



Bundeskartellamt

# Fuel Sector Inquiry

Final Report in accordance with § 32e GWB - May 2011 - Summary



Offene Märkte | Fairer Wettbewerb

## A.

### Overview of the Fuel Sector Inquiry

#### I. Purpose and procedure

The Bundeskartellamt has examined competition in the markets for the retail sale of petrol and diesel through petrol stations (fuel retail markets). The inquiry is based on § 32 e of the German Act against Restraints of Competition (ARC).<sup>1</sup> Accordingly, the Bundeskartellamt may examine a specific sector of the economy if circumstances suggest that competition is restricted in this sector in Germany. The inquiry is not targeted at individual companies, but focuses on the overall competitive conditions in the economic sector.

The Bundeskartellamt launched the fuel sector inquiry on 28 May 2008. It was **initiated following indications** received by the Bundeskartellamt in the course of its merger control activities **of possible competition law problems in the fuel sector**. Furthermore, there were **numerous consumer complaints about the level of fuel prices, as well as reports from independent petrol station operators on possibly anti-competitive practices by the large oil companies**. The Bundeskartellamt also used the sector inquiry to gain up-to-date market data as the last comprehensive nationwide survey under merger control had been conducted several years ago.

On 2 June 2009 the Bundeskartellamt published an interim report which analysed the market structures in the fuel sector, identified different market levels and relevant markets and presented initial findings on how these work.<sup>2</sup> In its final report the Bundeskartellamt has now made further use of these insights to present an in-depth analysis of the market structures and fuel prices. The sector concerned has been involved throughout this whole process. The Bundeskartellamt requested information and data from the oil companies, processed this information and took into account individual comments. Two economic experts commissioned by the oil sector were given the opportunity to present and discuss their findings at the Bundeskartellamt's offices.

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<sup>1</sup> Act against Restraints of Competition as published on 15.07.2005 (Federal Law Gazette I 2114; 2009 I 3850), last amended by Article 13 (21) of the Act of 25.05.2009 (Federal Law Gazette I 1102) - *Gesetz gegen Wettbewerbsbeschränkungen (GWB)*.

<sup>2</sup> Cf. *Bundeskartellamt*, Interim Report on the Fuel Sector Inquiry, June 2009, available at [http://www.bundeskartellamt.de/wEnglisch/download/pdf/09-242\\_Zwischenbericht\\_Kraftstoffe-E.pdf](http://www.bundeskartellamt.de/wEnglisch/download/pdf/09-242_Zwischenbericht_Kraftstoffe-E.pdf)

With this report the Bundeskartellamt concludes its fuel sector inquiry. The oil sector and experts are now invited to comment on the final report for a further three months until 26 August 2011. These comments will be taken account of in the Bundeskartellamt's further evaluation practice.

## **II. Economic subject matter of the inquiry**

In general the Bundeskartellamt's inquiry covers all market levels of the oil sector - the levels of production (refining of crude oil), distribution (wholesale of fuels) and petrol station markets (retail of fuels), but its **focus is on the fuel retail markets**.<sup>3</sup> The large oil companies which have their own production capacities are active at the production level. These vertically integrated companies are also represented at the distribution and retail levels where they are in competition with wholesalers and retailers. Therefore, the suppliers active in the petrol station sector are very diverse in terms of their size and financial power.

For the retail level the Bundeskartellamt has adopted the **standard differentiation according to the companies' pricing strategies**. Premium brands such as Aral (BP), Esso (EXXonMobil), Shell, Total, Orlen, OMV, Agip (Eni), Avia and Westfalen realize the highest price level in the market (so-called brands with A prices). Somewhat lower prices are realized by established brands such as in particular Jet (Conoco Philips), Star (Orlen), HEM (Tamoil), Q1 and avanti24 (OMV). The lowest prices in the market are generally offered by suppliers with C prices, for example members of the Federal Association of Independent Petrol Stations (*Bundesverband Freier Tankstellen*, bft).

At the retail level there are **two business areas**, i.e. **fuel sales through off-motorway petrol stations and fuel sales through motorway petrol stations**. These areas differ from one another in their general competitive conditions. In the off-motorway petrol station sector the oil companies can implement their business strategies based on their individual operational efficiency. This is not generally possible in the motorway petrol station business. Which oil companies operate which motorway petrol stations crucially depends on the allocation of the so-called fuel supply and distribution licences by Tank & Rast GmbH (Tank & Rast). Tank & Rast is in charge of the construction, operation and lease of motorway petrol stations. For

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<sup>3</sup> For a detailed description of the market levels, cf. *Bundeskartellamt*, Fuel Sector Inquiry, Interim Report, June 2009.

this reason the Bundeskartellamt's inquiry has differentiated between the two business areas of motorway and off-motorway petrol stations.

With regard to the **different types of fuel** sold at the petrol stations, the Bundeskartellamt differentiates between the product markets for the **sale of petrol and diesel**. **From the customers' perspective the types of fuel are not interchangeable** as motorists make a decision in favour of a certain type of fuel when purchasing a motor vehicle with a certain type of engine. The geographic market is defined as a **regional market which comprises all stations at which a motorist could fill up with fuel within reach of his target petrol station within a certain specified time period**. For its concrete definition of the regional market, the Bundeskartellamt applies the so-called accessibility model of the Federal Office for Building and Regional Planning. Following the insights gained from the sector inquiry, the Bundeskartellamt now bases its decisions on a different market definition<sup>4</sup> than the one previously used. This definition has meanwhile been confirmed by the Düsseldorf Higher Regional Court.<sup>5</sup>

The **starting point of the Bundeskartellamt's price analysis** is the **fuel price which motorists have to pay**. This price corresponds to the so-called gross petrol station price indicated at the pumps and price display boards. It includes energy tax<sup>6</sup>, a petroleum storage duty and value-added tax. It should therefore be noted first of all that in this way around 60% of the gross petrol station price is collected by the state on behalf of its citizens. After deduction of the state components, approx. 40% of the gross petrol station price is in principle subject to control by the Bundeskartellamt. Three quarters of this share are accounted for by the costs of procuring and transporting fuel while the remaining share remains with the petrol station. Even though only the share which is accounted for by the petrol station is in the focus of the inquiry, this by no means signifies that it would not be worthwhile to deal with the petrol station level under competition law aspects. In the course of one day, price increases amounting to several eurocents per litre can be observed so that, in relation to the margin, price increases in the high two-digit percent range are at stake. This underlines the justification for dealing in detail with the competitive situation in the petrol station sector today.

