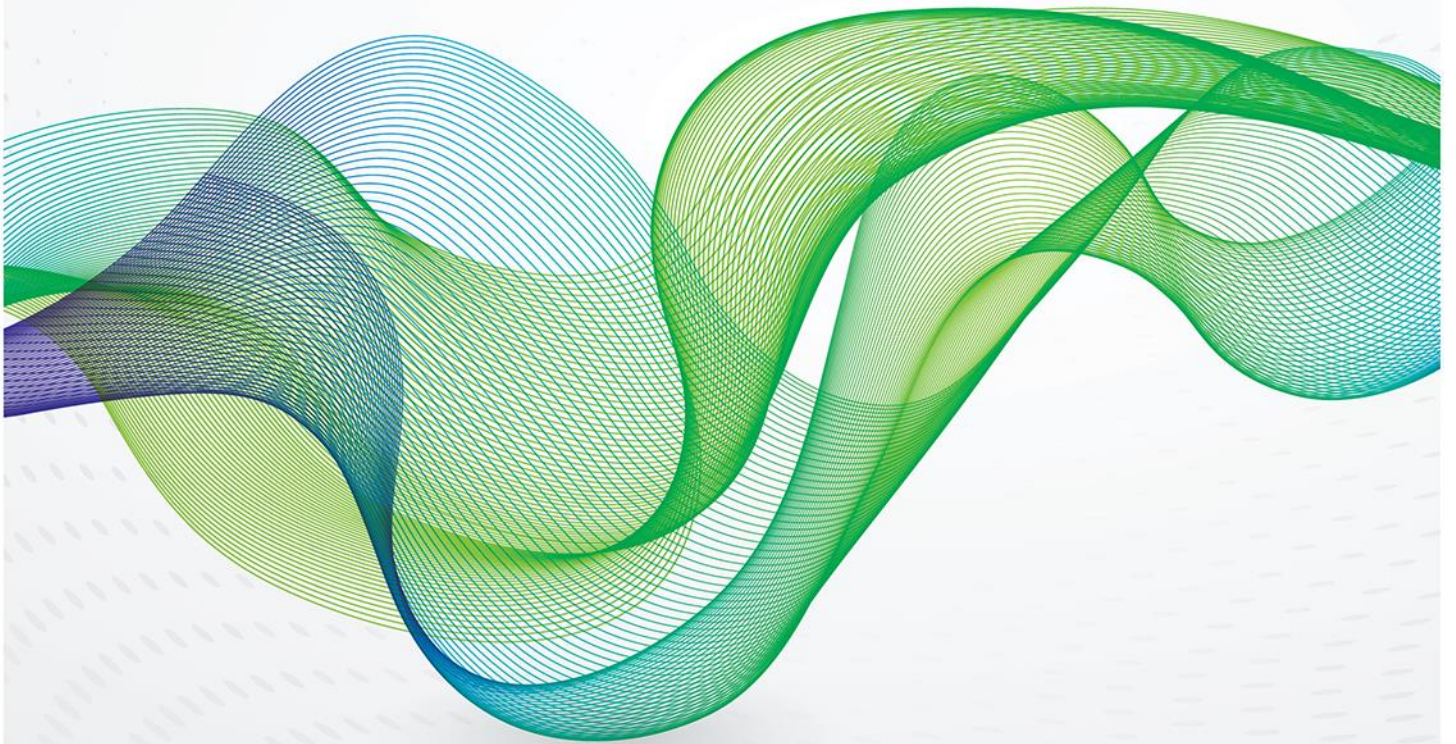


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European Traded Gas Hubs: German THE fails to impress



1. Introduction

The Author has been following the development of the European traded gas hubs over many years and has already published a number of Papers and Insights on the subject.¹ His last paper² reviewed all of the European traded gas hubs in 2020, with particular analysis on the leading Dutch TTF and the German GPL and NCG hubs.

The merger on 1st October 2021 of the German NCG and GPL hubs into one national hub is the culmination of a process of rationalisation started in 2008 when there were still 19 gas balancing zones. The stated aim of the Federal law which mandated the merger is to increase liquidity in the gas market, and the German TSOs have the ambition for the new hub to be an international hub linking the German with other European gas markets. Given the country's large physical consumption and total physical throughput, this should be a possibility but begs the questions of why the NCG and GPL have not developed more than they have and whether, if that is due to there being two hubs rather than one, simply merging them will now have the desired effect? Unfortunately, the statistical data and the French experience of hub mergers suggest that it will struggle to succeed.

