# Implications of liberalisation for methods of setting retail gas prices in Belgium

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## Introduction

Various analyses conducted at the National Bank of Belgium (Cornille, 2009) (Coppens, 2010) (NBB, 2010) and elsewhere (ECB, 2010) (NAI Price Observatory, 2010) show that in recent years prices of gas (and electricity) have made a significant contribution to inflation and have increased the volatility measured by the harmonised index of consumer prices (HICP). Various reasons for this have been suggested, including the ways in which liberalisation has changed the methods of setting the prices charged to residential customers.

Indeed, the aim of market liberalisation is to ensure that activities previously organised as monopolies are opened up to competition. In the gas and electricity sectors, this has been a three-stage process: segmentation of the production/supply chain, introduction of competition in the liberalised segments, and maintenance of control in the segments where the natural monopoly still exists. For the European gas industry, this has led to the decoupling of the liberalised activities concerning the purchase and sale of gas upstream and downstream of the transmission/distribution infrastructures, while the latter remain subject to regulation. In practice, this process has entailed thorough restructuring of the segments concerned and the establishment of new market mechanisms and channels linked to the unbundling of the gas supply chain. Consumers in Belgium have felt the effect of these changes, and since 1 January 2007 they have all been able to choose from a range of suppliers. Previously, gas was supplied by a vertically integrated operator at the same price for everyone, but nowadays Belgian consumers have the choice between several operators all offering their own tariff formulas.

This article analyses how the operators active on the Belgian gas market have taken advantage of this freedom to set prices, and how they are positioning themselves against what is happening in neighbouring countries. The analysis of the methods of setting retail prices on the basis of the price lists issued by the main operators shows that the latter have substantial freedom to set prices in Belgium, whereas this degree of freedom is not the same in other countries, a fact which must be borne in mind when making international price comparisons.

After a brief description of the structure of the Belgian wholesale and retail markets on the basis of the various operators active on those markets, section 2 focuses on an analysis per component of the variable-price tariff formulas offered by the gas suppliers serving customers in the residential sector. The situation of the operators as regards retail pricing is then assessed from an international perspective, and some findings which emerged during the exercise are also stated.

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## 1. Liberalisation and restructuring of the gas and electricity supply chain

Liberalisation implied a restructuring of the gas and electricity supply chain, which involved a decoupling of the chain into various segments, namely production/supply, transmission, distribution and marketing[1]. It also entailed the establishment of pricing methods for each segment and between them, with:

- production/supply, where pricing is not regulated; prices are based on transactions taking place on various wholesale markets between producers, shippers and resellers on the basis of mutual or over-the-counter (OTC) contracts, transactions on exchanges or via auctions (gas releases[2]);
- transmission and storage invoiced by the transmission network operator (TNO), either on the basis of negotiated prices or on the basis of prices regulated by a regulatory body, which is the option adopted in Belgium;
- distribution invoiced in Belgium by the distribution network operators (DNOs) also on the basis of regulated prices;
- and marketing to small consumers for whom prices are based on "free" standardised retail market tariff formulas, and on the basis of negotiated contracts for large industrial consumers (often with direct supply from the transmission network).

The price charged to the end-user includes the costs and profit margins of each segment, plus surcharges and taxes.

Since gas is a primary energy source which has to be bought from the producers, gas resellers on the wholesale and retail markets act as commercial agents whose tariff structures are designed to cover the cost of buying the gas, in particular. As at 31 December 2009, ten suppliers were active on the Belgian wholesale market out of a total of twenty-eight operators holding a federal licence to supply natural gas. This concerns supplies to customers (large consumers) linked directly to the TNO's transmission network (Fluxys) and to resellers active on the distribution networks. Chart 1 shows the distribution of market shares on the basis of energy supplied by the various operators active in 2009.

On the retail market, 45 % of the gas volumes are supplied via the distribution networks for residential and business consumers (SMEs and self-employed workers connected to the distribution networks). The bulk of that gas is supplied in the Flemish Region (67 % of the volumes supplied by distributors). Twelve suppliers are active on the retail market alongside the DNOs[3]. Only seven of the twelve suppliers have developed an active marketing policy targeting customers in the residential sector. Chart 2 shows their respective market shares on the basis of the number of access points[4].

(1) For a description of the gas market and its various components, see Swartenbroekx C. (2007), *The gas chain: influence of its specificities on the liberalisation process*, NBB, Working Paper 122.

(2) Procedures arranged for the resale to competitors of gas volumes held by the historical operators.

(3) In accordance with their public service obligations, the DNOs are the supplier of last resort for customers in difficulties whose supply contract has been cancelled by their supplier: this may concern protected customers qualifying for the social tariff, defaulting customers, customers waiting for a budget meter to be installed, etc.

(4) For the purpose of assessing the retail market situation, market shares based on access points are more relevant than those based on the energy supplied, as the latter attach too much weight to (larger) business users as opposed to residential consumers, since these statistics make no distinction between the two.

**CHART 1** OPERATORS ACTIVE ON THE NATURAL GAS WHOLESALE MARKET

(market shares in 2009 based on the energy supplied)

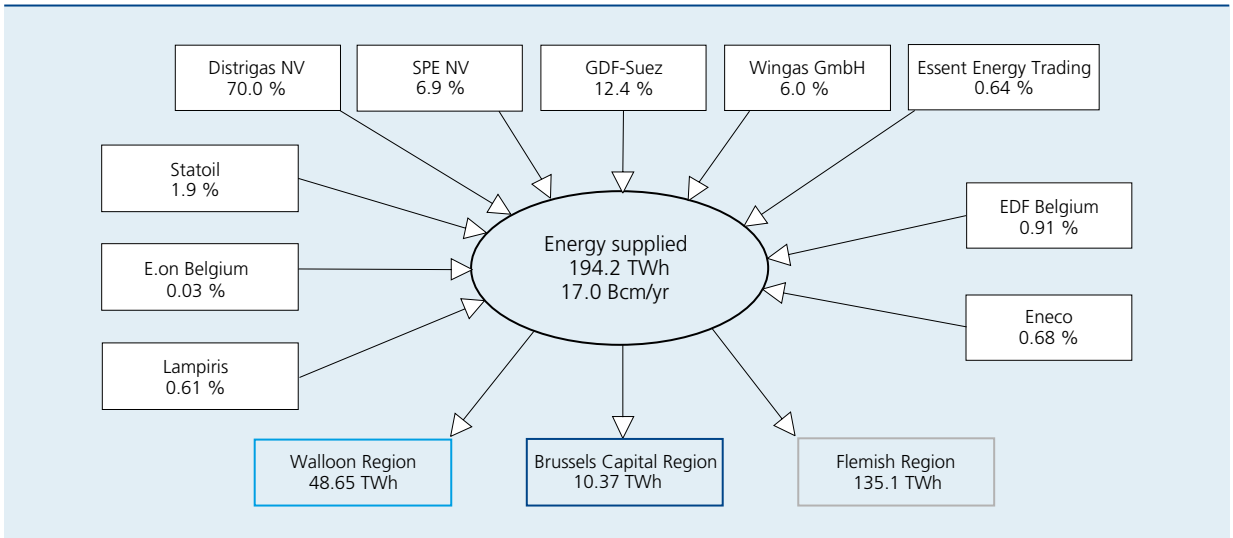
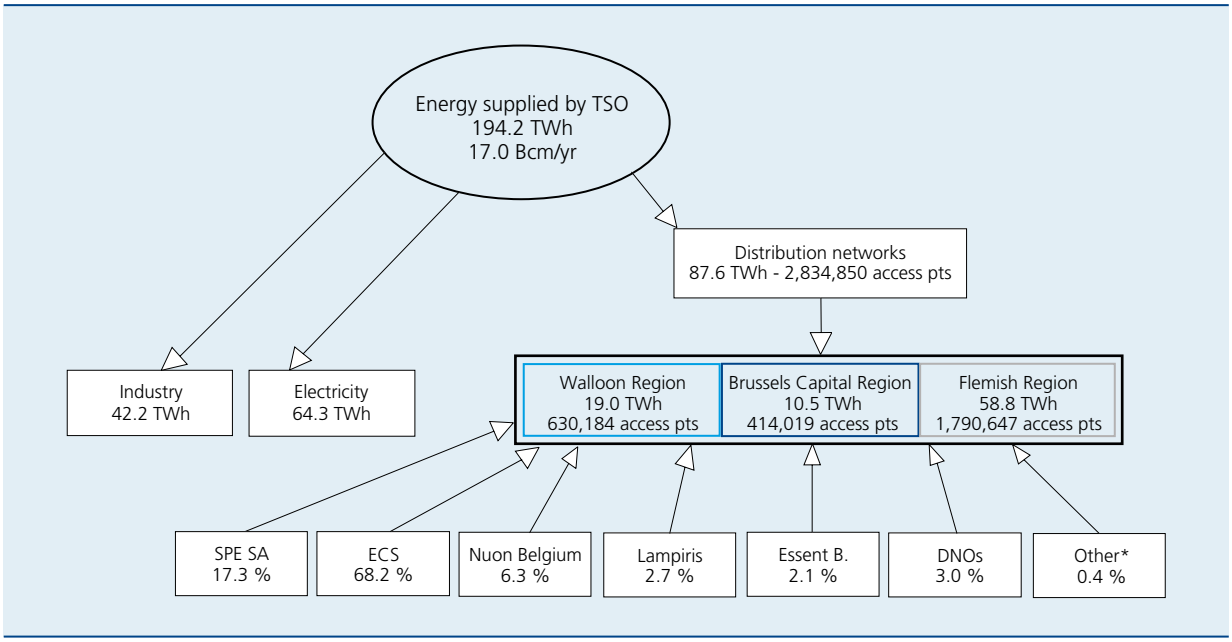


**CHART 2** RESELLERS ACTIVE ON THE NATURAL GAS RETAIL MARKET

(market shares in 2009 on the basis of the number of access points)




Sources: NBB, CREG – CWaPE – BRUGEL – VREG (2010).

