Italian ancillary services cartel highlights risks of electricity market transparency

In a decision published on 14 June, the Italian competition authority (AGCM) imposed fines on the owners of three generating plants involved in a cartel that allocated contracts and fixed prices for providing voltage support to the Italian grid operator, Terna. The decision is interesting for its careful analysis of one the most complex cartels seen in recent years in any industry. It is of particular importance for the energy sector, where it highlights the dangers of excessive transparency.

In order to keep the transmission system operating securely, Terna required voltage support in the Campania region on Sundays and public holidays. It accepted offers from suitable plants, usually on the basis of the lowest price. The three plants involved in the cartel were the only three that were technically able to provide voltage support. Instead of submitting competitive offers, however, they agreed to take it in turns to submit winning offers, allowing them to increase prices significantly.

Because of the high degree of transparency required by EU and Italian energy regulation, the operators of the plants were able to predict when their services would be required, and could see each other's pricing and bidding decisions sufficiently soon after each bidding round to be able to adapt their behaviour in subsequent rounds. They did this using a series of "rules", which allowed them to win the rounds in sequence, without contacting each other to arrange the details. The cartel resulted in an estimated overcharge of €900,000 for Terna.

The AGCM imposed fines totalling €302,642. The decision is interesting for a number of reasons, including the definition of highly technical energy markets and the AGCM's careful reconstruction of a complex cartel. More importantly, however, it emphasises concerns, already expressed by a number of competition authorities across the EU, about the European Commission's emphasis on greater transparency in energy markets.

Our article describes the operation of the cartel in more detail.

Background

On 28 May 2010, the Autorità Garante della Concorrenza e del Mercato (AGCM) received an anonymous complaint about a cartel aimed at "maintaining high prices offered for ancillary services in the Central-South zone in which Repower's Teverola plant is located. The agreement provides for the companies concerned to take it in turns to offer ancillary services at uncompetitive prices at weekends." The complaint also stated that the cartel was organised by Repower's head of trading in Italy and involved other companies in the area.

The AGCM launched a formal investigation in October 2010, and carried out on-site investigations at the premises of EGL, Repower and Tirreno Power a few days later.

The cartel related to activities in the Mercato Servizi di Dispacciamento (MSD), the ancillary services market, in Italy in 2010.[1] The Mercato Giorno Prima (MGP), the day-ahead market, closed at 09:00 on D-1 (the day before delivery). At 09:30 on D-1, the

[1] The wholesale electricity markets in Italy have undergone some changes since the period under consideration: the system in operation at that time is described.

intraday Mercato di Aggiustamento (MA) opened, with sessions running until 15:00. At 15:30 on D-1, the MSD opened, closing at 17:00. The MSD was followed by the real-time Mercato di Bilanciamento (MB).

Once positions resulting from the MGP and MA have been finalised, the Italian electricity transmission system operator, Terna, procures any ancillary services that it requires in order to ensure system security. This includes the procurement of resources required to maintain adequate reserves and to resolve constraints resulting from positions notified in the MGP and MA, and also the procurement of more specialist services. This case concerned the procurement of services to provide local voltage support. The area around Naples is characterised by problems of excessive system voltages during periods of low load, particularly on Sundays and public holidays. This is associated with levels of reactive power, which is not readily transmitted over longer distances. The problems can be resolved by running local plants at minimum generation. Terna therefore accepts offers in the MSD from one or more of three CCGT plants in the surrounding area, known as the Campania "cluster". These are Teverola (a 400 MW plant approximately 20km north of Naples), Sparanise (a 2 x 380 MW plant 40km north-west of Naples) and Napoli Levante (a 400 MW plant on the eastern edge of Naples). Minimum generation for each of these plants is approximately 200 to 230 MW. Although Teverola is operated by SET and Sparanise by Calenia, decisions on whether and if so at what price to offer in the MGP and MSD are made by Repower and EGL respectively. Napoli Levante is operated and traded by Tirreno Power. If one or more of the plants are accepted in the MGP, there is generally no need to accept offers in the MSD. Other plants are not substitutable, for various technical reasons.

Terna generally accepts offers in the MSD on the basis of the lowest price. It occasionally accepts an offer other than the lowest-priced offer, from a plant better placed to resolve the concern.