This Comment will look at the results of the analysis of trading data from January to October 2021 for the traded gas hubs in a selection of seven west-European countries.³ The focus of the analysis will be to determine whether the merger of the two German hubs into one has resulted in the desired effect, as stated by both the German Parliament and by the Transmission System Operators (TSOs)? Are there indeed signs that the German market is developing into an 'international' hub or is it simply 'business as usual'?

2. Review of the traded volumes so far in 2021

The European traded gas hubs have assisted the gas sector in managing their supply, distribution and sales needs, their physical balancing requirements, and their risk management and trading strategies; these have been particularly important in the past two very difficult years, due to the impact of the Covid-19 pandemic on supply and especially, demand but also, due to the sustained price rise over the course of 2021.

In 2020, all but two of the seven countries that are the focus of this paper, saw a fall in total traded volumes;⁴ the two that saw a rise were the Austrian VTP and the Dutch TTF. The combined German NCG and GPL fell by 7.5 per cent compared to 2019 and resulted in the TTF being more than fourteen times larger than the two German hubs combined; a position that did not auger well for the start of the new merged THE in 2021.

In the first ten months of 2021, all but the TTF saw a fall in total traded volumes, compared to the first ten months of 2020. However, this paper will focus on the changes compared to 2019, as being the last 'representative' year before the pandemic and the sustained price rise of this year that could influence the result; this will give a truer reflection of the growth trends across the individual hubs.

Table 1 below shows the total traded volumes for the ten months January to October 2021 for each country, as well as the breakdown between the spot,⁵ futures and OTC volumes; it has been ordered by descending total volumes. This clearly shows how TTF is the dominant hub, pulling away from the 'pack' below, increasing its comparable traded volumes by 15.75 per cent compared to 2020 and by

¹ All of which are available to download from the OIES website: [Patrick Heather - Oxford Institute for Energy Studies \(oxfordenergy.org\)](https://www.oxfordenergy.org)

² European Traded Gas Hubs: German hubs about to merge: <https://www.oxfordenergy.org/publications/european-traded-gas-hubs-german-hubs-about-to-merge/>

³ Netherlands, Britain, Germany, Italy, Austria, France, Belgium.

⁴ For more complete detail, see European Traded Gas Hubs: German hubs about to merge, pp.4-7: <https://www.oxfordenergy.org/publications/european-traded-gas-hubs-german-hubs-about-to-merge/>

⁵ All balancing, within day, day ahead, and other within month contracts.

nearly 33 per cent compared to 2019; TTF is now almost eight times larger than the second place NBP and nearly 18 times larger than the third place combined German hubs!

The author has previously documented the fall in the NBP and Belgian hubs, and this year is no exception: NBP has dropped further, some 32.5 per cent below the comparable 2020 volumes and a considerable fall of over 46 per cent compared to 2019; the Belgian hubs combined have fared equally badly, also falling just under 46 per cent from the comparable 2020 volumes, and 40.82 per cent against the 2019 levels.

Table 1: Hubs' traded volumes Jan–Oct 2021

HUB TOTAL TRADED VOLUMES (TWh): JAN-OCT 2021				
HUB	TOTAL VOLUMES	EXCHANGE TRADING		OTC TRADING
		SPOT VOLUMES	FUTURES VOLUMES	SPOT & CURVE
TTF	45069	574.71	29266.44	15228.28
NBP	5773	70.63	4070.44	1632.27
NCG+THE+GPL	2532	439.44	69.26	2023.33
PSV	980	70.37	38.63	871.44
VTP	787	99.95	65.84	621.04
TRF	709	155.69	22.73	530.82
ZEE+ZTP	256	112.09	1.74	142.08

Sources: OTC: LEBA, ICIS; Exchange: ICE, ICE-Endex, PEGAS, CME; P. Heather

One of the main reasons for these falls in traded volumes is that NBP and ZEE are priced in Sterling and, with less need for any Sterling priced risk management, there has consequently been a fall in overall traded volumes. The Euro priced and virtual ZTP hub did help to counter the fall in ZEE volumes, actually increasing its spot and OTC volumes from 2019 to 2020 but unfortunately so far in 2021, the OTC volumes have fallen back to below comparable 2019 levels, spot volumes have increased a little bit more, and the small futures volumes have continued to ease.