* In most cases, the "other" suppliers are resellers serving business users, namely Distrigas, EDF Belgium, GDF-Suez, Wingas and Eneco België. In contrast, Elektriciteitsbedrijf Merksplas and Dong Energy Sales also serve private customers in the Flemish Region.

The analysis which follows concentrates on the methods of pricing energy (excluding distribution costs and taxes) for consumers in the residential sector (private customers).

## 2. Impact of liberalisation on market developments and the pricing of energy

### 2.1 Transition from regulated tariffs to free tariff formulas for energy costs

Before liberalisation, the prices charged to consumers were based on agreements negotiated within the Electricity and Gas Control Committee (CCEG), between the social partners and the energy sector comprising the historical gas and electricity suppliers – who were at that time also responsible for transmission – and the local distribution companies. These tariffs, negotiated and recommended by the CCEG, were then endorsed by the government.

#### 2.1.1 Electricity and Gas Control Committee

Established by an agreement in 1955, the CCEG aimed to "ensure that the technical, economic and tariff situation and developments in the electricity and gas sectors are geared to the public interest and conform to the overall energy policy". The CCEG was abolished on 1 July 2003.

The negotiated tariff was a single all-in price which guaranteed the same price for all customers in the same consumption class regardless of their location. This tariff recommended by the CCEG was indexed monthly by reference to parameters reflecting the movement in costs comprising a proportional term relating to the purchase price of imported gas at the border, as indicated by the sales formula of the historical supplier, Distrigas, for public distribution, with:

– an annual standing charge = (a x IGD)
– a variable charge = (b x IGA) + (c x IGD)
  intended to cover gas import costs and other associated supply costs.

The gas acquisition index IGA reflected the movement in the natural gas price paid to public distribution and aimed to mirror the indexation of the long-term supply contracts on the international markets. Its publication ceased in November 2007, and all suppliers now use their own indexation formulas. The gas distribution index IGD reflects the movement in distribution costs other than those relating to the acquisition of gas (wages, overheads, return on capital employed, etc.). The current IGD is

defined by the Ministerial Decree of 12 December 2001, and is published monthly on the website of the federal regulator (CREG). It is still being used by all suppliers and is the same for all of them :

IGD = 0,44 + (0.31 x S) + (0.25 x M)

with : S = AGORIA reference labour cost index

M = equipment cost index.

The values of the coefficients a, b and c make it possible to set differential tariffs for the various consumption classes.

### 2.1.2 Tariff formulas applied to gas

#### 2.1.2.1 January 2007 : full liberalisation of the Belgian market and freedom to set tariffs for energy costs

Following the full liberalisation of the Belgian market, each supplier is free to define its own tariff formulas for the energy cost, and in particular to define the parameters and coefficients used in variable-price contracts for the supply of energy. The indexation adopted by suppliers retains the indexation formula which the CCEG used to apply, with :

– an annual standing charge = (a x IGD)

– energy cost (proportional charge) = (b x Igm) + (c x IGD)

where a, b and c are tariff coefficients specific to each supplier, each tariff formula and each consumption class ;

IGD = the gas distribution index reflecting the movement in distribution costs other than those relating to gas purchases, described above ;

Igm or GPI = an index reflecting movements in the cost of purchasing natural gas. Since full liberalisation of the market, that index has been calculated by each supplier instead of the former gas acquisition index.

Tariffs vary between suppliers in regard to :

– indexation formulas for the purchase of gas (coefficients and criteria underlying the former IGA = Igm or GPI) ;

– and the tariff coefficients a, b and c, so that the indexed prices of each supplier may vary in their sensitivity to movements in the parameters.

These elements influence both the annual standing charge and the cost of energy. The rest of the analysis concentrates on this last component. The tariff formulas are detailed in Annex 1 for the consumption class ranging between 5,001 and 30,000 kWh per annum, which corresponds to the use of gas for cooking and heating. This class also tallies most closely with the consumption band D2 corresponding to annual consumption between 20 and 200 GJ (5,555 to 55,555 kWh), used by Eurostat for its half-yearly monitoring of household gas prices.

The Igm indexation formulas used by suppliers for the purchase costs of gas are very similar, and of the type : (0.25 HUB + 0.0468 GOL603 + x * (CPIy–1 / CPIy–2) + y) / 21.21479

– (HUB), the price of forward contracts for gas traded on the Zeebrugge hub, reflecting the movement in the cost of spot gas purchases. The introduction of this parameter in relation to the former IGA formula also coincided with the end of the supply contract between Distrigas (the historical wholesale market supplier) and Algeria, and its replacement at the beginning of 2007 by a contract with Qatar (CREG, 2008a) ;

– (GOL603), the price of gasoil, which reflects the movement in the cost of purchases under other long-term contracts by Distrigas, indexed after a time lag to the price of oil / petroleum products ;

– (CPIy), the consumer price index, which determines the general movement in prices of other purchases ;

– x, the weighting coefficient applied to the CPI at the option of each supplier ;

– y, a constant, independent of the parameters and freely chosen by each supplier ;

– 21.21479, a reference value used in the calculation of the old IGA index (CREG, 2006).

The differences between indexation formulas concern :

– whether or not account is taken of the consumer price index : the CPI is not used by all suppliers (index adjusted annually) ; if it is not taken into account, a higher coefficient c is usually assigned to the IGD in compensation ;

– the use of a constant *y* allowing the price to be adjusted independently of the parameters (HUB, GOL and CPI).

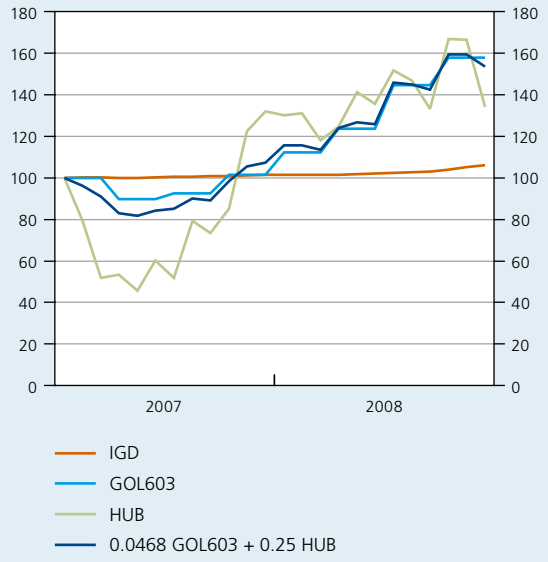
It is notable that the "0.25 HUB + 0.0468 GOL603" component has appeared at some point in the indexation formulas of all these suppliers. As pointed out by the federal regulator, if – as the suppliers claim – their indexation formula reflects the movement in the natural gas acquisition cost, it is reasonable to assume that this component is present in the purchase contracts which they concluded (at the time) with the historical importer on the wholesale market (CREG, 2007).

#### 2.1.2.2 October 2007 : the historical gas supplier uses the freedom to set tariffs...

In June 2007, the historical gas supplier on the retail market, Electrabel Customer Solutions (ECS), announced that, following the increase in energy prices on the international markets, new prices would apply with effect from September 2007. In the end, the revised prices were not introduced until October 2007 owing to confused communication with customers. The context of this price rise deserves some explanation.

**CHART 3** TREND IN GOL603, HUB AND IGD PARAMETERS IN 2007-2008

(indices 100 = January 2007)




Source: CREG.

The initial months of the full liberalisation of the Belgian gas market coincided with a decline in fossil fuel prices on the international markets in relation to 2006. This adverse trend in both the GOL and the HUB depressed the margin of operators acting as agents by the amount of the part of the energy price linked to those (declining) parameters, since their energy selling price is structured as follows: b (0.25 HUB + 0.0468 GOL603) + b (ΔCPI) + b (constant y) + c IGD. In order to distinguish themselves from others, suppliers choose their own value of the coefficients b and c and the constant y to cover their gas import costs and other supply costs, and to include their margin.

The withdrawal in January 2007 of the IGA formula which had applied before liberalisation and its replacement by the GPI parameter led to an average decline in the selling price, compared to the price using the IGA, of 0.45 cents per kWh (excluding VAT) over the period from January 2007 to September 2007. The indexation formulas adopted in January 2007 in fact refer to two energy parameters which followed a trend unfavourable to the operators. The cumulative effects of this in the first half of 2007 led to a reduction in the variable part of their price, and possibly their margin (all other things being equal, particularly the gas purchase conditions).

Since the selling price, and possibly the margin, applied by resellers can be adjusted by changing the value of the coefficients b and c and/or that of the constant, this means in particular that the price comprises:

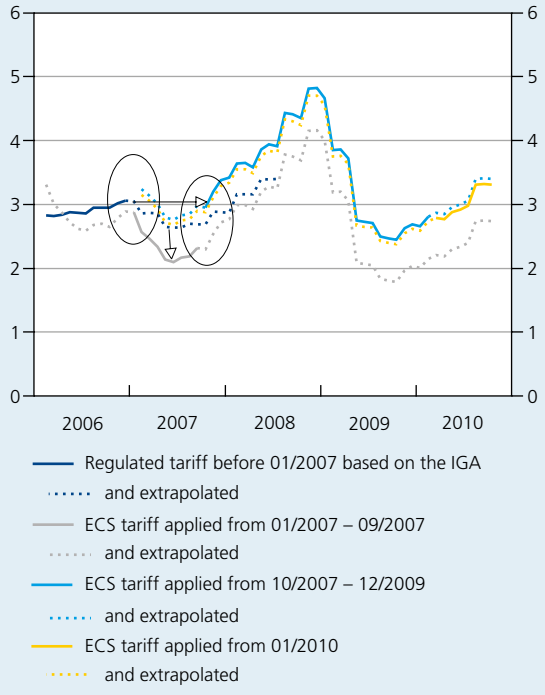
– a variable element, proportionate to the fuel price (GOL and HUB) and the CPI;
– a fixed element unaffected by movements in the parameters, which is the difference between the old constant and the new one (or more precisely b x Δ constant).