During the period of the cartel, the price per MWh of offers accepted in the MSD on Sundays and public holidays was more than two and a half times the price of offers accepted in the MGP. Margins achieved by the parties in the MSD stabilised at around €140/MWh during the height of the cartel, compared with margins in the MGP that were either negative or barely exceeded zero. The cartel coincided with a change in bidding strategies: whereas in 2009, the parties had regularly offered their plants in the MGP, in 2010 they did so only on very occasionally. This reflected falling margins in the MGP. EGL in particular acknowledged that the reduced margins available on the MGP, and the requirement for Terna to have recourse to the MSD, created an opportunity that it decided to exploit by not offering Sparanise in the MGP at weekends so that Terna would be required to accept offers in the MSD.

Market definition

An interesting element of the decision is its very thorough analysis of the relevant market. While market definition is usually less important in a cartel investigation, the principles set out here are equally capable of being applied in an investigation into an abuse of a dominant position.

The starting point of the AGCM was that according to well-established EU and national case law,[2] the different wholesale markets in which electricity is traded, in particular the MGP and MSD, constitute distinct product markets.

The sequential nature of the market means that Terna's requirements for ancillary services are dependent on the outcome of the MGP. Only once positions in the MGP are known can Terna determine whether all constraints are resolved and requirements for reserve services met. However, this does not mean that the MGP and MSD are part of the same market. The sequence and organisation of the two markets mean that market power can be exercised by different firms in different forms, even though based on electricity generated from the same plants. In the MGP, what matters is the pivotality of a particular company (and not of a single plant), in other words the extent to which it is indispensable for meeting demand. In the MSD, what matter are the location and technical characteristics of each plant which permit the resolution of network constraints, while for the provision of reserves it is the technical characteristics of each plant that matter. Of particular relevance in the MSD is the possibility of exercising market power in relation to local network constraints by those plants which are particularly suited to resolving those constraints. This possibility results in more limited substitutability than is the case for the zonal prices on the MGP or for the procurement of reserves.

In the MB, opportunities for the exercise of market power are similar those to those in the MSD, with the difference that they occur in or near real time, and the exercise of market power therefore depends on the occurrence of unforeseen circumstances.

The different ways in which market power can be exercised in the MGP and the MSD give rise to different competitive relationships which can only be adequately captured by defining them as two distinct markets. The creation of conditions for the exercise of local market power can also result from conduct in the MGP, typically in the form of withholding capacity, intended to give rise to a demand for specific services on the part of the transmission system operator. Terna is generally required to accept one of the plants in the Campania cluster in the MSD only if none of them is accepted at the outcome of the MGP. Therefore in order to be able to exploit the market power that the plants in that cluster enjoy (at least collectively), it is necessary that none of them offer in the MGP, in other words that each generator withholds its plant in the MGP. In this sense, the relevant market for services for the provision of minimum generation is defined exclusively by reference to the MSD and not the MGP.

CCGT plants (such as those in the Campania cluster) tend to be activated in the MSD rather than in real time in the MB, reflecting their ramp rates. Activation in the MB is rare and largely unpredictable. Transactions in the MB are also published with a delay of 2 months. Both of these features of the MB create a degree of uncertainty that means that it does not easily lend itself to collusion. The AGCM therefore concluded that offers in the MB did not form part of the relevant market.

The AGCM then considered whether the various services provided within the MSD constitute distinct markets. It noted that they respond to different requirements, including the resolution of network constraints and the constitution of reserves. The fact that a plant may be called upon by Terna to provide different services does not mean that those services are interchangeable and therefore belong to the same product market.

[2] The AGCM noted that the exception is the GB market, which is organised differently.

This applies in particular to the provision of minimum generation, whose main purpose is to provide voltage support at a particular point in the network, even if the power generated can then be used for other purposes. The fact that the plant can be used to provide a number of ancillary services at the same time is an indication of the complementarity of those services rather than their substitutability. Terna approaches the selection of offers sequentially – first addressing voltage support, then congestion and finally the creation of reserves. This sequential approach indicates that the services constitute distinct markets.