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<sup>4</sup> Cf. *Bundeskartellamt*, Fuel Sector Inquiry, Interim Report, June 2009, p. 25-29.

<sup>5</sup> Cf. Düsseldorf Higher Regional Court, decision of 04.08.2010, file number VI-2 Kart 6/09 [V], official copy of the court's ruling p. 6 ff. = WuW/E DE-R 3000 "*Tankstellenbetriebe Thüringen*" (appealed).

<sup>6</sup> Energy tax amounts to 65.4 eurocents per litre of petrol and 47 eurocents per litre of diesel.

### **III. Content of the inquiry**

Due to the different competitive conditions in the sectors of fuel sales through motorway petrol stations and off-motorway petrol stations, the sector inquiry took a different course in each of the two business areas.

With regard to fuel sales through motorway petrol stations, the Bundeskartellamt's sector inquiry has identified competition problems and worked towards reshaping the sector in line with competition rules. From a competition law perspective the task here is to prevent the discrimination of small and medium-sized oil companies in the allocation of fuel supply and distribution licences as well as to open up this business sector to foreign newcomers or incumbent companies with alternative strategies.

On the other hand, the competitive conditions for the sale of fuel through off-motorway petrol stations are influenced by other factors. In this area, the sector inquiry therefore focused on analysing the oligopolistic market structure and thus proving the existence of a collective dominant position held by BP (Aral), ConocoPhillips (Jet), ExxonMobil (Esso), Shell and Total. The inquiry also examined several individual issues relevant to competition (fuel and service cards, brand partnership and brand dealership agreements as well as predatory pricing) and carried out an analysis of petrol station prices.

## **B. Results**

### **I. Motorway petrol stations**

**Fuel sales through motorway petrol stations** are very **lucrative** for the oil companies as they are able to achieve high prices and, at each motorway petrol station, sell approx. double the amount of fuel sold at any off-motorway petrol station.<sup>7</sup> Which oil company operates which motorway petrol station essentially depends on the allocation of fuel supply and distribution licences by Tank & Rast. There are currently **approx. 340 petrol stations on the German motorways**, and in

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<sup>7</sup> On the basis of the absolute quantity of fuel sold, total fuel sales at motorway petrol stations clearly play a minor role than total sales at off-motorway petrol stations (2.0 billion litres per year versus 47.0 billion litres per year). Typically, motorway petrol stations sell more diesel than petrol (1.4 billion litres per year versus 0.6 billion litres per year), whereas the relationship between the types of fuel sold at off-motorway petrol stations is more balanced (23.0 billion litres per year versus 24.0 billion litres per year).

addition to these 30 so-called authorized petrol stations (*Gestattungsbetriebe*). **Tank & Rast** has taken over **management** of these businesses from the state, but so far has not sold fuel at these stations itself. The company **awards the supply and sales licences for fuel and lubricants to the oil companies**. In this respect the sector inquiry initially focused on the competition problems involved in the traditional allocation of supply and distribution licences (see 1. below) and went on to examine under competition law aspects the amended criteria envisaged by Tank & Rast for future use (see 2. below).

#### **1. End of licence allocation based exclusively on the quota model**

Since the 1960s, **most of the fuel supply and distribution licences** had been awarded by Tank & Rast and its legal predecessors **according to the so-called quota model, i.e. in proportion to the market shares held in the off-motorway petrol station business**. This award procedure was approved by the Bundeskartellamt at the time because it ensured that small and medium-sized companies also had a chance to obtain a motorway petrol station and would not be squeezed out by the large companies. In this context the competition law connecting factor was the prohibition of discrimination under competition law which Tank & Rast and its legal predecessors had to comply with as dominant providers of supply and distribution licences. The oil companies had gone on to **safeguard their interests by setting up the BAT Working Group of suppliers to motorway petrol stations** (*Belieferer von Bundesautobahntankstellen*) whose Chairman carried out the annually required adjustment of supply and distribution licences in proportion to the shares held in the off-motorway petrol station business.

In 2008, first Esso (ExxonMobil) and Shell and some time later also Total ended their participation in the Working Group's activities. The **Bundeskartellamt** refused to issue a certificate of non-objection as requested by the BAT Working Group because the **continuation of the established system of quota-based allocation raised competition law concerns**. In the Bundeskartellamt's view the allocation of all supply and distribution licences on the basis of this quota would indeed have been likely to restrict competition for these licences in the future. In the course of the sector inquiry the Bundeskartellamt was contacted by some oil companies which were already active in the motorway and off-

motorway petrol station business but wanted to weight the two sectors differently in future. Furthermore, trade publications reported on foreign oil producing companies which had so far not been represented by petrol stations in Germany and were interested in entering the market. Entering a country's petrol station business via the lucrative motorway petrol station segment would be an important opportunity for them. However, a model which directly links the allocation of all licences for motorway petrol stations to a company's presence in the German off-motorway petrol station business would make both strategies impossible.

In competition law terms it will therefore not be sufficient to merely ensure that licences are allocated in a non-discriminatory manner. It has also become increasingly important for the **protection of competition in the fuel sector to avoid market foreclosure**. The actual procedure of having quotas allocated by the BAT Working Group, in which the competing oil companies are represented, also raised competition concerns. The Bundeskartellamt therefore called on the BAT Working Group to restrict its work essentially to technical coordination.

As Tank & Rast had announced that it would change its allocation criteria, the **Bundeskartellamt** worked out **an interim solution** in 2009 together with the oil companies, the **BAT Working Group and Tank & Rast**. This solution has meanwhile been implemented. The main provision of the interim solution is that until 31 December 2012 the allocation can still be based exclusively on the quota. However, the quotas are allocated by the Bundeskartellamt and a trustee appointed by the authority.

