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Consultation paper: Self-evaluation Gas Target Model II

Functioning of the wholesale gas market in the Netherlands

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1 Introduction

This consultation paper provides the results of the self-evaluation of the functioning of the Dutch wholesale gas markets in the context of the updated Gas Target Model. The Netherlands Authority for Consumers and Markets (ACM) has performed this self-evaluation by using information about the specific market functioning GTM metrics, as calculated by three different sources. ACM presents these results to market participants and other stakeholders in order to inform them about the current state of the Dutch wholesale gas markets and the gas hub TTF, as well as about expected developments in the near future. Moreover, this document contains several questions for stakeholders and market participants in order to get their opinions about the functioning of the market, and whether they have suggestions about how to improve the functioning of the TTF even further.

2 Background

2.1 Updated Gas Target Model

The Gas Target Model (GTM) is a structural framework that sets out how a well-functioning European gas market should emerge. It sets market rules that enable the European gas markets to become more integrated and advanced in terms of competition, sustainability and security of supply.

The vision of the GTM is having a competitive European gas market, comprising entry-exit zones with liquid virtual trading points, where market integration is served by appropriate levels of infrastructure, which is utilised efficiently, and enables gas to move freely between market areas to the location where it is most highly valued by gas market participants.

The updated GTM[1] published by the Agency for the Cooperation of Energy Regulators (ACER) on 16th January 2015 (GTM II) identifies how Europe can realise its potential and reap the vast benefits of a secure, fully implemented internal gas market for all its citizens. GTM II focuses on fostering liquid spot markets and, crucially, liquid wholesale forward markets, so that cost-effective wholesale market risk management is possible.

The GTM II sets out criteria for liquid wholesale markets, and assesses the extent to which the existing market areas in the EU meet these criteria.

2.2 Self-evaluation of the GTM II

Based on the GTM II, it follows that all Member States assess whether they are likely to meet or continue to meet the revised GTM metrics by 2017 (and every three years thereafter). This is to determine whether their markets will be well-functioning. ACM is committed to perform this self-evaluation.

In the first phase of this self-evaluation, ACM assesses the current functioning of the wholesale gas market in the Netherlands based on the revised GTM metrics. This assessment is based on nine predefined metrics, which can be grouped on the basis of two key characteristics of markets:

- Market participants' needs metrics:
  order book volume, bid-offer spread, order book price sensitivity and the number of trades.
- Market health metrics:
  HHI, number of supply sources, Residual Supply Index (RSI), market concentration for bid and offer activities and market concentration for trading activities.

[1] European Gas Target Model – review and update, 16 January 2016.

These metrics should be used indicatively to assess the functioning of wholesale gas markets. Regardless of whether the market functioning criteria have been met, the GTM II also outlines that hub-functioning improvement should be pursued.[2] As a matter of best practice, wholesale gas markets should have an adequate level of liquidity, a wide accessibility and a connection to a gas exchange.

In addition to assessing the current state of the Dutch wholesale gas markets, ACM identifies and describes the key drivers for an improved functioning of the wholesale market, and it gives an outlook on the expected state of the wholesale market in 2017. As part of this first phase of the self-evaluation, ACM consults its findings with the market.

If, based on this evaluation, it appears that the Dutch wholesale market is unlikely to meet the criteria set in the GTM II and therefore the Netherlands is unlikely to have a well-functioning gas market by 2017, the GTM II suggests considering structural market reforms. In that case, in a second phase of the self-evaluation, ACM is expected to identify and to describe potential structural market reforms including market integration tools, among other suggestions. Ahead of the conclusions presented in this report, it is noted that, so far, there is no cause for ACM to initiate this second phase of the self-evaluation.

2.3 Outline of this report

In this report, ACM presents in chapter 3 the current state of the wholesale market in the Netherlands based on GTM II metrics. Next, in chapter 4, it describes the key drivers for an improved functioning of the wholesale market. In chapter 5, ACM gives its view on the state of the functioning of the Dutch wholesale market in 2017. Finally, the consultation questions are listed in chapter 6.

[2] European Gas Target Model – review and update, page 26 and annex 8 'Best practices in gas market design'.