Of course, in Continental Europe, it is the TTF that is continuing to attract risk management trading, as well as speculative trading, and is by far the most liquid gas hub. This is echoed not only in the total traded volumes,⁶ but also in the split between the contract types: it is the hub with the lowest percentage share of spot/prompt and month contracts and therefore the largest share of curve and options traded volumes.⁷ This indicates that, although as with all gas hubs TTF is used for balancing and physical portfolio adjustments ahead of maturity, it is primarily used for forward hedging, portfolio positioning and for speculation. Furthermore, it is by far (with NBP) the hub with the largest share of futures trading at 65% of total trades in the first ten months of 2021, which indicates that there is an overwhelming

⁶ Which in 2020 accounted alone for 72.48 per cent of total European gas traded volumes, across 20 countries.

⁷ Although the Author has not yet been able to obtain detailed contract splits for the OTC trades, these are unlikely to differ much from 2020. In that year, out of the total traded volume, TTF registered 32.77 per cent S/P/M trades and 67.23 per cent curve and options trades.

amount of pure financial trading, rather than bilateral physical OTC contracts; this indicates that aggregators, financial institutions and speculators are trading this hub more than any of the others.

When we consider the makeup of the German hubs combined, a very different picture emerges: Germany has Europe's largest gas consumption and its gas grid also transports a significant amount of transit gas to neighbouring countries. It should therefore attract large volumes of both physical forward trading as well as short-term trades. If it were more liquid it would also probably attract more financial trading but this is simply not the case: by contrast to TTF, the combined German hubs had the second lowest share of exchange futures trading, at just 2.74% but 17.36% of exchange spot trades; they also had a large share of physical bilateral OTC trades, at 79.91%, including 12.5% which will have been spot/prompt trades.⁸

Table 2: Hubs' traded volumes changes Jan–Oct 2021 vs 2019 and 2020

CHANGES BASED ON HUB TOTAL TRADED VOLUMES: JAN-OCT 2019 / 2020 / 2021								
HUB	CHANGE ON		CHANGE ON EXCHANGE VOLUMES				CHANGE ON OTC VOLUMES	
	TOTAL VOLUMES		SPOT VOLUMES		FUTURES VOLUMES		CURVE VOLUMES	
	Δ 2019 / 2021	Δ 2020 / 2021	Δ 2019 / 2021	Δ 2020 / 2021	Δ 2019 / 2021	Δ 2020 / 2021	Δ 2019 / 2021	Δ 2020 / 2021
TTF	32.84% ↑	15.75%	10.62%	16.74%	22.87%	43.85%	-24.90%	-15.86%
VTP	5.19% ↑	-8.18%	21.40%	35.05%	23.59%	3.70%	1.41%	-13.67%
TRF	-10.30% ↓	-4.83%	45.09%	25.15%	8.02%	-1.60%	-19.85%	-11.20%
NCG+THE+GPL	-18.19% ↓	-6.55%	15.71%	32.31%	-11.72%	25.54%	-23.26%	-12.87%
PSV	-21.00% ↓	-20.72%	26.16%	17.25%	111.97%	77.72%	-25.33%	-24.55%
NBP	-46.27% ↓	-32.50%	-5.40%	-3.23%	-39.39%	-33.06%	-58.73%	-31.95%
ZEE+ZTP	-45.96% ↓	-40.82%	57.12%	13.53%	-7.10%	-2.30%	-64.46%	-57.14%

Sources: OTC: LEBA, ICIS; Exchange: ICE, ICE-Endex, PEGAS, CME; P. Heather

Table 2 shows the percentage changes in the total volumes compared to both 2020 and 2019, which is a more representative comparison as Europe's economies start to come out of the pandemic and grow again; it also shows the changes in the exchange spot and futures volumes, as well as the total OTC volumes. The first point to note is that the OTC volumes fell in all of the surveyed hubs; this could in part be due to the sustained and extreme rise in gas prices over the course of 2021, as OTC trades are bilateral contracts where the counterparties have both performance and financial risk with each other. In all but one hub the percentage fall in OTC volumes was greater than the fall (or increase in the case of TTF) in total traded volumes, thereby indicating that the OTC segment of trading suffered more.