The AGCM concluded that the market was limited to the Campania cluster, consisting of the Teverola, Sparanise and Napoli Levante plants. The geographic market was defined by reference to the particular network constraint, because by definition only the plants that formed part of it could resolve the constraint.

The relevant market was also limited in time, to Sundays and public holidays when these particular low load conditions arose and voltage support became necessary.

So the AGCM concluded that the relevant market was the market for providing minimum generation requested by Terna on Sundays and public holidays from the plants in the Campania cluster. Defined in this way, the three parties held 100% of the market, and the AGCM could conceivably have treated this as an abuse of dominance investigation.

Contacts between the parties

There was, however, no need for AGCM to analyse the case from the perspective of an abuse of dominance, because of the evidence of collusion that it uncovered.

On 12 April 2010, the Repower employee responsible for offers for Teverola emailed one of his colleagues, apparently following a request from Repower's trading manager, asking for details of offers in the MGP and MSD by EGL for Sparanise and by Tirreno Power for Napoli in recent weekends. The email noted that this information was in the public domain. The request would of itself have been entirely legitimate – companies are entitled to use public sources to analyse their competitors' business strategies. However, that evening, the trading manager of Repower wrote to his colleagues to request a quick response, because he and a colleague were to "discuss this information on [14 April] with EGL". On 15 April, Repower's director of strategy and market analysis asked for feedback on the meeting. The head of trading replied "if we tell you, we will have to kill you! (We talked…)". The AGCM uncovered other evidence of contacts between Repower and EGL, including telephone calls and other contacts. There was also evidence of contacts between EGL and Tirreno Power, and of monitoring of each others' offers. The AGCM rejected the parties' explanations that the contacts related to bilateral supply contracts. It also rejected the explanation that the monitoring was for the purposes of planning investment, noting for example that the reports within Repower were sent to executives responsible for trading rather than investment.

The "regularities" observed by the AGCM

The AGCM analysed data on offers in the MGP and MSD provided by GME, the energy market operator. It detected a pattern in the parties' offers in the MSD between May and October 2010. In the first four months of 2010, no particular pattern was discernible,

partly because of the frequency with which Terna accepted offers from more than one plant. However, a pattern emerged in May. In particular, starting on 9 May and continuing until at least 4 July, offers accepted in the MSD for Sundays and public holidays ran in "triads", so that no plant, once accepted by Terna, was accepted again until the other two had been accepted. From 11 July until 1 August, the pattern was a little less clear, with EGL winning a "double shift" for Sparanise, having offered it in the MGP and then offering it again in the MSD on 25 July. A further set of triads was apparent between 22 August and 24 October, and again from the end of October, although this series includes another "double shift" for Sparanise.

The pattern is shown in Table 1:

Table 1 – Offers accepted by Terna, May to October 2010

	Date	Day	Teverola (Repower)	Napoli Levante (Tirreno Power)	Sparanise 1-2 (EGL)	Winner of the round
1st triad	9 May 2010	Sun			1	S
	16 May 2010	Sun		1		N
	23 May 2010	Sun	1			T
2nd triad	30 May 2010	Sun		2		N
	2 June 2010	Wed (Republic Day)	2			T
	6 June 2010	Sun				
	13 June 2010	Sun			2	S
3rd triad	20 June 2010	Sun	3			T
	27 June 2010	Sun			3	S
	4 July 2010	Sun		3		N
4th triad	11 July 2010	Sun	4			T
	18 July 2012	Sun			MGP	S (MGP)
	25 July 2010	Sun			4 + 1 MGP	S
	1 Aug 2010	Sun		4		N
	8 Aug 2010	Sun	5			T
	15 Aug 2010	Sun (Ferragosto)	6	5		T, N
5th triad	22 Aug 2010	Sun	7			T
	29 Aug 2010	Sun			5 + 1 MGP	S
	05 Sep 2010	Sun		6		N
6th triad	12 Sept 2010	Sun	8			T
	19 Sept 2010	Sun			MGP	S (MGP)
	26 Sept 2010	Sun			6 + 2 MGP	S
	3 Oct 2010	Sun		7		N
7th triad	10 Oct 2010	Sun			7 + 2 MGP	S
	17 Oct 2010	Sun		8		N
	24 Oct 2010	Sun	9			T
	31 Oct 2010	Sun		9	8 + 2 MGP	N, S
	1 Nov 2010	Sun	10	10		T, N
	7 Nov 2010	Sun			9 + 2 MGP	S
	14 Nov 2010	Sun		11		N
	21 Nov 2010	Sun		12		N
	28 Nov 2010	Sun		13		N
	5 Dec 2010	Sun	11			T
	8 Dec 2010	Wed (Immacolata)			MGP	S (MGP)
	12 Dec 2010	Sun		14		N
	19 Dec 2010	Sun			10 + 3 MGP	S
	25 Dec 2010	Christmas Day	12		11 + 3 MGP	T, S
	26 Dec 2010	Sun	13		12 + 3 MGP	T, S