3 Current state of the wholesale market based on GTM II metrics

3.1 Approach

The functioning of TTF has been part of the benchmark setting the GTM thresholds. This basically means that TTF has met most of these thresholds. For that reason, and for efficiency reasons, ACM has chosen to do a limited assessment. As anticipated by ACER and the NRAs during the preparation of this process, ACM uses the results of the GTM calculations based on 2013 data for this initial self-evaluation. For TTF, these are available for the market participants' needs metrics but not for the market health metrics.[3] In addition, ACM consulted two additional sources with more updated assessments of the GTM metrics for TTF: The Gas Wholesale Market Volume of the ACER/CEER Annual Report on the Results of Monitoring the Internal Natural Gas Markets in 2015[4] (hereafter: MMR 2015) and the expert opinion by WECOM on behalf of Bundesnetzagentur 'Gutachten Potentialen Marktgebietsintegrationen'[5]. Both studies base their assessments on the calculation specification[6] for the GTM II metrics as much as possible.

The expert opinion of WECOM includes a calculation of the participants' needs metrics for TTF. The MMR 2015 includes an in-depth assessment of the state of trading and, more particularly, the development of gas hubs in the European Union. As part of this assessment, ACER has calculated six selected GTM metrics for those EU gas wholesale markets with a transparent trading venue, including the Dutch TTF.[7] For the metric 'market concentration for trading activities', the MMR 2015 provides two concentration measures: HHI and C3 instead of one measure for the market share per company for the sale and purchase of gas. Note that a number of the GTM metrics calculations are based on data reported to ACER under REMIT[8]. As stated in the MMR 2015, ACM repeats that the reported REMIT data used in the MMR 2015 have a few shortcomings: the data were not assessed on data quality, and moreover, the data does not include a full gas year, but only data from November 2015 through April

[3] European Gas Target Model – review and update, annex 5: Metrics for market participants' needs: results for selected European gas markets.

[4] ACER/CEER Annual Report on the Results of Monitoring the Internal Natural Gas Markets in 2015, September 2016. http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Market%20Monitoring%20Report%202015%20-%20GAS.pdf

[5] Gutachten zu Potentialen weiterer nationaler oder grenzüberschreitender Gasmarktgebietsintegrationen sowie den damit verbundenen Auswirkungen auf den deutchen Gasmarkt, Gutachten im Auftrag der Bundesnetzagentur, Wien 4 April 2016.

[6] European Gas Target Model – review and update, annex 3 'Calculation specification for wholesale market metrics, January 2015'.

[7] Three GTM metrics are not calculated: order book price sensitivity, RSI and market concentration for bid and offer activities.

[8] EU Regulation on wholesale energy market integrity and transparency. See: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:326:0001:0016:en:PDF.

2016.[9] The fact that the assessed period does not cover a full gas year might bias the results because these are only based on months in the winter season.

ACM is aware of the limitations of the currently available data and information for the assessment of the GTM metrics for the Dutch wholesale gas markets, and it is also aware that this affects the value of the conclusions. However, because ACM combines data from different sources and because the Dutch gas hub TTF is part of the benchmark on which the thresholds for the metrics are based, ACM finds the available data sufficient to perform the self-evaluation and to draw conclusions concerning the functioning of the Dutch wholesale gas market in 2017.

For future self-evaluations of the GTM II, ACM has the intention to use the metrics calculated by ACER for subsequent Market Monitoring Reports. ACM notes that the calculation of several of the nine metrics requires an enormous amount of market and trade data. These specific and detailed data are or will be reported to ACER based on REMIT obligations for market participants.[10] In addition, ACM attaches great value to the fact that the GTM metrics are calculated in a similar manner for all member states as instructed by the GTM II. This improves the comparability of the metrics with the defined thresholds and the consistency in the evaluation executed for each member state.

3.2 Results

Assessment of the current state of the Dutch wholesale gas market based on the GTM metrics indicates that the Dutch wholesale gas market still meets most GTM II thresholds. The results are shown in Table 1 for the market participants' needs metrics and in Table 2 for the market health metrics. For both Table 1 and 2, if the calculated value falls within the accepted range, this value is marked green. When the value falls partially within the range, it is coloured yellow and when the value is too high or low compared to the reference threshold, then the value is marked red.

3.2.1 Market participants' needs

The market participants' needs metrics are used to evaluate if products and liquidity are available such that effective management of wholesale market risk is possible.

[9] For more detailed comments on and notes to the calculations of the GTM metrics made by ACER, see section 4.2 paragraph 66 and annex 1 of the MMR 2015.

[10] In line with Article 7(3) of REMIT, ACER uses REMIT data for the MMR. See paragraph 3 of the MMR 2015.