The change in the historical supplier's indexation formula with effect from October 2007 concerns the constant in the indexation formula and represents a permanent price increase of 0.66 cents per kWh (0.8 cents per kWh including VAT), regardless of the movement in fuel prices. Its immediate application leads to a realignment of the monthly price at the end-2006 level, just before the full liberalisation of the market (see chart 4).

Caution must be applied to any extrapolation of the effects of this selling price rise on the reseller's margin, because everything depends on developments concerning

**CHART 4** TREND IN THE PROPORTIONAL CHARGE FOR THE ENERGY PRICE EXCLUDING VAT

(cents/kWh)




Source: Own calculations based on (ICEDD, 2009a) and (CREG, 2006).

the reseller's upstream purchasing conditions, both on the exchanges and in bilateral contracts (for which the prices are not disclosed). The reseller's margin remains unchanged if the selling price rise merely passes on the change in the price affecting its purchase portfolio. In its (confidential) report on the link between costs and prices of importers and resellers on the Belgian residential and business market in natural gas over the period 2004-2009, the CREG mentioned three factors behind the increase in free market prices in recent years: the rise in oil product prices, the increase in the profit margin of the main gas supplier, and the variable increase in the profit margin of the leading natural gas importer (CREG, 2010a).

Table 1 shows the market shares held by operators active in 2007 as sellers on the wholesale and retail markets (supplies via transmission and distribution networks) expressed in terms of the volumes traded. By comparing the shares of the various players on these two markets, and assuming that the operators give priority to selling the volumes at their disposal on the retail market, it is evident that among the operators active on this market, ECS, SPE, Nuon and Lampiris had to buy on the wholesale market (indexed bilateral contracts and/or spot market purchases). Their share of sales on the retail market is in fact higher than their share, if any, on the wholesale market. In the case of Essent, the available statistics are inconclusive.

In 2007, it could be said that resellers other than the historical supplier were price takers in a context in which:

- on the wholesale market, the importer Distrigas had a dominant share of sales (78.2 % by volume); Distrigas itself obtained most of its supplies on the basis of long-term contracts with producers, accounting for 90 % of its supply portfolio in 2007 (Distrigas, 2008). At the level of the overall supply portfolio of suppliers active in Belgium, contracts with producers for a term of over 5 years still represented 71.3 % of the volume of imports in 2009 (CREG, 2010a);
- and the historical operator on the retail market, ECS, supplied 72.4 % of the access points on the distribution network in 2007 (1).

Obliged to buy on contractual conditions similar to those of the historical operator in relation to the importer Distrigas, and facing sales competition from the tariffs offered by the historical operator to retail market customers, most "alternative" resellers had limited room for manoeuvre on the retail market. In these circumstances, the price increase in October 2007 seems to have created a margin sufficient for all resellers, and big enough for the historical operator's competitors to take up a position within that margin. It could be said that the market has a margin setter and margin takers, the "basic price" of gas and movements in that price being determined by the structure of the resellers' indexation formulas, which themselves reflect the indexation formulas applied to some of the purchase transactions on the wholesale market (the long-term contracts with producers).

**TABLE 1** MARKET SHARES OF OPERATORS ACTIVE AS SELLERS ON THE WHOLESALE AND RETAIL MARKETS – 2007

(percentages of the total volumes traded)

| Wholesale market (supply) | Market for sales to end-users (via the transmission and distribution networks) |
|---|---|
| Distrigaz = 78.2 | Distrigas = 45.1 |
| | ECS = 28.6 |
| GDF = 15.2 | GDF = 10.0 |
| Wingas = 6.0 | Wingas = 6.0 |
| Essent = 0.5 | Other (EDF, Essent, Dong, |
| EDF Belgium = 0.1 | Nuon, Lampiris) = 3.8 |
| SPE = start 12/2007 | SPE = 6.5 |

Source: CREG – CWaPE – BRUGEL – VREG (2008).

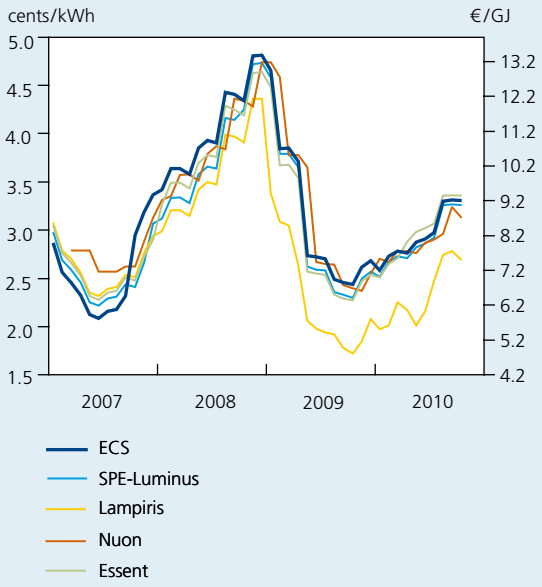
The change in the tariff formula was announced at a time when the indexation parameters used (GOL and HUB) were at their lowest level. That tariff increase, unrelated to the movement in fuel prices, therefore restored the price to a level already reached in the past. In fact, the prices announced in June 2007 in the price list effective from 1 September 2007 were based on the May 2007 monthly parameters (the delay was to do with the obligation on resellers to notify consumers of changes to their contracts). The prices announced in the (revised) price list as at 1 October 2007 were based on the September 2007 monthly parameters. The only autonomous increase in the parameters used in the new GPI between May and September 2007 led to an increase in the monthly price of 0.20 cents per kWh (excluding VAT).

The discretionary adjustment to the constant in the gas price indexation formula enables the historical operator on the retail market to consolidate a price which is independent of the movement in the underlying parameters while retaining the freedom to pass on any changes in the provisions of its purchase contracts detrimental to the competitiveness of its retail selling prices in relation

(1) For the purpose of assessing the retail market situation, market shares based on access points are more relevant than those based on the energy supplied.

**CHART 5** TREND IN THE PROPORTIONAL CHARGE MADE BY ECS, SPE-LUMINUS, NUON, LAMPIRIS AND ESSENT FOR THE CONSUMPTION CLASS 5,001 TO 30,000 KWH/YR

(price excluding VAT)




Sources: Own calculations based on price lists and CREG (2010b).

to rival suppliers. In practice, the relative competitiveness of ECS prices compared to those of its competitors was restored, as those competitors in turn made discretionary adjustments to their retail prices, as described in the next section.

#### 2.1.2.3 ... followed by its competitors on the retail market

In January 2007, all suppliers adjusted their tariff formulas for the energy price indexation on the basis of the formula which applied to them for their purchases on the wholesale market, the rules on the application of those formulas being in line with those used previously during the period of regulation. Subsequently, all suppliers adjusted their indexation formulas as they saw fit, changing the coefficients of the parameters and/or the constant, or – more recently – changing the parameters.

For the suppliers, automatic indexation is convenient because part of the price risk is automatically passed on to the customer without further notification. Under Article 74 of the Law of 6 April 2010 on market practices and consumer protection, price indexation clauses are permitted "so long as they are not unlawful and the price adjustment method is explicitly described in the contract". Also, if the suppliers' purchase conditions are changed, or if their margin is affected by an adverse development, they are free to adjust the corresponding weighting coefficients without incurring significant public information expenses. The said law contains rules on the notification of these changes, stipulating that in the event of a unilateral price increase or change in the conditions to the detriment of consumers, the latter are entitled to put an end to the contract free of charge. That right is stipulated in the contracts and can be exercised on the anniversary of the contract, i.e. at least annually (no suppliers specify a period of less than one year in their contracts), giving due notice.

Nevertheless, the disclosure of indexation formulas required by law does ensure some transparency compared to the situation in other countries (see below) because it is possible to deduce the relative importance of the various components and to anticipate how they may change. By analysing the movement in these formulas and the successive adjustments to them, it is also possible to ascertain how the resellers' margins have changed, independently of the movement in the underlying parameters. However, precise analysis of these margins would require access to information concerning the gas purchasing conditions and other costs relating to supply. In that regard, verification of the representativeness of the indices used in terms of cost movements, and the justification for the successive adjustments made to them, falls within the competence of the sector's regulator and that of the competition authorities as bodies considering appeals against decisions by the regulator[1]. At present, it must be said that this information is not accessible and will become more complicated to obtain than in the past, with the involvement of multiple operators for whom the relevant market is not – or is no longer – confined to the domestic market.

Among the resellers, Lampiris is notable for an indexation formula adopted in January 2009 in which the proportional charge refers to the IGD for supply costs, and solely to the TTF (index in €/MWh weighted by the volume of transactions on forward contracts for natural gas in the Netherlands for delivery in the following month) in regard to gas import costs[2]. Since January 2009, Lampiris has stopped buying from Distrigas and switched to the Dutch group Eneco under a multi-annual contract linked to the

(1) In some respects, the functions of the two institutions are closely linked, the regulator being responsible for opening up the sector to competition, while the competition authorities are in charge of maintaining that competition on the basis of national law (Law on the Protection of Economic Competition) and Community competition law (Articles 101 and 102 of the Treaty on the Functioning of the European Union).

(2) Since the second quarter of 2008, SPE-Luminus has also offered a variable-price contract partly linked to the gas price in Zeebrugge (weighted monthly average for day-ahead delivery – see Annex 1), alongside the HUB and the GOL.