Key

Outage

Offer accepted (with number of offers for that plant accepted to date)

The AGCM set out, at paragraph 98 of its decision, a number of what it termed "regularities" that it had observed in the parties' offers in the MSD:

> "98. The **first regularity** is the following: every time that on a public holiday [for these purposes, public holidays include Sundays] a company was called upon by Terna for its plant in the Campania cluster in the MSD, on the following public holiday that company submitted an offer higher than that with which it won the previous week, and therefore no lower than the price accepted two public holidays previously.[3] This was done in order to minimize the probability of winning again. A company that followed this rule would in principle not win twice in succession on the basis of the value of its offer. Compliance with this rule contributed to the creation of the "triad" shown in Table [1].
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> 99. The **second regularity** consists of the fact that the offer accepted by Terna on the public holiday F often appears to be no higher than the offer accepted on the public holiday F-2 (generally the last day for which disaggregated data on the offers have been published at the point at which offers for day F are formulated)[4], … This second regularity has as its effect a reduction over time of the value of offers accepted by Terna for public holidays in the Campania cluster. This downward trend certainly appears to be consistent with the downward trend of generation costs of the plants in the Campania cluster in the second half of 2010…
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> 100. The **third regularity** consists of the fact that the offers that are not selected on a given public holiday are almost always no lower than the offer accepted on the second preceding public holiday (ie. F-2). A similar regularity does not, however, appear with respect to the offers that are not accepted on the previous public holiday (F-1), by reference to which the offers that are not accepted on day F are sometimes higher and sometimes lower.
>
> In this regard, it can be observed that, according to the rules of transparency of offer data in the electricity markets, except in the case of consecutive public holidays, at the moment when offers are submitted for public holiday F (meaning a Sunday) the offers made by all competitors and those accepted by Terna for public holiday F-2 (two Sundays previously), but not those for holiday F-1 (the previous Sunday), have been published."

The first and third regularities appeared in more than 85% of Sundays and public holidays between 9 May and 10 October 2010. The second regularity was observed a little less frequently. Violations of one or more of the regularities appear to have increased in frequency in the latter stages of the cartel, from August to October 2010.

The AGCM concluded that the scheme was focused on the identification of a "reference offer" as the basis for calibrating the offers that were to be accepted by Terna. The winning bids would be those priced at below that offer (second regularity), and the losing bids would be those priced above it (first and third regularity). Using a reference offer would exploit the transparency of the MSD, minimizing contacts between the parties and imposing the fewest possible restrictions on the winning offer prices and the sequence of the winners, to make it more difficult for a competition authority to detect the scheme. However, the behaviour described in the first regularity (that a winning bidder would offer a higher price in the next round) was sufficiently unusual that in fact it may well have been one of the features that allowed the AGCM to unravel the cartel.

The three "rules"

[3] More precisely, no lower than the last published offer executed on a public holiday. In fact, the GME publishes details of the offers made by all operators in the MSD on a given day, and whether or not they were accepted, 8 days thereafter. On 6 June, for example, the data for 30 May (F-2 [because F-1 was Republic Day on 2 June]) had not yet been published, whereas those for 23 May [which was in fact F-3] had been.

[4] More precisely, almost always no higher than the last published offer for a public holiday.

