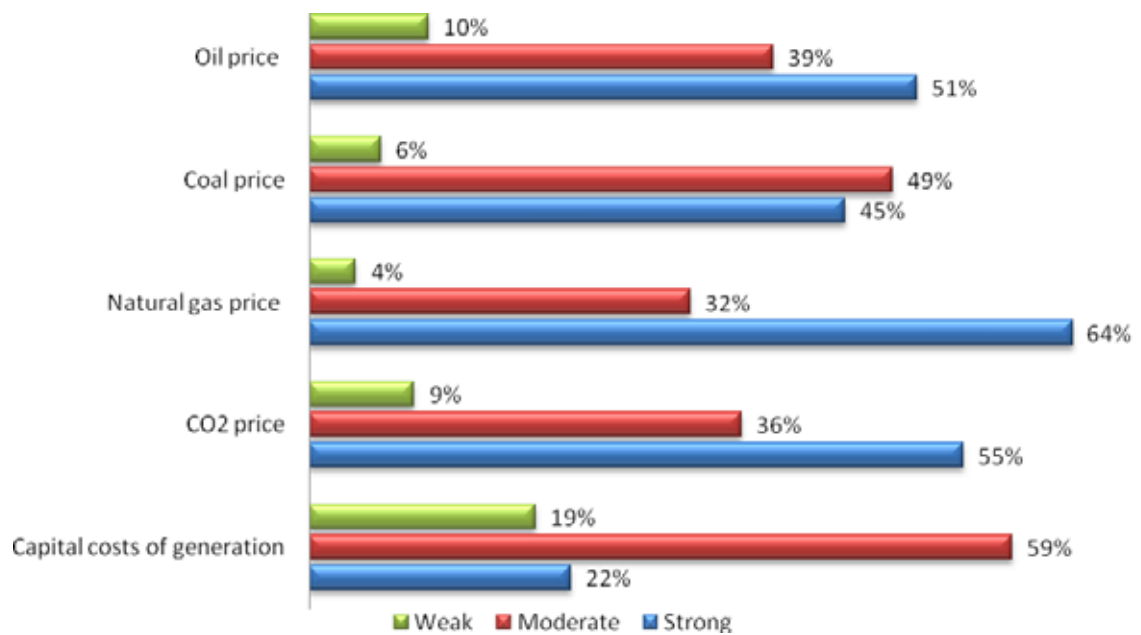
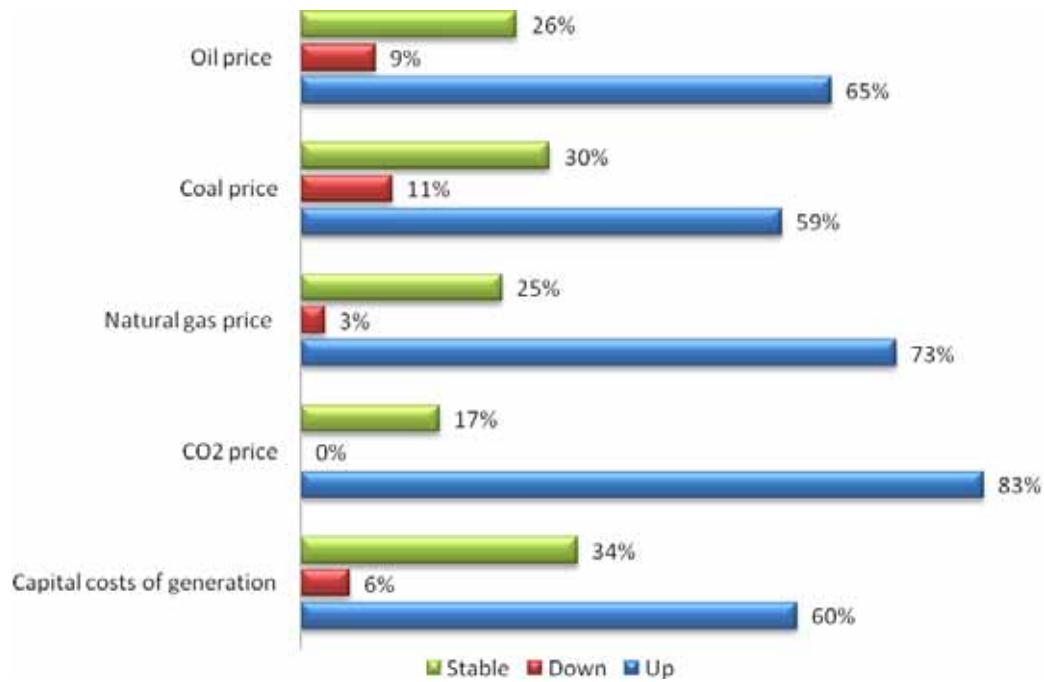


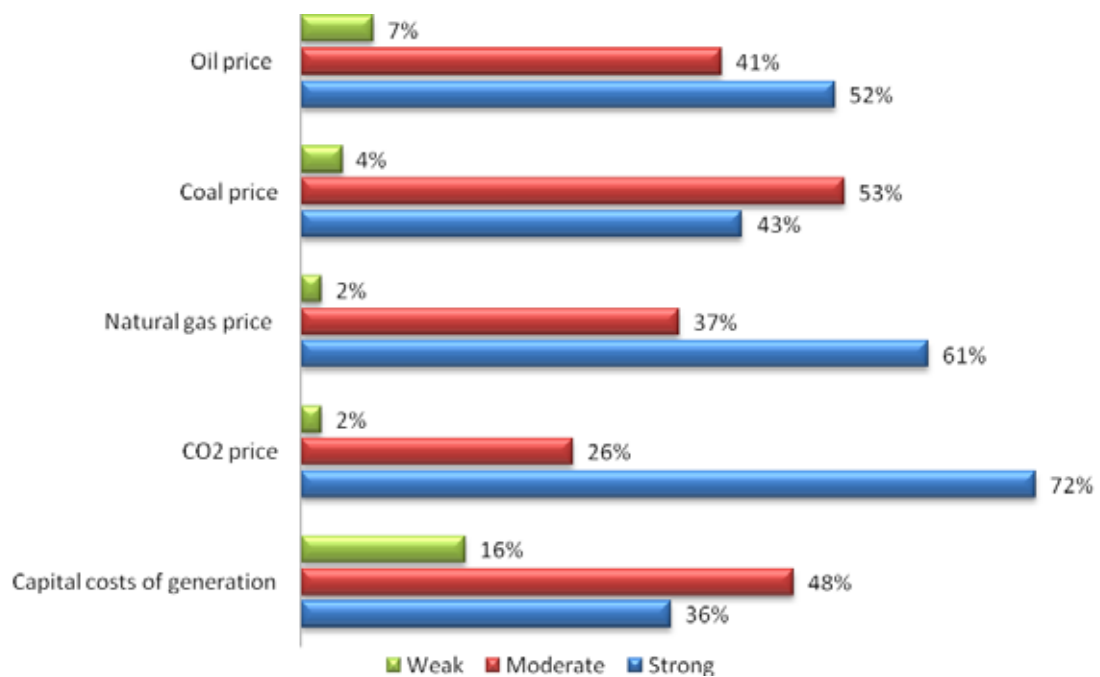
Chart 6: Key Energy Price Determinants – Electricity

Duration and impact next 5 years. (total responses 1007)

Direction 5 yrs



Impact 5 yrs



2.2.2 Gas

The sharp rise in the gas price prompted by spiking oil prices has been a key feature of the EU wholesale gas market in recent months.

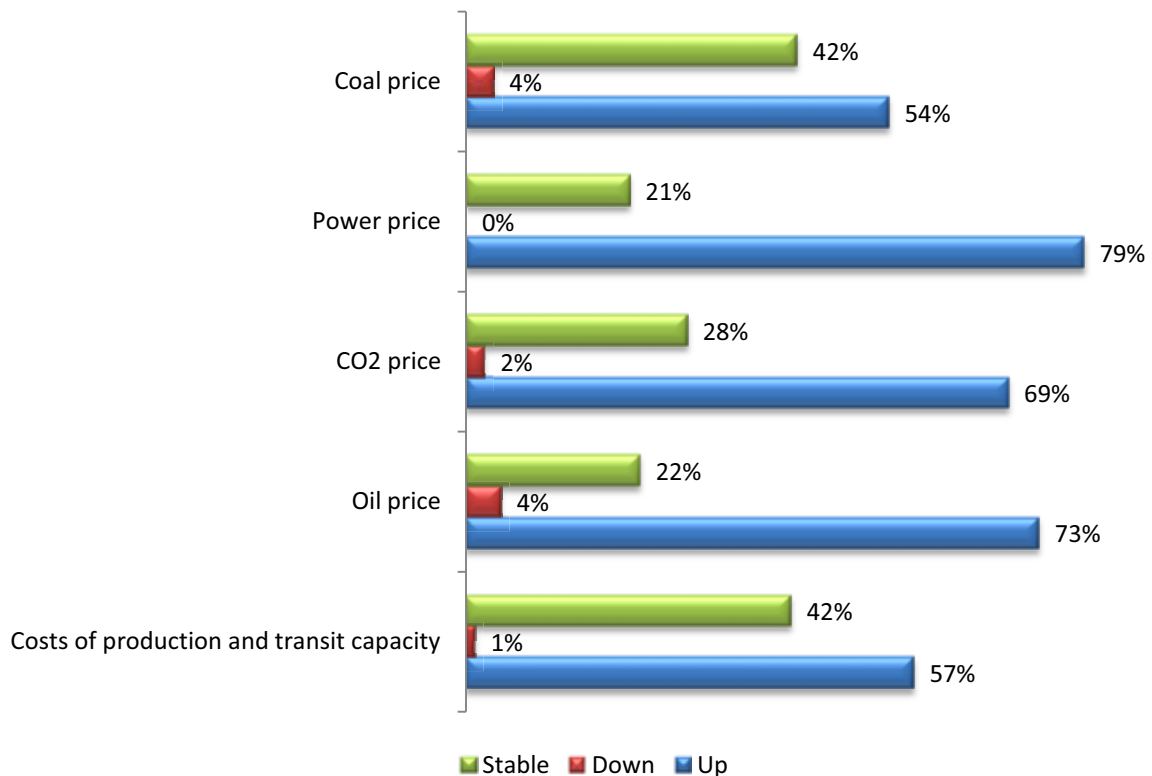
Some 72% of all respondents to the online survey believe that the oil price will be the dominant upward influence on the gas price in the next 2 to 5 years. The effect of rising CO₂ prices on the power price will also fuel further gas price increases as demand for gas for generation increases to meet CO₂ emissions targets.

Again as in power, focus group participants were more or less split in their view as to whether movements in oil and CO₂ prices had a positive or neutral impact on market liquidity. **For more details see section 2.5 below.**

Chart 7: Key Energy Price Determinants – Gas

Direction and impact next 2 years. (total responses 869)

Direction 2 yrs



Impact 2 yrs

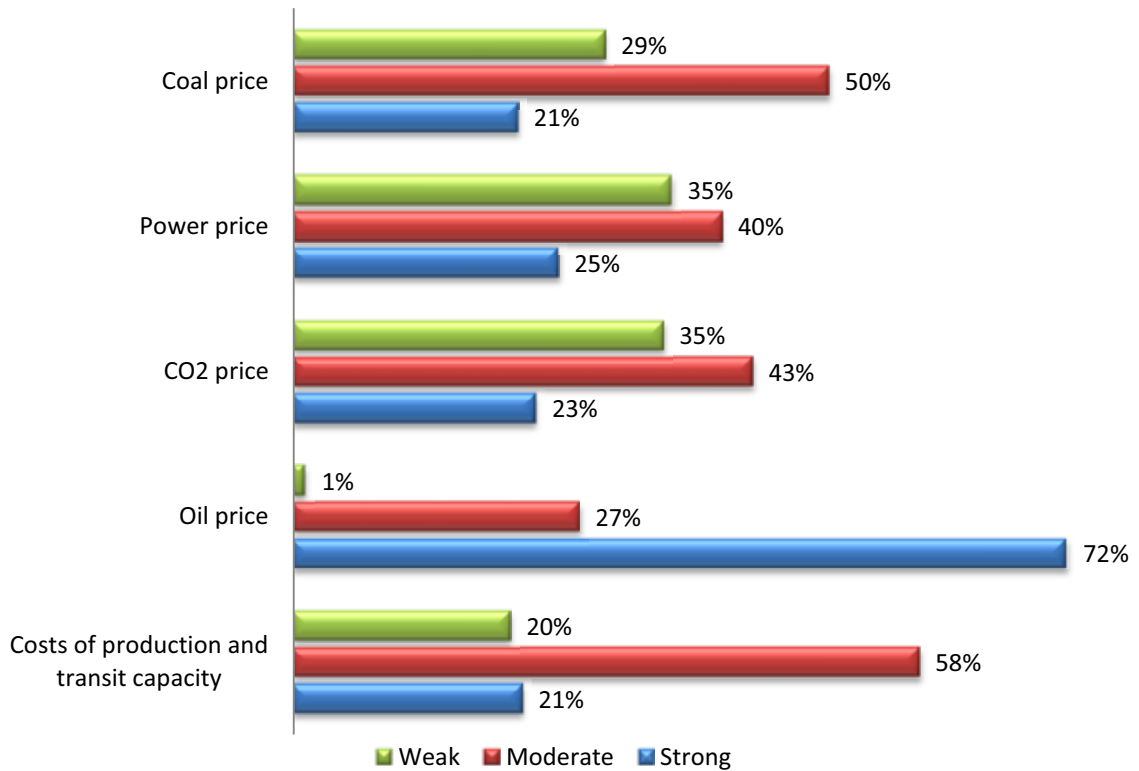
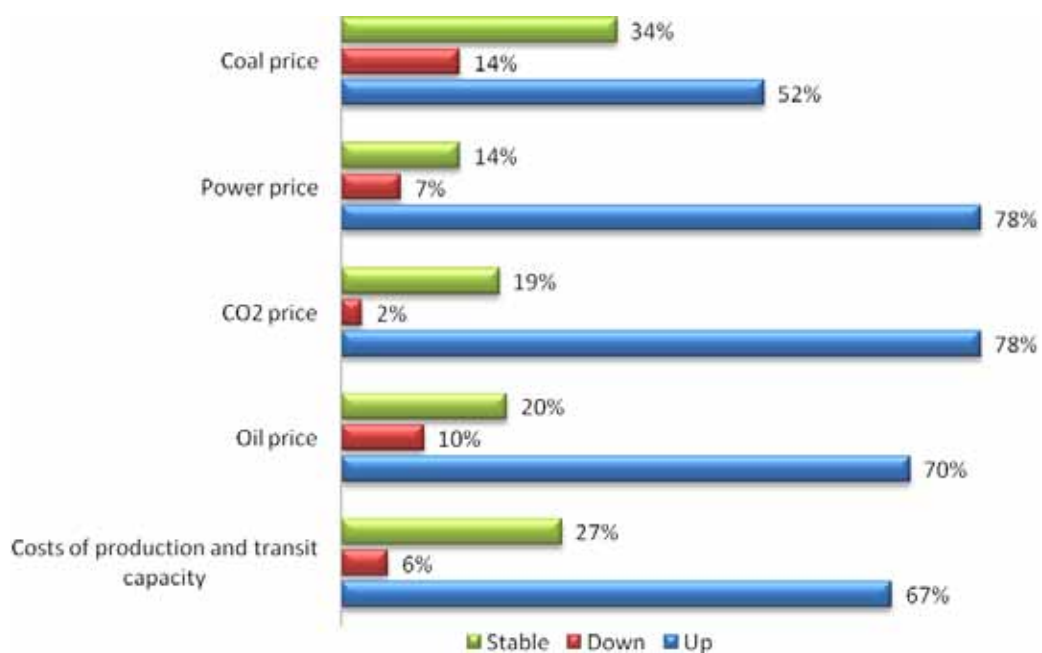


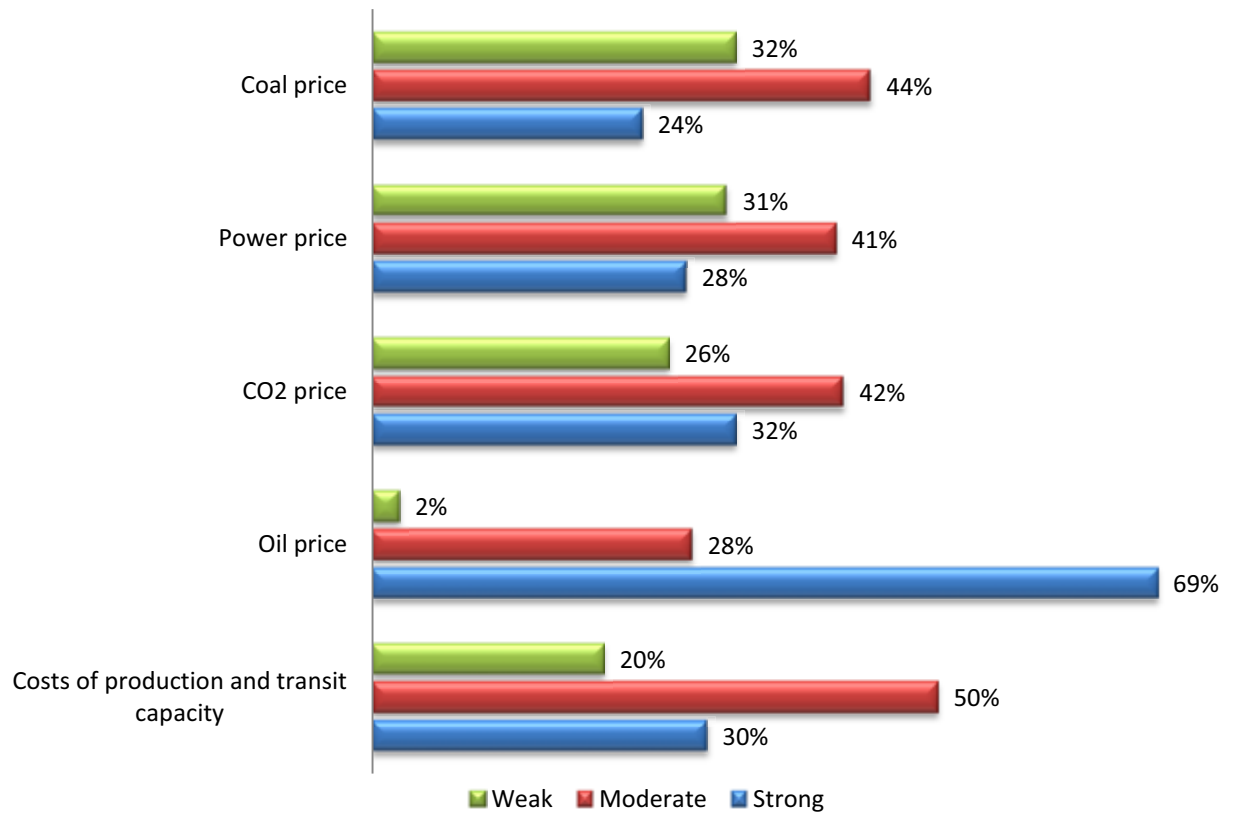
Chart 8: Key Energy Price Determinants – Gas

Direction and impact next 5 years. (total responses 851)

Direction 5 yrs



Impact 5 yrs



2.3 Variables Impacting on Price Volatility

2.3.1 Electricity

The online survey revealed that withdrawal or outages of generation capacity and CO₂ price fluctuations were by far the most important factors impacting on short term price volatility.

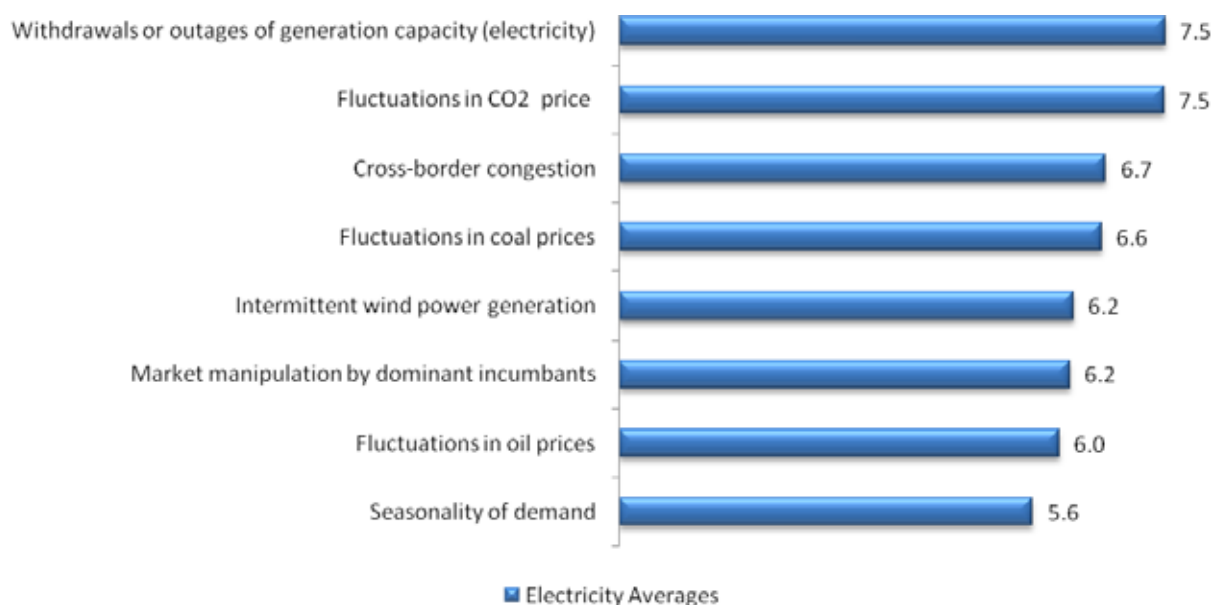
The remaining factors all rated 6 or above, including intermittent wind generation and market manipulation by dominant incumbents.

This confirms the strong influence of the CO₂ price on power prices. It also highlights the importance of improving supply data transparency, in particular the prompt notification of plant withdrawals.

Some 50% of all focus group participants believe that volatile CO₂ and fossil fuel prices stimulate market liquidity. **See section 2.5.**

Chart 9: Variables Impacting on Price Volatility – Electricity

(total responses 788)



2.3.2 Gas

Because of the link between gas and oil prices, fluctuations in the oil price was seen as the most important factor impacting on the short term volatility of the gas price.

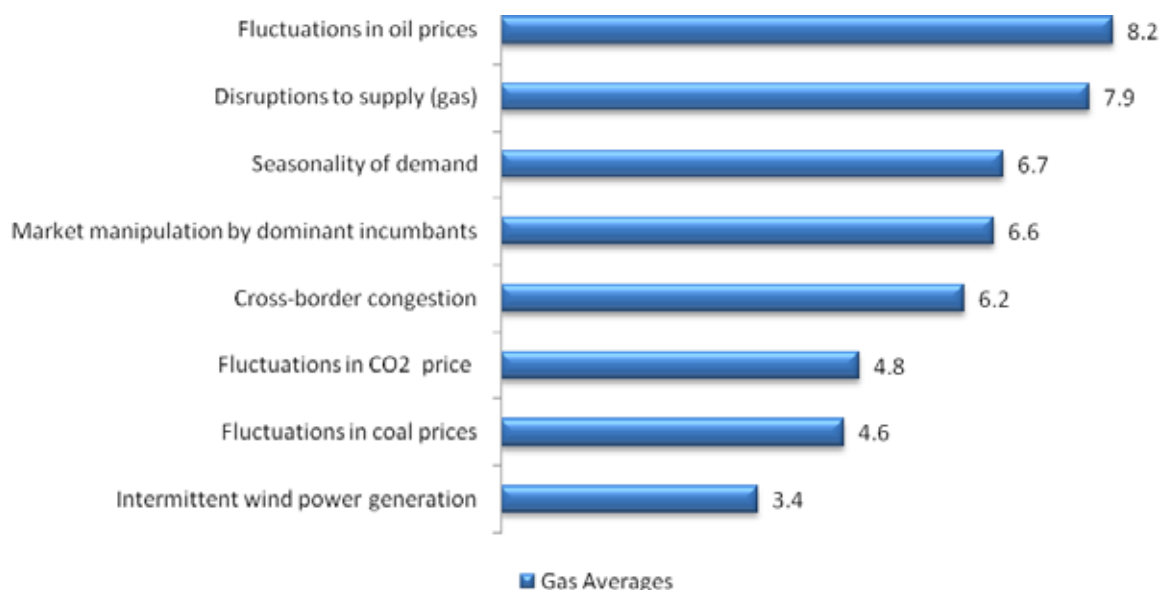
There was also clearly concern amongst respondents about the threat of supply disruption for political or commercial reasons.

In the case of gas, seasonality of demand is much more important than in the case of power.

Some 68% of all focus group participants believe that volatile power, oil and CO₂ prices stimulate market liquidity.