TTF price (De Boeck, 2008). In so doing, Lampiris designed its consumer price indexation formula on the lines of the one agreed with its new supplier on the wholesale market. The adjustment of its sale price indexation formulas in accordance with the indexation applied in its purchase contracts therefore conforms to the principle of transferring the price risk to the consumer.

Nonetheless, this change of supplier on the wholesale market with a new gas reference price used for indexation enables Lampiris to offer lower retail prices than its competitors in the current context of low gas prices on the exchanges, unconnected for now with the price of oil. That situation is due to the coexistence of two pricing mechanisms on the European wholesale markets. It must be remembered that, historically, the supply of the wholesale market in continental Europe is based largely on long-term bilateral contracts concluded with producers on a take-or-pay basis as far as volumes were concerned, and also incorporating a price indexation clause. Those clauses refer to the price of competing fuels on the sales markets (oil and its derivatives, and coal) with a lag of 3 to 6 months. Moreover, the development of the gas exchanges led to gas market prices representative of supply and demand conditions. The conditions currently prevailing on the gas market feature excess supply – due to the entry into service of gas liquefaction lines and sustained output of non-conventional gas in the United States – combined with demand still affected by the crisis. These developments depressed the market price of gas while the equilibrium on the oil market did not exhibit the same effects. Consequently, the spot market price for gas is depressed in relation to the gas price indexed to the oil price and used in the long-term contracts, which implicitly form the benchmark for the indexation formulas of the other suppliers. It is still questionable whether this gap will persist and whether the natural gas price will become uncoupled from the oil price (IEA, 2010).

#### 2.1.2.4 Implications for consumers

Regardless of the operator, the tariff formulas with automatic monthly indexation implicitly pass on all or part of the price risk to the end-users, whose only means of protection is a fixed-price contract.

The fixed-term contracts currently offered by suppliers active on the Belgian residential market all have a minimum term of one year at an index-linked or fixed price[(1)]. That implies, in particular, that customers wanting to see suppliers compete, or simply wishing to hedge against the price risk by concluding a fixed-price contract, cannot do so without incurring additional costs except on the anniversary of their annual contract. When the contract is signed, the fixed price is generally higher than the variable price because it includes a margin enabling the supplier to deal with the uncertainty over future price movements. Nonetheless, depending on the subsequent movement in the variable price over the term of the contract, the fixed price may be lower than the corresponding variable price in a given month. There are therefore more favourable moments when consumers wishing to hedge against price volatility can do so at lower cost. Customers have the best chance of compensating for the differential between the variable and fixed prices if they conclude a fixed-price contract at a time of low variable prices. That period should preferably coincide with the contract cancellation date if consumers want to keep their costs down.

In regard to the duration of supply contracts, the Verivox information portal for German consumers considers a contract to be more attractive to consumers the shorter its term and the shorter the period of notice of termination (Verivox, 2010). In Germany, 33 % of the tariffs analysed by that body[(2)] have a first contract term of one month, renewable on a monthly basis in 71 % of cases. Half of these monthly contracts are default supply contracts, the suppliers being appointed for a period specified by law; the contracts can therefore be terminated automatically on a monthly basis. Commercial contracts are increasingly offered for a one-year term with a statutory maximum of two years. On expiry of the commercial contract, consumers can always revert to a default supply contract. Prices are not published via an indexation formula[(3)] but at less frequent intervals (the main reason being the menu costs entailed in adjusting prices) via notification of the customer, generally six weeks in advance. Such flexibility in the contracts makes it absolutely essential to have an efficient infrastructure for the transmission of consumption data between the various market players.

Finally, if indexation formulas refer to the gas price on the spot markets on a monthly basis, they make prices more volatile than if they refer to oil prices derived from the average prices over the six months preceding the quarter in question. The transmission of gas spot price fluctuations is speeded up in comparison with the (smoothed) fluctuations in oil prices. However, over the period 2007-2009, the impact of this adjustment was modest in comparison with the general movement in

(1) Elektriciteitsbedrijf Merksplas, a supplier active in Flanders, offers a contract for an indefinite period which can be cancelled at a minimum of one month's notice on payment of cancellation fees. The basic contracts offered by ECS and SPE-Luminus (respectively ECS Basic Deal and Luminus Standard) are also for an indefinite period and can be cancelled on those terms.

(2) The Verivox study covers 1248 tariff formulas offered to businesses (596 tariffs) and residential customers (652 tariffs) by the 100 biggest resellers active on the German retail market.

(3) Except for eight tariff formulas in which the price is indexed to the heating oil price (Verivox, 2010).

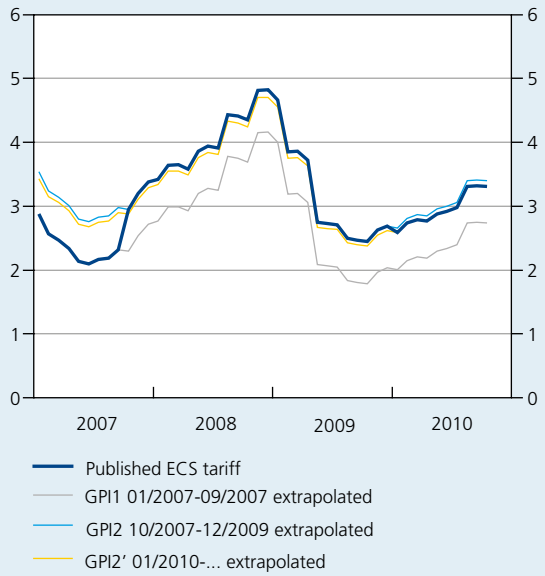
consumer prices of gas (Cornille, 2009). The range of the variations is in fact also due to the weighting accorded to each of the components.

## 2.2 Contribution of the various pricing components to gas price movements

The movement in gas prices (proportional charge) is shown in chart 6 according to the various successive tariff formulas adjusted by the historical operator in January 2007, October 2007 and January 2010. The permanent price increase represented by the constant is clearly visible from October 2007; without that adjustment, domestic consumers would currently be paying the same price as in January 2007. The change of formula has created an asymmetric price pattern, so that the price does not revert to its previous level despite the reduction in the level of the parameters. Any subsequent reversal of the price trend will therefore only be passed on in part.

**CHART 6** ECS ENERGY PRICES EXCLUDING VAT ACCORDING TO SUCCESSIVE TARIFF FORMULAS

(cents/kWh)




Source: Own calculations.

GPI1 = indexation during the period 01/01/2007 – 31/08/2007 (postponed to 30/09/2007)
= 0.25 HUB + 0.0468 GOL + 4.83 ΔCPI – 7.86

GPI2 = indexation during the period 01/10/2007 – 31/12/2009 = increase in the constant in the indexation formula
= 0.25 HUB + 0.0468 GOL + 4.83 ΔCPI – **1.30**

GPI2' = current indexation since 01/01/2010 = reduction in the coefficient applicable to the CPI
= 0.25 HUB + 0.0468 GOL **+ 4.63** ΔCPI – 1.30

and incorporation of the 2 % reduction in the price per kWh invoiced under the EnergyPlus contract:
2.13 GPI + 0.1768 IGD = basic deal for ECS gas 30
**2.0874** GPI + **0.1733** IGD = ECS EnergyPlus deal

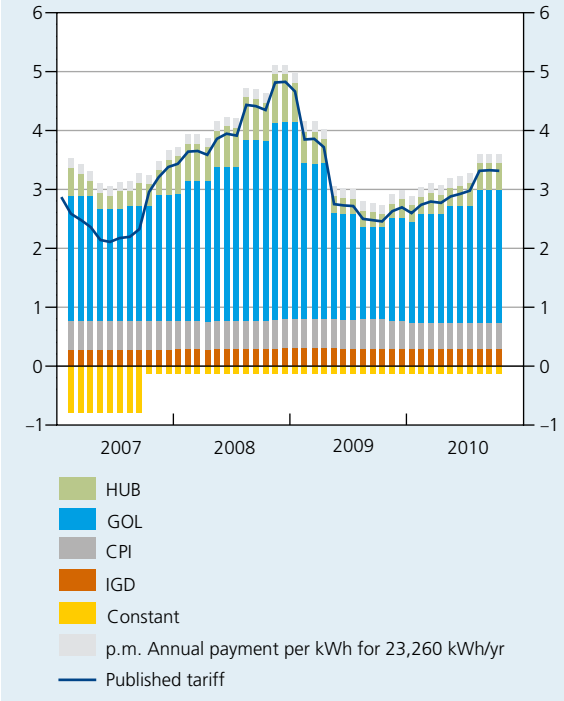
On the basis of the published indexation formulas and with application of the successive values of the parameters used, it was possible to reconstruct the monthly movement in the indexed price by identifying the components relating to each parameter which together make up the price published in the price lists as far as the proportional charge is concerned. For completeness, it would be necessary to take account of the annual standing charge expressed per kWh. In the class considered, using between 5,001 and 30,000 kWh/yr, that currently represents an additional cost of respectively 0.77 to 0.13 cent/kWh excluding VAT in the consumption band in question (shown *pro memoria* in chart 7 for consumption of 23,260 kWh/yr, but not included in the published tariff).

The constant incorporated into the indexation formula with a negative sign has the effect of reducing the overall price (blue line) in relation to the sum of the other formula components. The increase in the constant from –7.86 to –1.3 attenuates that reduction effect.

The change in the price compared to an earlier period is represented in the following charts by a continuous line.