The AGCM inferred the existence of three "rules" from the regularities that it had observed. It defined them in the [Communicazione delle Risultanze Istruttorie (CRI) – the communication of the findings of the investigation, roughly the equivalent of the statement of objections in European Commission proceedings] – as follows:

> "'public holiday of reference' (FR): the latest public holiday for which disaggregated offer data for the MSD are available on the GME web-site;
>
> 'triad': a cycle of three public holidays during which an offer of each company is accepted once and once only on the MSD;
>
> 'offer': the product of the volume of minimum generation and the hourly price (generally equal for all hours from the beginning of May 2010) at which that quantity is offered;
>
> ...
>
> "**Rule 1**: the winning company in a given round cannot win again in the following round, and therefore increases its own offer by reference to the previous round, bringing it to a level not less than the winning offer on the day of reference FR.[5] This rule also applies where Terna accepts multiple offers, or offers outside the merit order.
>
> **Rule 2**: on the public holiday that concludes a triad, the company whose offer has not been accepted in either of the two previous rounds reduces its offer to below that of the winner on the day of reference FR.
>
> **Rule 3**: on the public holiday that concludes a triad, the companies whose offers Terna has accepted in the two preceding rounds of the triad increase their offer to a level no less than the successful offer on the day of reference."

The AGCM outlined the application of these rules to each of the public holidays from 9 May 2010 until October, when it carried out its on-site investigations.

The description of the parties' conduct on 29 May provides a useful illustration of the AGCM's analysis:

> "113. On Saturday 29 May, when making bids for Sunday 30 May, the companies know the offers of 9 and 16 May [because the data have by then been published by the EGM]. Sparanise (EGL) and Napoli Levante (Tirreno Power), can infer, based on the fact that they won the rounds of 9 and 16 May, that on the previous Sunday 23 May, Terna called upon Teverola to run, and therefore that on 30 May Repower will make an offer that Terna will not accept – which is what actually happened. Repower increases its offer above that of Tirreno Power on 16 May (Rule 1). In consequence, EGL and Tirreno Power know that they can price freely relative to the reference price for Sunday 30 May and both reduce the offer price below that of the previous Sunday. Tirreno Power, however, reduces the price to bring itself to the level at which it won two Sundays previously (Rule 2), while EGL makes a higher offer; Terna accepts Tirreno Power's offer."

The application of Rule 2 resulted in a downward trend of the prices of offers accepted by Terna. This was inevitable where the winning price was designed to be lower than the reference price. Although it took place in a period of decreasing costs, it was not sustainable in the long run, and it required the occasional violation of Rule 2. So on 6 June, in the third round of the second triad, EGL was certain to be called and could therefore increase its price above the winning price on 23 May (which was the reference price despite being F-3, because the data for 2 June and 6 June had not yet been published). In the event, Terna did not accept any offers in the MSD on that date.

[5] The parties noted that Rule 1 did not fully reflect the description of the first regularity, notwithstanding the detailed analysis of the fluctuation of the offers that had been carried out, verifying observance of that regularity. Rule 1 was slightly modified from the way in which it described in the CRI, to reflect the first regularity more accurately.

Figure 1 – application of the cartel rules to the second triad

Ultimately the cartel appears to have broken down because EGL, whose Sparanise plant had a capacity nearly double that of the other two, had a greater incentive to deviate from the cartel. It apparently identified a likely increase in demand in the MGP on public holidays, which would favour its plant over those of the other two members. It bid on a number of occasions in MGP and out of turn in the MSD. Repower and Tirreno Power retaliated and although the cartel partially recovered for one or two triads, the parties had substantially abandoned it by the time of the dawn raids in October.

The AGCM noted that even in the absence of documentary evidence of direct contact between the parties, it was entitled to infer the existence of the cartel from the circumstantial evidence. There was evidence of contact between two of the parties, and the parties' conduct could not be explained by mere parallel conduct, but only by collusion. In particular, the sudden emergence of the pattern of offers in May 2010, without the period of mutual adaptation typical of tacit collusion, the very clear turn-taking, the higher prices during the cartel period and finally the very clear and accurate description of the operation of the cartel in the anonymous complaint received by the AGCM, all supported the existence of a cartel.