Chart 10: Variables Impacting on Price Volatility – Gas

(total responses 738)



2.4 Market Liquidity and Efficiency Review by Market

As part of the online survey, market participants that actively trade were asked to specify the national markets in which they operate. They were then asked to rate the following factors as having a strong, moderate or weak influence:

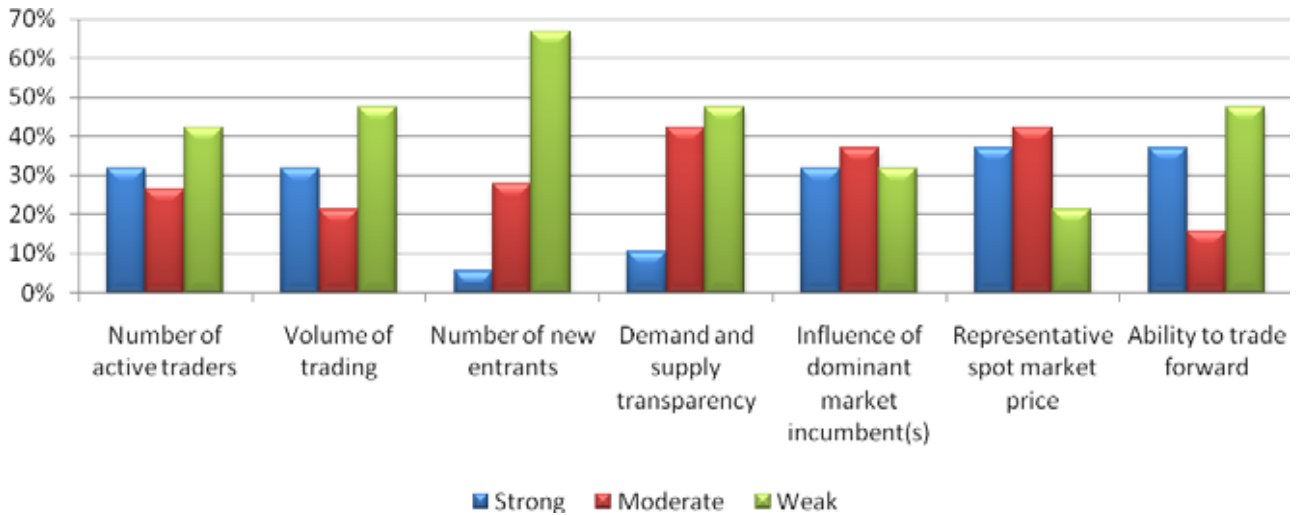
- Number of active traders
- Volume of trading
- Number of new entrants (e.g. industrial users)
- Demand and supply transparency (e.g. capacity and flow data)
- Influence of dominant market incumbent(s)
- Representative spot market price
- Ability to trade forward

The following results were obtained:

2.4.1 Electricity

Chart 11: Electricity - Austria

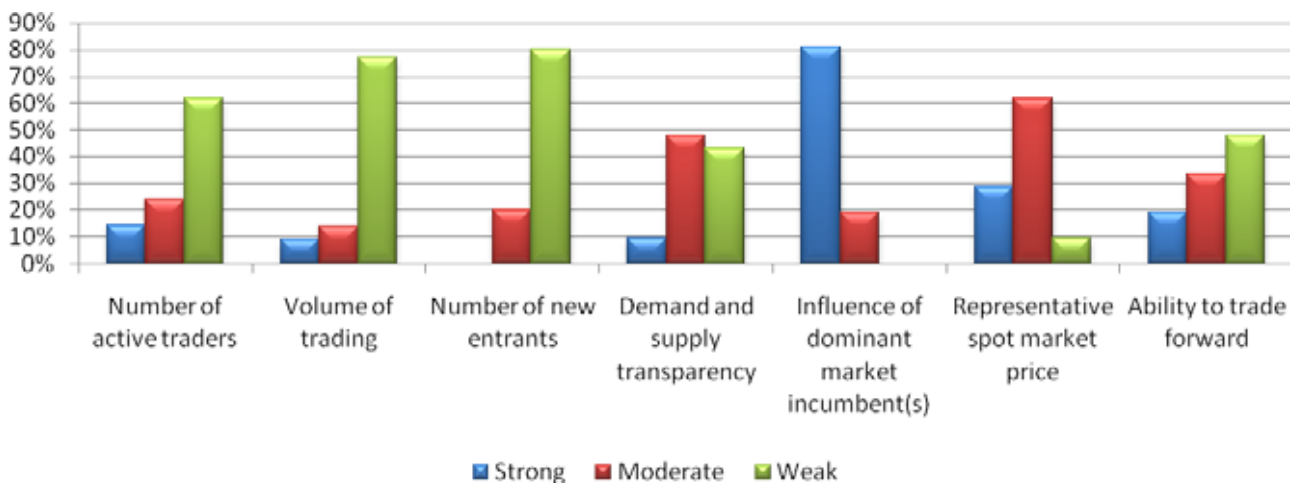
Responses 19



As can be seen from the table above, the number of active traders, especially new entrants, were considered weak. Transparency was also considered weak, which is a contributory factor to the lack of forward trading.

Chart 12: Electricity - Belgium

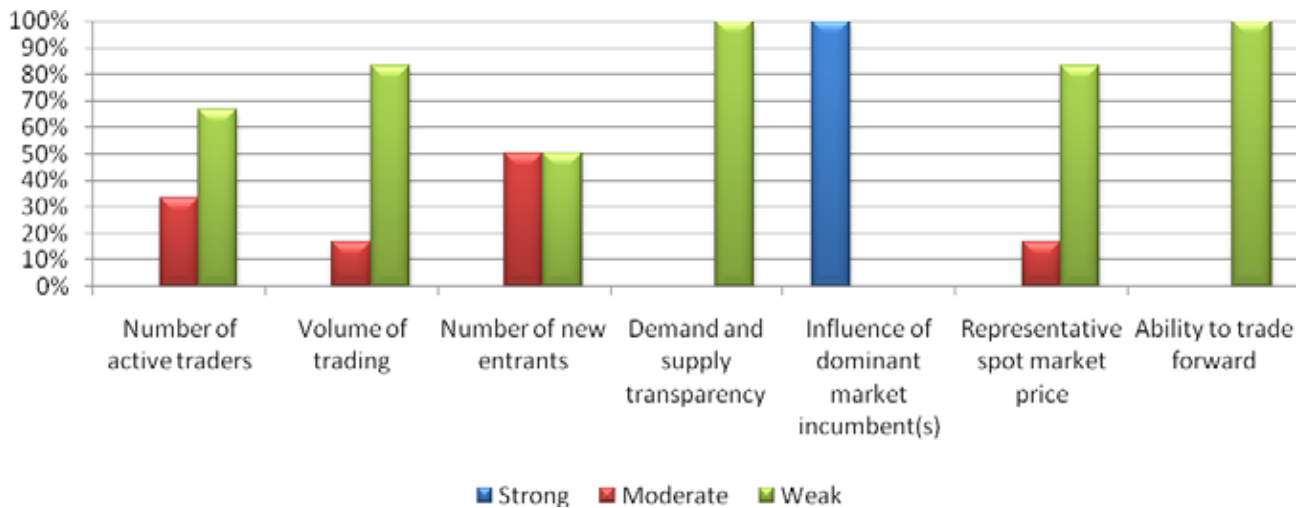
Responses 21



Within Belgium the most important issues are the number of market participants, new entrants and the volume of trading. Each of these was considered weak by respondents and this coincides with a strong belief that the dominate incumbent can influence the market.

Chart 13: Electricity – Bulgaria

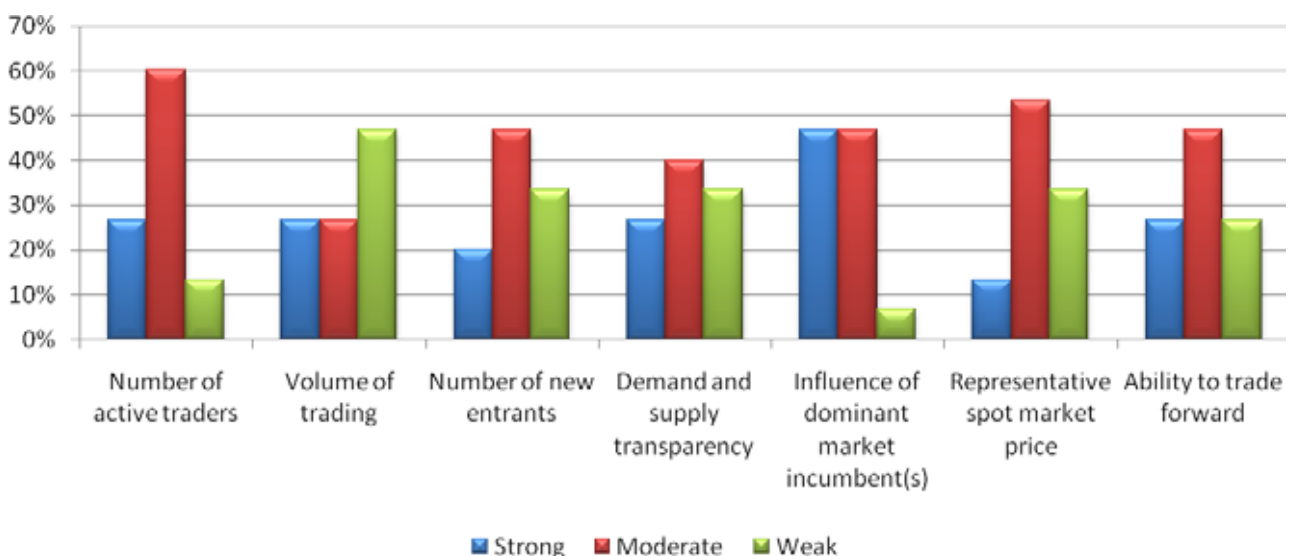
Reponses 6



The Bulgarian electricity market is virtually non-existent. The number of active traders, volume of trading, new entrants, transparency, reliability of the spot market price and ability to trade forward are all weak. The only strong factor is the influence of the dominant market incumbent.

Chart 14: Electricity - Czech Republic

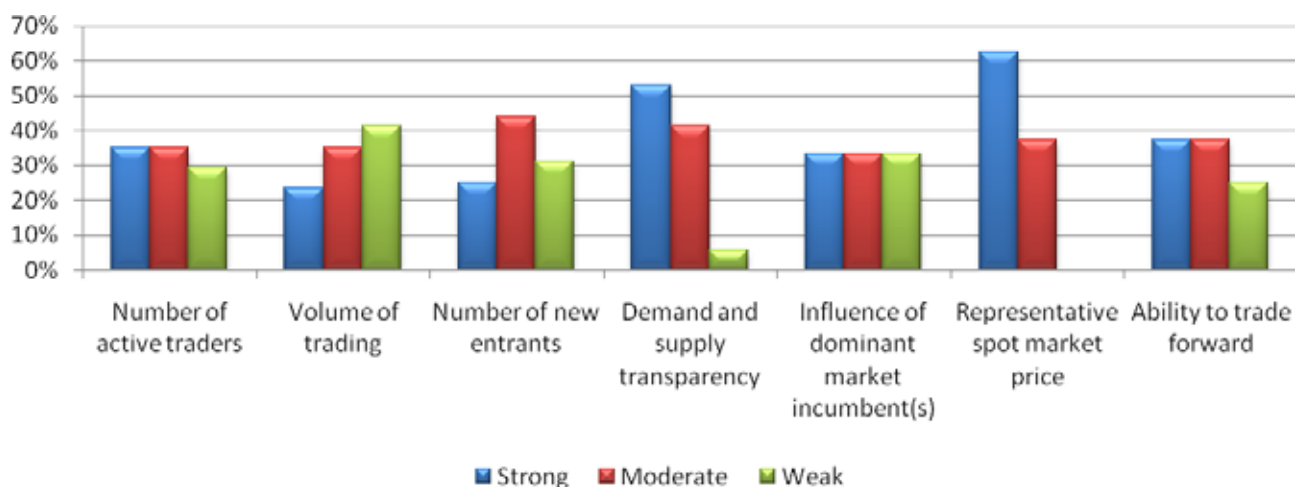
Responses 15



In the Czech Republic there was a reasonably balanced response but trading volumes are weak and the influence of the dominate incumbent(s) is strong.

Chart 15: Electricity - Denmark

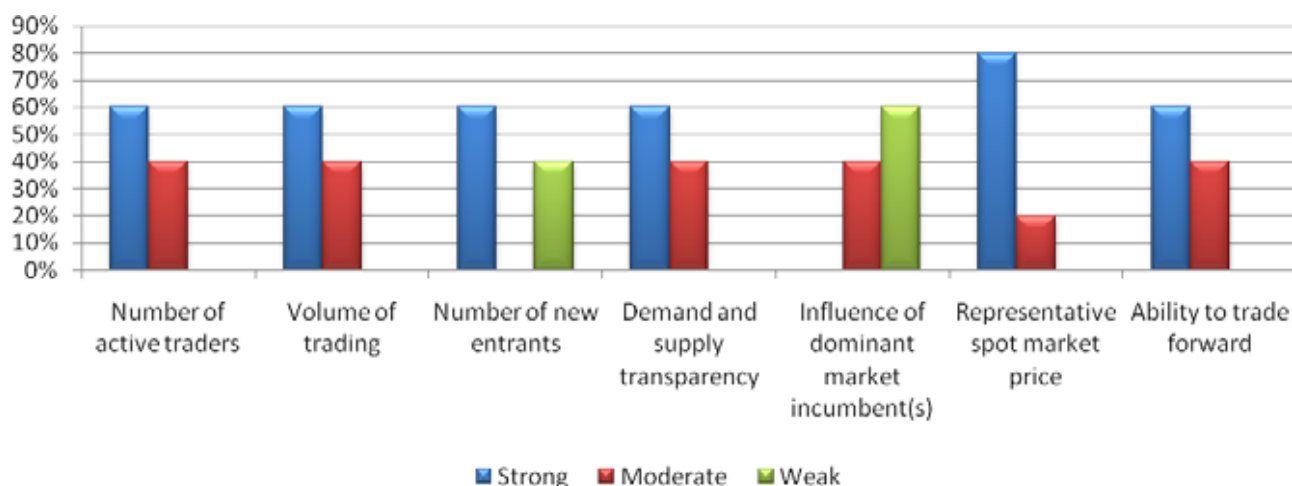
Responses 16



In Denmark the spot market price was considered representative, with transparency also considered strong. The ability to trade forward was also considered moderate to strong, and so were the current number of active traders. However, the volume of trading was still considered to be weak and traders were split on the influence of the dominant incumbent.

Chart 16: Electricity – Finland

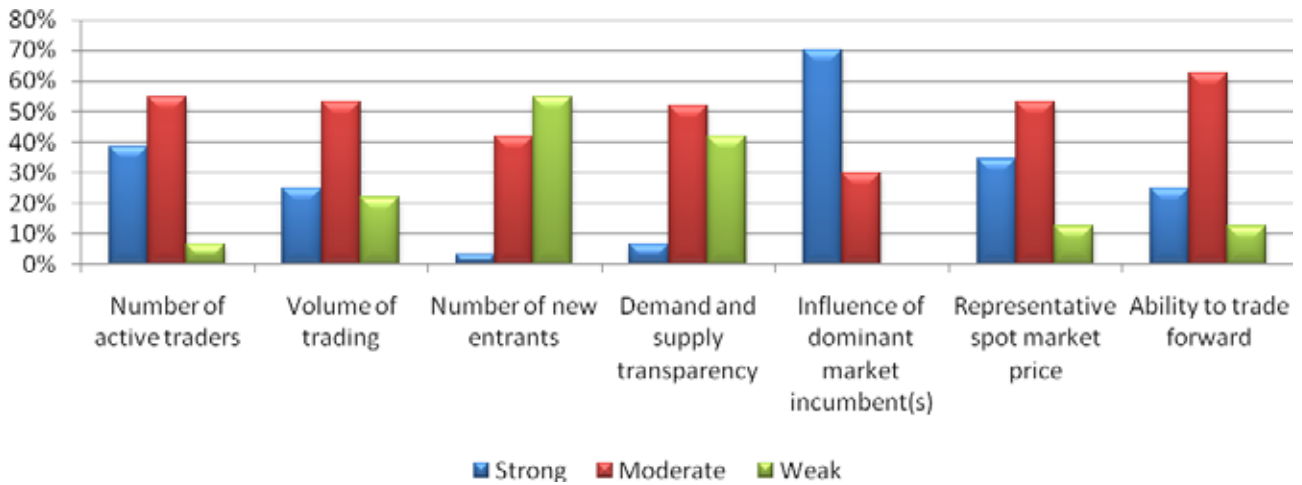
Reponses 5



Finland provides an interesting result with the number of active traders, volume of trading, number of new entrants, transparency, reliability of spot market price and ability to trade forward all being considered strong. The influence of the dominant incumbent was considered weak.

Chart 17: Electricity - France

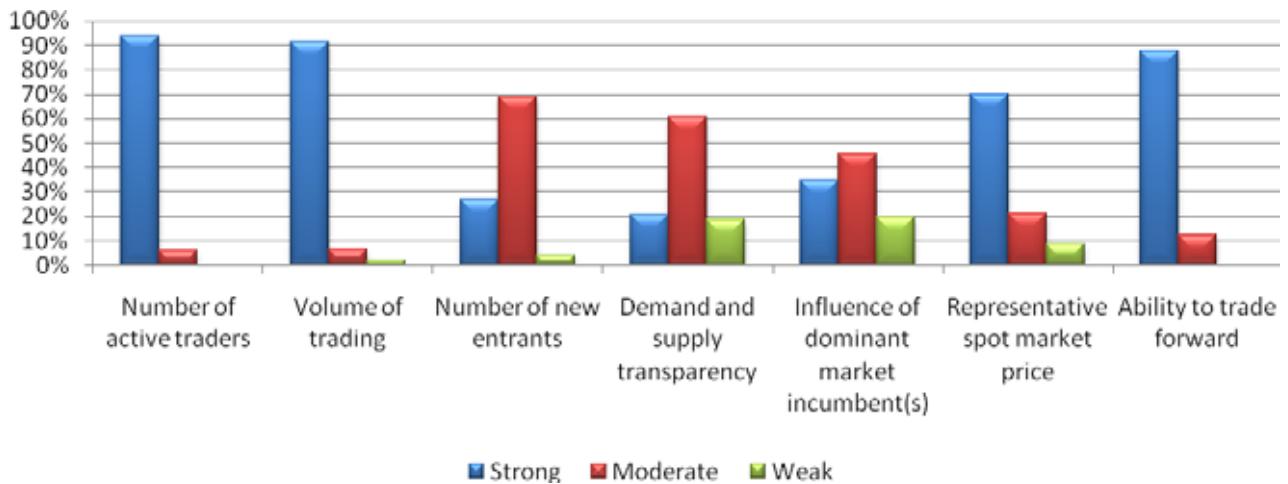
Reponses 31



As expected in France, the influence of the market incumbent was considered strong, with all other measures being considered moderate except for the number of new entrants which was scored as weak.

Chart 18: Electricity – Germany

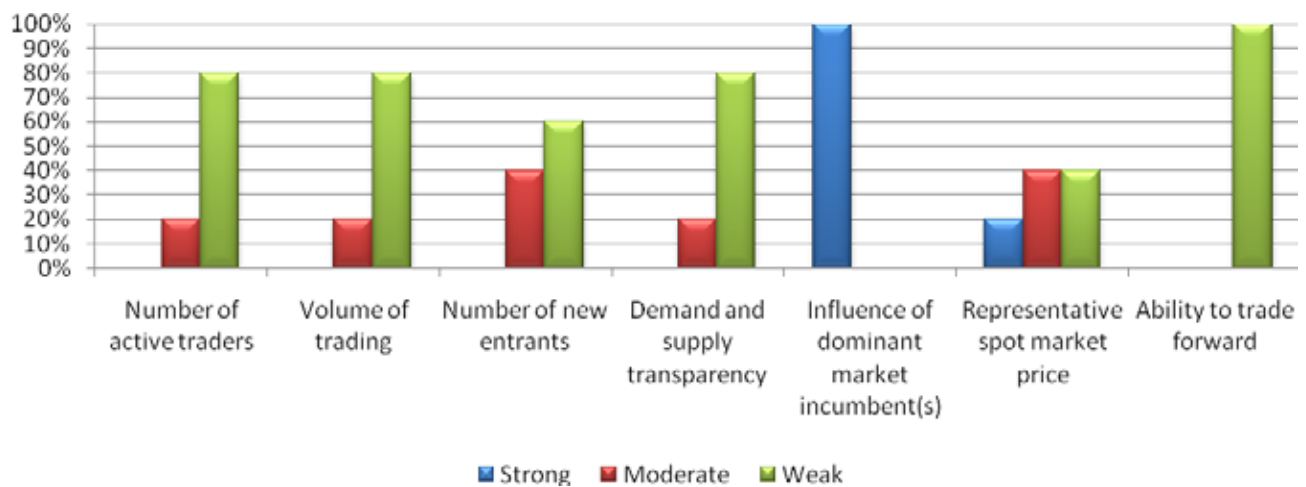
Reponses 49



Traders that operate within Germany considered the number of active traders and volume of trading to be strong, as is the reliability of the spot market price and ability to trade forward. The number of new entrants was considered moderate as was transparency, and the influence of the dominant incumbents.

Chart 19: Electricity – Greece

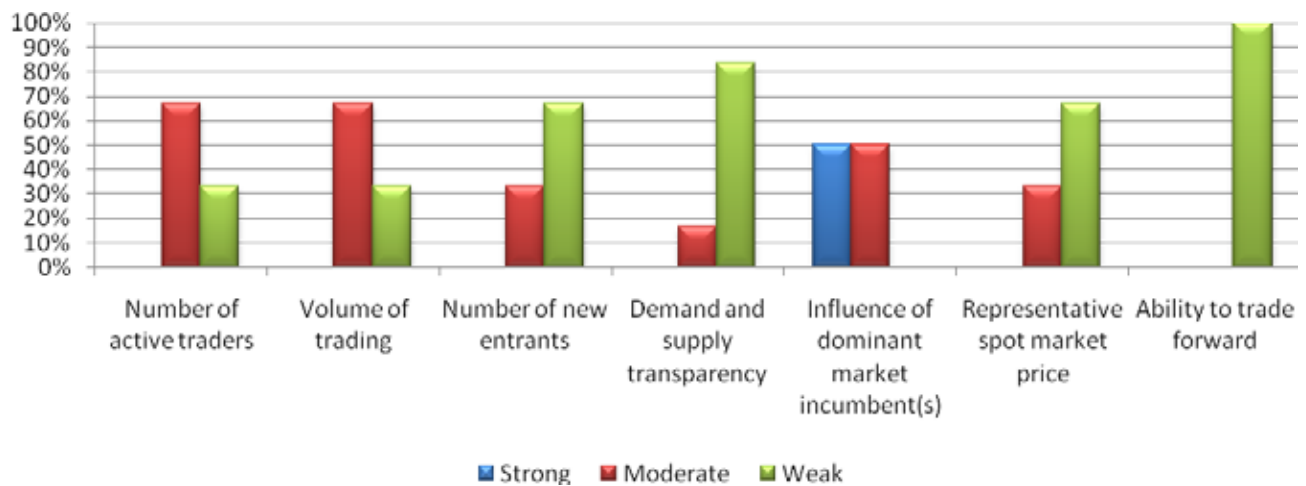
Reponses 5



Greece is in a similar situation to that of Bulgaria, with the dominant incumbent strongly influencing the market and the other factors being considered weak.

Chart 20: Electricity - Hungary

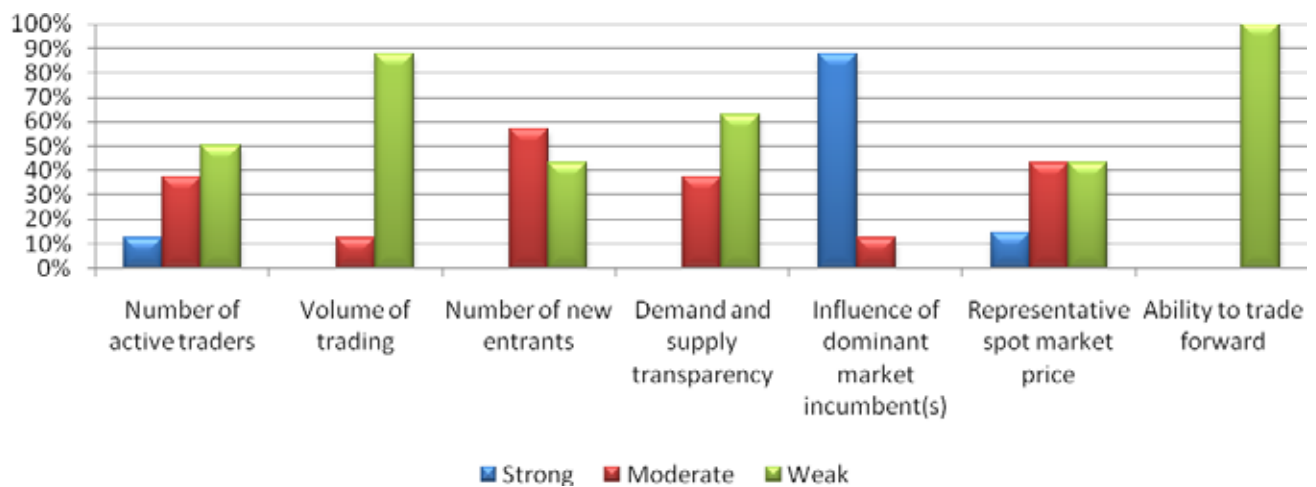
Reponses 6



Hungary’s result shows that people do not feel the number of active traders in the market nor the volume of trading is particularly weak, but the number of new entrants is considered weak. It would also appear relatively unattractive to new entrants with traders rating transparency, representation of the spot price and ability to trade forward as weak.