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Market participants' needs[11]						
GTM metric	**GTM threshold**	**Update GTM (2013)[12]**		**MMR 2015[13]**		**WECOM**
		Offer-side	**Bid-side**	**Offer-side**	**Bid-side**	
1. Order book volume						
DA	>= 2000 MW on each bid- and offer-side	2005	2053	Total[14]: 2400 – 3000 (OTC: 1350 – 1650 Exchange: 1050 – 1350)	Total: 3300 – 3900 (OTC: 2250 – 2550 Exchange: 1050 – 1350)	2000-3500
Front month	>= 470 MW on each bid- and offer-side	489	479	1350 – 1650	1650 – 1950	ca. 480- ca. 520
Forward	>= 120 MW on each bid- and offer-side for 17 month ahead[15]	19.3	17.4	36 - 42	36 - 42	14-18.1
2. Bid-offer spread						
DA	<= 0.4% of bid-price	0.2%		OTC: 0.25% – 0.5% Exchange: 0.5% - 0.75%		0.18%-0.32%
Front month	<= 0.2% of bid-price	0.2%		OTC: 0.25% - 0.5% Exchange: n/a		ca. 0.18%-0.29%
Forward	<= 0.7% of bid-price for 24 months ahead	12th month:0.2% 24th month: 0.4%		n/a 12th month OTC: 0.75% - 1% 12th month exchange: n/a		12 months: 0.2%-0.32% 24 months: 0.4%-0.52%

[11] The updated GTM used OTC data and general data on exchange trading activities (no detailed data but only approximately on the basis of volume data published by ICE Endex and EEX). For the market participants' needs metrics, the MMR 2015 used data from exchanges or OTC (broker platforms) within the framework of standard contract as collected under REMIT. WECOM used OTC data and approximate exchange data based on volumes of ICE and PEGAS for the market participants' needs metrics. This might explain some of the (large) differences in the results of the three sources.

[12] European Gas Target Model – review and update, annex 5: Market participants' needs metrics: results for selected European gas markets.

[13] The results of the metrics are shown as ranges in order to avoid any potential confidentiality issues as well as for reasons of data quality. See MMR 2015, page 52.

[14] Analogous to the results for the front month and forward product in the MMR 2015, ACM has calculated the total result by aggregating the OTC and exchange results for the day-ahead product.

[15] In other words, for the order book volume of the forward product, the calculated metric has to be at least 17 months.

3. Order book price sensitivity		Offer-side	Bid-side	Offer-side	Bid-side	Offer-side	Bid-side
DA	<= 0.02% price distance between average price for 120 MW and the best bid on each bid- and offer-side	0.01%	0.01%	n/a	n/a	0.01%-0.025%	0.01%-0.02%
Front month	<= 0.1% price distance between average price for 120 MW and the best bid on each bid- and offer-side for 24 months ahead	0.1%	0.1%	n/a	n/a	0.08%-0.16%	0.08%-0.15%
Forward	<= 0.2% price distance between average price for 120 MW and the best bid on each bid- and offer-side for 24 month ahead	12th month (120 MW): 0.2% 24th month (90 MW): 0.1%	12th month (120 MW): 0.2% 24th month (90 MW): 0.1%	n/a	n/a	n/a	n/a
4. Number of trades							
DA	>= 420 trades per day	Median: 429		Median: 1100 - 1500[16]		Median: 420-580	
Front month	>= 160 trades per day	Median: 164		Median: 900 - 1000[17]		Median:160-310	
Forward	>= 8 trades per day for 22 month ahead	24.1 months		n/a (result alternative calculation method: median 900 – 1000 trades on a daily average)		Ca. 24-28	

Table 1. Market participants' needs metrics for various products of the TTF.

Table 1 shows that the updated market participants' needs metrics indicate that the Dutch wholesale market is equipped for facilitating an effective management of wholesale market risks. The order book volume is large enough for all products and the bid-offer spread as calculated in different reports often falls within the accepted range as well. Although the MMR 2015 indicates that the bid-offer spread for the day-ahead and front month product for the assessed period (November 2015

[16] In the MMR 2015 'intragroup trades' are included in the calculation (see the MMR 2015, page 55, footnote AGTM Metric 4). This might explain the high number compared with the results presented by the GTM (threshold) and WECOM

[17] Idem

through April 2016) might be too high compared to the defined threshold, the study of WECOM shows lower bid-offer spreads for both the day-ahead product and the front month product.