## **2. Creation of allocation criteria which are compliant with competition law as from 1 January 2013**

In the course of the sector inquiry, Tank & Rast indicated that **as from 1 January 2013** it will base the **allocation of its supply and distribution licences** on new criteria. Initially 293 of the approx. 340 Tank & Rast motorway petrol stations will be affected by the new conditions. In future, **licences will no longer be exclusively allocated on the basis of the quota model, but will**

**also be auctioned.** Furthermore, **for the first time** a certain percentage of the motorway petrol stations will be operated and supplied by **Tank & Rast itself.**<sup>8</sup>

The Bundeskartellamt has subsequently asked all segments of the business community concerned to comment on this plan (market test) and has established evidence by obtaining an expert opinion on the auction conditions. Almost the entire industry has participated in a very constructive way in the market test and provided numerous comments and suggestions on the new award criteria. The expert opinion provided specific advice on how the auction conditions should be designed. Based on this advice the Bundeskartellamt requested Tank & Rast to further define and expand its criteria. Subsequently, in January 2011, the authority decided<sup>9</sup> that from a competition law perspective the new licence award procedures did not warrant any action on its part. In the Bundeskartellamt's view the reduction of the quota prevents market foreclosure within the meaning of § 1 ARC, Art. 101 TFEU<sup>10</sup>. Moreover, on balance the criteria do not raise any concerns that small or medium-sized bidders within the meaning of §§ 19, 20 ARC or Art. 102 TFEU may be discriminated against.<sup>11</sup>

Another point of interest for motorists is the fact that, together with the new award criteria, **a new fee schedule will be introduced by Tank & Rast.** Up to now the licence fee payable to Tank & Rast has depended on the quantity of fuel sold. This has provided an incentive for oil companies to sell a minimum of fuel at a maximum price at motorway petrol stations. The new fee schedule with its lower and more flexible rates will render such a strategy more unattractive.

## **II. Off-motorway petrol stations**

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<sup>8</sup> To what exact extent the quota system's share in the allocation process will be reduced still remains open; the quotas' share will either initially amount to about 35%, or initially 65% and then from 1 January 2018 around 40 - 49%.

<sup>9</sup> Cf. BKartA decision of 14.01.2011, Ref. B8-95/10 "*BAT-Neuvergabe*" (appealed).

<sup>10</sup> Treaty on the Functioning of the European Union as amended by the Treaty of Amsterdam of 02.10.1997 (Federal Law Gazette 1998 II 386,465, amended 1999 II 416) last amended by the Treaty of Lisbon of 13.12.2007 (consolidated version Official Journal 2010 C 83, p. 47) - Treaty on the Functioning of the European Union (TFEU).

<sup>11</sup> In particular, the new criteria are beneficial to small and medium-sized oil companies which - other than their vertically integrated competitors - face purchasing disadvantages, especially in the case of an auctioning model which involves a comparatively high financial outlay for them. With the amended criteria, these oil companies will be granted a discount of 0.21 eurocent per litre.



In the off-motorway petrol station sector, petrol and diesel are sold via approx. 14,700 petrol stations.<sup>12</sup> **An assessment of this sector under competition law has to be based on separate (regional) markets for petrol and diesel.** As a result of its investigations, the Bundeskartellamt regards the oil companies BP (Aral), ConocoPhillips (Jet), ExxonMobil (Esso), Shell and Total as collectively dominant on these regional markets. Consequently, these companies are subject to the anti-abuse provisions of the ARC and the TFEU (see 1. below). In addition, the Bundeskartellamt has conducted investigations in the areas of fuel and service cards, as well as brand partnership and brand dealership agreements with regard to their relevance under competition law. Both are important tools in the petrol station business (see 2. and 3. below). The issue of predatory pricing - which is a pressing one for small and medium-sized oil companies - was also fundamentally reviewed during the sector inquiry (see 4. below). Finally, the Bundeskartellamt conducted an extensive analysis of the development of petrol station prices in four sample regions and, in this context, critically reviewed two economic expert opinions submitted by the oil sector (see 5. below).

## 1. Collective dominance

One of the most significant results of the sector inquiry into the off-motorway petrol station business is the **confirmation that there is a dominant oligopoly on regional petrol station markets formed by BP (Aral), ConocoPhillips (Jet), ExxonMobil (Esso), Shell and Total.** Before the inquiry this had been challenged not only by the companies themselves but also by the Düsseldorf Higher Regional Court.<sup>13</sup>

a) Proof of collective dominance fundamental for intervention by competition law authorities

According to § 19 ARC not only are companies that have no competitors (monopolies) subject to anti-abuse provisions but also companies that, in relation to their competitors, have a paramount market position (dominant companies). Here, the German competition law not only covers a situation

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<sup>12</sup> Cf. "14.744 Tankstellen in Deutschland – EID-Umfrage zum 1. Januar 2011", in EID Nr. 05/11 of 31.01.2011, p. 1 f.

<sup>13</sup> Cf. Düsseldorf Higher Regional Court, decision of 04.08.2010, Ref. VI – 2 Kart 6/09 [V], official copy of the court's ruling p. 11 ff. = WuW/E DE-R 340 "Tankstellenbetriebe Thüringen" (appealed).

in which a single company is dominant. Two or more companies can also be dominant if no substantial competition exists between them and they jointly hold a paramount market position in relation to their competitors (collective dominance). Similarly, the same applies to the ban on abusive practices under Art. 102 TFEU.

A separate issue is the question of whether the oil companies are operating a cartel within the meaning of § 1 ARC and Art. 101 TFEU and coordinate, in particular, their retail fuel prices. According to the definition under §1 ARC, cartels are agreements between companies which have as their object or effect the prevention, restriction or distortion of competition. Other than in the case of collective dominance, a cartel agreement therefore requires a tangible agreement of any kind whatsoever between the companies. Such an agreement does not have to be explicit but can be tacit and informal. For the assumption of a cartel agreement to apply, however, it is not sufficient that the companies engage in mere parallel conduct, even where this is done wilfully. In fact, conscious parallel conduct is characteristic of an oligopoly. The sector inquiry has not produced any evidence that the oil companies coordinate their prices via agreements within the meaning of Art. 101 TFEU, § 1 ARC. However, due to the tremendous price transparency on the market the companies do not necessarily have to engage in such explicit agreements. Due to the price displays on the petrol stations' price display boards, the information provided by their licensed petrol stations on competitor prices and other sources of information, the oil companies have both an extensive and constantly updated overview of the price-setting activities of their competitors and the possibility to disclose their own price strategies to their competitors.