Chart 21: Electricity – Italy

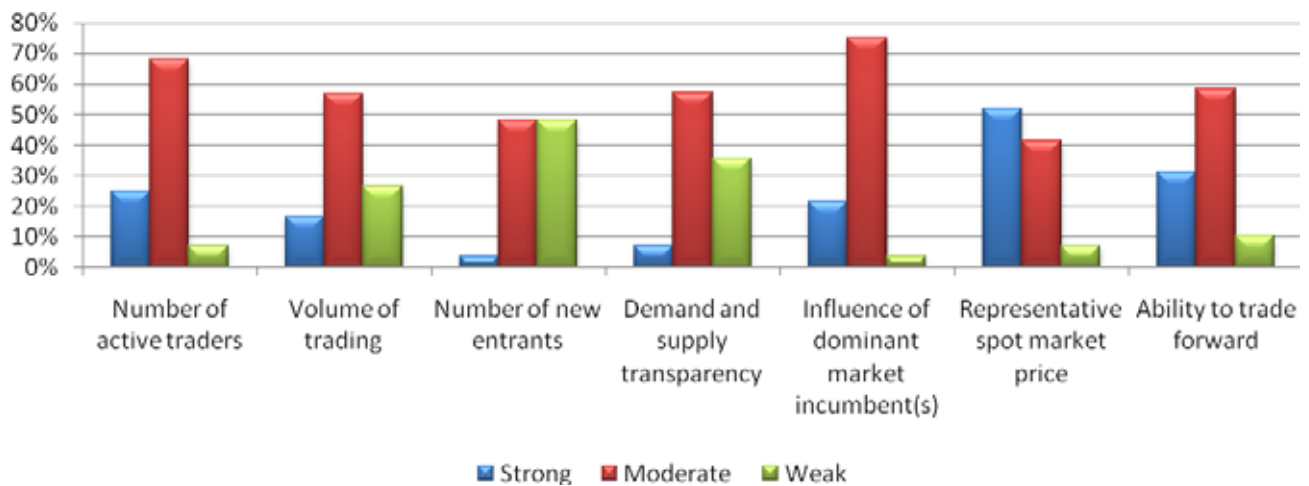
Reponses 7



Italy was rated as being particularly weak in terms of the ability to trade forward and the current volume of trading in the market. This coincides with a strong belief that incumbents have a dominant influence on the market and transparency is weak.

Chart 22: Electricity - Netherlands

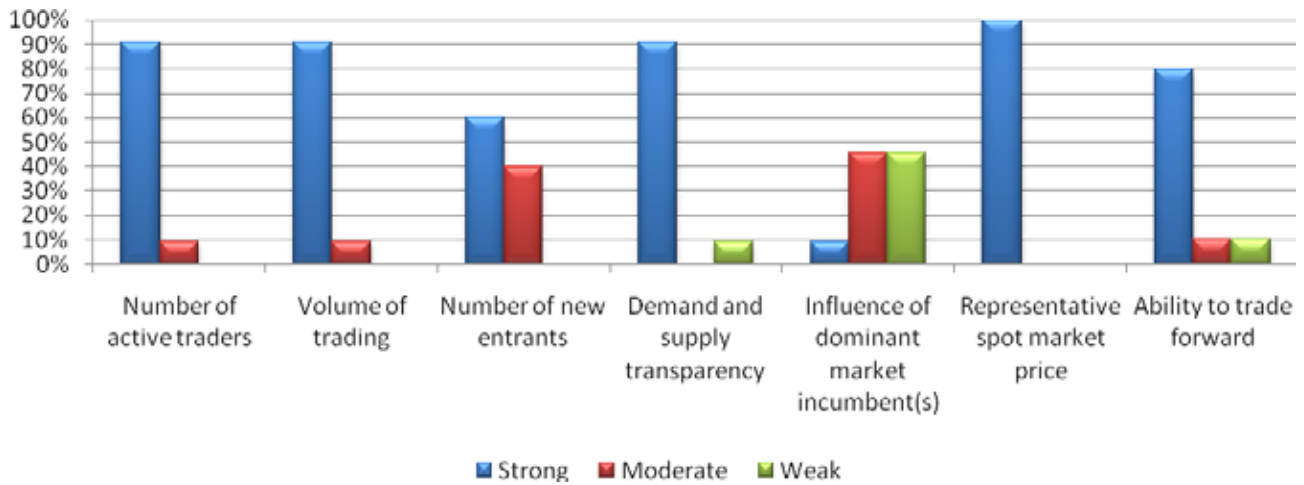
Reponses 29



Traders rated most factors as moderate, with only the reliability of the spot price being rated as strong.

Chart 23: Electricity - Norway

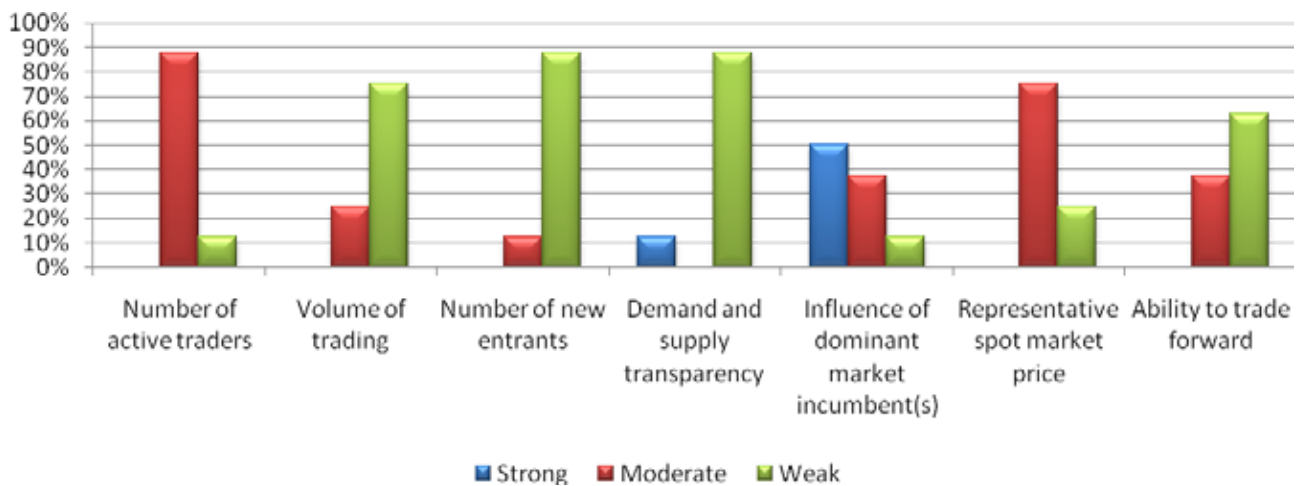
Reponses 11



Traders in Norway strongly believe in the viability of the market where the influence of dominant incumbents is weak.

Chart 24: Electricity – Poland

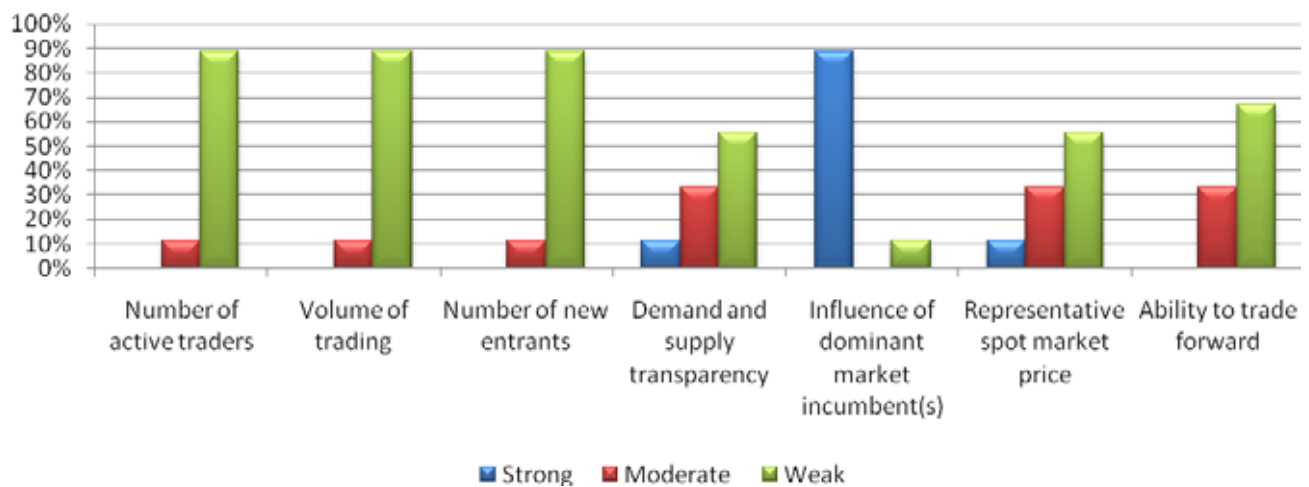
Reponses 8



Regarding Poland, traders rated the volume of trade, number of new entrants, and transparency as a significant weakness in the market. The dominant incumbent was still considered to have a strong influence upon the market, however there was considered to be a moderate number of active traders and a representative spot market price.

Chart 25: Electricity – Portugal

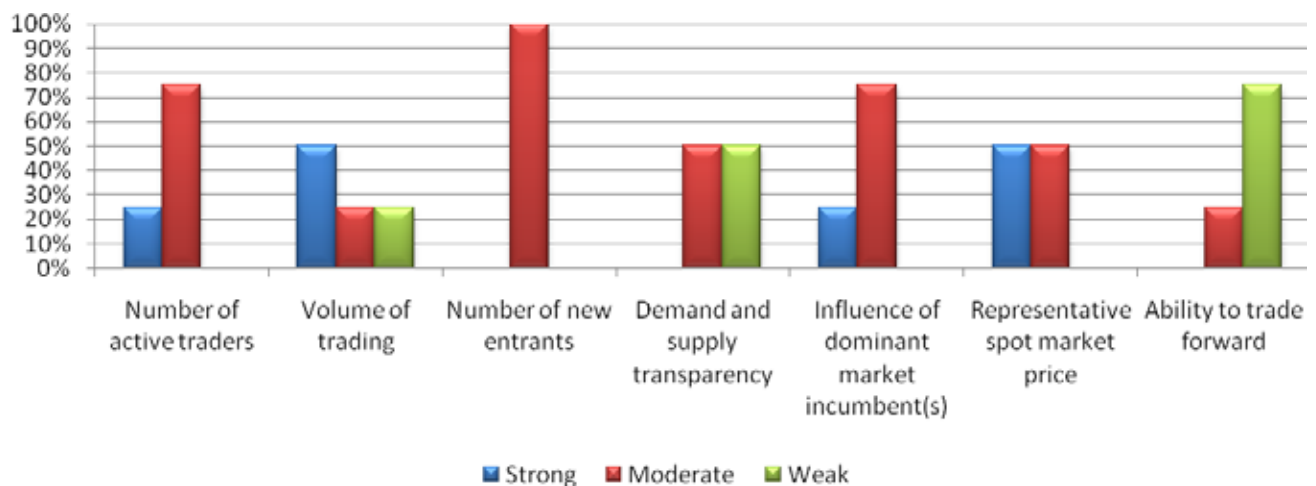
Reponses 9



Portugal was rated as being weak in terms of the number of active traders, volumes of trading, new entrants, transparency, representative spot price and ability to trade forward. Once again (as with other countries), this coincides with strong rating for the influence of the dominant market incumbent.

Chart 26: Electricity – Romania

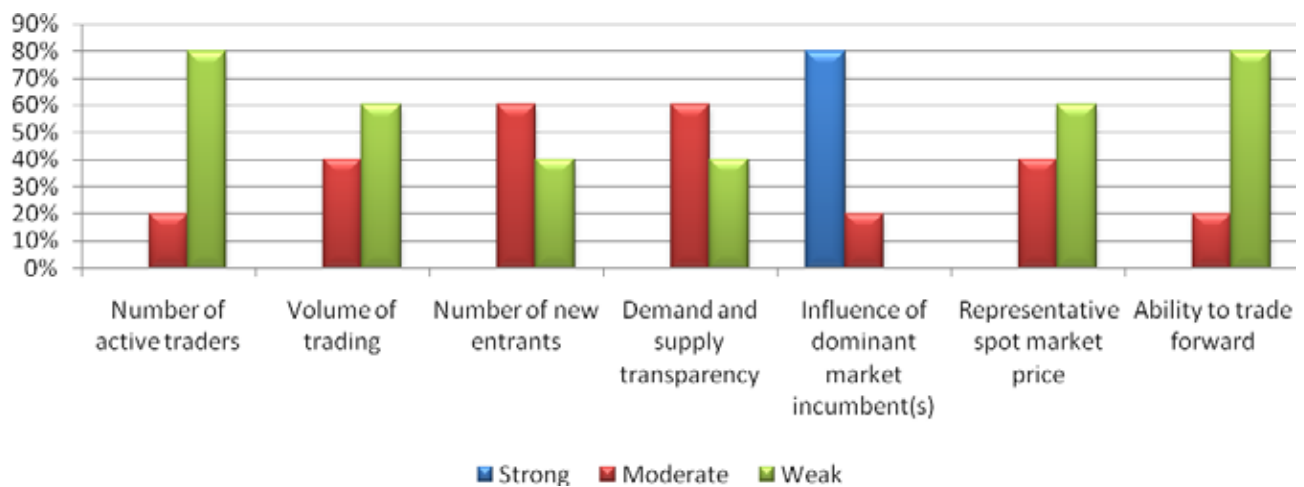
Reponses 4



Romania was only rated as having a weak ability to trade forward; the number of new entrants and the influence of the dominant incumbent were rated as moderate. The spot price was considered to be moderate to strong and transparency was considered moderate to weak.

Chart 27: Electricity - Slovenia

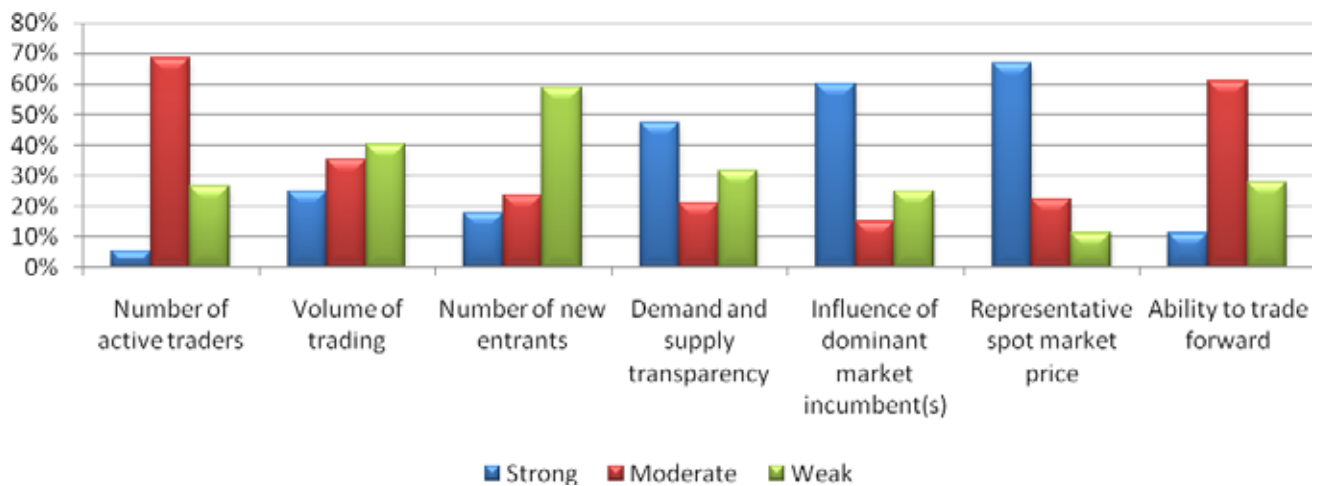
Responses 5



Slovenia is another country where there is a highly influential dominant incumbent and similar to other countries in the same position. The rest of the factors rate weakly with only the number of new entrants and transparency achieving a moderate score.

Chart 28: Electricity – Spain

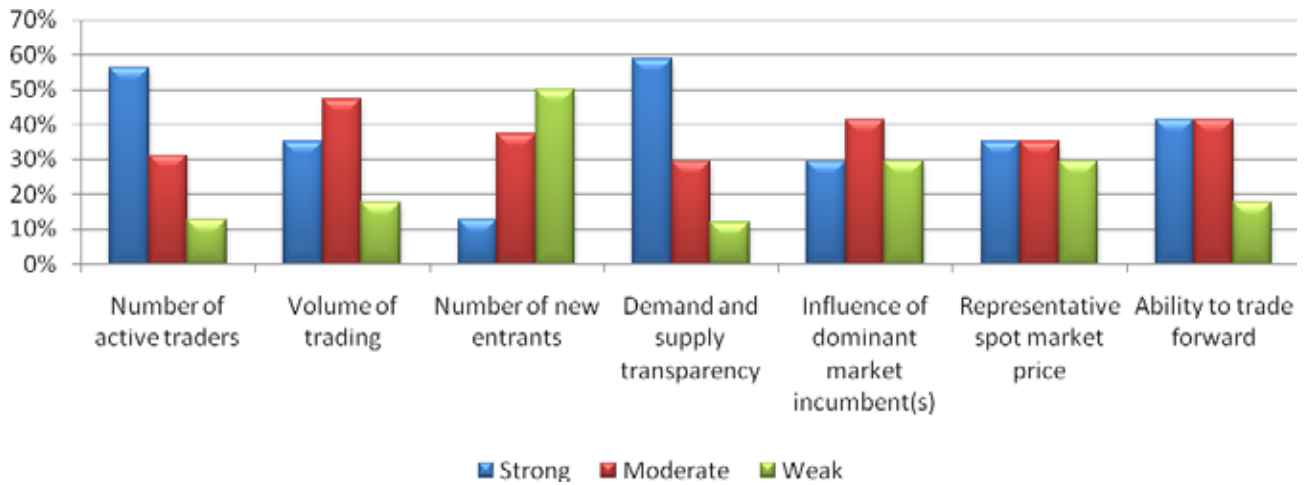
Reponses 18



Spain has strong dominant incumbent(s), but has a strong representative spot market price and strong transparency. As for active traders and the ability to trade forward, these were rated as moderate, with only the volume of trading and the number of new entrants being considered as weak.

Chart 29: Electricity - UK

Responses 17



The UK was rated as having strong market transparency and was also considered to have a strong number of active players with mixed views on the reliability of the spot price and the ability to trade forward. Volumes traded and the influence of incumbents were both rated as moderate with only the number of new entrants being rated as weak.

Chart 30: EU Summary of Market Liquidity and Efficiency Ratings – Electricity

	Number of active traders	Volume of trading	Number of new entrants	Demand and supply transparency	Influence of dominant market incumbent(s)	Representative spot market price	Ability to trade forward
Austria	Weak	Weak	Weak	Weak	Moderate	Moderate	Weak
Belgium	Weak	Weak	Weak	Moderate	Moderate	Moderate	Weak
Bulgaria	Weak	Weak	Moderate - Weak	Weak	Strong	Weak	Weak
Cyprus							
Czech Republic	Moderate	Weak	Moderate	Moderate	Moderate - Strong	Moderate	Moderate
Denmark	Moderate - Strong	Weak	Moderate	Strong	Neutral	Strong	Moderate - Strong
Estonia							
Finland	Strong	Strong	Strong	Strong	Weak	Strong	Strong
France	Moderate	Moderate	Weak	Moderate	Strong	Moderate	Moderate
Germany	Strong	Strong	Moderate	Moderate	Moderate	Strong	Strong
Greece	Weak	Weak	Weak	Weak	Strong	Moderate - Weak	Weak
Hungary	Moderate	Moderate	Weak	Weak	Moderate - Strong	Weak	Weak
Ireland							
Italy	Weak	Weak	Moderate	Weak	Strong	Moderate - Weak	Weak
Latvia							
Lithuania							
Luxembourg							
Malta							
Netherlands	Moderate	Moderate	Moderate - Weak	Moderate	Moderate	Strong	Moderate
Norway	Strong	Strong	Strong	Strong	Moderate - Weak	Strong	Strong
Poland	Moderate	Weak	Weak	Weak	Strong	Moderate	Weak
Portugal	Weak	Weak	Weak	Weak	Strong	Weak	Weak
Romania	Moderate	Strong	Moderate	Moderate - Weak	Moderate	Moderate - Strong	Weak
Slovakia							
Slovenia	Weak	Weak	Moderate	Moderate	Strong	Weak	Weak
Spain	Moderate	Weak	Weak	Strong	Strong	Strong	Moderate
Sweden							
United Kingdom	Strong	Moderate	Weak	Strong	Moderate	Moderate - Strong	Moderate - Strong

Chart 31: National Market Liquidity and Efficiency League Tables – Electricity

The scores for each market here have been averaged to provide a series of league tables showing each country rated in terms of the market liquidity and efficiency criteria listed in the online survey.

Number of active traders

1. Germany	6. Romania	11. Poland	17. Greece
2. Norway	7. Netherlands	12. Spain	18. Slovenia
3. Finland	8. Czech Republic	13. Hungary	19. Portugal
4. United Kingdom	9. Denmark	14. Italy	
5. France	10. Austria	15. Belgium	
		16. Bulgaria	

Volume of trading

1. Portugal	7. Slovenia	12. Spain	17. Finland
2. Italy	8. Hungary	13. Netherlands	18. Germany
3. Bulgaria	9. Czech Republic	14. France	19. Norway
4. Greece	10. Denmark	15. United Kingdom	
5. Poland	11. Austria	16. Romania	
6. Belgium			

Number of new entrants

1. Norway	6. Czech Republic	10. Italy	15. Austria
2. Germany	7. United Kingdom	11. Netherlands	16. Hungary
3. Finland	8. Slovenia	12. Bulgaria	17. Belgium
4. Romania	9. Spain	13. France	18. Poland
5. Denmark		14. Greece	19. Portugal

Demand and supply transparency

- | | | | |
|-------------------|-------------------|--------------|--------------|
| 1. Norway | 6. Germany | 11. Austria | 17. Greece |
| 2. Finland | 7. Czech Republic | 12. Slovenia | 18. Hungary |
| 3. Denmark | 8. Netherlands | 13. Portugal | 19. Bulgaria |
| 4. United Kingdom | 9. Belgium | 14. Romania | |
| 5. Spain | 10. France | 15. Italy | |
| | | 16. Poland | |

Influence of dominant market incumbent(s)

- | | | | |
|-------------|-------------------|--------------------|-------------|
| 1. Greece | 7. France | 12. Romania | 17. Austria |
| 2. Bulgaria | 8. Hungary | 13. Netherlands | 18. Norway |
| 3. Italy | 9. Czech Republic | 14. Germany | 19. Finland |
| 4. Belgium | 10. Poland | 15. United Kingdom | |
| 5. Slovenia | 11. Spain | 16. Denmark | |
| 6. Portugal | | | |

Representative spot market price

- | | | | |
|------------|--------------------|--------------------|--------------|
| 1. Norway | 7. Netherlands | 12. Greece | 17. Slovenia |
| 2. Finland | 8. France | 13. Czech Republic | 18. Hungary |
| 3. Denmark | 9. Belgium | 14. Poland | 19. Bulgaria |
| 4. Germany | 10. Austria | 15. Italy | |
| 5. Spain | 11. United Kingdom | 16. Portugal | |
| 6. Romania | | | |

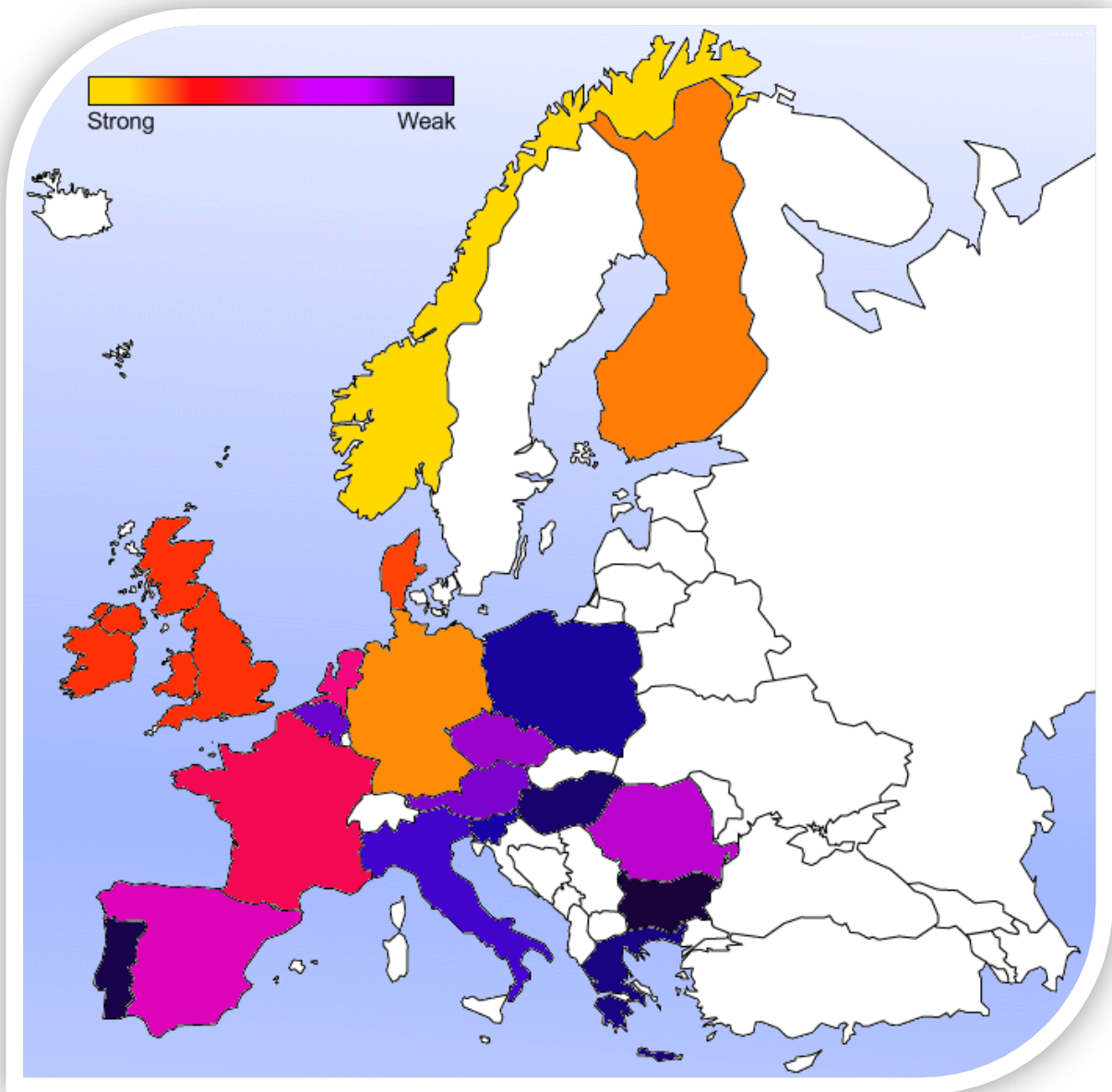
Ability to trade forward

- | | | |
|-------------------|-------------------|--------------|
| 1. Germany | 7. France | 13. Portugal |
| 2. Norway | 8. Czech Republic | 14. Romania |
| 3. Finland | 9. Austria | 15. Slovenia |
| 4. United Kingdom | 10. Spain | 16. Greece |
| 5. Netherlands | 11. Belgium | 17. Italy |
| 6. Denmark | 12. Poland | 18. Hungary |
| | | 19. Bulgaria |