**CHART 7** ECS ENERGY PRICE EXCLUDING VAT AND ITS COMPONENTS

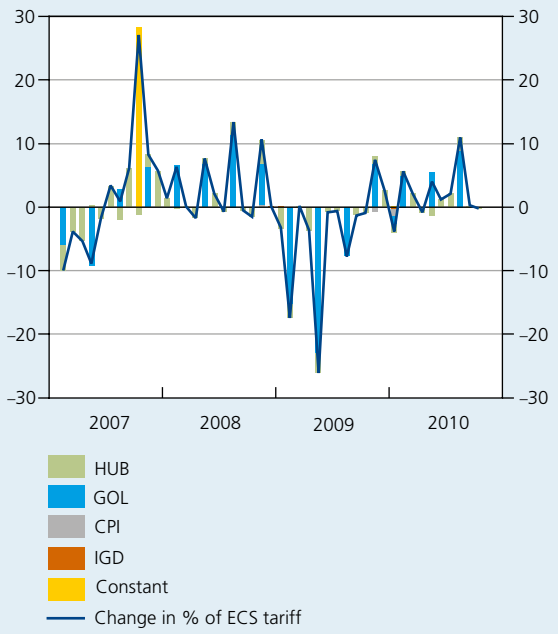
(cents/kWh)




Source: Own calculations.

**CHART 8** CONTRIBUTION OF THE COMPONENTS TO THE CHANGE IN PRICE COMPARED TO THE PREVIOUS MONTH

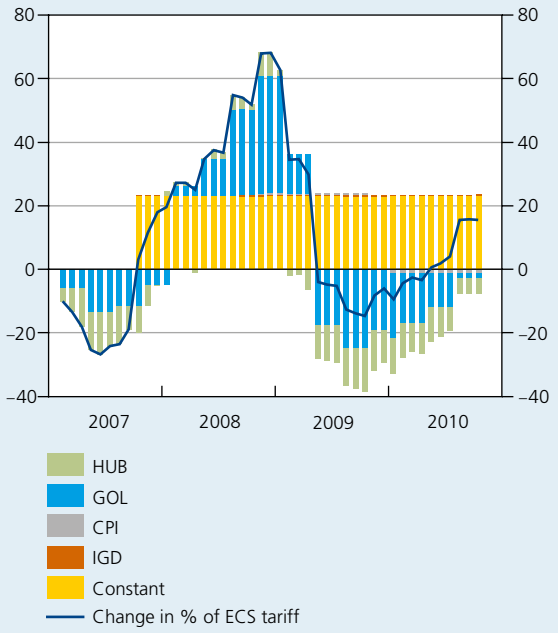
(percentage points, unless otherwise stated)




Source : Own calculations.

**CHART 9** CONTRIBUTION OF THE COMPONENTS TO THE CHANGE IN PRICE COMPARED TO JANUARY 2007

(percentage points, unless otherwise stated)




Source : Own calculations.

The contributions of the various price components to that change are represented by stacked bars.

The monthly price change is first influenced by the volatility of the GOL603 parameter (average of prices over the six months immediately preceding the quarter concerned) which may change every three months. The HUB parameter is taken into account every month, but has a less marked influence on the price than the GOL owing to the lower weighting of the HUB in the price formula.

Since January 2007, there has been a permanent price increase following the change in the constant and, in 2008, that was accompanied by the increase in oil and gas prices. Without that change, the price level from the second quarter of 2009 would have been lower than in January 2007 (by ± 20 to 30 percentage points) instead of gradually increasing (asymmetric price pattern).

In 2008, the year-on-year change in the price was first influenced by the price rise caused by the revision of the constant. Then came the increase in the energy parameters, the price in August 2008 having doubled compared to its 2007 level. One-third of that increase was then still attributable to the constant. In 2009, the changes were due entirely to the energy parameters. The slightly negative contribution associated with the CPI from January 2010 is due to the impact of the reduction in the transmission charge included in the energy price (see Annex 1).

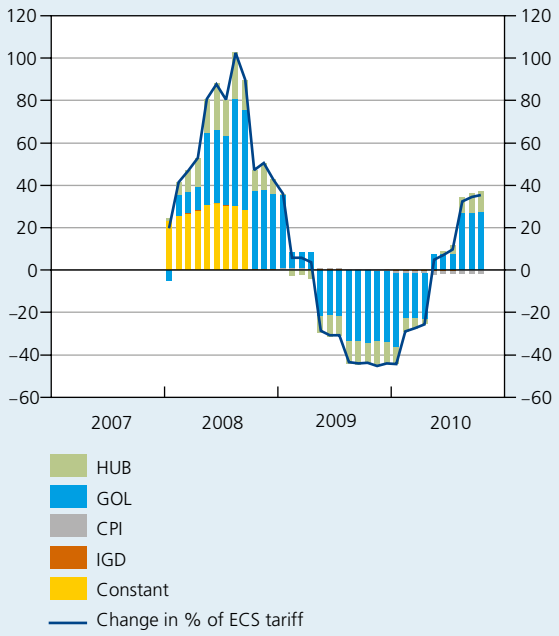
## 2.3 Comparison of the energy prices charged by ECS, SPE-Luminus, Nuon, Lampiris and Essent

Since January 2007, retail-market suppliers to private customers have made use of their freedom to set prices on a number of occasions, leading to gas price changes unrelated to the underlying parameters. The comparison was conducted for the five leading suppliers whose respective market shares for sales via the distribution network are shown in chart 2. In 2009, the five suppliers considered represented 96 % of the access points.

The main tariff adjustments made by these suppliers are detailed in Annex 1, which also sets out the changes in the energy price stated in their price lists. These figures are illustrated for each of them by a thick blue line, the thinner lines showing the prices which would have applied if

**CHART 10** CONTRIBUTION OF THE COMPONENTS TO THE CHANGE IN PRICE COMPARED TO THE CORRESPONDING MONTH IN THE PREVIOUS YEAR

(percentage points, unless otherwise stated)




Source: Own calculations.

the tariff formulas adopted successively had been maintained. The stacked bar charts which follow show the monthly prices with a breakdown between the various components corresponding to each parameter, which together make up the price published in the price lists in relation to the proportional charge.

These charts reproduce the unit energy prices quoted in the suppliers' price lists as published on their website and notified to the regulators for statistical and monitoring purposes. However, it must be pointed out that the monthly prices used for invoicing are those based on the values of the parameters corresponding to the consumption month; they are plotted with a dotted line with a delay of one to two months against the date of the published price, which itself is based on parameters which applied one to two months earlier. The index values are in fact not known until the beginning of each month, whereas the price lists must be sent out during the month preceding implementation of the prices.

It should be noted that – in the case of three of these suppliers – it would have been more advantageous to the consumers if the first set of tariffs introduced in January 2007 had been retained (see charts in Annex 1 – thin grey line below the thick blue line). The indexation adjustment made by Lampiris is the only one which became more favourable than that adopted in January 2007. A similar finding is true in the case of the new variable-price contracts offered since then, such as the Luminus Connect contract introduced in 2008, which referred partly to the Zeebrugge DAH gas price. The Essent Eco contract launched in October 2010 offers a price with indexation comparable to that adopted by Lampiris (see Annex 1). The same applies to the contract offered by the newcomer on the Belgian market from October 2010, Octa+.

At the level of the contributions of the various components, the changes made to the tariff formulas as regards indices and/or weightings have had the effect of increasing the stable part of the tariff, i.e. excluding the parts linked to the energy parameters HUB, GOL and HFO which are more prone to fluctuation. The CPI is in fact adjusted annually, the IGD is an index which rises gradually, and the constant is only changed by discretionary decision. Since January 2007, this stable base has increased in the case of four operators (at Nuon it is relatively constant but already high) and now represents between 0.50 and 0.85 cents per kWh (excluding VAT). The top of this range is seen in the case of Lampiris where the stable IGD component represents up to 49 % of the total price (depending on the movement in the TTF)[1].

These changes led to a permanent increase regardless of the movement in the energy price parameters on the international markets, and may be part of the reason for the deterioration in the gas price level compared to that seen in neighbouring countries, leaving aside the effect of the increase in gas transmission and distribution costs which is not discussed in this article[2].