Neither European nor German competition law prohibits the existence of collective dominance in a market as such; however, collectively dominant firms are subject to restrictions. For example, a notifiable merger of one of several collectively dominant firms with another company can be prohibited by the Bundeskartellamt under § 36 ARC if this would strengthen the collective dominant market position. In addition, members of a dominant oligopoly are prohibited under Art. 102 TFEU, §§ 19, 20

ARC from hindering their competitors in an unfair manner and treating their suppliers and customers differently from one another without an objective justification.

b) Proof of a dominant five-company oligopoly

Based on the results of the sector inquiry, the Bundeskartellamt is certain that BP (Aral), ConocoPhillips (Jet), ExxonMobil (Esso), Shell and Total form a dominant oligopoly on regional fuel retail markets. A characteristic of all five companies is that they are the only oil companies with access to refinery capacities in Germany and a nationwide network of petrol stations. **Access to refinery capacity is a key determinant of market power in the petrol station sector.** Their nationwide representation at the petrol station level offers the five company groups indicated above complete participation in the price transparency and an extensive potential for sanctions. The market shares of the five groups differ from one regional market to the other; however, the magnitude of their market shares can be illustrated by looking at their nationwide share of sales. **Together, the five dominant companies have a combined share of approx. 64.6 % of the annual fuel sales.** The remaining shares are distributed among a few other large oil companies <sup>14</sup> and a large number of small and medium sized oil traders.

c) Characteristics of the dominant oligopoly

Proving collective dominance under competition law is done in two steps. First, there needs to be proof that there is **no internal competition between the members of the dominant oligopoly.** Then it has to be demonstrated that the **members of the oligopoly collectively hold a dominant market position vis-à-vis outsider companies.** The examination criteria applied by the Bundeskartellamt in this context correspond to current German and European case-law. In the view of the

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<sup>14</sup> In particular Orlen, Tamoil, OMV and ENI.

courts, significant indications here are market transparency and the means to deter and punish deviant market behaviour.<sup>15</sup>

d) Lack of internal competition

On the basis of its overall appraisal of the market structures and the state of competition in the fuel sector, the Bundeskartellamt has concluded that **a long-term uniform conduct by the dominant firms is very likely and can be observed in the actual price setting mechanisms.**

As concerns market structures, there is a whole series of significant **characteristics** which enable oligopolists to **implicitly coordinate** their conduct **in a robust and simple way**:

- High percentage of joint market shares held by the dominant firms,
- High degree of market transparency,
- Product homogeneity, product innovations and price elasticity,
- Recurrent interaction between the dominant firms,
- Company interlocks between the dominant firms and
- Interdependencies between the dominant firms.

**Product homogeneity, market transparency and retaliation opportunities** are particularly relevant in this context. Fuels are homogeneous bulk goods with a low potential for innovation. Consequently, **fuel prices are practically the only competition parameter open to coordination on the retail level.** As already explained, on account of the high degree of market transparency, the collectively dominant firms are able to closely monitor all price movements of their competitors and quickly identify and punish deviating conduct by the other members of their dominant oligopoly. On top of this, the Bundeskartellamt is convinced that there are **effective retaliation mechanisms in the fuel sector.** Due to their corporate and contractual

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<sup>15</sup> Cf. Federal Court of Justice, decision of 11.11.2008, Ref. KVR 60/07, official copy of the court's ruling para. 39 "*E.ON Mitte/Stadtwerke Eschwege*" = WuW/E DER 2451 ff. 2457; European Court of Justice, decision of 10.07.2008, Ref. C 413/06 P, para. 129 "*Impala/Kommission*" = WuW/E EU-R 1498 ff., 1507.

interlocks in production, storage and logistics the dominant oligopolists can, for example, challenge or even disrupt the hitherto smooth cooperation with another member. This retaliation mechanism is particularly flexible because the members of the oligopoly are able to apply pricing measures that are temporary and regionally confined as a means of punishing one another. This makes the retaliation mechanism even more credible.

In addition to these aspects, coordination is also facilitated by several other structural characteristics. One is the fact that petrol station markets are very stable markets. As a consequence, market developments and market conduct are more predictable and behavioural changes easier to detect and punish. Due to the high barriers to entry, the market entry of newcomers is very unlikely, as is the introduction of new, innovative fuel types. Another stabilising factor is the symmetry between the dominant firms. All of them are vertically integrated companies with similar product portfolios and technologies; all of them are active nationwide. As a consequence, they share similar interests and incentives which, in turn, makes it easier for them to coordinate their behaviour. In addition, the company interlocks and frequent interaction of the market participants facilitate the implementation of such a coordination mechanism by the dominant firms.

The actual competitive situation confirms this assessment. The continuous nationwide monitoring of prices and their evaluation by the oil companies, as well as the companies' constant interaction have led to the emergence of certain price setting mechanisms. Both the members of the dominant oligopoly and the other market participants who are familiar with the pricing mechanisms are able to anticipate or at least closely watch and promptly react to the prices of their competitors without any need to communicate with them. Thus, over time, pricing patterns have emerged that are observed by all market participants (for a detailed analysis on this, cf. section B.II.5.). Due to this coordination mechanism, price wars hardly ever occur in the fuel retail markets, as would be expected in a competitive market. If an aggressive pricing strategy is applied at all, this is in the majority of the cases only temporary.

e) Paramount market position in relation to external competition

**The members of the dominant oligopoly collectively hold a paramount market position vis-à-vis external competitors.** The competition which the dominant firms face is to a large extent **fragmented**, with the exception of a few larger oil companies. The brands or associations represented by bft, AVIA and UNITI stand for a multitude of petrol station providers that are active only locally or at regional level. Most importantly, the competitors are dependent on the members of the dominant oligopoly for their fuel supplies. It is very unlikely that this fragmented group of external competitors which are dependent on the dominant firms can effectively limit the latter's scope for action. In addition, there are **high barriers to market entry** in the petrol station sector. These consist on the one hand of the difficulties to find attractive 'free' sites and on the other of the financial risks involved in establishing the necessary access to a refinery or building up corresponding supply relationships.

## 2. Fuel and service cards

Oil companies or independent fuel card companies **issue fuel and service cards mainly to business customers**. With these cards the customers are able to buy fuels and other services and pay tolls or other fees without cash at petrol stations that accept their cards. **The fuel and service cards are of great significance in the sales of fuels. In the case of diesel they account for almost 40% of the total sales volumes. They are noticeably less significant in petrol sales and are used to a larger extent at motorway petrol stations than at off-motorway petrol stations.** The dominant firms together account for significantly more than 80 % of diesel sales paid for with fuel and service cards, while their share of card-related payments for petrol amounts to just over half of the sales volumes. Fuel and service cards are not only used at branded petrol stations but also at other petrol stations with which acceptance agreements have been concluded. As a consequence, networks can be expanded and turnover increased.

The investigation results described above support other findings of the sector inquiry in two significant aspects. First, the fact that a large part of the sales of diesel are paid by card while this is not true for petrol sales, supports the Bundeskartellamt's definition of two separate retail markets for diesel and petrol. Second, the finding of a dominant oligopoly is confirmed by the fact that the dominant firms have an advantage over other, in particular small and medium-sized oil companies in that they account for a disproportionately high percentage of the fuel sales paid by card. With regard to specific customer groups who need to be able to use their cards throughout Germany, their nationwide presence on the petrol station market provides the five dominant firms with a structural advantage over the other oil companies. At the same time, at least four of the five firms have a higher percentage of customers that are contractually bound to a card payment system. As a consequence, the sales volumes achieved from these customers are also contractually secured. The said customers are also likely to be less price sensitive.