Chart 32: Overall EU Market Liquidity and Efficiency League Table and Map – Electricity

Overall Ranking

- | | | |
|-------------------|--------------------|--------------|
| 1. Norway | 8. Spain | 15. Poland |
| 2. Germany | 9. Romania | 16. Greece |
| 3. Finland | 10. Czech Republic | 17. Hungary |
| 4. Denmark | 11. Austria | 18. Portugal |
| 5. United Kingdom | 12. Belgium | 19. Bulgaria |
| 6. France | 13. Italy | |
| 7. Netherlands | 14. Slovenia | |

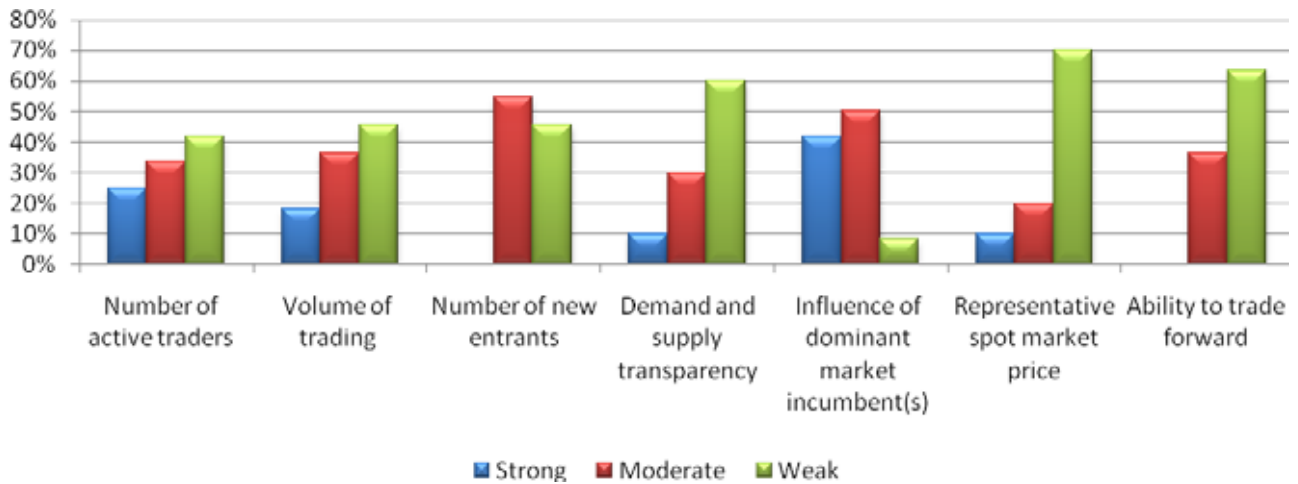


2.4.2 Gas

The ratings for various EU national gas markets were as follows:

Chart 33: Gas – Austria

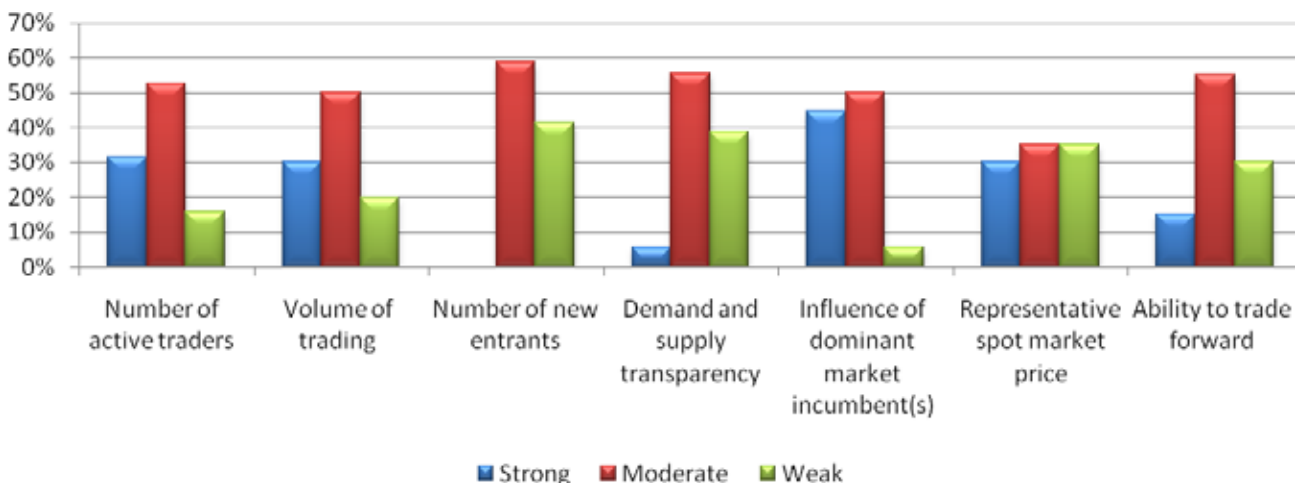
Responses 12



Austria's gas market was considered significantly weak in the reliability of the spot market price, transparency, and the ability to trade forward. The volume of trade and number of active traders were also rated as weak but not to the same degree. The influence of the dominant incumbent and the number of new entrants were considered moderate.

Chart 34: Gas - Belgium

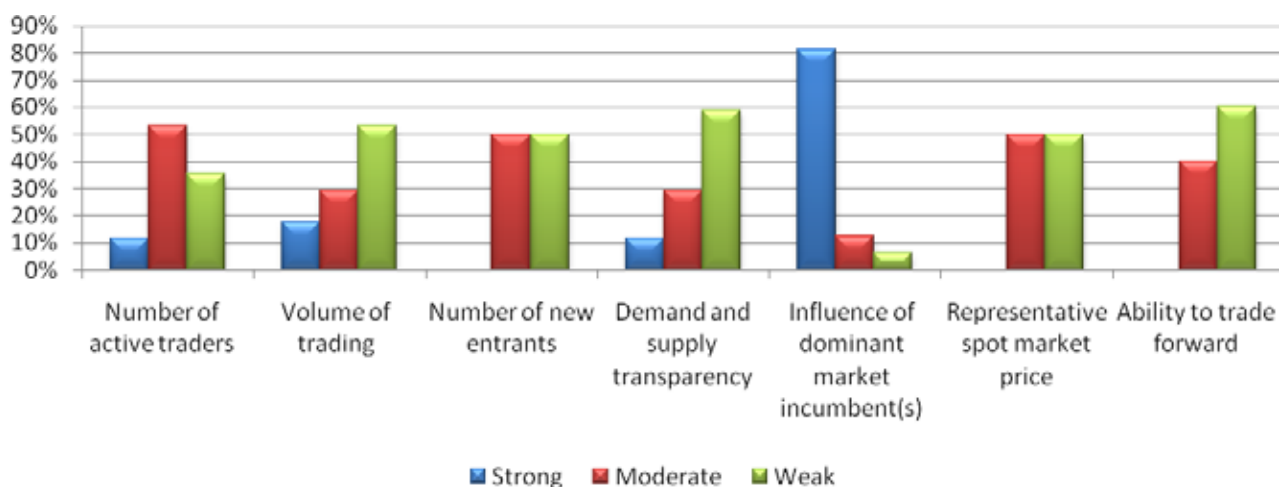
Responses 19



Belgium rated moderate across the board, with the number of active traders, volume of trading, the number of new entrants and the ability to trade forward all being significant. The influence of the dominant incumbent and transparency were less significant and the reliability of the spot market price was rated as strong to moderate.

Chart 35: Gas - France

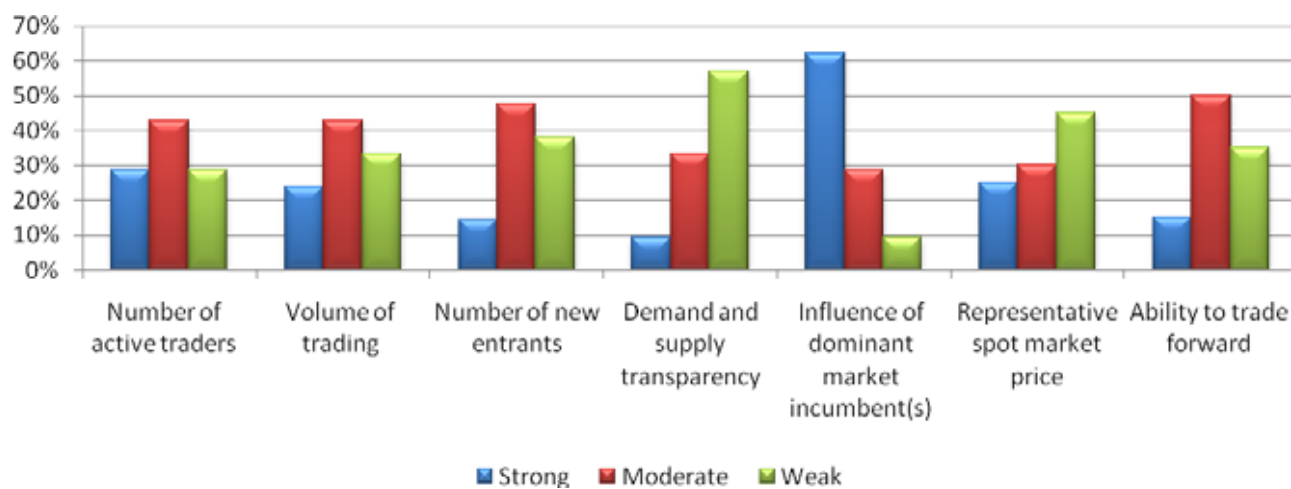
Reponses 18



In France the dominant incumbent was rated as having a strong influence on the market. The volume of trading, transparency and the ability to trade forward were considered weak and the other measures were rated as being weak to moderate.

Chart 36: Gas - Germany

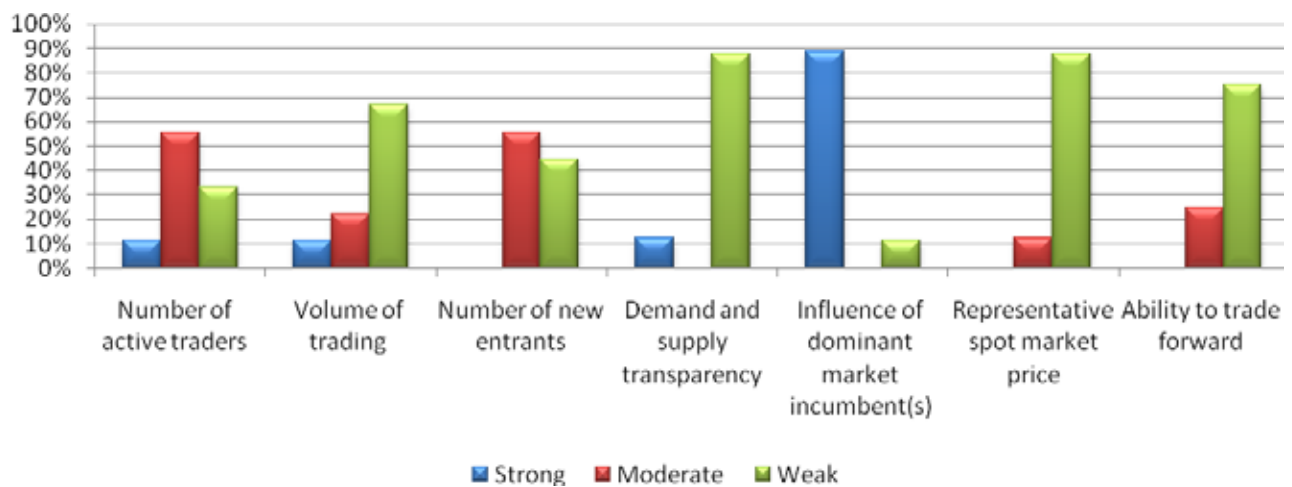
Responses 21



The gas market in Germany is also considered to have a strong dominant incumbent, and like France, transparency was considered weak. However other measures were better such as the ability to trade forward, and the volume of trading. The spot price in Germany was considered a weak representation of fundamentals in the market.

Chart 37: Gas - Italy

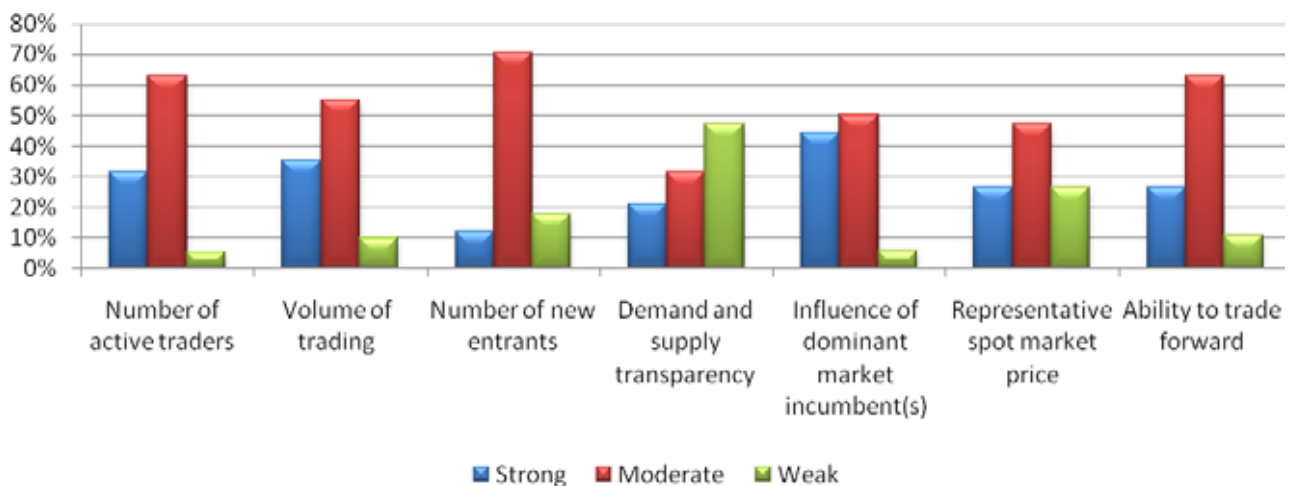
Responses 9



In Italy the influence of the dominant incumbent is the strongest factor but with a moderate number of active traders and new entrants. However, transparency was considered significantly weak and so too was the ability to trade forward and the reliability of the spot market price.

Chart 38: Gas - Netherlands

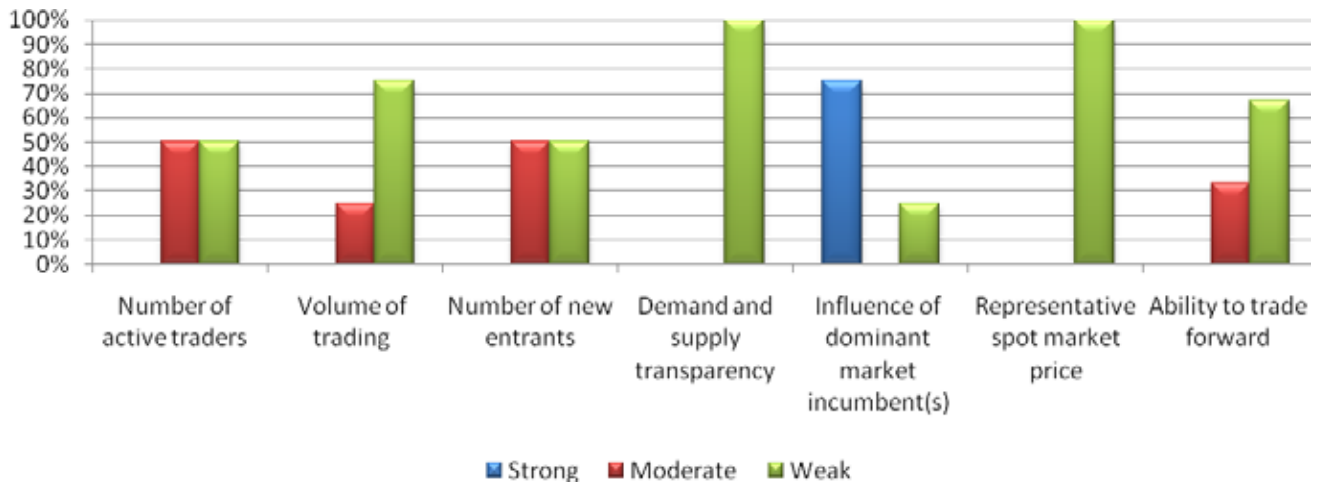
Responses 19



In the Netherlands it can be seen that, unlike most of the gas markets within Europe, the power of the dominant incumbent is moderate. It was reported that the number of active traders, the volume of trade and the number of new entrants were also considered moderate, as was the ability to trade forward and the reliability of the spot market. The only issue that stands out within this market is weak transparency.

Chart 39: Gas – Portugal

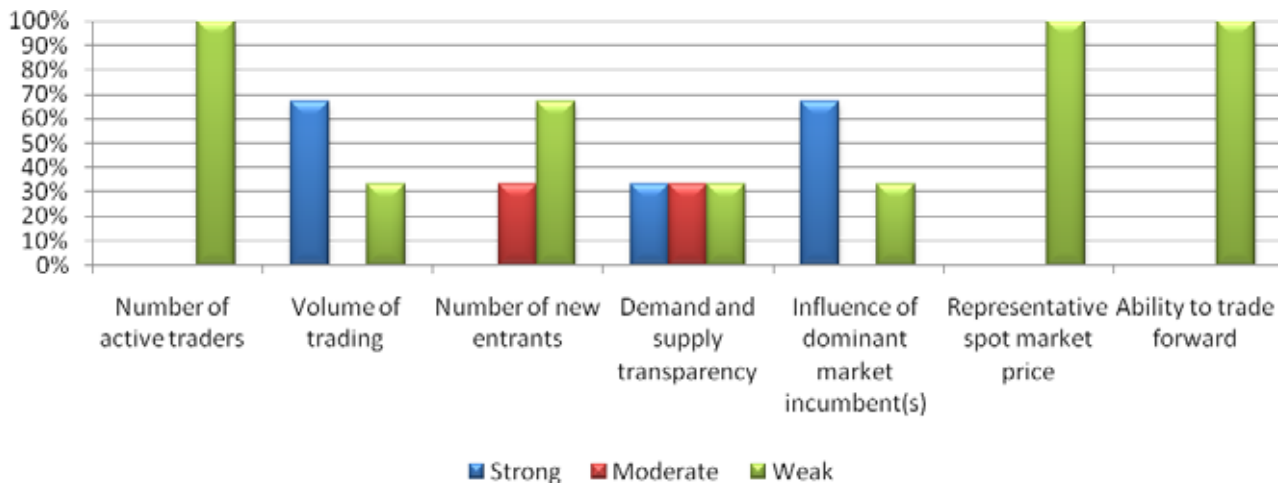
Responses 4



Portugal was rated by all respondents as having weak transparency and spot price within a market where the dominant incumbent is strong. It is therefore little surprise to see that the volume of trading, and ability to trade forward are considered weak. However, the number of active participants and new entrants were only rated as weak to moderate.

Chart 40: Gas Slovakia

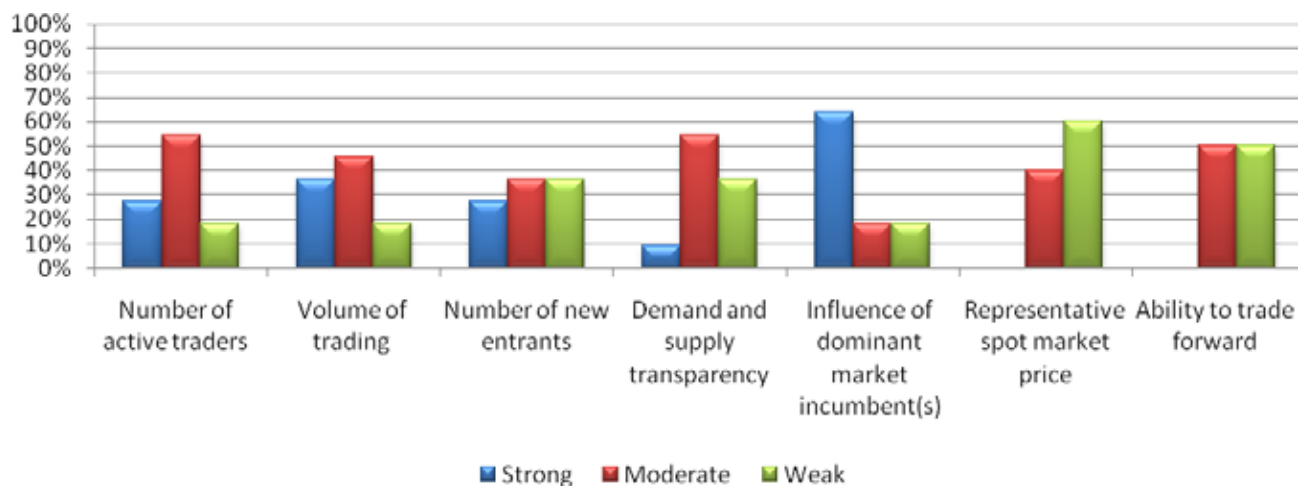
Responses 3



In Slovakia, the gas market is virtually non-existent with a dominant market incumbent and very little trading opportunities.

Chart 41: Gas - Spain

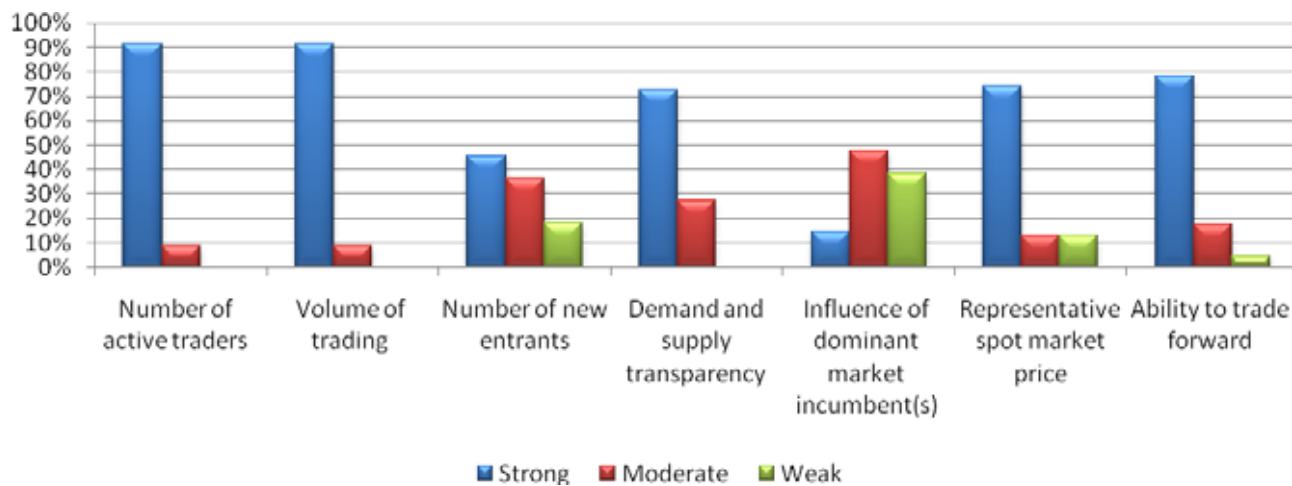
Responses 11



In Spain, the volume of trading, number of new entrants, number of active traders, and transparency were all considered moderate, with only the reliability of the spot market being considered weak. The power of the incumbent was also rated as strong.

Chart 42: Gas - UK

Responses 23



In the UK, all measures received a strong vote and the influence of market incumbent(s) was considered moderate.