From this table it can be seen that the comparable total traded volumes of the combined German hubs fell 12.45 per cent from 2019 to 2020 and a further 6.55 per cent from 2019 to 2021, making a drop of 18.19 per cent over the two-year period. This is a significant drop, a little less than the 21 per cent drop at the Italian PSV, although far less than those of NBP and the Belgian hubs. However, the performance of the German hubs was worse than the 10.3% drop at the French TRF and much worse than the 5.2 per cent increase in total traded volumes at the Austrian VTP. Of course, all these results are nowhere near the 33 per cent rise in TTF traded volumes in the same period.

⁸ This is an estimate based on the 2020 figure of 9.45 per cent, adjusted by the same 32.32 per cent increase seen in the exchange spot.



When looking at the changes in the types of trading, the combined German hubs fell in both the OTC and futures categories, but did increase in the exchange spot category. This indicates a shift towards spot/prompt trading linked primarily to physical requirements, and away from curve trading which is linked more to risk management. The spot increase was consistent in each of the ten months, although the increase on October 2021 against October 2020 was slightly higher than all but three of the other months. Therefore, the introduction of the single THE market does not appear to have made any difference to the underlying trend. There are however, two apparent outliers in the exchange futures volumes when comparing the monthly volumes for 2021 with 2020: each monthly volume ranges from 3.7 to 9.2TWh in both years, except for 14TWh (NCG+GPL) in May 2021 and 15.2TWh (THE) in October 2021. These two months are what contributed to the 25 per cent rise in futures volumes in 2021. However, as that is due to just those two individual months, it does not indicate a new trend, nor does it say that THE has in itself made any difference to the trading patterns in Germany.

4. What do the results say of the prospects for the new German THE hub?

The results of the first ten months' trading show that the combined German gas hubs, and now the new THE, have not really changed their ranking among the top performing hubs in Europe. The only slight change is that, when the NCG and GPL volumes are combined, the total is greater than that at PSV.⁹ There have been some changes in the splits between exchange and OTC, spot and curve but again, these have not really altered the fact that the German traded gas market is there to assist the industry to procure, transport, and deliver gas, thereby satisfying physical contracts and allowing for, in particular, day ahead balancing. It was not a market aimed at major volumes of long term risk management nor at attracting financial players or speculators; this is still the case and is unlikely to change in the immediate future with the start of the THE hub.

The history of gas hub mergers in Germany¹⁰ has been rather long-winded: having started with 19 balancing zones, there was a period of consolidation from 2009 to 2011, resulting in the NCG and GPL hubs, both with high and low calorific gas networks (and associated traded contracts). As soon as 2012, discussions were initiated to complete the process and create just one hub, as well as socialising the high/low calorific conversion;¹¹ the idea was rejected on the grounds that the costs far outweighed any potential benefits to the consumer and that a further consolidation of market areas was not urgent.

Several more initiatives finally led to a consultation with the German gas industry, culminating in a draft amendment to the Gas Network Access Ordinance that was passed into law in August 2017. The stated aim for merging the two hubs was to increase market liquidity. Following further discussions with the industry participants, it was agreed that the new merged Market Area would start operations on 1st October 2021; they would optimistically call this the Trading Hub Europe, or THE.

Simply calling the new hub 'Trading Hub Europe' and creating an appropriately named domain name (tradinghub.eu) will not in themselves make the new THE more liquid than the combined NCG and GPL hubs; indeed, that aspiration is a long way from the reality, as demonstrated in the analysis of the hubs shown in this and previous papers.

The new Market Area Manager started to coordinate the new structure in early 2021, with a new website going live on 1st June 2021. In the first six months there has been very little information posted to the website and even in early December 2021,¹² there is still very little. The Author is surprised that the site does not appear to work very well, including requests for downloading trading data met with error warnings!¹³ When looking at this trading data page, it is possible to hover over the volumes and churn bars and see that, since the Author compiled and analysed the data to end October 2021, the site has now posted the results for November: these show that the traded volumes have increased very slightly

⁹ In 2020, PSV (1455TWh) was ranked behind NCG (1965TWh) but ahead of GPL (1350TWh).