The findings concerning the fuel and service cards have also been considered in the Bundeskartellamt's proceedings on the allocation of supply and distribution rights to motorway petrol stations. Under specific circumstances the

acceptance of non-branded fuel cards at off-motorway petrol stations will now be obligatory.

The inquiry has not provided any tangible indication of a further need for action on the part of the competition authorities. There is no evidence that the agreed conditions violate competition law. Nor have the individual cases of refusal to enter into an acceptance agreement that have occurred reached a competitively relevant level. There is also no evidence that acceptance agreements have led to anti-competitive agreements on price elements or illegal exchanges of information. The pressure on small and medium-sized oil traders to enter into so-called brand partnership agreements with the oil companies in order to keep up the card business of the major brands is certainly harmful to competition. However, an obligation of oil companies to grant competitors unconditional access to their card systems can hardly be deduced from the competition law provisions.

### 3. **Brand partnership and brand dealership agreements**

**A brand partner/dealer is a retailer who is supplied by an oil company and allowed to sell the oil company's brand.** A brand dealership agreement is an agreement between an oil company and an oil trader, a brand partnership agreement is an agreement between an oil company or an oil trader and a petrol station operator. In particular the company groups BP (Aral) and Shell have - in absolute terms - an expanded network of brand partnership and brand dealership agreements. The three other dominant firms make less use of this sales tool.

Via these agreements the oil companies are able to closely tie independent petrol stations to their products and often make the petrol station operators cede pricing control to them. As a consequence the **real extent of price setting activities by the dominant firms at petrol stations is far greater than their own network of petrol stations** would suggest.<sup>16</sup> **In fact, the members of the dominant oligopoly set the prices for approx. 65% of the fuel sold:**

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<sup>16</sup> In merger proceedings the Bundeskartellamt has therefore started to assign the share of fuel sales achieved by their brand partners to the oil companies when calculating their market share, in so far as the brand partnership agreement gives the oil companies the right to determine the prices.



- Own petrol stations selling oligopoly brand = 41%,
- Own petrol stations with "white" brand = 6%,
- Petrol stations of brand partners = 17%,
- Petrol stations with a margin agreement = 1.4%.

But also the remaining approx. 35% of fuel sales are not completely free from the price setting influence of the large oil companies. In its investigation, the Bundeskartellamt received information that independent petrol stations had entered into price maintenance agreements even though they were not in a brand partnership with one of the dominant firms.

In its calculation of market shares the Bundeskartellamt had already attributed approx. 65% of the annual fuel sales to the five dominant firms. A new insight gained, however, is the realisation that the market share held by the dominant firms need not be so high because a significant proportion of it is attributed to petrol stations that are not owned by the dominant oligopoly. **All in all the assessment of the agreements shows that the market power of the five dominant firms is based to a significant extent on the actual fact that they contractually tie small and medium-sized petrol stations to their products.**

#### 4 Predatory prices

Independent petrol stations are constantly complaining to the Bundeskartellamt of being economically squeezed out of the market by pricing mechanisms at petrol stations which are in direct competition with them. These complaints mainly take the form of an **allegation of so-called price squeezes and in some cases illegal sales below cost.**<sup>17</sup> At first view especially low retail prices seem attractive from the perspective of the motorist. On closer examination, however, these are really "gifts" to the consumer, which he later pays for himself. In actual fact, such pricing mechanisms are forcing competitors out of the market and, as a result, imposing a higher price level within the market. **In the case of sales below cost an oil company offers its fuel to the motorist at a retail price which is below its own effective wholesale price. A price**

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<sup>17</sup> In examining the pricing behaviour of the oil companies for possible predatory strategy, the price squeeze aspect was the most significant criterion for the Bundeskartellamt.

**squeeze** is a term used to describe a situation where a vertically integrated oil company offers motorists its fuel at a lower retail price at its petrol stations than the wholesale price that it demands from its competitors. Whilst sales below cost have always been prohibited under § 20 ARC, price squeezes within the meaning of the price abuse amendment of December 2007 were also explicitly included in the new version of § 20 ARC.<sup>18</sup>

The price squeeze prohibition is targeted at companies with superior market power in relation to small and medium-sized competitors, which in any case applies to the five oil companies regarded by the Bundeskartellamt as collectively dominant.<sup>19</sup> Such a price squeeze situation also requires that the oil company concerned is in competition with the independent petrol stations on the retail market which object to the price squeeze and that these are supplied with fuel by the same oil company. In the Bundeskartellamt's view this can include the indirect supply of fuel, i.e. the fuel is not procured directly from the refinery or tank farms but via an intermediary. In order for the Bundeskartellamt to assume a price squeeze situation, the price at which the oil company concerned supplies the independent petrol stations must be higher than the retail price which it demands from the motorist at its own petrol station. Establishing such a relation between the upstream price on the one hand and the retail price on the other is the greatest challenge in proving the existence of a price squeeze. The relevant prices will be determined by the Bundeskartellamt in the future as follows:

- For reasons of comparability the energy tax, petroleum storage duty and value added tax are added to the upstream price paid by the oil trader (= gross refinery price).
- The gross refinery price is to be calculated on a daily basis (= daily replacement cost) whereby the lowest gross refinery price is to be taken.

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<sup>18</sup> However, the new rule has been limited in time by the legislator to 31.12.2012 unless otherwise provided for by another decision in the 8th amendment to the ARC.

<sup>19</sup> In the case of BP (Aral), ExxonMobil (Esso), Shell and Total the Düsseldorf Higher Regional Court has already confirmed this in an earlier decision, cf. Düsseldorf Higher Regional Court (OLG Düsseldorf), decision of 13.02.2003, Ref. Kart. 16/00 [V], official copy of court ruling p. 14 ff. "*Freie Tankstellen II*" = WuW/E DE-R 829 ff.

- Freight costs are to be included in the gross refinery price even if the transport is undertaken by the oil trader itself.
- The gross refinery price is compared with the price which the motorist has to pay for his fuel (gross retail price).
- The gross retail price used for the comparison should not be a "fictitious" daily average but be based on its actual progress across the day.
- Discounts on the gross retail price are to be deducted if these are granted to a larger group of motorists or if they are tied to the purchase from an assorted selection of goods (e.g. neighbouring supermarket) without a substantial minimum purchase value.