Chart 43: EU Summary of Market Liquidity and Efficiency Ratings – Gas

	Number of active traders	Volume of trading	Number of new entrants	Demand and supply transparency	Influence of dominant market incumbent(s)	Representative spot market price	Ability to trade forward
Austria	Weak	Weak	Moderate	Weak	Moderate	Weak	Weak
Belgium	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate - Weak	Moderate
Bulgaria							
Cyprus							
Czech Republic							
Denmark							
Estonia							
Finland							
France	Moderate	Weak	Moderate - Weak	Weak	Strong	Moderate - Weak	Weak
Germany	Moderate	Moderate	Moderate	Weak	Strong	Weak	Moderate
Greece							
Hungary							
Ireland							
Italy	Moderate	Weak	Moderate	Weak	Strong	Weak	Weak
Latvia							
Lithuania							
Luxembourg							
Malta							
Netherlands	Moderate	Moderate	Moderate	Weak	Moderate	Moderate	Moderate
Norway							
Poland							
Portugal	Moderate - Weak	Weak	Moderate - Weak	Weak	Strong	Weak	Weak
Romania							
Slovakia	Weak	Strong	Weak	Undecided	Strong	Weak	Weak
Slovenia							
Spain	Moderate	Moderate	Moderate - Weak	Moderate	Strong	Weak	Moderate - Weak
Sweden							
United Kingdom	Strong	Strong	Strong	Strong	Moderate	Strong	Strong

Chart 44: National Market Liquidity and Efficiency League Tables – Gas

Number of active traders

- | | | |
|-------------------|------------|--------------|
| 1. United Kingdom | 5. Germany | 9. Portugal |
| 2. Netherlands | 6. Austria | 10. Slovakia |
| 3. Belgium | 7. Italy | |
| 4. Spain | 8. France | |

Volume of trading

- | | | |
|-------------------|------------|--------------|
| 1. United Kingdom | 5. Belgium | 9. Italy |
| 2. Slovakia | 6. Germany | 10. Portugal |
| 3. Netherlands | 7. Austria | |
| 4. Spain | 8. France | |

Number of new entrants

- | | | |
|-------------------|------------|--------------|
| 1. United Kingdom | 5. Belgium | 9. Portugal |
| 2. Netherlands | 6. Italy | 10. Slovakia |
| 3. Spain | 7. Austria | |
| 4. Germany | 8. France | |

Demand and supply transparency

- | | | |
|-------------------|------------|--------------|
| 1. United Kingdom | 5. Belgium | 9. Italy |
| 2. Slovakia | 6. France | 10. Portugal |
| 3. Netherlands | 7. Germany | |
| 4. Spain | 8. Austria | |

Influence of dominant market incumbent(s)

- | | | |
|-------------|----------------|--------------------|
| 1. Italy | 5. Spain | 9. Austria |
| 2. France | 6. Netherlands | 10. United Kingdom |
| 3. Germany | 7. Belgium | |
| 4. Portugal | 8. Slovakia | |

Representative spot market price

- | | | |
|-------------------|------------|--------------|
| 1. United Kingdom | 5. France | 9. Portugal |
| 2. Netherlands | 6. Spain | 10. Slovakia |
| 3. Belgium | 7. Austria | |
| 4. Germany | 8. Italy | |

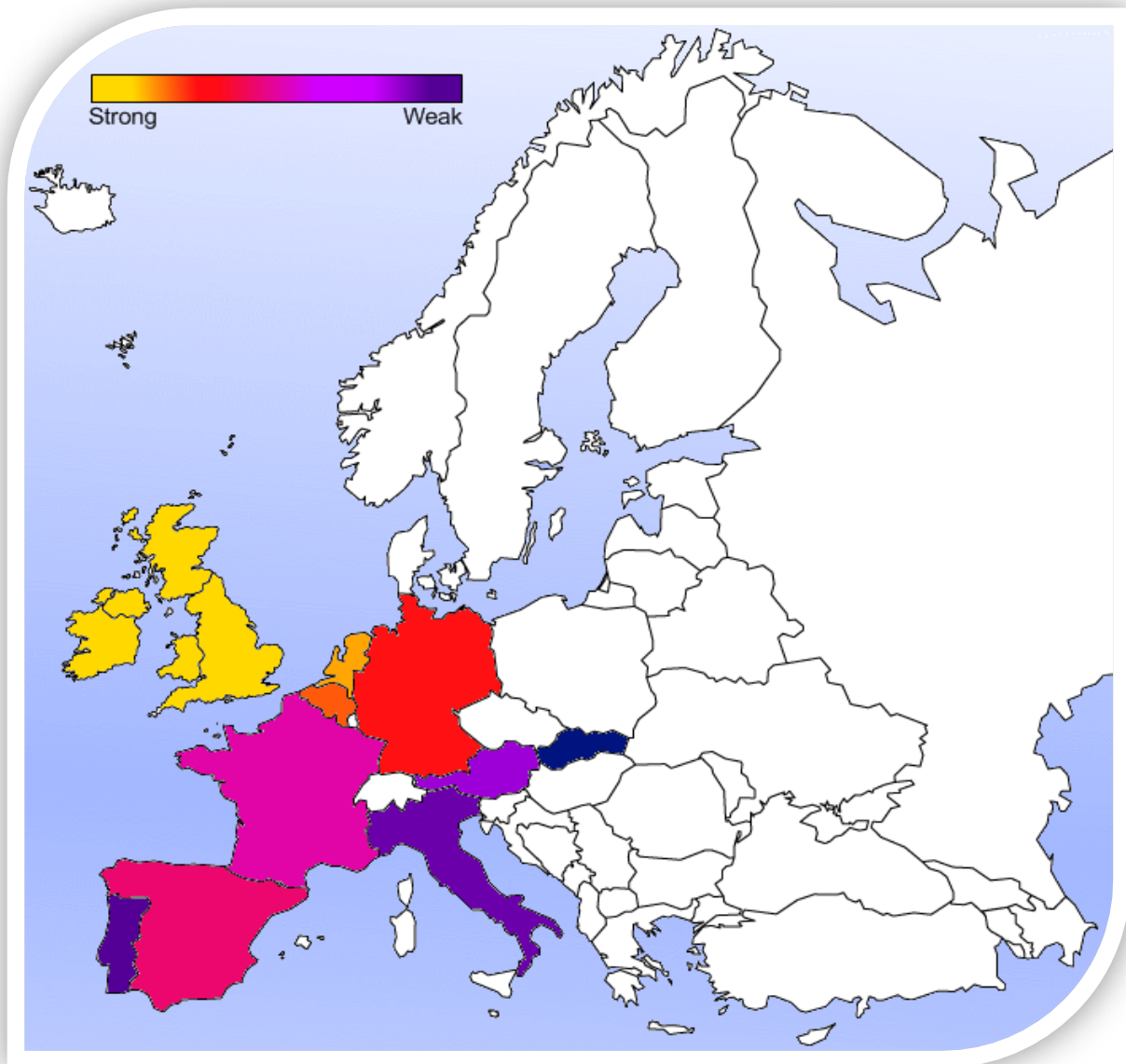
Ability to trade forward

- | | | |
|-------------------|-------------|--------------|
| 1. United Kingdom | 5. Spain | 9. Italy |
| 2. Netherlands | 6. France | 10. Slovakia |
| 3. Belgium | 7. Austria | |
| 4. Germany | 8. Portugal | |

Chart 45: Overall EU Market Liquidity and Efficiency League Table and Map – Gas

Overall Ranking

- | | | |
|-------------------|------------|--------------|
| 1. United Kingdom | 5. Spain | 9. Portugal |
| 2. Netherlands | 6. France | 10. Slovakia |
| 3. Belgium | 7. Austria | |
| 4. Germany | 8. Italy | |



2.5 Market Liquidity and Efficiency Review by Region

2.5.1 Electricity

The following league tables are based on aggregating national scores for liquidity and efficiency from the online survey.

Chart 46: Regional Market Liquidity and Efficiency League Tables and Map

Number of active traders

- | | |
|-----------------|-----------------------|
| 1. UK/Ireland | 4. Northern |
| 2. South West | 5. Central South West |
| 3. Central West | 6. Central South |

Volume of trading

- | | |
|------------------|-----------------------|
| 1. South West | 4. Central West |
| 2. Central South | 5. Northern |
| 3. UK/Ireland | 6. Central South West |

Number of new entrants

- | | |
|---------------|-----------------------|
| 1. Northern | 4. Central South West |
| 2. South West | 5. Central West |
| 3. UK/Ireland | 6. Central South |

Demand and supply transparency

- | | |
|---------------|-----------------------|
| 1. South West | 4. Central West |
| 2. Northern | 5. Central South West |
| 3. UK/Ireland | 6. Central South |

Influence of dominant market incumbent(s)

- | | |
|------------------|-----------------------|
| 1. Central South | 4. South West |
| 2. Central West | 5. Northern |
| 3. UK/Ireland | 6. Central South West |

Representative spot market price

- | | |
|------------------|-----------------------|
| 1. Northern | 4. Central South West |
| 2. Central South | 5. South West |
| 3. UK/Ireland | 6. Central West |

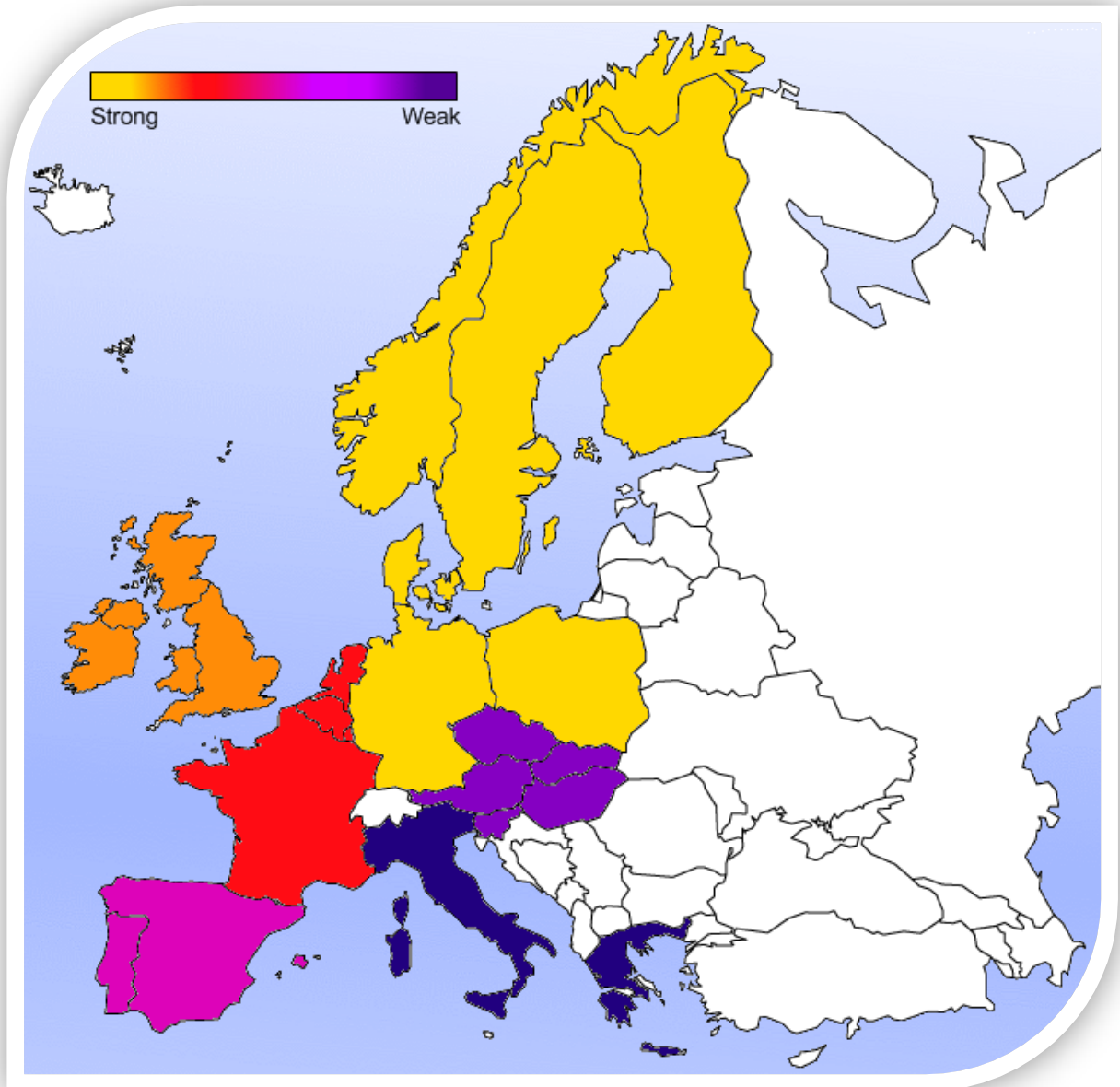
Ability to trade forward

- | | |
|-----------------|-----------------------|
| 1. Central West | 4. Central South West |
| 2. Northern | 5. South West |
| 3. UK/Ireland | 6. Central South |

Chart 47: Regional Market Liquidity and Efficiency League Table and Map – Electricity

Overall Ranking

- | | |
|-----------------|-----------------------|
| 1. Northern | 4. South West |
| 2. UK/Ireland | 5. Central South West |
| 3. Central West | 6. Central South |



Region – UK/Ireland (Focus Group)

(a) Pre-Session Questionnaire Results

(impact on market volumes and liquidity)

Market Economics

	Positive	Neutral	Negative
Rising fossil fuel prices	45%	33%	22%
Falling fossil fuel prices	33%	44%	23%
Rising CO ₂ prices	44%	34%	22%
Falling CO ₂ prices	22%	56%	22%
Volatile fossil fuel and CO ₂ prices	56%	22%	22%
Actual and expected changes in generation investment	44%	45%	11%
Actual and expected changes in the generation fuel mix	33%	56%	11%
Actual and expected investment in cross-border networks	44%	44%	12%

Market Features

	Positive	Neutral	Negative
Increase in the total numbers of active market traders	56%	11%	33%
Impact of greater demand-side trading – e.g. major energy users	56%	33%	11%
Impact of greater financial trading in energy commodities	89%	0%	11%
Expansion in both exchange and OTC facilities	56%	33%	11%
Introduction of new spot, forward and derivative trading contracts	67%	22%	11%

Market Operations

	Positive	Neutral	Negative
More transparency in bilateral contracts	56%	33%	11%
More transparency in OTC contracts	46%	43%	11%
More trading via exchanges	56%	33%	11%
Regulatory monitoring of all transactions	11%	56%	33%
Measures to control “excessive” speculation	0%	33%	67%

(b) Overview of Focus Group Discussion

Within this region, transparency is considered to be amongst the best in Europe. The process of price discovery was considered easy in both exchanges and the OTC market. There was some concern about the lack of a reliable price index, on which futures contracts could be based. The FOA is currently testing a new spot market platform.

When asked what influence CO₂ had on liquidity and end user prices, it was generally felt that the ETS had a positive to neutral effect on liquidity and CO₂ prices had been passed on in higher power prices. Some concerns were voiced surrounding ETS in connection with regulatory uncertainty. The CO₂ price was recognised as a method of costing different generation mixes and their subsequent environmental impact.

The UK was considered to be facing a generation crunch and this issue was considered of the utmost importance. Participants believe investment will not occur until there is more certainty surrounding Phase Three of ETS.

At the EU level, interconnection was the focus of attention. The main concern was the lack of ability to physically move electricity from the UK to say France or Ireland. There was a general feeling that there would be no improvement in cross-border issues for at least two years, and that financial incentives are required to encourage investment in these areas.

Traders felt that there would be more participants within the market if there was not the requirement to take physical delivery of power. It was pointed out that there is a way round this issue but it was quite obvious from those around the table that this option was either unknown or difficult to implement. One of the participants also questioned the need to be BSE registered to trade electricity. This acts as a barrier to entry as additional requirements are placed upon people wanting to trade power.

Across the EU as a whole, it was generally felt that regulators should be independent and that TSO ownership unbundling was the preferred solution. The European Commission should provide clarity with regards to the role of national regulators on both national and international issues. The harmonisation of rules and transparency should be pursued further with the removal of regulated tariffs.

Region – Central South Power (Focus Group)

(a) Pre-Session Questionnaire Results (impact on market volumes and liquidity)

Market Economics

	Positive	Neutral	Negative
Rising fossil fuel prices	20%	60%	20%
Falling fossil fuel prices	40%	60%	0%
Rising CO ₂ prices	20%	80%	0%
Falling CO ₂ prices	10%	90%	0%
Volatile fossil fuel and CO ₂ prices	30%	30%	40%
Actual and expected changes in generation investment	60%	40%	0%
Actual and expected changes in the generation fuel mix	50%	50%	0%
Actual and expected investment in cross-border networks	80%	20%	0%

Market Features

	Positive	Neutral	Negative
Increase in the total numbers of active market traders	70%	10%	20%
Impact of greater demand-side trading – e.g. major energy users	80%	10%	10%
Impact of greater financial trading in energy commodities	70%	0%	30%
Expansion in both exchange and OTC facilities	80%	10%	10%
Introduction of new spot, forward and derivative trading contracts	90%	0%	10%

Market Operations

	Positive	Neutral	Negative
More transparency in bilateral contracts	50%	40%	10%
More transparency in OTC contracts	50%	40%	10%
More trading via exchanges	80%	10%	10%
Regulatory monitoring of all transactions	20%	40%	40%
Measures to control “excessive” speculation	30%	10%	60%

(b) Overview of Focus Group Discussion

Price discovery within the Italian market was considered adequate but only within the spot market and outside of this data is limited. There are four price zones within Italy and a single system price, with price variations between the zones sometimes being significant. The single system price is currently calculated based upon the costs of the single buyer (Acquirente Unico), which are unknown to other market players. The single buyer supplies to households and small businesses as the default electricity supplier, and accounts for 40% of the market. Outside of this default area of the energy market, the single buyer is in competition with the other market players within Italy.

Liquidity in Italy is an issue, it is possible to trade without the requirement of having to accept physical delivery, and it was felt that more market players are trying to enter the market. However three major issues were raised; the system price, the limited number of market players and Italy's dependence on gas fired power generation.

Transparency is an issue in Italy with both the TSO's and balancing market reluctant to publish data. There is a transparent spot market, but there are few players and a regulated system price, which is not transparent. TPA was not considered an issue but the exchange is also owned by the government which prompted some participants to question its legitimacy.

The CO₂ market was not considered important, with much larger issues within their market, participants said that any effect from CO₂ was likely to be seen in off-peak trades due to the fact that electricity prices are so high in peak periods. Currently generators do not pass on the full impact of the CO₂ costs.

Investment in Italy is a major issue with generation reliant on gas. This has consequently reduced liquidity because gas is imported under long term contract agreements. The government has recently announced that it will increase investment in nuclear power.

Another major issue is the lack of transmission capacity between the zones. Italy has a major problem with transmission of electricity between zones. Cross-border transmission capacity was commented upon as being limited. However, it was not clear if this was due to the fact that there was not enough capacity, or because the single buyer owns large chunks of this capacity, not only restricting supply but also driving up prices for competitors.

Regulation then became the focus of discussion, with individuals requesting that the exchange and TSO's be regulated more actively. Once again the need for independent, powerful regulators was debated. There was also agreement that the zones within Italy needed harmonising and that more regular discussions with all stakeholders would be desirable.

It was generally agreed that there was a need to replace the tariff system, regulate dominant incumbent(s), and increase investment in both the grid and generation mix. It was felt that only, if this occurs would Italy have active spot/forward trading.

On an EU level the main issues were the need to strengthen the independence and power of regulators and make it easier to build interconnectors. Common EU-wide transparency standards and an EU regulator would be welcomed especially on cross-border issues.

Region – North Power (Focus Group)
(a) Pre-Session Questionnaire Results
 (impact on market volumes and liquidity)

Market Economics

	Positive	Neutral	Negative
Rising fossil fuel prices	25%	50%	25%
Falling fossil fuel prices	37%	50%	13%
Rising CO ₂ prices	25%	50%	25%
Falling CO ₂ prices	38%	50%	12%
Volatile fossil fuel and CO ₂ prices	38%	49%	13%
Actual and expected changes in generation investment	63%	37%	0%
Actual and expected changes in the generation fuel mix	75%	25%	0%
Actual and expected investment in cross-border networks	100%	0%	0%

Market Features

	Positive	Neutral	Negative
Increase in the total numbers of active market traders	100%	0%	0%
Impact of greater demand-side trading – e.g. major energy users	100%	0%	0%
Impact of greater financial trading in energy commodities	87%	13%	0%
Expansion in both exchange and OTC facilities	75%	25%	0%
Introduction of new spot, forward and derivative trading contracts	62%	38%	0%

Market Operations

	Positive	Neutral	Negative
More transparency in bilateral contracts	75%	25%	0%
More transparency in OTC contracts	75%	25%	0%
More trading via exchanges	88%	12%	0%
Regulatory monitoring of all transactions	25%	75%	0%
Measures to control “excessive” speculation	25%	25%	50%

(b) Overview of Focus Group Discussion

Price discovery was considered adequate with a 50:50 split on the amount of trading via OTC/exchanges. In this region there is a single Nordic system price and trades can occur without the need for physical delivery. Liquidity and transparency across the region was considered good by all participants, with the exception of Poland where the balancing market is subsidised, the exchange has weak powers, and most trades occur bilaterally. It was felt that progress would occur in this area given time. As regards the CO₂ market, the key issues were its unpredictability.

When asked about possible situations that may arise concerning market abuse, there was a consensus that currently there were no instances of market abuse and that the Nordpool mechanism of market monitoring was working well, with the suggestion that other areas in Europe should consider a similar approach. TPA was also thought of as open and competitive. Even long term contracts per se were not considered detrimental to the market.

One of the major differences that sets this region apart from others is the willingness to harmonise licensing, gate closures, balancing rules and trading platforms. It was felt that these measures would enable smaller players to be more competitive in the market. There was serious discussion around the table concerning the formation of a regional system

operator. The process is apparently already underway with the majority of parties showing commitment to this goal.

Cross-border flows need investment and currently the problem is due to a lack of incentives for TSO's to invest. The single price was then raised as causing a possible problem; it was felt that this price may not give sufficient investment signals within specific areas. For this reason, it was felt that regulators had a greater role to play. Physical interconnection was also hampered by contractual congestion and bottlenecks. The solution favoured most was to invest auction revenues back into solving congestion problems. Once again it was felt this may be done better on a regional basis.

The willingness to create a regional market was strong. There was a lot of emphasis on the merging of TSO's but based on co-operation, the harmonisation of rules, transmission product, licences, and regulations. There was discussion on the possible legal standing of any regional regulator. Could a legally powered body be installed between the Commission and a national regulator and would this be required if the EU was to go down the regional market integration route?

Region – Central, South East Power (Focus Group)

(a) Pre-Session Questionnaire Results

(impact on market volumes and liquidity)

Market Economics

	Positive	Neutral	Negative
Rising fossil fuel prices	57%	29%	14%
Falling fossil fuel prices	43%	43%	14%
Rising CO ₂ prices	57%	29%	14%
Falling CO ₂ prices	43%	29%	28%
Volatile fossil fuel and CO ₂ prices	57%	0%	43%
Actual and expected changes in generation investment	57%	43%	0%
Actual and expected changes in the generation fuel mix	57%	43%	0%
Actual and expected investment in cross-border networks	86%	14%	0%

Market Features

	Positive	Neutral	Negative
Increase in the total numbers of active market traders	86%	0%	14%
Impact of greater demand-side trading – e.g. major energy users	100%	0%	0%
Impact of greater financial trading in energy commodities	86%	14%	0%
Expansion in both exchange and OTC facilities	86%	0%	14%
Introduction of new spot, forward and derivative trading contracts	57%	29%	14%

Market Operations

	Positive	Neutral	Negative
More transparency in bilateral contracts	71%	29%	0%
More transparency in OTC contracts	71%	29%	0%
More trading via exchanges	86%	14%	0%
Regulatory monitoring of all transactions	43%	43%	14%
Measures to control “excessive” speculation	43%	43%	14%

(b) Overview of Focus Group Discussion

Members of the group felt that on the whole price discovery was relatively easy and reliable with the exception of Hungary (no exchange at present, relies on bilateral deals, whole industry operates on year long contracts) and Slovenia (exchange liquidity is zero in terms of price discovery). Liquidity in the region was said to be better in the shorter term than that in the long term and currently improving. Once again certain regions were highlighted; Hungary has an (illiquid market, but this should open up in the next year), Slovenia (mostly bilateral and export fees are a problem), Poland (most liquid market in the region), and the Czech Republic (currently not as liquid as Poland).

Transparency in the region was considered generally to be adequate, with transparency in bilateral contracts also being praised. Participants thought that more data monitoring was acceptable but you could not expect companies to publish all their data. The current ETSO Vista platform was considered an example of progress, but it was accepted that there are still some issues with data publication in Eastern Europe where there is either a lack of data or the data available is very volatile, and Germany where there were issues when trying to access data in the large OTC market.

There was concern over the amount of older generation within Eastern European countries and increased investment risks. It was felt that companies are waiting to see what the likely outcome of ETS Phase Three will be before signing up to any binding investment agreements.

More generally it was felt that currently the market has been limited by the nature of players in local zones, and that some countries were more determined than others to hinder the harmonisation process. It was felt that over time exchanges would merge to create bigger regional markets and that this process is better performed by independent exchanges. Issues that arose concerned political involvement within the process, the problem of regulated tariffs in some states and that quite a large segment of the market is tied up in PPA's (Power Purchase Agreements). Further in most cases if PPA's are not used they are still not traded.

There was consensus that there was no manipulative behaviour within the market, but it was accepted that there could be the possibility of dominant incumbents exerting market power. The need to have a locally registered company in order to trade in some regions, and in Slovenia the unwillingness of existing players to trade with new market entrants.

Balancing, TPA, and harmonisation were also discussed and it was felt that these issues went hand in hand. Balancing markets needed EU wide harmonisation with transparency requirements as these are a pre-requisite for efficient effective spot markets. Once these markets are formed, the harmonisation of licensing issues, gate closure etc will enable developments such as market coupling, which in turn will help further harmonisation.

Cross-border issues with regards to physical capacity within this region were not seen as important as others. There was little or no incentive to invest across the region due to export fees being used to lower domestic prices but participants did say that generally interconnection could be considered adequate and suggested TSO's could be incentivised to co-operate more.

Regulation within the region was considered to be important with members stating that generation had to be monitored, indicating that data transparency alone could not do this job. It was felt that TSO's should be controlled by regulators, with ownership unbundling and the expertise put in place to manage the market. On a more European level, too many

national rules were considered the reason for difficulties in harmonisation and that regulation in these areas should be at a regional or EU level.