## 2.4 Freedom to set prices in Belgium

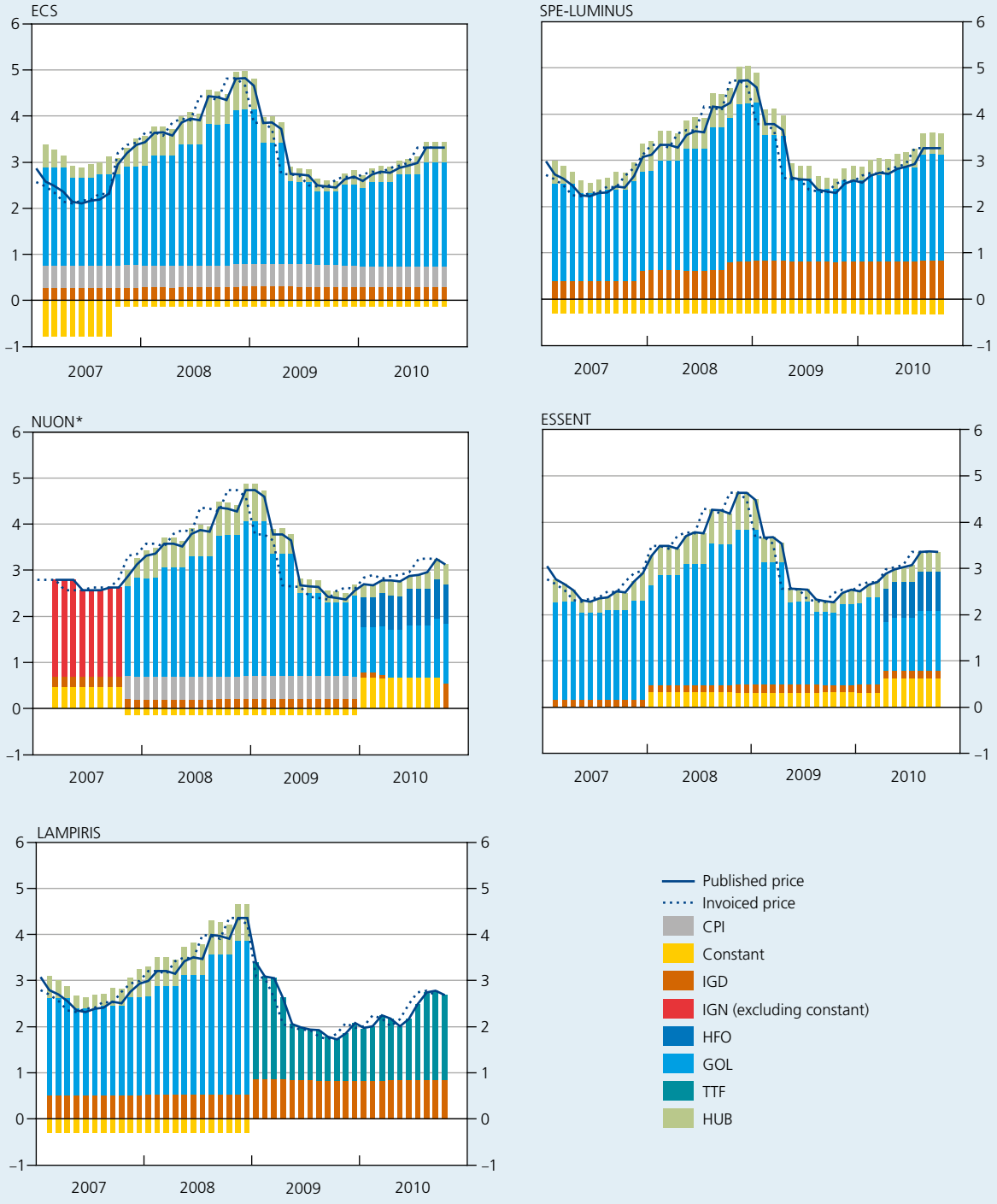
The division of powers between the various levels of authority also has an impact on the freedom to set prices available to players on the gas market. In the case of transmission and distribution tariffs, the federal authorities intervene via the federal regulator, which checks whether the tariff offers submitted to it by the transmission and distribution companies conform to the set methodology. The energy price is not regulated, but may be capped if appropriate by decision of the federal

(1) It should be noted that the increase in the coefficient applied to the annual standing charge (a x IGD) by Essent in January 2008 (see Annex 1 and CREG (2010b)) also represents an increase in stable revenue, but proportionate to the number of access points (and not to the volumes supplied).

(2) See Cornille D. (2009), "Methodology or pricing: what is the reason for the greater volatility of consumer gas and electricity prices?", NBB, *Economic Review*, for a more detailed analysis of this question.

**CHART 11** TREND AND BREAKDOWN BY COMPONENT IN THE PRICE OF ENERGY EXCLUDING VAT BY ECS, SPE-LUMINUS, NUON, LAMPIRIS AND ESSENT

(cents/kWh)




Source: Own calculations.

* In its price lists, Nuon refers to the value of the parameters in m–2 instead of m–1.

authorities, after obtaining the opinion of the federal regulator[1]. The powers of the Regions relate, among other things, to certain public service obligations[2]. It is against that backdrop that the decree by the Walloon government concerning public service obligations in the gas market specifies that, on invoices for gas supplies, "the supplier shall notify his standard supply contract and any adjustments to it to the CWaPE. No standard contract may enter into force without prior notification to the CWaPE". For Brussels, the regulator BRUGEL has not stipulated any similar obligation. In Flanders, the regional regulator stipulates that the VREG has no authority to pass legally binding decisions on contractual and commercial aspects of commitments between suppliers and consumers. In these areas, it is necessary to refer to contract law and to the sectoral agreement concluded in March 2005 between energy suppliers and the Consumer Protection Minister entitled "The consumer in the liberalised electricity and gas market" (FPS Economy, 2008)[3].

Under its consumer protection powers, the Federal State has in fact negotiated a binding agreement with the suppliers on their trade practices. The agreement covers issues such as price transparency, marketing and selling techniques, changes of supplier, general conditions, information for consumers and the handling of complaints; in particular, it stipulates that "unilateral changes to essential conditions or changes to energy or gas prices on the basis of factors dependent solely on the will of the supplier are prohibited". Failure to comply with that agreement can be reported to the special federal mediation service for the energy sector (mediation service set up at FPS Economy, SMEs, Self-employed and Energy).

The extension of the CREG's area of competence implemented under the Law of 8 June 2008 enables it to conduct permanent monitoring of the gas and electricity markets, in regard to both market operation and prices, including supply prices. In particular, Article 15/14ter specifies that "the prices offered by a natural gas company must be objectively justified in relation to the costs incurred". If the regulator identifies infringements, it may on its own initiative submit a report to the minister setting out its findings and recommended measures. The CREG reports alleged infringements to the Competition Council, submitting its report and the necessary confidential information (CREG, 2009). The regional regulators are responsible, under their public service obligations, for informing consumers of the prices offered by the suppliers, including the obligation to present an objective comparison. So, just before the end of each month, as input for the price simulators set up by the regional regulators, the suppliers notify the price lists for the following month based on the value of the parameters for the current month.

## 3. Do other countries also grant as much freedom to set retail prices?

The process of gas market liberalisation launched at European level is following different agendas in the various national markets and is based on arrangements determined autonomously by the national authorities[4]. This leads to levels of (de)regulation which vary from one country to another and which also affect the scope for competition. That scope in turn depends on the competition conditions on the wholesale markets upstream, which determine the conditions on which the suppliers obtain gas, be it via bilateral contracts, purchases on the exchanges or auction procedures. The operators active on the national markets have adapted to the rules on their respective markets, notably where pricing is concerned. Thus, the Belgian pricing policy based on automatic monthly indexation formulas common to all operators active on the residential market means that changes connected with the underlying energy parameters are passed on automatically in the gas price invoiced to the domestic consumer. The proportion of variable-price contracts concerned represents around 93.2 % of the contracts concluded by households as at October 2009 (CREG, 2010c). This pricing policy – which is rather specific to Belgium – is one explanation for the greater volatility of consumer prices of gas and the rapid transmission of changes in gas import prices to consumer prices (in which the indexation formulas are governed by the same principles), points already noted elsewhere (Baugnet and Dury, 2010).

The above analysis emphasises the freedom to set prices which resellers enjoy on the retail market in Belgium. If these prices are compared at international level, the question remains to what extent that freedom to set prices also exists in other countries, and whether it is based on similar arrangements.

### 3.1 From varying levels of regulation to simple retail price monitoring

In July 2007, the European Regulators' Group for Electricity and Gas (ERGEG) conducted an initial survey among the regulators to assess the effective liberalisation of gas and electricity prices by ascertaining whether regulated prices persist in segments which are nevertheless open

(1) Article 15/10 of the Law of 12 April 1965 on the transport of gaseous and other products by pipeline.

(2) Public service obligations according to the Gas Directive 2003/55/EC – Article 3(2) – "Member States may impose on undertakings operating in the gas sector, in the general economic interest, public service obligations which may relate to security, including security of supply, regularity, quality and price of supplies, and environmental protection, including energy efficiency and climate protection."

(3) The latest version of this agreement was supplemented in June 2008, and entered into force on 15 December 2008.

(4) For an appraisal of the current situation, see EC (2010), *Report on progress in creating the internal gas and electricity market*.

to competition. That survey was updated in July 2008 (ERGEG, 2009) and January 2010 (ERGEG, 2010).

The survey reveals that, in regard to the residential market, Belgium is among the Member States where gas and electricity prices are not subject to regulation in the sense defined by ERGEG (see definition below).

Apart from Belgium, the Member States where retail prices of gas and electricity are totally liberalised (according to ERGEG) are Austria, the Czech Republic, Germany, Luxembourg, Slovenia, Sweden and the United Kingdom. In Finland, only electricity prices have been liberalised[1].

### 3.1.1 Definition of a regulated retail price

ERGEG considers that a regulated retail price is a price which is regulated (or controlled) by a public authority, rather than a price established solely by supply and demand. Such regulation may take various forms: price-setting or approval, maximum prices, or a combination of those measures.

Despite the proclaimed full liberalisation of their retail markets, a number of Member States continue to regulate energy prices on this segment, justifying that policy by the need to protect vulnerable consumers. In ERGEG's opinion, that protection should not be provided by regulated prices applicable to some or all of the customers. However, the obligation to relinquish such provisions in the long term is open to interpretation: a recent judgment by the European Court of Justice (Case C-265/08 – 20 April 2010) confirms that, under certain conditions, the Directive on the internal gas market does not preclude national legislation making temporary provision for setting the price level for the supply of natural gas to final consumers.

### 3.1.2 ERGEG's position on regulated retail prices

ERGEG's position comprises a number of points:

- in the long term, regulated retail prices are incompatible with a competitive environment, and ERGEG is urging the adoption of scenarios in which these regulated prices are gradually phased out;
- ERGEG recognises that competition entails close supervision in order to ensure that customers are treated fairly, so that they can obtain the best terms and can exercise their freedom of choice in an open market. Yet regulated prices tend to distort the market;
- measures concerning social protection for vulnerable consumers must be in line with market principles;
- regulated prices can interfere with the operation of the wholesale and retail markets and send the wrong price signals to suppliers and consumers.

## 3.2 The situation in some neighbouring countries

The ERGEG analysis, summarised in Annex 2, shows that free pricing applies in all consumption segments of the Belgian gas market, without any regulation according to the ERGEG definition. Without claiming to be exhaustive, this section examines in more detail the natural gas prices offered to domestic consumers in neighbouring countries of North-Western Europe. Two groups of countries emerge:

- countries with regulation: France, the Netherlands, Denmark, Ireland[2];
- countries without regulation: Germany, the United Kingdom, Luxembourg, Austria, Sweden, Finland.