If the comparison results in the gross refinery price being at least temporarily higher than the gross retail price, this shows that there was a forbidden price squeeze in the respective period and the oil company might have to argue that its pricing mechanism was otherwise justified.

## 5. Price analysis

Price developments are at the core of the public discussion about the fuel sector. In an extensive price analysis which differentiated between petrol and diesel, the Bundeskartellamt has collected and analysed data on all price changes from 1st January 2007 to 30th June 2010<sup>20</sup> at over 400 petrol stations of 19 oil companies<sup>21</sup> in four German cities, Hamburg, Leipzig, Cologne and Munich<sup>22</sup>. It concluded from the analysis that **the retail prices of the majority of off-motorway petrol stations were higher in the oligopolistic setting than they would have been if effective competition had been in place.** The pricing pattern with its cycles in daily and weekly intervals is by no means an

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<sup>20</sup> The intention of spreading the inquiry over a three-and-a-half year period was to cover any seasonal fluctuations within the yearly cycles and any general developments such as business cycles.

<sup>21</sup> including the five dominant firms, the remaining vertically-integrated suppliers and other regionally or locally active oil companies of various size.

<sup>22</sup> A decisive factor in the selection of these cities was firstly their geographic distribution over Germany, in order to evaluate various channels of distribution (pipelines, refineries); moreover, each sample region selected has a high density of petrol stations, allowing for a good analysis of reaction patterns.

expression of substantial competition in the sector, in contrast to the interpretation given by the oil companies and the Düsseldorf Higher Regional Court. Rather, it is an indication of how the dominant oligopoly is trying to impose its equilibrium price at an even higher level than before. Although the aim of the inquiry was not to specifically measure the price increases in individual cases, the price differences between the collectively dominant firms and oil companies with B or C prices, albeit only at temporary intervals, illustrated the potential for price cuts. Even a minimal price deviation of 1.5 euro cent per litre would, for example, account for a total amount of 1 billion euros per annum across Germany.

a) Starting basis of the price analysis

The typical complaints constantly received by the Bundeskartellamt and assertions sometimes made in the press about petrol station prices include, among others:

- Retail prices are agreed between the oil companies.
- Prices are higher just before holidays and holiday periods.
- Friday is the most expensive day of the week.
- Prices rise despite no change in the price of crude oil.

These allegations are either generally denied by the oil sector or encountered with certain explanations. With its price analysis the Bundeskartellamt was able to **for the first time systematically examine these subjective assertions**, which are often based on fragmentary observations and **analyse them on an objective basis**. The first analysis of price data at petrol stations to be conducted by a public authority can therefore promote and objectify the public debate about the fuel sector. Above all, it is an **important step in closing the existing structural information gap on pricing between the oil sector and the motorist**.

b) Significance of price monitoring

In the price analysis the data on the competitor petrol stations monitored were evaluated. Alone this first part of the analysis provided valuable information on the actual competition situation. **In practice price monitoring is done** by the licensees of petrol stations or their staff by

driving past the specified competitor petrol stations several times a day and noting the prices. Price information on the vertically integrated oil companies in particular might also be accessed via the internet. In some cases, especially in towns, petrol stations are located in close vicinity to one another, making it easy for them to monitor one another's prices virtually without any additional expense of time or energy. The monitored prices are then fed decentrally into the electronic system of the respective oil company. This **mutual price monitoring without communication is not objectionable under competition law** and can therefore not be taken up by the Bundeskartellamt. However, in the overall analysis of the competitive situation, the existence of such a monitoring system is of great significance as it further confirms the finding of collective dominance and forms the basis for identifying the price-setting patterns, in particular in the case of price increases. **By regularly monitoring prices and due to their nationwide presence the collectively dominant firms have an extensive and constantly updated view of the petrol station prices of their competitors.** This price monitoring takes place primarily within the dominant oligopoly, which results in a very high degree of price transparency.

c) Pricing within the week

With regard to the concrete pricing conduct, the collected data were analysed for price and volume developments on different weekdays. This analysis allows conclusions to be made on the time intervals within which price increases and cuts were made and on the average price level and volumes sold according to days of the week. In addition, certain time patterns could be established in the sequence of price increases. In general the patterns and developments identified tally with the finding of collective dominance. They are to be interpreted as an attempt by the dominant firms to establish a new equilibrium.

The strategic behaviour of the oil companies is reflected in particular in the **cyclical price movements within one week**, for which the price development of diesel in Cologne is a good example. The analysis showed that the **fuel price on Fridays was the highest within the week.**

In 2007, 2008 the fuel price reached its peak, above all, on Friday afternoons and evenings. In 2009 the fuel price on Fridays was slightly surpassed by the price on Wednesday mornings. **It is also noticeable that the high price level on Fridays continues until Saturday afternoons. Only then do prices begin to fall, resulting in a lower price level on Sundays and Mondays.** Prices can then be seen to rise by the latest on Tuesday mornings. Whilst prices can be seen to fall from Tuesdays to Thursdays, at least in the evenings, this pattern does not continue on Friday evenings. Also with regard to petrol in Cologne, the analysis has shown that in each of the years examined, the price on Fridays was among the highest. The fuel price was lowest on Sundays and Mondays.

d) Number of price changes

Another interesting factor which comes into play in the analysis is the **number and magnitude of price changes**, which can again be illustrated by the development of the price of diesel in Cologne: At first glance the number of price reductions within one year is more than double the number of price increases. However, it should not be concluded from this that price increases are not important **because the steps in price increases were greater than those in price reductions.** By comparing the extent of changes in price, the Bundeskartellamt found that in the years 2007 to 2010 these averaged 1.5 eurocent/litre in the case of price reductions, but 3.7 to 3.9 eurocent/litre in the case of price increases. In the first half of 2010 the average level of price reductions rose to 2.2 eurocent/litre and the average level of price increases to 5 eurocent/litre. It could also be established that price increases between Mondays and Thursdays occur most often in the evenings whereas prices on Fridays are already increased at lunchtime. Price reductions generally occur during the day rather than in the evenings. At the weekends the number of price increases falls dramatically; by comparison, the number of price reductions on Saturdays does not significantly deviate from the number of price reductions on other weekdays except Sundays. This divergence in price increases and price reductions at the weekends explains why the price of fuel is lowest on Sundays and also Mondays in comparison with other

weekdays. An analysis of the petrol prices in Cologne has revealed almost identical observations.