Participants expanded upon this issue indicating that investment needs to be improved in two areas (a) on cross-border issues, which is essential if market coupling or implicit auctions are going to happen, and (b) generation investment within the region. Currently only a few countries export and as GDP increases rapidly in some economies energy needs will increase. More power will need to be generated or imported.

From an EU perspective it was agreed that the carbon market needed to be clarified post 2012 to remove regulatory uncertainties. It was felt that a more EU wide perspective should be taken on investment issues with the creation of appropriate legal frameworks to support such investment. Harmonisation was also key; it was felt that standardising the transmission product, providing EU wide balancing market framework and guides, and moving some responsibilities to an EU level would create a more efficient market. Most importantly, it was felt that congestion revenues should be collected and distributed to appropriate investment projects to create an improved European grid structure.

Region – South West Power (Focus Group)

(a) Pre-Session Questionnaire Results

(impact on market volumes and liquidity)

Market Economics

	Positive	Neutral	Negative
Rising fossil fuel prices	50%	33%	17%
Falling fossil fuel prices	67%	33%	0%
Rising CO ₂ prices	50%	50%	0%
Falling CO ₂ prices	67%	33%	0%
Volatile fossil fuel and CO ₂ prices	83%	17%	0%
Actual and expected changes in generation investment	33%	50%	17%
Actual and expected changes in the generation fuel mix	50%	33%	17%
Actual and expected investment in cross-border networks	83%	0%	17%

Market Features

	Positive	Neutral	Negative
Increase in the total numbers of active market traders	83%	17%	0%
Impact of greater demand-side trading – e.g. major energy users	50%	33%	17%
Impact of greater financial trading in energy commodities	83%	0%	17%
Expansion in both exchange and OTC facilities	83%	0%	17%
Introduction of new spot, forward and derivative trading contracts	67%	16%	17%

Market Operations

	Positive	Neutral	Negative
More transparency in bilateral contracts	83%	0%	17%
More transparency in OTC contracts	67%	17%	17%
More trading via exchanges	50%	33%	17%
Regulatory monitoring of all transactions	50%	17%	33%
Measures to control “excessive” speculation	50%	17%	33%

(b) Overview of Focus Group Discussion

Price discovery in this region is considered good. In Spain and Portugal the spot markets have merged and are managed in Lisbon, but as yet there is no forward market in Portugal. Price differences between Spain/Portugal occur around 80% of the time and are due to differentials in the generation mix. These differences help to relieve congestion as power is directed to the necessary region.

Liquidity in the region is sufficient but could be improved; OTC contracts are published via brokers which generate enough liquidity to trade. However, the main issue in this region is end-user tariffs. These operate in Spain (70% supply regulated tariff / 30% open market) as they do in Italy, but traders do operate in the market albeit at a reduced level.

On the issue of transparency the following position re generation data was cited: Spain (available), France (slowly becoming available), and Portugal (not available).

The CO₂ market was said in this region to be helping to reflect the full cost of production, but it was found unfair that at the moment utilities are allowed to pass on the full cost of something they get for free. ETS Phase One was found to have been full of regulatory uncertainty/mismanagement.

More generally the market in Spain is still primarily OTC (90% of trade), members of the group stated that Spain and Portugal cannot buy electricity from France and France encourages long term contracts to be offered at a regulated price. Market concentration in Spain has dropped from 80% to 60% but customers are still uncertain of and so do not purchase off the free market, instead opting for the regulated tariff. The tariffs in this region are recognised as being an issue and although participants agreed that they should in theory be abolished. At the moment the focus is on trying to harmonise tariffs across the region.

Participants agreed that currently there were no instances of market abuse and that any cases that have occurred have been dealt with in an appropriate manner.

TPA in Spain and Portugal is not an issue. Harmonisation was seen to be the biggest issue between France and Spain, where regulatory frameworks are completely different and it was felt that TSO unbundling has left the Spanish in a politically weak position when trying to deal with the French incumbent.

Cross-border issues were cited as the most important issue in this region, improvements needed to be made between Spain and Portugal but most importantly between France and Spain. There is a lack of physical investment and a few participants also commented upon cross-border tariffs being too high and preventing trade.

Tariffs were an issue with individuals pointing to the fact the regulated tariff has stayed the same since 1996, despite the fact that generation costs have increased. This kind of regulation would not support a free operating market. There is need for a straight forward regulatory framework; in Spain regulation is constantly changing creating regulatory uncertainty within the market. However, this was not seen as the fault of the regulator in Spain, because the tariff set by the regulator can be changed by the government at any time. The group stressed the importance of having an independent powerful regulator for the efficient operation of energy wholesale markets. Investment was also felt to have failed due to a lack of correct pricing signals and political support.

Finally, from an EU perspective it was felt that the EU should step in and help Spain to explore market coupling with France as this would be considered an important step forward. An EU regulator was deemed to be useful for solving cross-border and investment issues,

but this EU role would have to be clearly defined. It was felt that it is important to enforce the existing legislation and to follow the ERGEG regional integration agenda. Also, interestingly participants asked for an EU wide debate on the most appropriate generation mix and the possible issuing of EU wide guidelines on this subject to clarify investment uncertainties.

Region – Central West Power (Focus Group)

(a) Pre-Session Questionnaire Results

(impact on market volumes and liquidity)

Market Economics

	Positive	Neutral	Negative
Rising fossil fuel prices	67%	22%	11%
Falling fossil fuel prices	33%	56%	11%
Rising CO ₂ prices	33%	44%	23%
Falling CO ₂ prices	33%	56%	11%
Volatile fossil fuel and CO ₂ prices	67%	11%	22%
Actual and expected changes in generation investment	56%	33%	11%
Actual and expected changes in the generation fuel mix	33%	56%	11%
Actual and expected investment in cross-border networks	78%	22%	0%

Market Features

	Positive	Neutral	Negative
Increase in the total numbers of active market traders	67%	22%	11%
Impact of greater demand-side trading – e.g. major energy users	89%	11%	0%
Impact of greater financial trading in energy commodities	89%	0%	11%
Expansion in both exchange and OTC facilities	33%	67%	0%
Introduction of new spot, forward and derivative trading contracts	89%	11%	0%

Market Operations

	Positive	Neutral	Negative
More transparency in bilateral contracts	67%	22%	11%
More transparency in OTC contracts	78%	11%	11%
More trading via exchanges	67%	33%	0%
Regulatory monitoring of all transactions	56%	11%	33%
Measures to control “excessive” speculation	44%	22%	33%

(b) Overview of Focus Group Discussion

Within this region price discovery was considered to be good, with prices available on existing platforms and most products sold through brokers. The exchanges gave strong price signals, but the only way to discover this price was to enter the market (i.e. enter a bid). Again the issue was raised that traders can see what the price is but have little or no ability to ascertain what is driving that price.

There were some concerns over the possibility of standardised products which do not differentiate between users needs. Currently, bilateral deals solve this problem and so it was deemed necessary that both types of contract are needed to truly have liquidity.

Transparency was then discussed in more detail; it was felt that transparency within the region is good but could be better in terms of generation information. An example used was

EEX where the data is aggregated and so not very useful. Transparency, it was felt, linked into other vital elements such as cross-border, intraday and spot market issues, and that EU transparency requirements should be in place. It was also felt that if an incumbent controls the market, then it would be prudent to have them release full transparency information on the grounds this would be better than no information. Transparency was felt to also reduce the risks of abuse, which currently was felt not to be a problem in the region.

However, participants did feel that there was potential for market manipulation and there was support for an EU wide/regional approach to be taken towards the subject of market abuse. Rather than the full disclosure of transactions, it would be better if Regulators collected data and subsequently had the powers to implement change if abuse is proven to have occurred. Interestingly, in this region, when a plant goes offline they cannot trade until it has been announced to the market.

In the UK, CO₂ prices can be seen feeding through into power prices in a transparent way; however this does not occur across Europe, maybe with the exception of Spain.

Looking at the market generally, users within the group insisted that you are more likely to get a better price trading bilaterally, stating that currently fundamental factors in the wholesale markets are unclear to end users and so there is a lack of trust. Users stated that they do not have the expertise to trade on an exchange. Members of the group were also wary of mergers creating a European wide oligopoly situation, with the ultimate result of reducing liquidity. More positively, new entrants could be seen as making ground within the market in areas such as environmentally friendly energy.

Harmonisation and cross-border trading would be more efficient if transparency was in place, but within the region members agreed that the TSO's were talking to each other but that rules needed to be made consistent. Users currently felt that it was too complicated to trade across borders and so would not contemplate such a transaction. Finally, it was added that more could be done to ensure full TPA across the region.

Regulation was considered important within the focus group due to its role in ensuring efficient utilisation of existing capacity, quality control of data disclosure, investment incentives, and its role in preventing market abuse. Regulated tariff removal, and regulatory gaps between borders were also issues that required more attention.

On investment, the focus was on the need to incentivise companies to invest in generation and cross-border transmission with the participants questioning where the base load back-up was for any newly planned wind developments.

As regards the EU as a whole, it was believed that the EU needed to start acting on a more regional basis to secure investment harmonisation and transparency. Regulatory frameworks are needed across the EU for generation investment, transparency requirements, and regulatory regimes. While OU was considered to be important, participants felt that it would be more beneficial to have independent powerful regulators. It was felt that in the interim period quick wins should be pursued on harmonisation and transparency to move things forward, and whilst an EU or regional regulator was not totally favoured, some kind of regional framework was considered important.

2.5.2 Gas

The Following league tables are based on aggregating national scores for liquidity and efficiency from the online survey.

Number of active traders

- | | | |
|----------|---------------|----------------------|
| 1. South | 2. North West | 3. South, South East |
|----------|---------------|----------------------|

Volume of trading

- | | | |
|---------------|----------|----------------------|
| 1. North West | 2. South | 3. South, South East |
|---------------|----------|----------------------|

Number of new entrants

- | | | |
|----------|----------------------|---------------|
| 1. South | 2. South, South East | 3. North West |
|----------|----------------------|---------------|

Demand and supply transparency

- | | | |
|---------------|----------|----------------------|
| 1. North West | 2. South | 3. South, South East |
|---------------|----------|----------------------|

Influence of dominant market incumbent(s)

- | | | |
|----------|----------------------|---------------|
| 1. South | 2. South, South East | 3. North West |
|----------|----------------------|---------------|

Representative spot market price

- | | | |
|---------------|----------|----------------------|
| 1. North West | 2. South | 3. South, South East |
|---------------|----------|----------------------|

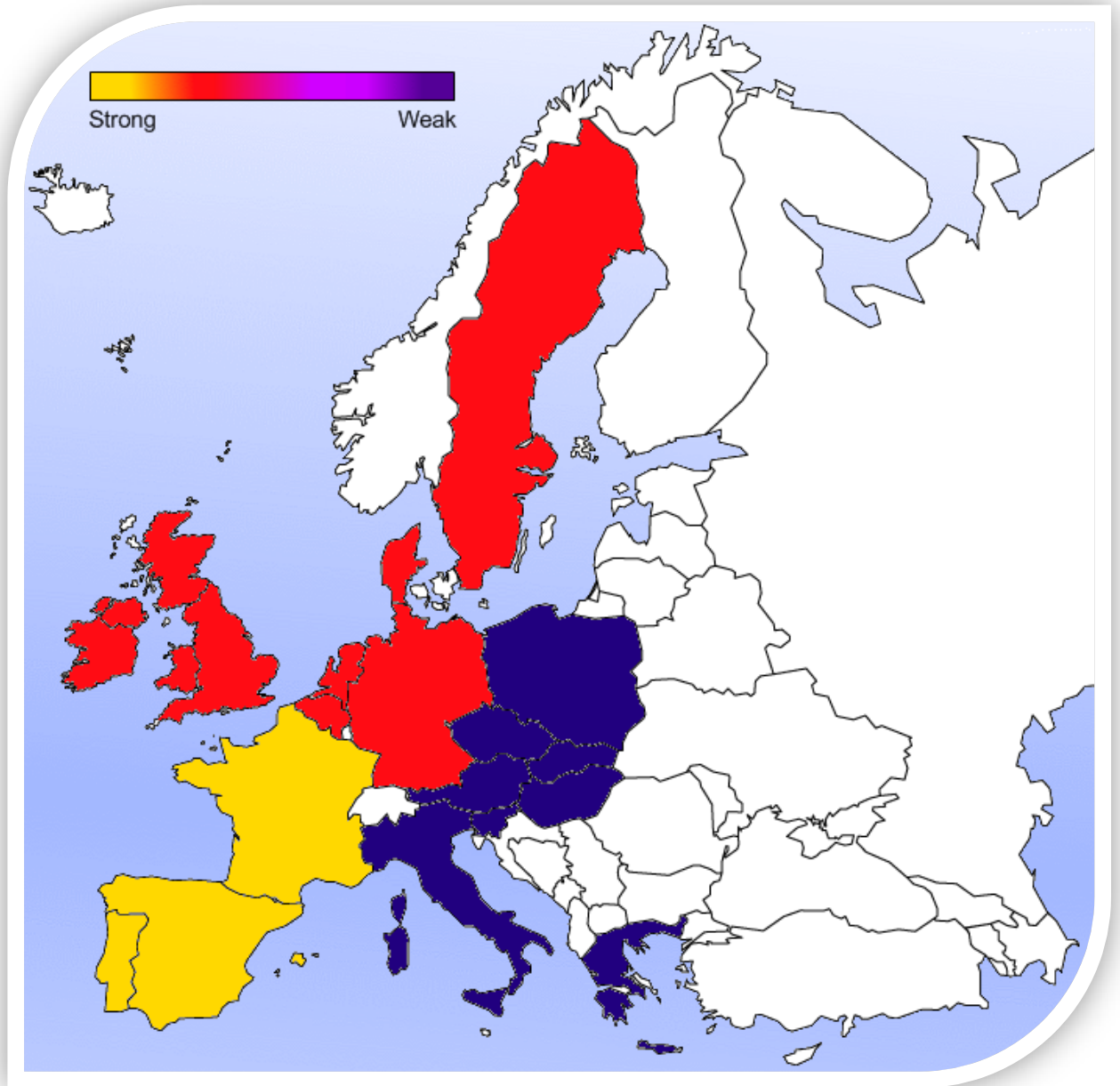
Ability to trade forward

- | | | |
|---------------|----------|----------------------|
| 1. North West | 2. South | 3. South, South East |
|---------------|----------|----------------------|

Chart 48: Regional Market Liquidity and Efficiency League Tables and Map – Gas

Overall Ranking

1. South
2. North West
3. South, South East



Region – South, South East Gas (Focus Group)

(a) Pre-session Questionnaire Results

(impact on market volumes and liquidity)

Market Economics

	Positive	Neutral	Negative
Rising oil prices	29%	42%	29%
Falling oil prices	14%	57%	29%
Rising CO ₂ prices	14%	57%	29%
Falling CO ₂ prices	14%	57%	29%
Volatile oil, electricity and CO ₂ prices	71%	15%	14%
Actual and expected changes in level and sources of gas supply	86%	14%	0%
Actual and expected changes in the power generation fuel mix	57%	43%	0%
Actual and expected investment in expanded storage, pipelines and transit-capacity	86%	0%	14%

Market Features

	Positive	Neutral	Negative
Increase in the total numbers of active market traders	71%	16%	13%
Impact of greater demand-side trading – e.g. major energy users	57%	29%	14%
Impact of greater financial trading in energy commodities	43%	57%	0%
Expansion in both exchange and OTC facilities	71%	15%	14%
Introduction of new spot, forward and derivative trading contracts	73%	15%	12%

Market Operations

More transparency in bilateral contracts	29%	30%	43%
More transparency in OTC contracts	57%	14%	29%
More trading via exchanges	57%	29%	14%
Regulatory monitoring of all transactions	14%	29%	57%
Measures to control “excessive” speculation	14%	29%	57%

(b) Overview of Focus Group Discussion

Within this region participants believed that transparency was relatively poor, with market players unable to find prices relating to long term contracts and storage. Although gas exchanges were considered more transparent, it was felt they were too expensive and also that prices should reflect the cost of transportation. The secondary market was not considered transparent and participants indicated that even if a perfect level of transparency was achieved within Europe, (which would be beneficial) the EU’s dependence on a monopoly supplier would still remain.

When looking at the market more generally, the development of Baumgarten into a gas exchange was seen as a step in the right direction; with individuals pointing out there is currently no gas exchange offering the sort of services you see in electricity markets. Interest then turned to the role of Gazprom which had acquired 50% of the gas hub, but opinion was that this was a possible positive step as it is also in Gazprom’s advantage to improve liquidity across this hub, but it was noted by several participants that this potentially gives Gazprom a lot of power.

Technical matters within the gas market were also discussed, and it was accepted that LNG offered an important alternative source of supply. Transmission accounts for approximately

10-15% of the total cost of gas, and participants emphasised that liquidity in the gas market comes primarily from infrastructure; storage, terminals and pipelines. Access to the market was also considered a problem, due to the fact that Gazprom was able to sell straight from the source to the consumer and so no other companies could gain a foothold within the market. The secondary market was considered inaccessible and the role of explicit auctions was questioned because they create more borders and so there are more areas where you had to try and negotiate access.

Long term contracts were considered to hinder markets because the current contracts going through hubs on average last for 25 years. However, long term contracts were noted as slowly becoming more flexible as they compete with wholesale markets in terms of price and are considered to play an important role as part of a competitive market. It was felt that there are currently no specific examples of wholesale market abuse.

Regulation was generally felt to be too national in focus with regulators not enforcing current legislation and being unable to instigate planning procedures and investments beyond their own national borders. For this reason, it was generally believed there should be a super-regulatory authority which was designed specifically to deal with cross-border and investment issues, and that this authority needed more detailing within the Third Package.

Investment issues once again raised concern about the role of Gazprom, which seemed to be aligning itself so that when current investments in gas powered electricity generation come on line, they are the only feasible supplier. For this reason, it was felt that LNG should be pursued as an alternative to Russian gas and that investment incentives needed to be redesigned in order to encourage competition.

Overall it was felt that all the above suggestions should complement each other in that investment, harmonisation and regulation cannot be pursued in isolation but need to be part of a package of measures to enable the development of more liquid transparent wholesale gas markets. On a European basis, it was felt that the co-ordination of platforms was essential, and planning procedures should be extended beyond the remit of national borders. It was felt that the Third Package needed to support a regulatory authority with an EU remit and its role vis a vis national regulators needed clarification.

Region – South Gas (Focus Group)

(a) Pre-Session Questionnaire Results (impact on market volumes and liquidity)

Market Economics

	Positive	Neutral	Negative
Rising oil prices	46%	31%	23%
Falling oil prices	69%	31%	0%
Rising CO ₂ prices	31%	54%	15%
Falling CO ₂ prices	15%	54%	31%
Volatile oil, electricity and CO ₂ prices	69%	31%	0%
Actual and expected changes in level and sources of gas supply	46%	46%	8%
Actual and expected changes in the power generation fuel mix	85%	7%	8%
Actual and expected investment in expanded storage, pipelines and transit-capacity	92%	0%	8%

Market Features

	Positive	Neutral	Negative
Increase in the total numbers of active market traders	85%	15%	0%
Impact of greater demand-side trading – e.g. major energy users	85%	9%	6%
Impact of greater financial trading in energy commodities	69%	31%	0%
Expansion in both exchange and OTC facilities	69%	14%	17%
Introduction of new spot, forward and derivative trading contracts	65%	18%	17%

Market Operations

	Positive	Neutral	Negative
More transparency in bilateral contracts	46%	31%	23%
More transparency in OTC contracts	38%	31%	31%
More trading via exchanges	62%	31%	7%
Regulatory monitoring of all transactions	23%	46%	31%
Measures to control “excessive” speculation	46%	38%	16%

(b) Overview of Focus Group Discussion

In the Spanish market no price discovery is an issue. This is due to the fact that the majority of trades are performed bilaterally and are for balancing purposes. Where OTC prices are reported they were considered reliable because market players were using the prices, but one had to question if this was just an excuse for not having more detailed price indicators. End-user prices in Spain do not operate under a regulated tariff.

Liquidity within the region varies, Spain is considered to be liquid but this is based upon physical trades. France is considered to be liquid in the North but not in the South and Portugal is considered to be moving towards the same position as the Spanish market. Traders stated they do not have a trading platform because it has <1% of volumes traded upon it. (>90% of the market operates through long term contracts)

Unlike the rest of Europe, Spain is well situated with regards to LNG terminals and capacity, and these can be considered liquid but once again there are some restrictions such as the limited number of players at each LNG point. Several individuals mentioned that whilst the bigger players are happy and trade amongst themselves to balance and operate out of these terminals, smaller players have problems accessing the market at any LNG terminal, due to the fact they do not own storage. Transparency in France and Spain was considered to be moving in the right direction.

It was felt that to compete on a global market you need long term contracts in LNG to secure supply. TPA to these terminals for shippers is open, anyone can import into the terminals. A suggestion from one of the participants was that Spain could create a virtual storage situation at each of the LNG points, by taking LNG when it arrives and trading it, this could increase liquidity. Spain also has more reserve capacity than transmission capacity, so only utilising the southern LNG terminals and transporting gas to the north would be impossible.

When looking at storage for gas across the region, France does not have an issue whereas Spain and Portugal do. Once again the incentives to invest were questioned and it was believed that accurate price signals in Spain might help to alleviate this issue. Harmonisation discussion around the table identified three quick wins that could make significant difference to the market and these were: harmonise gate closure times, harmonisation of the measurement of gas and improve co-operation between TSO's.

The Spanish indicated that they would like to see the formation of ten year network investment plans to achieve the required outcomes but unfortunately the French regulator was not free enough of political control for this to occur. This raised the issue of

interconnection investment and the possibility of more interconnection providing price signals and improving liquidity. However, as one participant pointed out, even if you built an interconnector into southern France from northern Spain the whole of Spain would not benefit because there is currently no national infrastructure to carry this benefit through Spain.

On an EU level, it was felt important that political influence upon regulators was removed and that this is accompanied by an increase in their powers of enforcement. It was felt that consistent transparency guidelines should be issued across the EU.

Region – North West Gas (Focus Group)

(a) Pre-Session Questionnaire Results (impact on market volumes and liquidity)

Market Economics

	Positive	Neutral	Negative
Rising oil prices	25%	50%	25%
Falling oil prices	63%	37%	0%
Rising CO ₂ prices	38%	49%	13%
Falling CO ₂ prices	24%	62%	14%
Volatile oil, electricity and CO ₂ prices	62%	26%	12%
Actual and expected changes in level and sources of gas supply	75%	12%	13%
Actual and expected changes in the power generation fuel mix	63%	24%	13%
Actual and expected investment in expanded storage, pipelines and transit-capacity	100%	0%	0%

Market Features

	Positive	Neutral	Negative
Increase in the total numbers of active market traders	87%	13%	0%
Impact of greater demand-side trading – e.g. major energy users	88%	14%	0%
Impact of greater financial trading in energy commodities	88%	13%	0%
Expansion in both exchange and OTC facilities	63%	37%	0%
Introduction of new spot, forward and derivative trading contracts	62%	38%	0%

Market Operations

	Positive	Neutral	Negative
More transparency in bilateral contracts	38%	37%	25%
More transparency in OTC contracts	38%	37%	25%
More trading via exchanges	75%	25%	0%
Regulatory monitoring of all transactions	0%	37%	63%
Measures to control “excessive” speculation	12%	38%	50%

(b) Overview of Focus Group Discussion

Within this region participants said price discovery was simple, with both prices and volumes being available on screens. Regarding areas of improvement, it was felt that a lot of the prices displayed are still linked to oil prices, which although providing some reliability and stability, may distort supply and demand signals. The development of the secondary market was also mentioned as an important improvement for creating efficiency within the gas market because it allows access for new players and provides flexibility.

Liquidity within the region was not so highly regarded with individuals explaining that in France and Germany you do not have structural liquidity, but only short term liquidity.

Transparency within the region was considered good but members of the group did have some concerns because, although the data is easy to find, working out what is going on behind the market is still difficult, especially if there are a few dominant players. Monitoring the market was not considered to be a problem as long as this did not entail full market disclosure. Interestingly, it was felt that the markets can deal with rule differences as long as there is sufficient transparency. In terms of harmonisation, market players would rather have the European Commission put the true cost of harmonisation out in the open so the market would be aware of its significance.

More generally France and Germany, compared to NBP or Zeebrugge, were considered pretty embryonic. On a relative basis the concentration of TTF is very good but it accounts for only 1% of traded gas volumes and in the Netherlands there is only one market player, whereas in Belgium three times the national consumption is traded on Zeebrugge. The participants felt that it was time that Europe recognised that the gas industry was a global industry and not just a European one. Regarding the way forward, participants regarded the ERGEG roadmap as a good basis for regional integration.

Access to the market was considered of utmost importance. Storage was also mentioned in a similar light with some markets in the region lacking access to existing storage, which in turn inhibits balancing regimes as you do not have the tools to balance. Once again it was felt that although long term contracts can cause problems they do have a legitimate place within the market. In France, there are a number of CCGT plants being built and the question was should these be supplied using flexible bilateral contracts or will they have to rely on the wholesale market.

Harmonisation was a major topic of discussion with the conclusion that before you can consider liquidity, you need to harmonise balancing regimes and credit risk. Once this is done there is a need for consistent comparable figures, and the gas quality issues need to be solved (e.g. ability to import richer gas into the UK). It was agreed that political issues do hinder this process, sometimes unnecessarily, but there was a word of caution in that harmonisation could be a recipe for standardised, but inefficient markets.

On regulation, participants agreed that in theory regulators should be independent of political involvement, with sufficient legal powers. They require a clearly defined framework in which to operate, and equal mandates need to be drawn up (which should be drafted at the highest possible level). There was widespread belief that problems are occurring because current mandates stop at the national borders and so solving cross-border issues is difficult.