The order book price sensitivity and the number of trades mostly fall within the accepted range, but the WECOM study shows that the order book price sensitivity might be outside the accepted range for the day-ahead and front month product.

Based on the results presented in Table 1, it is important to monitor the bid-offer spread and the order book price sensitivity closely in the future.

3.2.2 Market health

The market health metrics help evaluate if the wholesale markets are demonstrably competitive, resilient and have a high degree of security of supply.

Market health			
GTM metric	**GTM threshold**	**Update GTM (2013)[18]**	**MMR 2015**
5. HHI	<= 2000	2488 (GTM 2011)	3295[19]
6. Number of supply sources	>= 3	6 (GTM 2011)	7: NL(59%), NO (25%), DE(11%) +4 other supply origins
7. RSI	>= 110%	189% (GTM 2011)	n/a
8. Market concentration for bid and offer activities	<= 40% market share per company for the best 120 MW on each bid- and offer-side	n/a	n/a
9. Market concentration for trading activities	<= 40% market share per company for the sale and purchase of gas	n/a	n/a Concentration indicators[20] used: - CR3 of traded volumes (on both the buying-side and on the selling-side, for each product (DA, front month and forward): 20% - 30% - HHI of traded volumes (on both the buying-side and on the selling-side, for each product (DA, front month and forward)): 0 -1000

Table 2. Market health metrics for various products of the TTF.

Table 2 shows that the updated information concerning the market health metrics is incomplete. With

[18] European Gas Target Model – review and update, Table 1: Overall results of GTM 2011 criteria assessment.

[19] The deviation compared with GTM 2011 is mainly explained by a different assumption made in relation to market share estimations.

[20] MMR 2015, page 57: for the calculation, both OTC and exchange trading are combined, and intragroup companies are not treated separately (i.e. concentration of holding groups could be higher).

the next MMR, we will be able to provide a more complete picture. However, for the time being, ACM has no indications to assume that the market health situation of the Dutch wholesale market has worsened in comparison to the GTM II. For example, the TTF still features a well-diversified supply structure with well more than three supply sources. Metrics about market concentration show different results: the HHI for the Dutch wholesale market exceeds the threshold value, but the metric 'market concentration for trading activities' at the gas hub TTF shows that, on both the buying and selling side and for all three products (spot, prompt and forward), markets are not to be considered concentrated.[21] Because most of the market health metrics fall within the accepted range as defined by the threshold values, this indicates that the structure of the Dutch wholesale market is sufficiently competitive.

3.2.3 Overall conclusion of TTF market functioning based on GTM metrics

In general, the metrics' results show that the Dutch wholesale gas market is functioning well, with a sufficient level of liquidity. ACM concludes that based on the revised GTM II metrics and keeping in mind the data limitations, TTF still appears to meet the market participants' needs which indicates that products and liquidity are available which makes it possible for market participants to effectively manage their wholesale market risks. Moreover, evaluation of the market health metrics indicates that the Dutch wholesale market is competitive, resilient and has a high degree of security of supply.

4 Key drivers for an improved functioning of the wholesale market

Its physical characteristics and its historical background are important factors that lie behind the current relatively high level of functioning of the Dutch wholesale gas market. The Dutch market benefits from domestic gas production and is well-connected to other cross-border gas sources. In addition, TTF has been able to gain first-mover advantages as the market place on the European continent where market participants can manage their gas portfolio hedging and optimisation with confidence.[22]

Looking forward, ACM starts from the view that the abovementioned development is most likely self-reinforcing and contributes to continuing the attractiveness and reliability of the Dutch gas market. In addition, the TTF is currently, together with NBP, the leading hub in the European Union having the most developed spot, prompt and forward markets.[23] The gas hub TTF has become the clear continental price benchmark (euro), and the TTF is used extensively as a contractual price reference

[21] Note that the HHI (metric 5) is based on market shares of upstream companies that are derived from production statistics, shareholder structure of export facilities and desktop research. The market concentration for trading activities (metric 9) looks specifically at market shares based on finalised (OTC and exchange) trades in TTF.
[22] MMR 2015, page 23-24 'Case study 1: Reasons for TTF liquidity development – historical account'
[23] MMR 2015, Chapter 4 'Status of EU gas hubs functioning'.

for the indexation of long-term contracts and for other EU hubs.[24]