The findings which emerge from that examination are summarised in three boxes with:

- a brief description of the scope of gas price regulation in the residential sector, if any;
- the supervision measures which nevertheless exist in countries without regulation;
- the price indexation arrangements observed in all the countries analysed.

The scope of gas price regulation in the residential sector can be summarised as follows.

(1) The Finnish gas market is in fact closed to competition under Article 28(1) of Directive 2003/55/EC which exempts Finland from opening up the gas market so long as the country has no direct link to the EU gas network (EC, 2003).

(2) Prices are considered to be regulated if there is any control by the authorities (price approval procedure, maximum prices) though the prices may still be freely set.

## Box 1 – Scope of regulation

**France – coexistence of regulated price deals and market price deals**

Regulated price deals (90 % of residential locations, in volume) offered by the historical supplier GDF-Suez and 22 local distribution companies (or less than 5 % of customers) – the regulated selling prices have to cover supply

costs and are fixed jointly by the ministers responsible for the economy and energy on the advice of the regulator (CRE).
Market price deals offered by five alternative suppliers alongside the historical supplier.

**The Netherlands – control procedure before any price change**

Before any price is changed, there is a control procedure (safety net) to ensure the change is justified, with maximum prices imposed if appropriate.
These maximum prices correspond to the total purchase costs and a gross margin considered to be reasonable by the *Energiekamer*, which comes under the Minister for Economic Affairs and is based at the competition authority, Nma.

**Denmark – maximum prices controlled by the regulator**

Maximum prices for suppliers designated as having a default supply obligation in relation to customers who have not changed their supplier.
The maximum prices for the supply obligation are controlled by the regulator, DERA. They cover the costs plus a reasonable margin assessed by the regulator in the light of the efficiency achieved by the suppliers in the contracts for the purchase of gas (efficiency regulation).

**Ireland – maximum prices controlled and subject to review by the regulator**

Maximum price fixed for 18-month periods (price may be reviewed by the regulator if he considers that to be in the consumers' interests).
Determination of an average maximum tariff composed of the gas price, transmission and distribution costs, operating expenses and the supplier's margin. Suppliers must take all possible steps to ensure that in any period of twelve successive months the average gas price does not exceed the maximum authorised by the regulator.
The regulator monitors market developments (report on competition), the decision to suspend that regulation depending on the competition situation.

The absence of regulation does not give operators total freedom; rather, it is more of a supervised freedom.

## Box 2 – Supervisory measures in countries without price regulation

**Germany**

Free prices, but since 2008 the competition authorities have been able to bring proceedings on account of anti-competitive practices, both at federal level (*Bundeskartellamt* in the case of trans-regional suppliers) and at the level of the *Länder*.
12/2007: amendment of the legislation against restraints of competition in order to strengthen control over the existence of unfair prices in the energy sector. The *Bundeskartellamt* can investigate (and prosecute) a dominant undertaking on account of excessive prices, by demonstrating that other firms charge lower prices or that the price is disproportionate to the costs. The burden of proof rests with the undertaking in question.

03/2008: 35 regional/local gas resellers were prosecuted on suspicion of having charged excessive retail prices in 2007 and 2008. In August 2008, the prosecution was halted because the resellers undertook to reimburse the customers and not to recoup the amounts in question by way of subsequent price increases ("no-repeated game"). The *Bundeskartellamt* oversees all the proceedings.
10/2009: the Federal Court condemns a supplier for using an invalid contractual clause: the price-matching clause allowed an immediate increase in prices in the event of a cost increase, but conversely made no provision for an obligation to cut prices if costs went down.
03/2010: judgment of the Federal Court ruling that retail gas prices cannot depend exclusively on the price of oil (light heating oil), because that single link is unfavourable to customers and can lead to extra profits for suppliers (e.g. if transport or operating costs decline).

### The United Kingdom

Free pricing formulas (4,000 tariffs offered).
10/2008: *ex post* analysis of the market situation (the Energy Supply Probe) under the direction of OFGEM (and of the regulator which is its supervisory authority) whose job is to protect the interests of consumers by promoting competition.
Following that analysis, introduction of a new condition for awarding supply licences, prohibiting unjustified tariff differentials: prices must reflect the costs of the undertakings, and price differences must be objectively justified on the basis of costs or on other terms and conditions.
From 2009: publication of *Quarterly Wholesale/Retail Price Report*s which include an analysis of the link between wholesale and retail prices.
Establishment of an independent body – *Energywatch* – to protect and promote the interests of gas and electricity consumers: free, impartial information, registration of complaints, and use of the experience thus gained to inform the authorities on these aspects, by involving the regulator and the operators in such a way as to make them more receptive to the needs of consumers whenever any change is made to operators' policies, procedures and systems.

### Luxembourg

Free pricing since 1 July 2007.
The regulator notes that "it does not have the legal means to conduct a survey of prices charged on the market".

### Austria

Free pricing – indexation at irregular intervals by the suppliers but with clear and transparent notification (the same applies to invoices).
The regulator E-control has a legal mandate to check the transparency of invoices, and conducts analyses on the market situation jointly with the competition authority BWB.

### Sweden

Small market (44,400 households).

### Finland

Finnish gas market closed pursuant to Article 28(1) of Directive 2003/55/EC which exempts Finland from opening up its gas market so long as the country has no direct link with the EU gas network – small market.
Gas prices are not regulated as such: there is no authority responsible for their approval or for fixing them in advance.

The indexation arrangements concerning variable-price contracts can be summarised as follows.

## Box 3 – Indexation arrangements under variable-price contracts

### France

Market deals = –x % compared to the regulated prices = parallel changes.
Regulated standing charge for customers connected to the transmission network and customers connected to the distribution network consuming over 4 GWh/yr – changes every 3 months.
Regulated public distribution price for business and domestic customers connected to the distribution network and consuming less than 4 GWh/yr:

- regulated tariffs of local distribution companies adjusted 4 times a year (1 January, 1 April, 1 July and 1 October) in line with the movement in costs. Ministers may ask a supplier to submit a new scale of charges on the recommendation of the CRE;
- GDF-Suez regulated prices adjusted (in theory) at unspecified times, but in practice they change according to GDF's costs (proposal by GDF) and the "authorisation" obtained by the CRE/Ministry (public service contract). The government sets the selling prices at least once a year, but GDF is permitted to change them between two price decrees (on the recommendation of the CRE, according to an approved formula).

Publication in March 2009 of the formula for calculating GDF's supply costs; formula included in the public service contract and audited by the CRE for application during 2008 to 2010.
$\Delta$ supply costs of GDF-Suez = 1.3107 $\Delta$ exchange rate €/$ + 0.01988 $\Delta$GOL(€/t) + 0.02652 $\Delta$HFO(€/t) + 0.06206 $\Delta$Brent(€/b)[1].

### The Netherlands

Obligation to inform the competition authority (NMa) of price changes four weeks in advance so that it can check whether the adjustments are reasonable (safety net) (NMa, 2009).
Contract formulas offered:

- fixed-term at a fixed or variable price, with prices generally adjusted in January and July;
- indefinite-term and variable price with adjustment in January and July.

### Denmark

Contract formulas offered:

- variable price indexed to the price of petroleum products or to Nord Pool Gas price, adjusted monthly;
- price fixed for one or two years, with or without maximum prices.

### Ireland

Maximum price fixed for 18-month periods:

- standard tariff with fixed charge and charge per kWh consumed;
- tariff with no fixed charge and two price levels (< and > 3,550 kWh);
- "winter saver" tariff allowing big winter bills to be staggered;
- reduction for payment by direct debit.

(1) April 2010: with the emergence of a significant spot market (attractive in a context of spot prices below the long-term contract prices), the CRE was questioned about the absence of spot prices in the approved formula. A new audit was launched by the CRE (Europénergies, 2010a). Under this formula, a price increase for private customers was announced from 1 July 2010. Meanwhile (June 2010), the Minister for Economic Affairs asked that, after that rise, prices should remain unchanged until the CRE had completed its audit (Europénergies, 2010b). At the end of August 2010, the CRE confirmed that the existing formula offers a correct approximation of the supply costs of GDF-Suez, while stressing the need to consider a revision in order to take account of new developments: new indexations based on the spot price in long-term contracts and increased percentage of supplies obtained on the spot market (CRE, 2010). Some people warned that this could lead to greater price volatility (Pétrostratégies, 2010c).

Germany

Around 16,000 gas and electricity tariffs offered by 900 electricity resellers and 750 gas resellers.
Prices change as and when changes in market conditions so require: adjustment authorised *nach billigem Ermessen der Entwicklung der Kosten* (according to a reasonable assessment of changes in costs).

The United Kingdom

Retail prices adjusted at not too frequent intervals because of the costs entailed and the potential adverse effect on customer relations (consumers prefer stable prices).
Main types of tariffs:
- tariff varying according to payment method: "credit" tariff with invoicing at the end of each quarter, direct debit tariff with payment taken direct from the customer's account, tariff for prepayment via a meter;
- dual fuel tariff offering a discount for customers buying both gas and electricity from the same supplier (amount fixed quarterly or annually);
- fixed or capped tariff (limit that price will not exceed during a set period);
- special tariff for vulnerable, low-income customers (voluntary agreement between OFGEM and suppliers for the financing of these tariffs).

Luxembourg

Natural gas purchase price indexed to the price of petroleum products (fuel oil and heating oil) with quarterly indexation.

Austria

Free price – indexation at irregular intervals by suppliers with obligation to publish clear, transparent information on price adjustments.
Rebates granted:
- according to the payment method (direct debit);
- for new customers;
- for brand loyalty (after a minimum period has elapsed);
- for recommendation to new customers.