It was felt that regulators had a role to play with regards to TSO co-operation and that there should be a duty towards integration. Contractual congestion could be solved using existing legislation, and further regulation was not required. Regulators also need to endorse network codes, and there should be a move towards harmonisation of these codes. Investment once again was thought to be lacking with regards to interconnection, and that incentives would

have to be provided. The feeling generally was that investment could not be left entirely to the market.

From an EU perspective, it was felt the removal of the three-minus shipper rule would be beneficial and that rule differences can exist as long as there is transparency. The creation of consistent mandates for regulators and their independence from government would assist in the creation of more efficient gas wholesale markets but within this there needed to be clear and detailed guidance on harmonisation.

2.6 Factors Impacting on Future Market Liquidity

In both the focus groups and in the online survey, MA explored ideas and views on various policy-related measures that could impact positively on increasing market liquidity.

2.6.1 Electricity

In electricity, three measures rated most highly in terms of their positive impact on liquidity were:

- incentives to encourage more investment in interconnectors;
- the removal of regulated end-user prices;
- harmonisation of rules relating to TPA, balancing and TSO network investment.

These were closely followed by – clarity on Phase Three of the EU ETS scheme, forcing all generation output to be traded wholesale and cross-border market coupling via implicit auctions.

Greater market participation by major energy users was seen as something that would encourage greater market liquidity but because of lack of market knowledge and expertise many users are reluctant to trade directly preferring the stability of long term contracts.

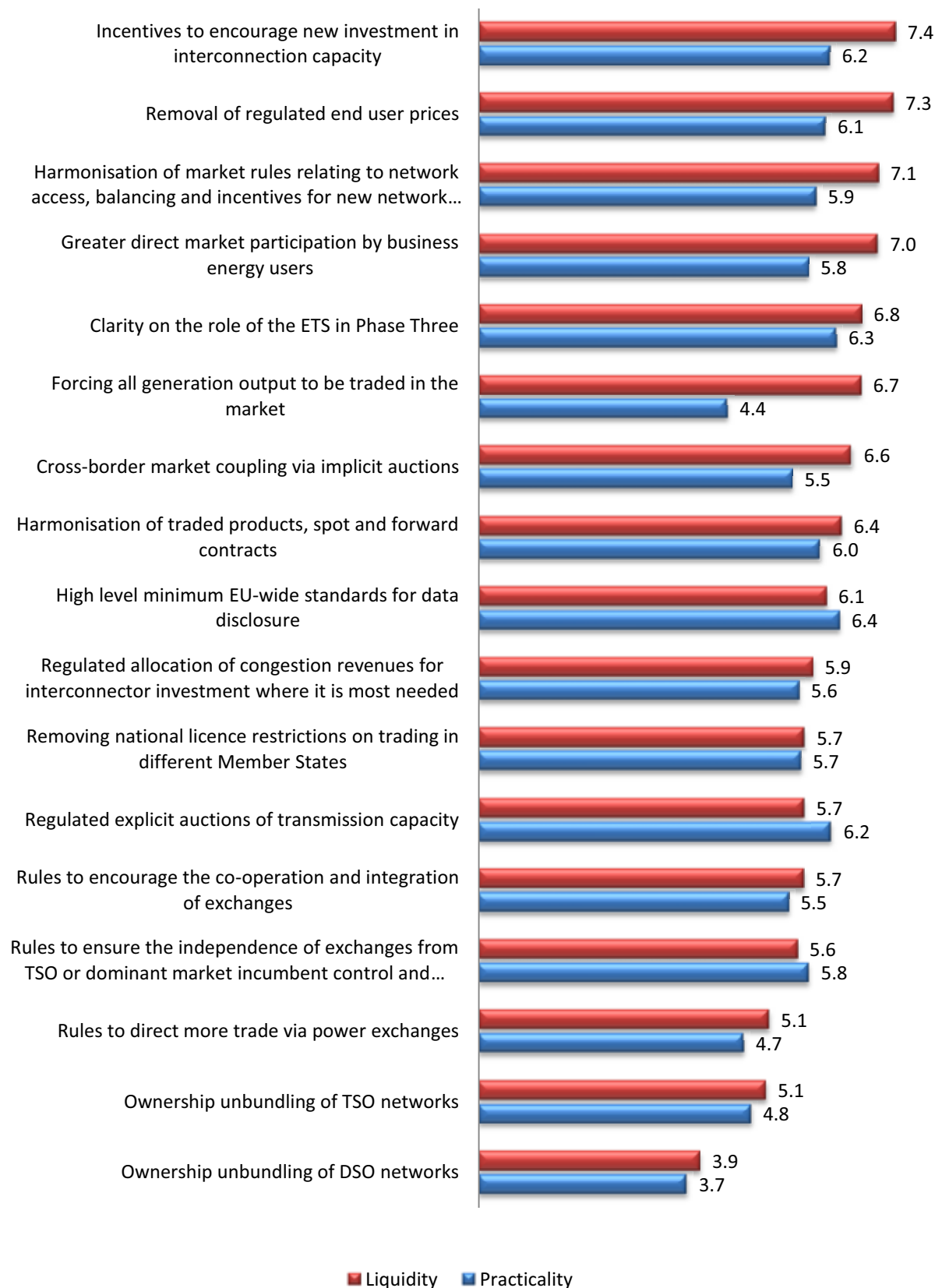
All traders agreed that in theory wholesale markets would become more liquid and more efficient if trades taking place within dominant generation and supply companies were openly traded on the market.

But in practical terms forcing this issue is not seen as a realistic option although certain regulators, traders and users would like to see more published data on the volume and pricing of these “internal” trades.

A full list of options ratings by all respondents and their perceived practicality are set in the chart below.

Chart 49: Factors Impacting upon Future Liquidity – Electricity

(total responses 3264)



2.6.2 Gas

In gas, the three measures rated most highly in terms of their positive impact on liquidity were:

- incentives to invest in national and cross-border transit capacity
- harmonisation of market rules relating to TPA, balancing etc
- high level minimum standards for infrastructure data disclosure

These were closely followed by – forcing more entry point trading of long term gas contracts, UIOLI conditions on pipelines and interconnectors, and moves to encourage larger trading hubs.

The latter, along with forcing more flexibility in long term gas contracts and de-coupling the link between oil and gas prices, were not seen as being practical options given the dependency of the EU on a small number of producers, the lack of downstream supply competition and the global nature of the gas market.

A full list of options ratings by all respondents and their perceived practicality are set out in the chart below.

Chart 50: Factors Impacting upon Future Liquidity – Gas

(total responses 2552)



2.7 Market Transparency – Supply and Demand Data

There is almost unanimous support for the disclosure by generators/suppliers of real time information on supply and demand data in both electricity and gas markets. This is seen as an urgent and essential pre-requisite for improving both the liquidity and efficiency.

There were some concerns about the adequacy, accessibility and timing of the delivery of online transparency platforms by ETSO and GTE. Almost all respondents said there should be regulatory oversight at the national level to ensure that TSOs and suppliers/generators provide the requisite data to an agreed schedule. In addition, some 74% of all respondents to the online survey agree that the proposed new ACER should set EU wide rules and standards for data disclosure – thus recognising the need for common standards and the fact that in many cases national regulators do not have the power to act alone on this issue.

A summary of all responses relating to the implementation of improved transparency and the scope and timing of data disclosure are set out below.

Chart 51: Views on Market Transparency - Supply and Demand Data – Electricity and Gas

(total responses 769)

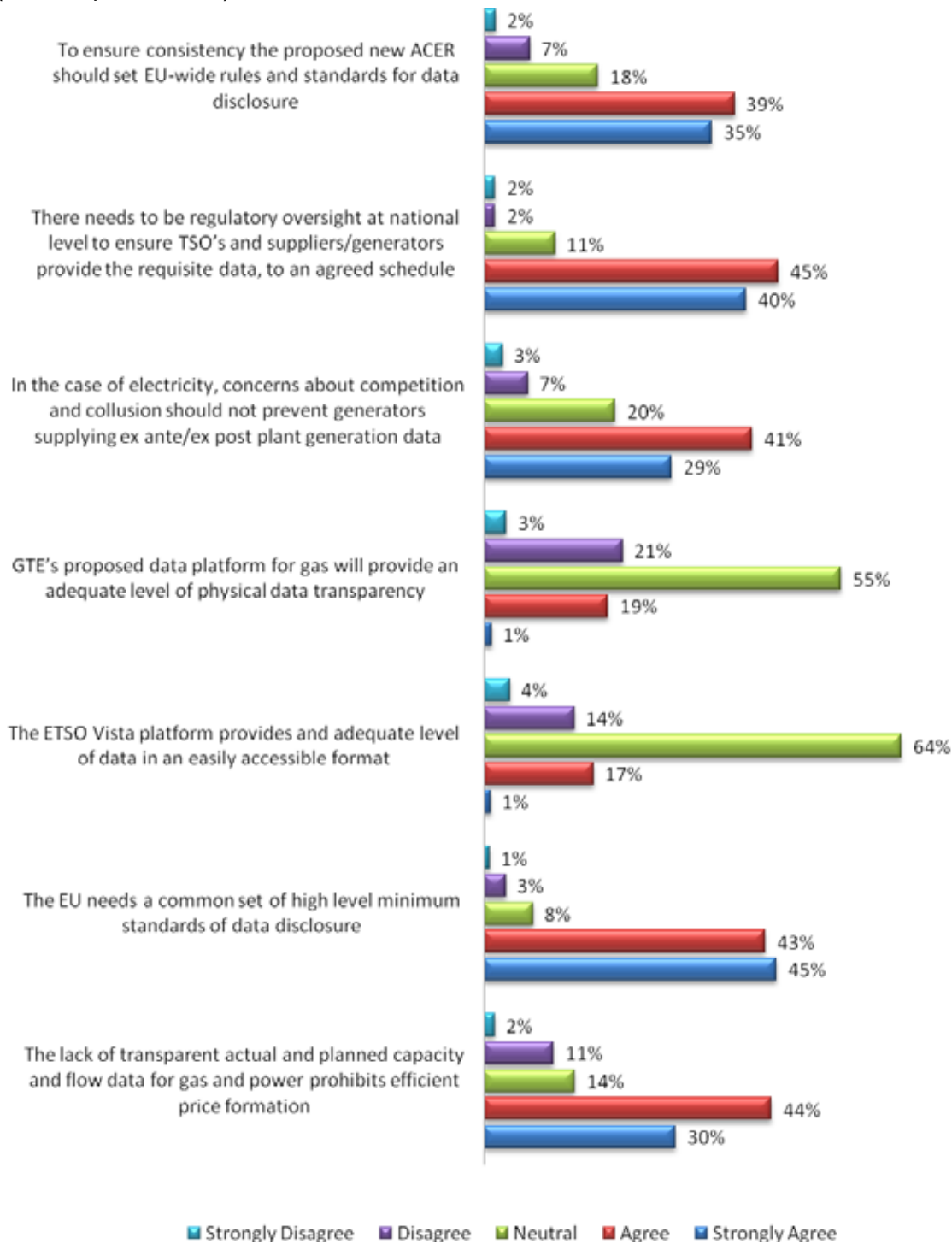
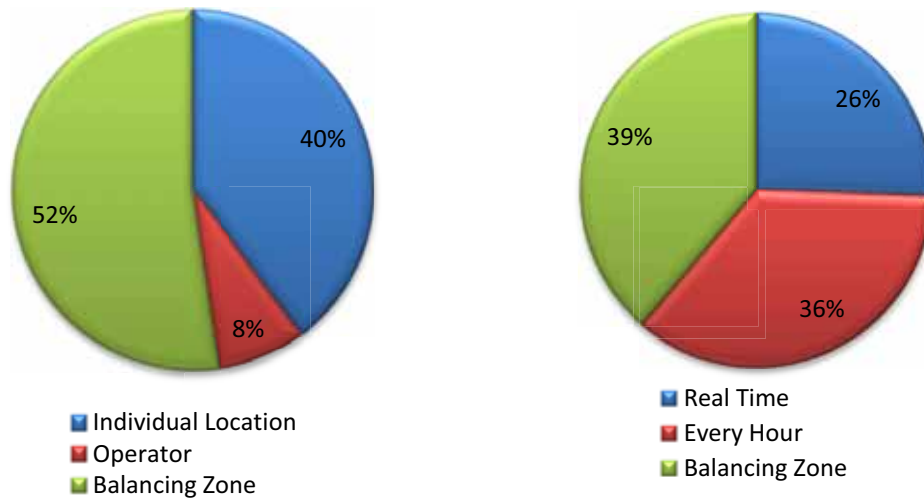


Chart 52: Scope and Timing of Data Disclosure – Electricity and Gas

(total responses 186)

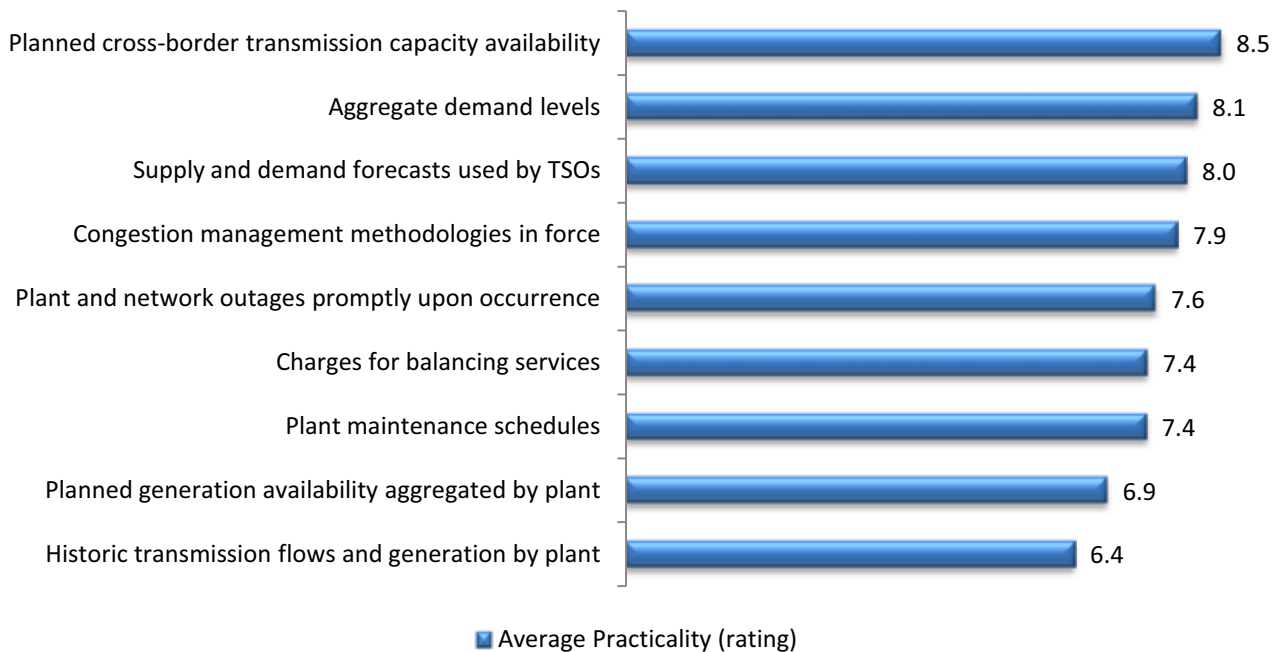
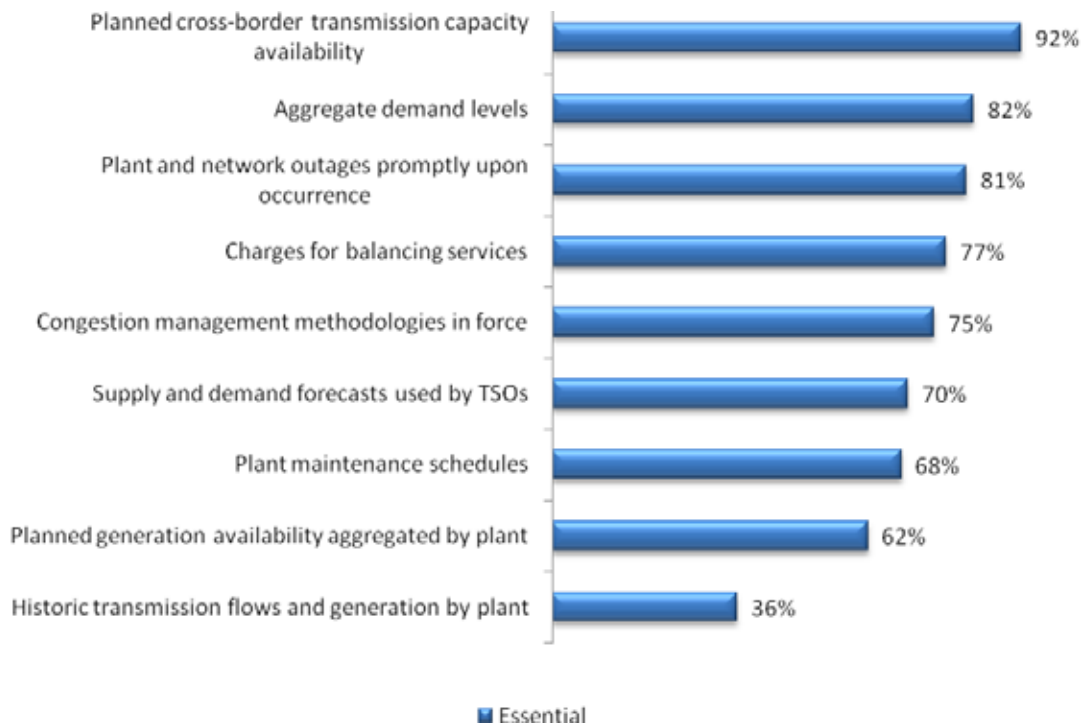


2.7.1 Electricity

In terms of types of data, planned cross-border transmission capacity, aggregate demand levels and plant and network outages are seen as the most essential items but all items rate highly with the exception of historic generation and flow data. See **Chart 53** below for essential and practicality ratings.

Chart 53: Essential Rating for Supply/Demand Data Disclosure and Practicality Rating of Type of Data Disclosure – Electricity

(total responses 1740)



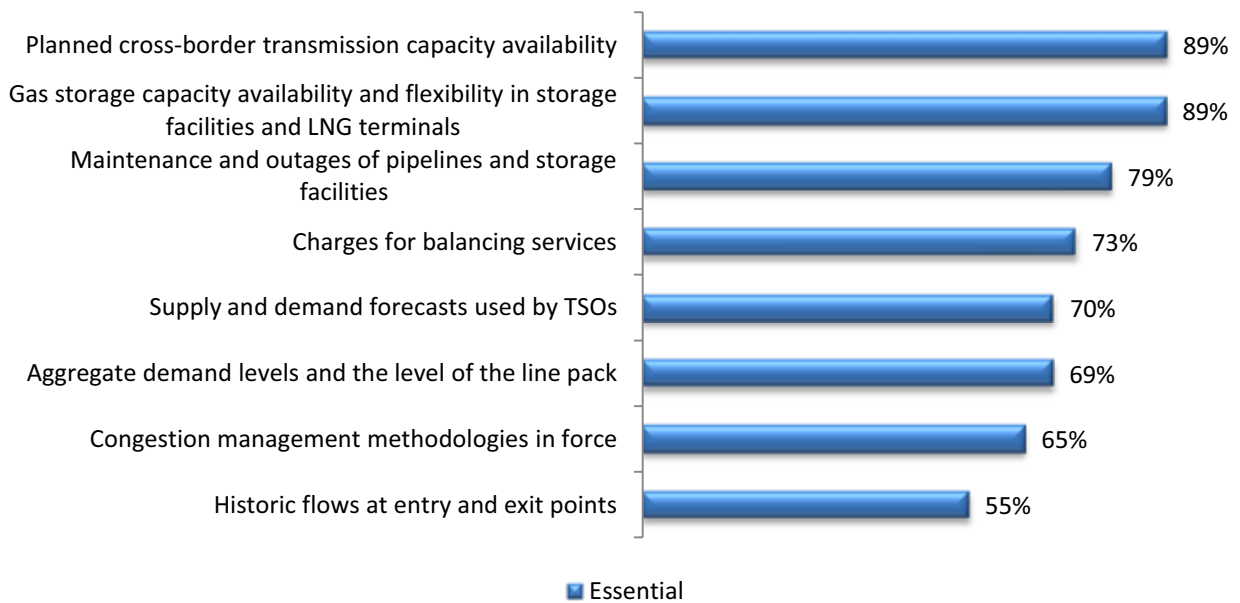
2.7.2 Gas

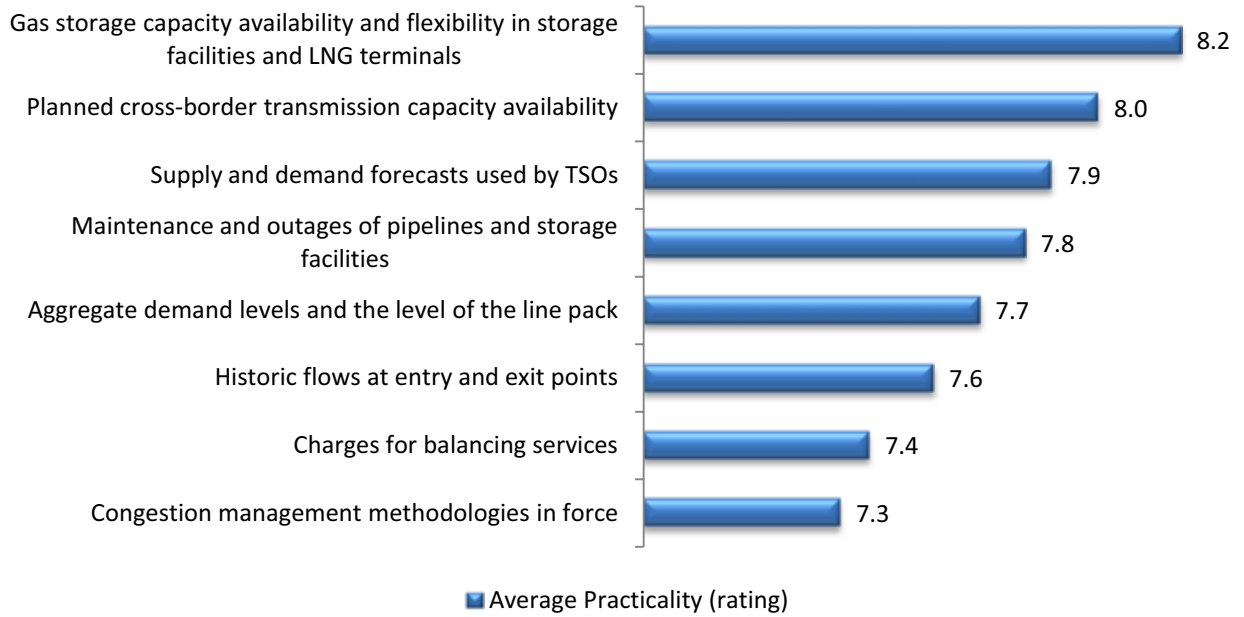
In the case of gas – cross-border transmission capacity data, aggregate demand levels, supply and demand forecasts used by TSOs and congestion management methods are seen as the most essential items.

See chart below for essential data and practicality ratings.

Chart 54: Essential Rating for Supply/Demand Data Disclosure and Practicality Rating of Disclosure – Gas

(total responses 1373)





2.8 Market Transparency – Transactions Recording and Monitoring

2.8.1 Electricity and Gas

With energy prices rising sharply there has been growing concern in political and regulatory circles about the non-regulated nature of wholesale energy markets - particularly since most trading is done in opaque OTC markets.

The key questions are whether there is a case for greater controls to monitor transactions volumes and prices, and if so, how should this be done and by whom and would it help identify and/or prevent market abuse or excessive speculation.