The impact of wholesale electricity market transparency

The high level of transparency of the Italian wholesale electricity market played a very significant role in facilitating the cartel. The publication of disaggregated data on offers in the MSD on D+8 permitted the use of F-2 data as the basis for pricing offers. This delay meant that the information was sufficiently current to permit effective coordination. The AGCM noted that the publication on Terna's website of data on the unavailability of Repower's Teverola plant from 2 to 16 May 2010 facilitated the start of the cartel by reducing from 3 to 2 the number of plants that needed to be coordinated. Prompt publication of disaggregated data also permitted monitoring of compliance. Deviation could be detected within 8 days, and punished two Sundays from any deviation, ie. with only one intervening offer. For example, it became clear on 1 August that on 18 July EGL had offered Sparanise in the MGP and that no plant had been called in the MSD. According to the rules, having run (albeit in the MGP) on 18 July, EGL should have submitted an offer for 25 July that would not be accepted. However, on 8 August it became clear that it had not done so, and Repower retaliated by submitting the lowest offer of any of the three companies during the cartel period (€200/MWh).

Even the publication of aggregated data facilitated the operation of the cartel. For example, aggregated data published on 7 June made it clear that on 6 June Terna had accepted an offer from a plant with minimum generation of significantly less than 200 MW, therefore ruling out all three plants in the Campania cluster. The parties were therefore able to treat this as a missed turn and repeat it the following Sunday.

The AGCM had already expressed concerns about the level of transparency in a report to the Italian government in April 2009, shortly after the delay for the publication of disaggregated data was reduced from 12 months to 7 days.

Transparency increased further in January 2010, as a result of requirements imposed by the Central-South Electricity Regional Initiative of the European .[6] These required the publication of data on planned and unplanned outages of plants with a capacity greater than 100 MW.

European energy regulators intend to go further still in creating wholesale market transparency. In December 2010, ERGEG published its draft Comitology Guidelines on Fundamental Electricity Data Transparency.[7] The draft Guidelines, which are intended, despite their title, to be adopted as a formal binding measure by the European Commission, propose publication of unit-by-unit output for generation units exceeding 100 MW at H+1 (with a delay of only one hour). In relation to balancing markets, which may be defined very narrowly in terms of service, geography and time, the guidelines require the publication of significant levels of detail, much of it at H+2.

Unusually, the European Commission published a further consultation on the proposal in July 2011, specifically inviting comments on the question of whether greater levels of transparency presented greater risk of anti-competitive agreements and conduct.

Not surprisingly, a number of competition authorities expressed concerns. Among them was the AGCM, which commented[8] that:

> "[The] Italian wholesale electricity market could… be defined an oligopoly. In such a situation, possible infringements of competition law would take the form of collusion rather than abuse of dominance. The ICA has recently opened an investigation regarding an alleged cartel among three competitors aimed at sharing a niche of the ex ante balancing market in Central-Southern Italy. In this case, as in other possible situations, the ICA believes that firms involved could have taken great advantage of the possibility to know, with a seven days delay, their competitor behaviour on the balancing market. It must be noted that ERGEG Guidelines would reduce this delay to one hour."

Comment

This is an important decision for competition law enforcement generally, being one of the most sophisticated bid-rigging mechanisms described in an infringement decision in Europe. Most bid-rigging relies on some form of allocation and pricing decision for each round. This cartel, by using a recent but published price as the reference price, introduced an apparently random element that would probably, in the absence of the complaint, have made it harder to detect. However, the decision will be of the greatest relevance in the energy sector, where its detailed analysis of market definition in the area of ancillary services, and its concrete demonstration of the real risks of excessive transparency, will be of interest to generators and transmission system operators alike.

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[6] http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_ACTIVITIES/EER_INITIATIVES/ERI/Central-South/Press/press%20release%20transparency%20report%20CSE_final.pdf ; http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_ACTIVITIES/EER_INITIATIVES/ERI/Central-South/Final%20docs/Transparency%20Final%20version.pdf

[7] http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_CONSULT/CLOSED%20PUBLIC%20CONSULTATIONS/ELECTRICITY/Comitology%20Guideline%20Electricity%20Transparency/CD/E10-ENM-27-03_FEDT_7-Dec-2010.pdf

[8] http://ec.europa.eu/energy/gas_electricity/consultations/20110916_electricity_en.htm