¹⁰ For more complete detail, see European Traded Gas Hubs: German hubs about to merge, pp.12-14: [European Traded Gas Hubs: German hubs about to merge - Oxford Institute for Energy Studies \(oxfordenergy.org\)](https://www.oxfordenergy.org/energy-articles/european-traded-gas-hubs-german-hubs-about-to-merge)

¹¹ The Netherlands had socialised the high/low calorific conversion several years previously and this had been cited as a positive contribution to the rapid increase in trading at the TTF.

¹² THE website accessed 3rd December 2021.

¹³ See: <https://www.tradinghub.eu/en-gb/Publications/Virtual-Trading-Point/Development-VTP-THE>

but, as there was also an underlying increase in physical throughput, the (net) churn rate has actually fallen slightly from 3.36 times in October to 3.04 times in November, for high and low calorie combined; these churn rates are in line with the annualised results the Author published for 2020.¹⁴

These churn rates are far from reflecting a mature liquid market and the fact that they appear to be falling slightly is not very encouraging for the new THE hub.

Indeed, this is far from the aspirations stated by two of the joint Managing Directors of THE in the press release¹⁵ to announce the start of trading on the new hub: “Thanks to its central location, high service quality and our customer-friendly approach, THE will be the central starting point for further cross-border links between individual European gas markets”; the press release goes on to state that THE is: “one of the most attractive and liquid gas trading hubs in Europe [...], providing excellent opportunities for future growth”.

The ‘new’ THE has only been trading for two months but it is of course simply the continuation of the previous NCG and GPL hubs combined; the start date in October was maybe unfortunate given the extreme and unprecedented rise in gas prices over the summer of 2021, leading to very high levels of volatility and pushing traders towards the exchange contracts and away from OTC contracts.¹⁶ As explained above, there has been a large increase in traded volumes at TTF, Europe’s largest and by far most liquid hub, and this has been reflected by lack-lustre performance at most other hubs, including the German NCG, GPL, and the new THE.

This situation may not have helped THE get off to a good start but, if the aspirations were to be fulfilled, there would already have been encouraging signs of growth in the German traded gas market, as there have been in the Austrian market; unfortunately there have not. This is despite there being 5 official Market Makers,¹⁷ who were each paid €50,000 to provide market making services, with the aim to “increase liquidity in the futures and forwards markets at the VTP”. Their efforts have so far not proved very effective but the market operator has recently opened another tender¹⁸ for a second round of market makers to “improve liquidity” in the first half of 2022.

It is worth remembering that the French gas market went through a similar transition, the TRF is the result of the consolidation of the five French balancing hubs created in 2004, to the present day two, with just one trading area. It was expected to bring more liquidity to the market and to boost its place among its neighbouring hubs. Market Makers were also invited to help create more liquidity and generally boost trading activity. Unfortunately, the French traded gas market has been very slow to develop and analysis of the trading results shows that it has barely changed over the past few years; this example does not bode well for the promise of greater liquidity at the new Trading Hub Europe.

As Continental Europe’s economies, of which Germany’s is the largest, grow post-pandemic crisis, it can be expected that gas demand might also grow again, leading to an increase in overall trading. To counter that there is still, post-COP26, an answered question over whether gas is part of the energy transition or not, which might have an impact on gas demand. The real question in the scope of this paper is whether the German traded gas market can grow significantly to become ‘one of the most attractive and liquid gas trading hubs in Europe’ as stated in the THE press release? From the results of the analysis set out in this paper, the future prospects for THE are that the hub will most likely continue the path set out by the previous NCG and GPL hubs, remaining an ‘active’ hub but not increasing its total traded volumes to any great extent and not being a threat to the dominant TTF benchmark hub.

¹⁴ The net churn in 2020 for NCG was 4 times, GPL 3 times, and combined 3.48 times.