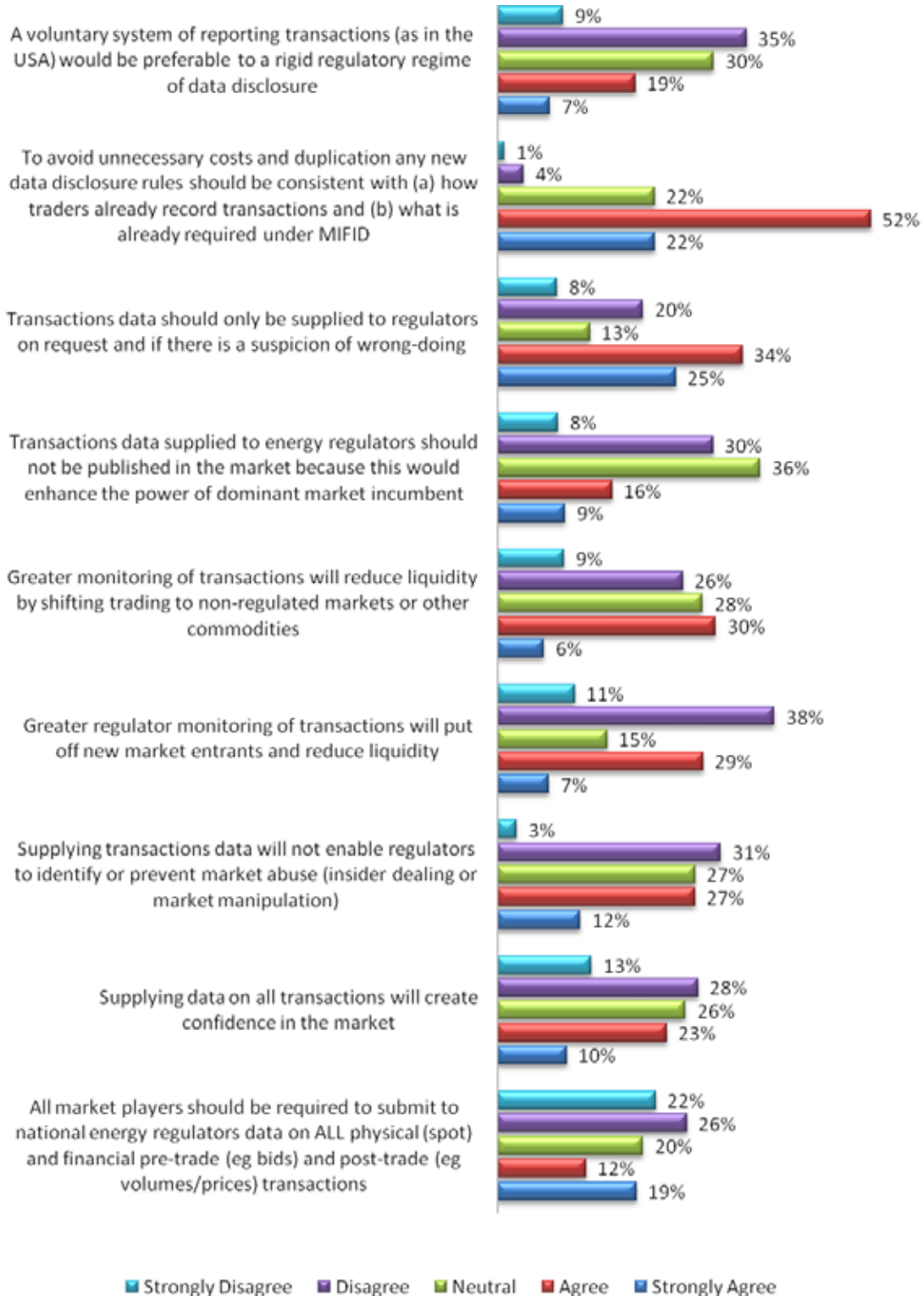
In December 2008, the Commission mandated ERGEG and CESR to report on these issues. MA has liaised closely with Johannes Kindler of BNetzA, who is chairing this investigation. In a response to a call for papers ERGEG/CESR had received only 8 submissions by the 18 March 2008 deadline.

Given the importance of this issue to the EC study, MA took the initiative with ERGEG's agreement to include in our online survey a series of questions/scenarios relating to transactions recording and monitoring. This has meant that we were able to canvass a much wider response from different market stakeholders.

Our online survey of the market has revealed (a) there is a lack of awareness and knowledge on this issue, particularly amongst energy regulators (many of whom do not have a remit to monitor wholesale markets) (b) views vary significantly on the benefits of transactions data disclosure, and (c) there is a fear that excessive regulatory compliance in this area would be costly to expedite and might undermine what is still an embryonic EU energy wholesale market without increasing market confidence or reducing the likelihood of market abuse.

Chart 55: Market Transparency – Transactions Recording and Monitoring – Electricity and Gas

(total responses 999)



2.9 Market Reform and Regulation

2.9.1 General views on market reform

Throughout the study, the Commission's proposed Third Energy Package and the likely outcome of the debate in Parliament have been key factors in our discussions with wholesale market participants and regulators.

Our study has revealed strong support for (a) strengthening the independence and power of national regulators while at the same time, (b) providing a legal basis to underpin the regional market integration programme, and (c) strengthening regulatory oversight at the EU level (via the proposed ACER) to ensure consistency and delivery of common market rules.

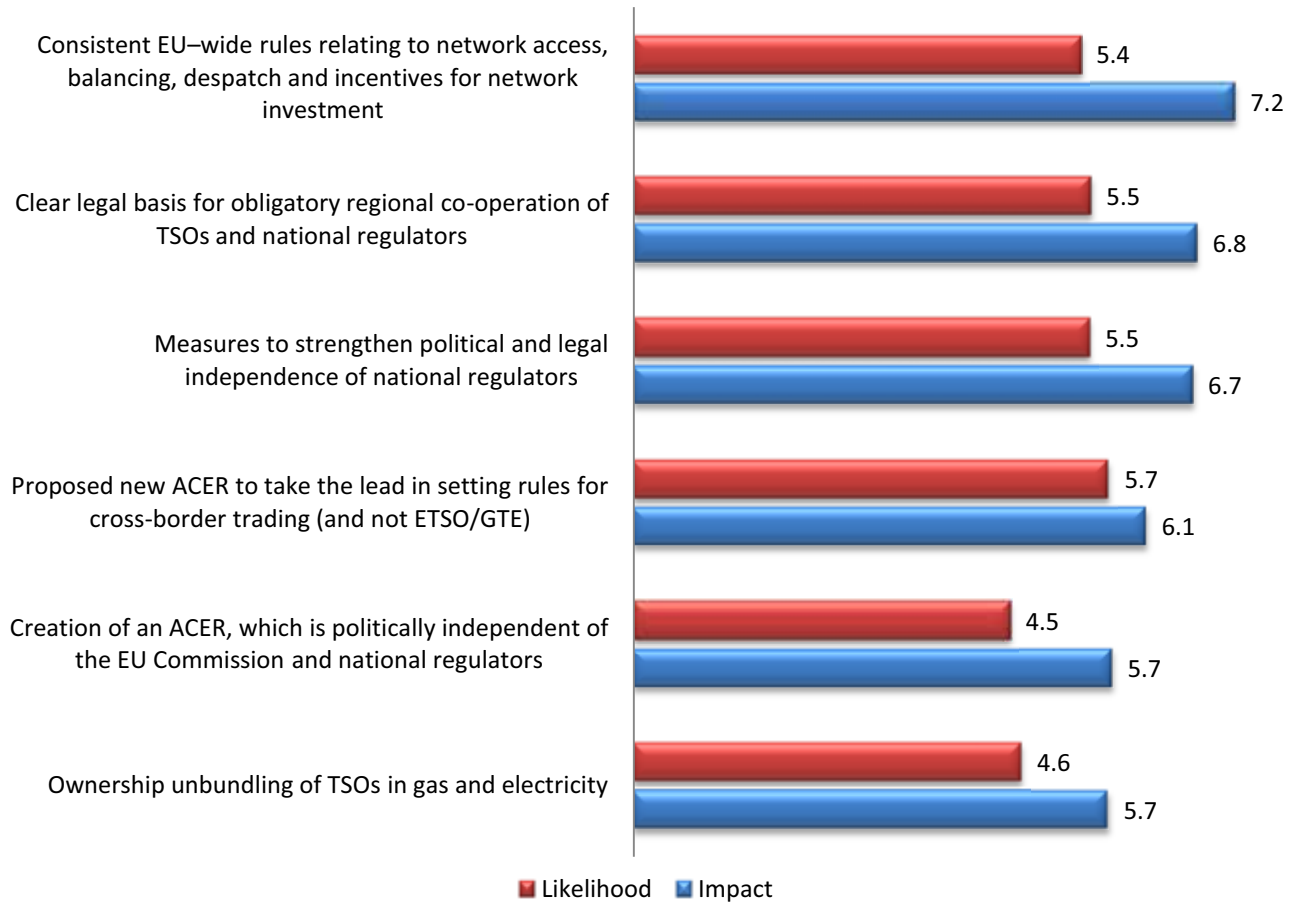
However, our online survey to canvass views on particular regulatory scenarios revealed that respondents as a whole are currently a little sceptical about the likelihood that the sort of reforms and compliance required will, for political reasons, not be delivered in the Third Package. This is cynicism borne out of experience of previous reform efforts that have failed.

Our survey has also revealed that there would be strong support for the Commission to try and use existing legislation to force the pace on issues such as transparency and harmonisation of market rules in the event that the regulatory regime envisaged in the Third Package is either delayed or not implemented.

The chart below summarises respondent views on the likely positive impact on the market of particular measures and views on the likelihood of measures being enacted.

Chart 56: Market Behaviour and Regulation – Electricity and Gas

(total responses 90)



2.9.2 Trader views on EU-wide market regulation

In parallel with MA's market study, EFET conducted a separate survey of some 38 traders on the pricing risks associated with EU energy policy. Their feedback was broadly comparable with MA's independent study.

Pricing risks associated with EU policy failures

Assuming that 19 replies or above out of 38 (50%) is significant, then the following risks were considered to be a direct result of EU energy policy:

- Lack of powers and independent discretion for energy regulators;
- Intrusive political interference (e.g. price controls or caps);
- Unpredictable market effects of environmental measures (e.g. renewable generation subsidies, climate change taxes);
- Variations in EU ETS national allocation plan outcomes;
- Non-implementation or non-enforcement of EU market legislation;
- Imperfectly harmonised transmission access mechanisms and rules on a cross-border basis for both electricity and gas.

The following factors were considered to be indirect consequences of policy failure:

- Market concentration – electricity and gas;
- Insufficient competition – electricity.

Of the policy factors that influenced prices, the most significant was market transparency with 25% of the vote, with political influence a close second.

The remaining factors (variations in EU ETS allocation, lack of harmonisation/transmission access, market concentration, unpredictable effects/environmental measures) scored approximately 13%. This suggests that traders consider a range of issues need to be tackled but political will and the need for transparency are seen as priorities.

Respondents felt that the most important factors which influenced energy prices (excluding energy policy) were crude oil prices followed by cost component changes and transmission restraints.

Respondents suggestions for reducing market uncertainty

- Clear TPA requirements;
- Develop new interconnections;
- Introduce and agree on a detailed emissions trading scheme that stretches over a full investment horizon (15-25 years);
- "Micromanagement" of the market: power plants and gas storage offer tremendous advantages to established incumbents in supply business;
- Explicit overruling rights of EU over national governments in energy issues – this is crucial as France, Germany and alike contemplate actions against open markets (to protect industry etc);

- Vertical and horizontal integration has to be limited and reversed to allow competition. Greater than 25% market share of customers, production, generation, and supply by quantity should be considered a monopoly. Consideration should be given to the dismantling of these dominant players with the protection that they cannot be taken over by companies which are in the same industry area and/or owned by national governments;
- Reinforcement of ACER;
- Removal of any regulatory power from TSOs;
- Making trading on markets mandatory for the production flows of producers (gas, power);
- More focus on regional integration (instead of national focus);
- Regulatory stability or at least Regulatory predictability;
- European Regulator;
- Improvement of security of energy supply;
- Allow foreign ownership of TSOs;
- Leave competition issues to DG COMP, not regulators;
- Developing an effective pan-European regulatory regime for CCS and nuclear on a level playing field with renewable measures.

Respondent suggestions for building trust in the functioning of energy markets

- Ensure that competition works across borders (power) and that the gas market is opened up and traded quickly (especially in Germany) and that the number of trading zones is reduced;
- Providing more transparent information about the market as such;
- Stronger regulation – especially in SE Europe;
- Eliminate political interference – empower independent regulation;
- Increase rules for market transparency, the same information for all participants at the same time;
- Auctions on capacity;
- Simplify gas transmission rights (one leg of entry rights bundled with exit right);
- Information on use and interruption of infrastructures;
- Solution to the problem of energy intensive customers;
- Independence of National regulators;
- Let the transparency discussions run their course;
- Make infrastructure use and bottlenecks and related investment transparent.

3. Conclusions Summary and Possible Policy Options

Compared with other commodity and financial markets, EU wholesale energy markets are relatively underdeveloped. Electricity is significantly more advanced than gas, but progress is not uniform and there are large variations in market liquidity and efficiency across the EU.

In addition, in the case of both electricity and gas, wholesale market trading is for all practical purposes a non-regulated activity with a large and growing proportion of energy market trading (gas, electricity and CO₂) taking place in the opaque OTC market.

The numerous themes and issues that have emerged from this comprehensive programme are evidence of the complexity of the subject. Furthermore, amongst market participants, there are diverse views on many topics ranging from defining market liquidity to proscribing what regulators can and should do to make markets work more efficiently.

In terms of improving the liquidity and efficiency of wholesale markets, the Commission is faced with three possible options, namely (a) do nothing and allow self-governing markets to develop while lending support to voluntary cooperation between stakeholders – e.g. ERGEG's Regional Energy Market (REM) initiatives, or (b) use existing legislation to help strengthen national regulation and underpin the regional integration process or (c) use new legislation e.g. Third Package to accelerate the process of reducing the barriers to the development of liquid and efficient markets.

Given the recent and dramatic increase in energy prices, a related issue of increasing political concern is whether and to what extent, wholesale trading can be controlled to try and ensure that market prices reflect fundamental demand and supply conditions and are not distorted by market abuse and/or excessive speculation, however this may be defined.

As regards this issue, there are serious practical problems associated with intervention. Moreover, the Commission and regulators would be faced with the difficult challenge of trying to strike a balance between too much regulation, which could undermine the development of liquid markets and too little, which could leave buyers and sellers exposed to rising and volatile prices.

In the time available for this research programme, it has not been possible to explore all possible future wholesale market scenarios but we have canvassed a wide cross-section of views on a number of issues. What follows is MA's summary of the main conclusions and what market participants consider could or should be done to improve the operation of the wholesale energy markets.

Trading Channels

There has been a significant increase in trading via exchanges and a dramatic growth in OTC trading caused partly by the shift in financial trading from equities into commodities in particular oil and other energy commodities.

A separate MA survey (APX Energy Viewpoints - April 2008) amongst 30 market participants across 10 countries showed that about 75% of all respondents believe that exchanges, because they provide standardised products, observable benchmarks and reduced credit risk, have increased market liquidity, particularly in power. They also, via market coupling in the case of electricity, offer a necessary and efficient platform for cross-border trading.

However, many participants think there are too many exchanges and some, in markets with very dominant incumbents (e.g. in Eastern Europe), trade very low volumes. In this context, many traders have welcomed the recent consolidation amongst exchanges (e.g. EEX cooperation with Powernext and OMX takeover of the Nordpool's international activities).

This process of consolidation looks set to continue driven partly by the desire to diversify on behalf of large traditional financial exchanges with money to spend. As regards the ownership status of exchanges, there is general support for the notion that exchanges should be independent of governments/TSOs, especially if they are trading financial contracts.

Exchange prices set a benchmark for spot prices across the market and benefits of transparent prices and lower credit risk will ensure their continued success but our research would suggest that the market would not want regulators to try and force more trading via exchanges.

The Commission should resist the temptation to expect exchanges to address all the underlying structural problems with competition, regulation and co-ordination between markets. As one focus group participant observed in the case of Nordpool, "although the market offers 46 contracts for difference against zonal price differences they are rarely traded and highly illiquid because the only natural seller of transmission hedges – the Nordic system operators – have no incentive to hedge their own exposure to transmission congestion".

The vast bulk of energy trading takes place via the OTC market. The risks for investors are higher and there is little or no transparency, but OTC trading is seen as being more flexible, cheaper and offers more specialised products e.g. forward and derivative contracts. In the words of one major German power trader, "only the combination of both exchange and OTC trading makes it possible to have complimentary products and the 24/7 availability of trading and procurement".

Ultimately, trading channels will depend on market models and, at the moment, there are various combinations of exchanges, balancing and OTC markets in operation. Various respondents expressed the view that while a particular model is often the result of a compromise between political and commercial requirements (e.g. the switch from the Electricity Pool to NETA in the UK), it would be useful if the Commission were to suggest some form of preferred "market design" for electricity and gas.

In this context, the roles of exchanges, balancing markets and OTC could be specified and the required levels of market monitoring and transparency defined, including optimum size of trading area, price discovery mechanisms, contract types etc. Such guidance would help the regional market integration process. However, great care would be needed in trying to regulate for a particular form of market design because, as with all intervention in financial markets, there is a risk that traders move elsewhere and Member States try and attract liquidity to their national market at the expense of others.

Market Liquidity

Our survey has revealed that liquidity can mean different things to different people. For many, an increase in both trading volumes and number of traders are essential requirements but it is clear that the predominance of bilateral trading limits the development of both spot and forward markets.

Using seven basic criteria we invited participants to rate various national and regional markets for electricity and gas. The results and key market variables are presented and discussed in detail in **Sections 2.5 and 2.6 above**.

In general, the conclusions are that there are significant variations in liquidity between gas and power and between different national markets with a strong inverse relationship between the levels of market concentration and the degree of liquidity.

Electricity

In electricity, three measures rated most highly in terms of their positive impact on future market liquidity were:

- incentives to encourage more investment in interconnectors;
- the removal of regulated end-user prices;
- harmonisation of rules relating to TPA, balancing and TSO network investment.

These were closely followed by – clarity on Phase Three of the EU ETS scheme, forcing all generation output to be traded wholesale and cross-border market coupling via implicit auctions.

Greater market participation by major energy users was seen as something that would encourage greater market liquidity but, because of lack of market knowledge and expertise, many users are reluctant to trade directly, preferring the stability of bilateral long term contracts.

All traders agreed that, in theory, wholesale markets would become more liquid and more efficient if trades taking place within dominant generation and supply companies were openly traded on the market. But in practical terms trying to legislate to make this happen is seen as unrealistic, although certain regulators, traders and users would like to see more published data on the volume and pricing of these “internal” trades.

Gas

In gas, the three measures rated most highly in terms of their positive impact on future market liquidity were:

- incentives to invest in national and cross-border transit capacity;
- harmonisation of market rules relating to TPA, balancing etc;
- high level minimum standards for infrastructure data disclosure.

These were closely followed by – forcing more entry point trading of long term gas contracts, UIOLI conditions on pipelines and interconnectors and moves to encourage larger trading hubs which would encourage price harmonisation and increase the effectiveness of measures such as gas release programmes to facilitate competitive access to gas supplies.

However, enlarging gas trading hubs together with legislating to create more flexibility in long term gas contracts and de-coupling the link between oil and gas prices were not seen as being practical options given the dependency of the EU on a small number of producers, the lack of downstream supply competition and the global nature of the gas market.

Nevertheless, despite the existence of long term contracts and the price link with oil, there is support in principle for the view that gas market liquidity could improve. For example, a majority of traders believe that new pipelines and more LNG import capacity will result in (a) more flexible gas contracts (b) higher volume of shorter term contracts and (c) more price indexation against traded hubs.

Access to transit capacity is just as important as access to gas. The market needs access to both if competitive trading in gas is to develop. A majority of traders believe that, in the light of recent initiatives, (e.g. North West Gas REM), it is possible that trading in secondary transit capacity rights will increase in the next few years and that this could prevent excess capacity being withheld from use but there are a number of issues to overcome.

The market wants the prices for both gas and transmission capacity to be real time prices and for there to be a facility for forward trading. It would also make sense for capacity tariffs and physical gas prices to be made available on the same trading screen (OTC or exchange).

Regional Integration

Evidence from our focus group discussions reveals that progress has been and is being made to develop workable regional markets. With varying degrees of success, the ERGEG regional market groups are addressing the following issues:

- interconnection and capacity including congestion and capacity allocation;
- transparency of supply and demand;
- integration and interoperability including balancing for gas and;
- the development of liquid trading points such as energy exchanges and hubs.

The problem is that regulatory co-operation is voluntary, e.g. the Pentalateral Agreement in the Central-West Region for electricity and the MoU in the North West Region for gas. In other regions, the dominant influence of market incumbents and the political control over national regulators are seen as major inhibitors to progress.

In our discussions with market participants, including regulators, the general view was that (a) the regional initiatives need to be supported actively by the Commission, (b) a project management approach is crucial (setting objectives, timescales and allocating tasks), (c) fewer actions with more focus are needed, (d) political commitment is a key to success, and (e) there needs to be more involvement of all market stakeholders, including major energy users. In some cases, the focus groups MA conducted were the only recent meetings where a representative group of traders, users, exchanges, regulators and generators/suppliers were present.

It was also evident that there is a need for a consistent approach across the EU, including the need to identify best practice in market design (e.g. defining appropriate size of gas hubs, system balancing and imbalance settlement in electricity).

There was support for setting EU-wide market guidelines with clear steps and timescales (e.g. in electricity, gate closure is an essential first step before market coupling between regions can be put in place). Many respondents took the view that REM agendas were overloaded with actions and there was a need to establish a short list of quick wins e.g. transparency and harmonising gate closure in the case of electricity.

As regards the likely impact of the Third Package on regional market integration, the majority of respondents took the view that while TSO unbundling was both necessary and desirable, the need (also identified in the Third Package) for strong independent regulation to set the ground rules for market trading was critical.

In particular, the following success criteria were considered a priority: (a) a clear legal basis underpinning the co-operation between TSOs and national regulators, (b) increasing the independence and powers of national regulators to take action which is in the interests of the region or EU as a whole, and (c) effective EU regulatory oversight to manage cross-border issues.

In terms of improving market liquidity, the need to stimulate investment in national and cross-border network capacity in power and gas was seen as critical by all respondents to the online survey.

To counter the national political influence on NRAs, the proposed ACER was seen as potentially the preferred vehicle for helping to devise and oversee the implementation of the agreed set of market and network rules to include, (a) setting financial incentives to encourage new investment in national networks and interconnectors, (b) directing the use of auction revenues to relieve congestion where it is most acute, and (c) harmonising rules on gate closure, balancing, capacity allocations and despatch.

Market Transparency

Respondents were virtually unanimous in their support for urgent action to improve supply and demand data transparency. Setting down and monitoring the implementation of a set of common EU standards in this area was seen as a key role for the proposed new ACER working alongside ETSO and GTE.

However, it is important to note that respondents felt the Commission should not rely exclusively on TSOs to devise the rules and that generators/suppliers as well as TSOs should be obliged to publish the information required. Hence the transparency process needs regulatory oversight at the EU level.

Political concerns about the sharp rise in energy prices and the desire to prevent market abuse and excessive speculation was seen by the majority of respondents as the main driving force behind the Commission's interest in MA exploring market reaction to the possibility of introducing a more formal system for recording and monitoring wholesale market transactions.

This topic prompted some extreme views ranging from (a) users who favour more stringent reporting because they see wholesale markets as being dominated by traders running index funds and focused exclusively on earning short-term profits from bidding up oil, gas and carbon prices to, and (b) utility traders who have welcomed the increased liquidity in both exchange and OTC markets brought on by the growth in financial trading and who fear that a more rigorous reporting to regulators of all pre and post trade transactions could jeopardise market liquidity by forcing traders off-shore and into other commodities.

Concerns were expressed by traders and regulators that voter pressure on politicians to do something about rising prices could interfere with progress on the Third Package and provide some national governments with an excuse to delay TSO unbundling and the creation of the ACER, which they consider unacceptable for other reasons. There is concern that in the short-

term, political desire to do something to mitigate the impact on consumers of higher energy prices could undermine progress on much needed internal market reform.

Past experience in financial markets has shown that it is very difficult, if not impossible, for national regulators to control the impact of, or prevent market speculation in OTC trading. Furthermore, monitoring the behaviour of financial markets is outside the remit and beyond the expertise of many EU energy regulators. It is therefore perhaps not surprising that in our online survey the majority of regulators agreed with the following statements:

- A voluntary system of data disclosure (as in USA) would be preferable to a rigid regulatory regime;
- More disclosure will not make it easier to detect or prevent wholesale market abuse or excessive speculation;
- To avoid any duplication and unnecessary cost, any new data disclosure rules should be consistent with how traders already record transactions (i.e. extending the principles of MIFID, as it applies to exchanges, to the OTC market).

Theoretically, a few traders could try and corner the electricity market by buying off OTC bulletin boards and selling at inflated prices on a power exchange. Competition and financial services regulators have learned from experience that predicting such action or taking effective penal action after the event is extremely difficult.

Market Regulation

The study has revealed that there is strong market-wide support for (a) strengthening the independence and power of national regulators, (b) providing a legal basis to underpin the ERGEG regional integration programme, and (c) creating some form of regulatory oversight at the EU level to ensure consistency and delivery of common market rules.

Not surprisingly, there is some scepticism about whether these objectives can be achieved via the Third Package. If for any reason the current package of measures was seriously diluted, delayed or abandoned then our survey results suggest that there would, in any event, be strong market support to use existing legislation and processes to try and force the pace on “quick win” issues such as transparency and harmonisation.

In the short term, however one of the biggest potential threats to the future evolution of competitive wholesale markets is not so much that elements within the Third Package could be compromised, (e.g. TSO unbundling and the independence of the ACER), but that political reaction to the dramatic and continuing increase in energy costs could prompt “retrogressive” measures.

With mounting pressure from both residential and business consumers, governments are beginning to explore what, if anything, they can do to control or mitigate the effects of rising energy prices on their known economies. At the moment it could be argued that energy prices do not reflect fundamental supply and demand conditions – if so then the market could correct itself and some speculators might suffer.

But political pressure in the meantime could result in governments taking unilateral action to curb the impact on consumers, which could delay or undermine progress that has so far been

achieved in building wholesale energy markets. Price increases are also focusing attention on the need to increase security of supply and take 'national' measures to stimulate much needed investment in generation capacity (e.g. nuclear power).

Interventionist measures such as regulated discounted tariffs for consumers, preferential grid access for industrial users and capping CO₂ prices would be retrogressive steps. In this context, it would be advisable for the Commission to explore immediately, and in more detail, what action could be taken at the EU level which might pre-empt the sort of fragmented national approach which could threaten reform and liberalisation.

Possible measures requiring further investigation could include: preferred market "design" criteria and market rules for wholesale markets such as additional data recording if wrong doing is suspected, higher margin requirements, transparency rules covering all types of energy trading not just energy exchanges, mandatory clearing on exchanges of all OTC transactions, joint regulatory oversight of exchanges by ACER and securities regulators and emergency contingency plans in the event of a massive price spikes.

Additional research work is required to flesh out these options and assess their practicality and their likely market impact. This would need to be done in tandem with the Commission's deliberations on the role and functions of the proposed new ACER and its relationship with national regulators authorities covering energy, competition and securities markets.

Moffatt Associates

May 2008