**The frequency of price changes** often objected to by motorists **has greatly increased again in recent years** and, taking Cologne as an example, rose from 12,235 to 18,726 per year in the case of price increases and from 30,458 to 45,653 per year in the case of price reductions.

e) Price increase rounds

The exact **timing of the pricing measures plays a crucial role** above all because the approach taken by the oil companies in pricing differs greatly depending on whether prices are increased or reduced. **Price increases often occur simultaneously at the majority of the petrol stations of an oil company whilst price reductions are generally offered only at specific individual petrol stations.**

The examination of the **price increase rounds** in the individual regional markets has produced a number of results which elucidate the distinctive parallel conduct of the companies Aral, Shell, Jet, Esso and Total. **Price increase rounds are generally initiated by Aral or Shell, whereby over a period of time each of the two companies is equally often the first to start the action.** If a round of price increases is begun by Aral, Shell reacts in 90 % of the cases **exactly three hours later** with a price increase in all of the regional markets, thereby adjusting its price level to that of Aral. Vice-versa, when Shell starts a round of price increases, in 90 % of the cases Aral follows suit, again after exactly three hours. Total also generally reacts with price rises in all of the regional markets three or three-and-a-half hours after the start of the price round. Jet and Esso also react in the same way to rounds of price increases started by Aral or Shell, although the response patterns differ in some of the regional markets. Nevertheless it can be concluded that Jet often also raises its prices five hours after the start of a round of price increases, whereby it generally observes a price difference of one eurocent/litre to Aral and Shell's prices. Esso reacts between three and six hours after the start of a round of price increases. It is also apparent that on some regional markets Jet and Esso

only react to rounds of price increases started in the evenings on the morning of the following day.

f) Gross retail margins

The development of the gross retail margin remaining with the petrol station illustrates that the price increases are not driven by costs but serve primarily to increase profit. The results of the inquiry show that the gross retail margin is lowest on Mondays and highest on Fridays, i.e. on a day with distinctly high fuel prices. The analysis has also shown that the gross retail margin is generally higher in the case of diesel than petrol. A possible explanation for the higher gross retail margin in the case of diesel may lie in the lower price elasticity in the demand for diesel because a higher price level can more easily be realized at petrol stations if price elasticity is low. The fuel card share of diesel sales is significantly higher and the users of such cards (drivers of company or official vehicles) usually do not have to pay for the fuel themselves.



g) Price developments at weekends and in holiday periods

Higher retail fuel prices at the beginning of the holiday periods and at weekends are justified by representatives of the oil sector mainly with allegedly higher demand but sometimes also with an increase in procurement prices. However, this is not confirmed by the analysis. Instead it found that in the sample regions examined, demand for fuel in the respective periods was not higher than on any other weekdays. The same applies to the development in procurement prices which was no different from the "usual" periods. Above all, the analysis confirmed a distinct price increase just over the Easter period in 2009. On the Tuesday, Wednesday and Thursday before Easter the price level lay at up to eleven eurocent per litre above the price level two or three weeks before Easter. Wholesale prices during this period only rose by four or 1.5 eurocent per litre. Also in the week following Easter the fuel price rose by eight eurocent per litre at the end of the holiday period whereas the wholesale price was only one eurocent higher. No significant rise in demand can be detected during the Easter holiday period. For this reason it seems plausible that the rise in fuel prices at Easter is attributable to strategic pricing behaviour on the part of the oil companies.

h) Assessment of economic expert opinions

Within the context of its price analysis the Bundeskartellamt has examined in further detail two expert economic opinions submitted by the oil sector<sup>23</sup> on pricing at petrol stations, and in particular the theoretical models and empirical studies on which they are based. These expert opinions were examined on the basis of the authority's published best practices for expert opinions.<sup>24</sup> The respective experts also had the opportunity to

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<sup>23</sup> *Charles River Associates (CRA)*, Gibt es ein marktbeherrschendes Tankstellenoligopol in Deutschland? (*Is there a dominant petrol station oligopoly in Germany?*), expert economic opinion commissioned by BP Europa SE, November 2010; *European School of Management and Technology Competition Analysis (ESMT CA)*; Wettbewerb im Hamburg Tankstellenmarkt (*Competition in Hamburg's petrol station market.*) "Eine empirische Analyse", expert economic opinion commissioned by the Association of the German Petroleum Industry, January 2011

<sup>24</sup> Bundeskartellamt, Best practices for expert economic opinions, 20 October 2010, available at [http://www.bundeskartellamt.de/wEnglisch/download/pdf/Merkblaetter/Bekanntmachung\\_Standards\\_Englisch\\_final.pdf](http://www.bundeskartellamt.de/wEnglisch/download/pdf/Merkblaetter/Bekanntmachung_Standards_Englisch_final.pdf)

present and discuss in detail their analyses and conclusions at the Bundeskartellamt. In their conceptual approach both expert opinions refer to the pricing model driven by the so-called Edgeworth cycles as developed by *Maskin/Tirole*.<sup>25</sup> Furthermore they provide a largely identical interpretation of existing scientific studies on price cycles and present their own empirical analyses. The experts all maintain that they have proved the existence of Edgeworth cycles and their alteration in a certain manner in the petrol station markets in Germany during the periods under consideration. They also unanimously evaluate these findings as proof of substantial competition.

The empirical findings as such at least generally do not contradict the results of the Bundeskartellamt's inquiry illustrated above, even though the economic experts leave out of consideration above all the time patterns of the price increase rounds. **However, the existence of substantial competition cannot be deduced merely from the existence of price cycles or their alteration over a specific period.** At no stage in theoretical research is the existence of Edgeworth cycles interpreted as proof of substantial competition. Rather, it is even interpreted by different authors, above all by *Maskin/Tirole* themselves, as implicit coordination. **The interpretation of the empirical studies also proves to be at least one-sided and is unable to support the conclusions drawn by the experts.**

### C.

#### **Conclusion and Recommendations for action**

The general conclusion which the Bundeskartellamt has drawn from the fuel sector inquiry is that this sector of the economy needs to be given continued attention in its work in future. **Priority will have to be given to competition enforcement measures with regard to market structure.** Firstly, the Bundeskartellamt will **take firm action against the dominant oligopoly where this is permitted by law** (see C. I. below). Secondly, it intends to **eliminate the restraints of competition**

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<sup>25</sup> Cf. *Maskin/Tirole*, A Theory of Dynamic Oligopoly II: Price Competition, Kinked Demand Curves and Edgeworth Cycles, *Econometrica*, Vol. 56, No. 3, May 1988, p. 571-599.