A possible development that might thwart these positive trends is the reduction of the domestic gas production, especially from the Groningen field.[25] For 2017, ACM expects that this will have no impact (negative or otherwise) on the functioning of Dutch wholesale gas market. The lower production cap on the Groningen field implies a greater reliance on imported gas for the Netherlands and Northwest Europe. The fact that TTF is well-connected to other foreign gas sources and the fact that the available capacity of import facilities in the Netherlands is not congested (contractually or otherwise),[26] suggests that sufficient gas will be available to meet the needs of market participants in 2017.[27]

Certainly for 2017, because of the well-functioning TTF, ACM has sufficient confidence to assume that the Dutch gas market will not be negatively impacted by lower domestic gas supply. On the contrary, ACM is of the opinion that a well-functioning gas hub like TTF is an important element in ensuring that the market can continue to respond effectively to the reduction in future Groningen production.[28]

ACM points out the fact that the Dutch gas hub TTF is operated by the Dutch TSO Gasunie Transport Services (GTS). In the view of ACM, this operation is done in a fair and non-discriminatory manner. GTS facilitates a transparent procedure to become a trader on the TTF for which a licence and registration are needed.[29] Next to physical traders, the licencing system allows the admission of pure non-physical traders as well. This makes TTF more accessible and attractive for financial institutions, among other organisations, to participate in the trading of gas. This contributes to increased competition and liquidity of especially the forward market. The actual trading is made possible through bilateral trading, via brokers (OTC) and through gas exchanges (ICE Endex and PEGAS).

5 Expected state of the wholesale market in 2017

Based on the assessment of the current state of the wholesale market in the Netherlands and taking into account the key drivers for an improved functioning of the wholesale market, ACM expects that the Dutch gas wholesale market will continue to meet the GTM metrics in 2017.

ACM has no indications to expect a lower level of functioning of the market of the TTF in 2017.

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[24] MMR 2015, page 23-24 'Case study 1: Reasons for TTF liquidity development – historical account'

[25] The Minister of Economic Affairs has reduced the production cap on the Dutch Groningen field.

[26] ACER annual report on contractual congestion at interconnection points, period covered: 2015, 31 May 2016.

[27] See also Gasunie Transport services, 'The Network Development Plan 2015', 16 July 2015.

[28] See also Baringa, 'The benefits of TTF liquidity', 25 September 2015.

[29] Website Gasunie Transport Services, https://www.gasunietransportservices.nl/en/shippers/become-a-customer. To become a trader on the TTF a market participant needs a shipper's licence and a registration on the TTF.

Therefore, at this stage, ACM has no intention to impose new concrete measures for improvement of the functioning of the Dutch wholesale gas markets or its gas hub TTF.

ACM notes that potential options for further market integration involving the TTF are currently being explored. One initiative explores the possible cross-border market integration of TTF with German market areas. As part of the self-evaluation of the GTM II for the German market, the Bundesnetzagentur has presented the initial evaluation of several pre-selected options.[30] ACM supports the exploration of these initiatives and will have a positive view towards these initiatives as long as the weighing of costs and benefits in such a case will have a positive result and the integration meets all legal requirements.

ACM is aware that despite the current good level of functioning of the Dutch wholesale gas market, improvements are still possible. ACM is open to any feedback that, in the end, might contribute to improving the functioning of the Dutch wholesale gas market and the functioning of the Dutch gas hub TTF.

6 Consultation questions

As part of the self-evaluation, ACM invites market participants and other stakeholders to put forward their views on the current level of market functioning of the TTF and how they think that it might be improved. Preferably, ACM receives input substantiated with evidence where possible.

Questions to stakeholders:

1. Do you agree with the analysis of ACM regarding the expected state of the wholesale market of TTF in 2017? If not, please motivate your answer.
2. What are possible trends or developments that might impact the functioning of the Dutch wholesale market, according to you?
3. What do you think should be done to improve the functioning of the Dutch wholesale market?
4. Do you agree with ACM's view that the TTF gas hub is operated in a fair and non-discriminatory manner and is widely accessible for market participants? If not, what do you think should be done for improvement?
5. What are the main barriers to an improved functioning of the Dutch wholesale gas market according to you?

[30] Bundesnetzagentur, 'Market dialogue on the further development of the German market areas' http://www.bundesnetzagentur.de/cln_1411/EN/Areas/Energy/Companies/NetworkAccess/NetworkAccess_node.html