¹⁵ THE press release “Trading Hub Europe market area starts operations”, 1st October 2021: <https://www.tradinghub.eu/en-gb/About-us/Newsroom/News/Details-en-GB/ArtMID/1412/ArticleID/25/Press-Release>

¹⁶ As exchange contracts are financially guaranteed but OTC trades are bilateral contracts where the counterparties have both performance and financial risk with each other.

¹⁷ THE press release “Market maker tender closed”, 28th June 2021: <https://www.tradinghub.eu/en-gb/About-us/Newsroom/News/Details-en-GB/ArtMID/1412/ArticleID/9/Market-maker-tender-closed>

¹⁸ THE press release “Tender Market Maker”, 15th November 2021: <https://www.tradinghub.eu/en-gb/About-us/Newsroom/News/Details-en-GB/ArtMID/1412/ArticleID/30/Press-Release>

7. Conclusion

The aim of this paper has been to question the official statements¹⁹ made in the German energy Act and in the NCG/GPL joint press release, and to report on the actual performance of the NCG/GPL hubs so far in 2021 as well as the first month of trading of the new THE hub. After just one month's data available, this paper analysed whether there are indeed signs that the German market is developing into an 'international' hub or whether it is simply 'business as usual'?

It could be argued that the German hubs could or indeed should have already performed better over the past decade. The reality is that they did not, despite Germany having the highest physical gas demand in Europe, having a comprehensive gas pipeline and storage infrastructure, and having good connections with all the surrounding countries. These attributes should have enabled the traded gas markets to flourish, yet compared to neighbouring countries, they did not and the two German hubs remained essentially where they were five years ago. By contrast other 'active' hubs, such as the Italian PSV and Austrian VTP, continued to progressively improve on all counts.

If the NCG and GPL hubs had not developed more than they had due to there being two hubs in Germany rather than one, simply merging them was unlikely to succeed in creating a more liquid market, as the French experience of hub mergers showed. Furthermore, after years of debate and delay in implementing such a merger, and the decision not to go ahead and socialise the high/low calorie conversion cost, as done in the Netherlands to great positive effect, the resulting THE hub has inherited a trading environment focused on delivering an efficient and effective spot/prompt market, and this is borne out in the statistical trading data.

The total traded volumes of the combined German hubs fell 12.45 per cent from 2019 to 2020 and a further 6.55 per cent from 2020 to 2021, making a drop of 18.19 per cent over the two-year period. This is a significant drop, worse than the 10.3 per cent drop at the French TRF and much worse than the 5.2 per cent increase in total traded volumes at the Austrian VTP, and in total contrast to the 33 per cent rise in TTF traded volumes in the same 2-year period.

The combined German hubs fell in both the OTC and futures categories, but did increase in the exchange spot category. This indicates a shift towards spot/prompt trading linked primarily to physical requirements, and away from curve trading which is linked more to risk management.

Despite the extreme and unprecedented rise in gas prices over the summer of 2021, leading to very high levels of volatility and pushing traders towards the exchange contracts in general, and the very liquid TTF in particular, there have not been any encouraging signs of growth in the German traded gas market. It could be said that those extreme market conditions were in part the reason and that it is still too early to tell but, despite just two months²⁰ of trading data, there are no observable signs at all of a change in trading patterns in Germany

The new THE hub's biggest rival is the TTF, and the one to 'catch up' if the statements were indeed to come true; the churn rates are far from reflecting a mature liquid market, the total traded volumes are reasonable and are 'the best of the rest' after TTF and NBP but, it must be stressed that the TTF volumes are just short of eighteen times larger than THE! Given all the statistical trading data, There is no reason to believe at this stage that the new German THE hub could ever challenge TTF to become the European benchmark hub.

The final conclusion of this paper is that, as previously stated by the Author, the new German Trading Hub Europe is very unlikely to reflect its name.

¹⁹ These state that the merger's aim was to 'increase liquidity', that the NCG and GPL hubs were 'two of the most liquid trading hubs' and that the THE would 'become one of the most attractive and liquid gas trading hubs in Europe'. For more detail, see: European Traded Gas Hubs: German hubs about to merge, p.14: <https://www.oxfordenergy.org/publications/european-traded-gas-hubs-german-hubs-about-to-merge/>

²⁰ The October data is included in full in this paper, as well as the November volumes and churn rates as declared by THE on their website.