**detected** during the course of the sector inquiry (see C II. below). **Proceedings on prices are not to be expected because pricing in the case of fuel, as the results of the sector inquiry clearly show, is the symptom of a market structure which is hardly conducive to competition.** Instead, the planned continual work on the market structures will also have a positive effect on pricing in the medium and short term. **Thirdly, with its final report the Bundeskartellamt can contribute to the discussion whether price-effective measures are likely to bring about the desired effect or not;** in any case the sector inquiry has already helped to close the gap in knowledge about pricing between the oil companies and motorists (see C. III. below).

### **I. Intervention against the dominant Oligopoly**

**In order to curb the market power exerted by the five dominant firms, the Bundeskartellamt will either prohibit any planned petrol station acquisitions under §§ 36, 40 ARC or clear them only subject to obligations and conditions unless the acquisitions are of negligible size.** The Bundeskartellamt already adopted this assessment practice during the current sector inquiry with a prohibition in the "*Total/Ostdeutsches Tankstellengeschäft OMV*" case in April 2009<sup>26</sup>, clearance subject to obligations in "*Shell/Lomo*" in Mai 2009<sup>27</sup> as well as a statement of objections that was followed by a renotification in "*Shell/Edeka*" in October 2010<sup>28</sup>.

On the basis of the results of the inquiry the Bundeskartellamt will also take **measures to protect small and medium-sized oil companies against hindrance by the dominant firms within the meaning of §§ 19, 20 ARC and Art. 101 TFEU.** As regards the most important form of hindrance in the fuel sector, the price squeeze, the Bundeskartellamt has already initiated a proceeding against an oil company and carried out an unannounced inspection. Proceedings are about to be initiated in two further cases. Where necessary the Bundeskartellamt will also take action against other measures hindering small and medium-sized oil companies. For example, in some cases oil companies required medium-sized companies buying Super E5 from

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<sup>26</sup> Decision of 29.04.2009, Ref. B8-175/08, revoked by the Düsseldorf Higher Regional Court, decision of 04.08.2010, Ref. VI-2 Kart 6/09 (V) = WuW/E DE-R 3000 „*Tankstellenbetriebe Thüringen*“ (appealed).

<sup>27</sup> BKartA, decision of 8.5.2009, Ref. B8-32/09.

<sup>28</sup> Cf. BKartA, press release of 6.12.2010.

their refineries or tank farms to also buy nine times the quantity of the largely unsaleable Super E10. The Bundeskartellamt has already informally intervened in this matter with the Association of the German Petroleum Industry.

## **II. Remedy of competition restraints**

If evidence of any cartel violations emerges from the examination of the **brand partnership and brand dealership agreements**, the Bundeskartellamt will redress these violations in a "clear up" action and consider **initiating the following proceedings**:

- several proceedings concerning inadmissible resale price maintenance agreements within the meaning of § 1 GWB, Art. 101 TFEU, where oil company groups and other major oil companies directly determine or indirectly influence the prices at independent petrol stations, which are not tied to them via a brand partnership agreement.
- a proceeding concerning an anticompetitive agreement within the meaning of § 1 ARC, Art. 101 TFEU between oil companies and oil traders in the planning of new petrol stations.
- a proceeding to break up an acquisition by an oil company of more than 15 petrol stations, which was put into effect without notification.
- several proceedings concerning the possible foreclosure of fuel markets as a result of the high number of brand partnership and brand dealership agreements, if in addition to the quantitative extent of these contract networks an excessively long contractual period<sup>29</sup> has also been agreed.

## **III. Reaction to pricing (strategies)**

Even if the fuel sector inquiry concludes that the fuel prices are higher at most off-motorway petrol stations in the oligopolistic setting than they would be if effective competition were in place and the cyclical development of prices in no way reflects a competitive situation, **the Bundeskartellamt still considers that direct measures by the authority to reduce prices will have little hope of success.** First of all, **price abuse control** under § 19 (4) no. 2 ARC is **hardly practicable** in the case of petrol station prices because of the many price changes which occur over a 24-hour period. Secondly, even under price abuse control, prices could at the most be

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<sup>29</sup> An analysis of the duration of the individual contracts, especially in respect of any so-called "English clauses", would have overloaded the inquiry and will have to be done in individual proceedings.

brought closer into line with those charged by the independent petrol stations. Even then it would make better sense in free market terms for the motorist to drive to an independent petrol station himself instead of making these petrol stations dispensable. This notwithstanding, if general fuel price reductions are desired, this is a matter for the legislator.

The Bundeskartellamt does not regard price abuse control on the upstream refinery level as a realistic alternative. It is true that procurement prices make up a significant part of the gross retail price. Furthermore, market positions at the petrol station level are predetermined by access to refinery capacities in Germany (in this respect they are an important element for the finding of collective dominance). However, pricing at the refinery level does not match that at the petrol station level to the extent that one could hope for greater leverage effect if price abuse control were applied at the upstream level.

Although protecting market structures as illustrated above will only create a competitive price level in the medium to long term, it is the preferable alternative to simply treating the symptoms of pricing patterns. In any case, with its price analysis based on the sector inquiry, the Bundeskartellamt has been able to make up for the **information deficit of the motorists and partially offset this against the extensive price monitoring systems of the oil companies.** The inquiry offers the customer objective information on pricing patterns. It now lies with the private service sector to provide the motorists with information on the current and local price situation. The Bundeskartellamt welcomes any such information services which benefit the consumer.

In the authority's view, actions such as abolishing price display boards or banning price monitoring would not effectively help to reduce prices. The oil companies would soon find alternative ways of obtaining information. **Whether regulatory measures such as those taken under the fuel price regulation in Austria and the "24-hour rule" in Western Australia would make sense for Germany would have to be decided by the legislator from a consumer protection viewpoint.** However, the regulation introduced in Austria in January 2011 by which prices can only be increased once a day at 12 noon, cannot easily be applied to Germany because the oil companies here normally only raise their prices once a day. Moreover, it is questionable whether this would have a lasting effect on the price level because it

would merely slow down price cycles. The "24-hour rule" practised in Western Australia since 2001 goes further in that all fuel prices are fixed for 24 hours at 6 a.m. and, moreover, have to be announced the day before. A study has shown that although the coordination between the oil companies via price cycles was initially interrupted, the cycles returned again later. Nevertheless, a reduction in price change times as described above can protect consumer interests because this would reduce the frequent number of price changes during the day which motorists find frustrating, a fact which has also been observed by the Bundeskartellamt. **Other game-theoretic models might also be feasible to limit the scope of pricing in the fuel sector. However, such regulatory intervention would require a legal basis which would have to be created by the legislator.**