Sweden

Annual contracts with a variable price adjusted quarterly, and fixed-price contracts for 1, 2 or 3 years.

It is clear that the interpretation and comparison of price movements is subject to the influence of regulation, which may still vary considerably in scope from one country to another.

According to economic principles, the operators' selling price formulas reflect – or aim to reflect – the price structure of their purchase portfolio.

Except for Denmark (where maximum prices nevertheless apply), none of the countries analysed had any automatic monthly indexation mechanism like that adopted by all suppliers active in Belgium. Indexations take place on an *ad hoc* basis, at quarterly/six monthly intervals. The reseller must always give advance notice of new prices to consumers, who can then rescind their contract.

With the fall in spot prices of gas, a number of regulators/authorities have been concerned about that reduction being passed on to consumers, the possible outcome being asymmetric retail price patterns; *ex post* analyses

have been conducted in a number of countries, including Germany and the United Kingdom.

This monitoring is only possible and effective if the regulators (or others) have the power to pursue it and to take *ad hoc* measures (development seen in Germany since 2008 under the aegis of the competition authorities).

Even in countries where prices are not regulated, the authorities keep a watchful eye on prices of electricity and gas because these are essential household expenditure subject to a public service obligation, with prices which must be determined by the market. Regulators, competition authorities and consumer protection bodies intervene to varying degrees in accordance with their respective area of competence.

In September 2009, the Citizens' Energy Forum (or London Forum)[1] which is the European platform for consultation between market players (regulators, operators, consumers) on the retail energy markets stated in the conclusions of its second meeting that it was in favour of close cooperation and coordination between regulators, competition authorities and organisations representing consumers in regard to supervision of the market and action against anti-competitive or unfair practices (EC, 2009b).

## 3.3 Towards more visible methods of gas pricing in Belgium

Although in Belgium, as elsewhere, gas and electricity prices have contributed to inflation and increased its volatility, they are also largely responsible for the divergence between Belgian prices and the European average (Cornille, 2009). Similarly, it emerges from econometric studies that, in comparison with neighbouring countries, the methods of setting gas prices in Belgium are a factor in the variability of consumer prices of gas, and the greater speed with which those prices adapt to changes in gas import prices (Baugnet and Dury, 2010). Essentially, in economic terms, price changes are appropriate incentives for supply and demand adjustments, provided they reflect the real movement in supplier costs. For comparison, retail prices of natural gas are more volatile in Belgium than in other countries, with undesirable second-round effects in terms of the general trend in prices, effects which could be countered by measures capable of smoothing that volatility. However, any intervention by the authorities in the methods of setting retail prices must take place in a context in which Belgium already has totally deregulated prices according to the ERGEG definition: introducing maximum prices, for example, would be a form of regulation. Moreover, any intervention in the frequency of indexation must be preceded by an assessment of the advantages of reduced price volatility in relation to the risk that operators pass on to the consumer the costs of price risk hedging which less frequent adjustment of their selling prices would imply, plus any menu costs. It would be appropriate, at least, to consider practices in other countries where prices are deregulated. Two types of adjustment are conceivable.

First, introduction of "supervised" freedom to set prices with effective prior verification that the price adjustments proposed by the suppliers are indeed cost reflective. That approach is based on the one adopted in the Netherlands, where the validity for changes to both electricity and gas prices is examined by the regulator before they take effect (Coppens, 2010). That presupposes, in particular, the creation of an obligation to submit the changes and their justification in advance, and confidential access to information relating to the management of the gas purchase portfolio (bilateral contracts, acquisitions on exchanges or at auctions). A complete and accurate assessment of these purchase conditions is also important for suppliers facing competition on the wholesale markets. Generally speaking, the required transparency is more complex to implement than in the past owing to the involvement of multiple operators for whom the relevant market is not – or is no longer – confined to the national market. Another option is *ex post* supervision, like that applied in Germany following the amendment to the legislation against restraints of competition, adopted at the end of 2007. The competition authorities can investigate (and prosecute) a dominant firm for overcharging on the basis that other companies' prices are lower or that the price is disproportionate to the costs, but without having to prove that the company in question is guilty of anti-competitive behaviour. The obligation to explain the differences found rests on the company in question (Lohmann, 2009).

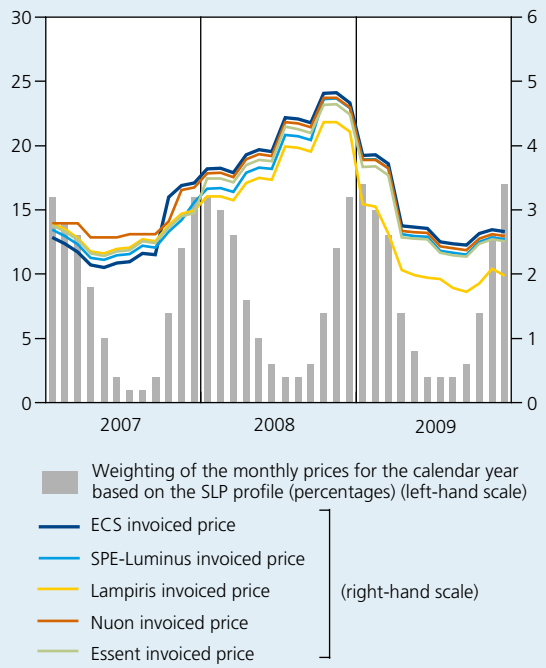
Also, information on prices needs to be easier for the average consumer to understand. Unless they repeat all the calculations or print the price lists every month, consumers do not get any information on the prices which they actually pay month by month[2]. It must be said that this comparison of the tariffs offered by the operators has shown that the picture is rather unclear for consumers, as the information given out allows them to get only a rough idea of the price paid, and especially of how it has

(1) The Commission's Third Energy Package includes improvements to the operation of the retail markets for the benefit of consumers. In that connection, the Commission created this special regulatory platform on the basis of experiences gained from the Madrid Forum (gas) and the Florence Forum (electricity).

(2) The federal regulator provides these figures in its monthly analysis of "Natural gas prices on the residential market", but without any link to the calculation of the invoiced price.

**CHART 12** MONTHLY MOVEMENT IN THE PROPORTIONAL CHARGE COVERING THE ENERGY PRICE EXCLUDING VAT AND THE CORRESPONDING WEIGHTING FOR THE CALENDAR YEARS 2007 TO 2009

(cents/kWh, unless otherwise stated)




changed. In fact, the only price which consumers see on the invoice is an average price calculated over the invoicing period. Under the sectoral agreement in favour of "consumers on the liberalised electricity and gas market", consumers can obtain free of charge the detailed calculations of the components of their invoices (including the price components and details of the indexation mechanisms). One possibility would be to present the movement in the monthly prices charged alongside the movement in the standard consumption profile used for weighting the monthly prices in establishing the price charged for the energy. That approach is illustrated in chart 12 for the three calendar years 2007 to 2009 [(1)]. It helps gain a better understanding of the composition of the price invoiced.

Finally, increased cooperation and/or close coordination between the regulators, the competition authorities and the organisations representing consumers in the supervision of the markets would enhance transparency regarding these complex pricing mechanisms for the consumer.

(1) The gas consumption generally recorded at annual intervals is allocated over time on the basis of a standard consumption profile obtained either from a Synthetic Load Profile (SLP), or from the number of degree-days, both being available on the Synergrid website. The profile presented here corresponds exactly to calendar years. In practice, this type of chart is specific to each invoicing procedure, since the weighting is influenced by the number of days between the issue of two successive invoices and the corresponding SLP/degree days. Thus, the weightings in chart 12 relate to calendar years (invoice on 31 December in each year) and vary from one year to the next.

## 4. International price comparison, a tricky exercise

The differences revealed by international gas price comparisons may be due to the gas price itself and/or to the methods used to measure it.

This article has shown that retail price deregulation is a process which is still going on in some EU Member States, and that any price comparison is therefore biased to some extent. It should be noted that the level of retail gas price regulation is far form uniform between the various American States (see Annex 3 on liberalisation in the United States). The persistence of varying forms of regulation limits the operators' scope for action and price adjustments, and that may also affect the level and volatility of the natural gas price indices.

Moreover, freedom to set prices implies the existence of multiple formulas in accordance with the general principle whereby resellers need to find the right balance between the terms on which they purchase the gas and the tariff formulas offered for sale on the retail market. The underlying parameters used may therefore vary and be adapted at different frequencies (monthly, quarterly, half-yearly, *ad hoc* or even annually with the fixed-price contracts), while respecting the regulatory framework set by the national authorities. In neighbouring countries, indexation takes place less frequently or on an *ad hoc* basis with prior announcement of the new indexed prices. The cost associated with these procedures (obligation to notify customers) tends to discourage frequent indexation. Conversely, automatic indexation such as that applied in Belgium avoids some of those costs and is all the more attractive since all operators adopt that approach in their variable-price contracts. This rather specific situation also helps to explain why the consumer price of gas changes faster in line with changes in gas import prices in Belgium, compared to neighbouring countries (Baugnet and Dury, 2010).

Finally, the statistical recording of price movements may also lead to differences. In its annual report on the 2009 price analysis (NAI Price Observatory, 2010), the National Accounts Institute mentions a number of differences between Belgium's neighbouring countries in the methodology used to record gas and electricity prices:

– in the composition of the sample of prices monitored. In Belgium and the Netherlands, the national index is

calculated on the basis of prices charged by suppliers active on the market, weighted according to their market share. Germany conducts a sample survey in 188 towns on the basis of the best prices offered by the leading operator. In France, it is only regulated prices that are taken into account;

– in the frequency of the surveys, the calculation of averages or the use of end-of-period data, the definition of consumption profiles and the recording times.

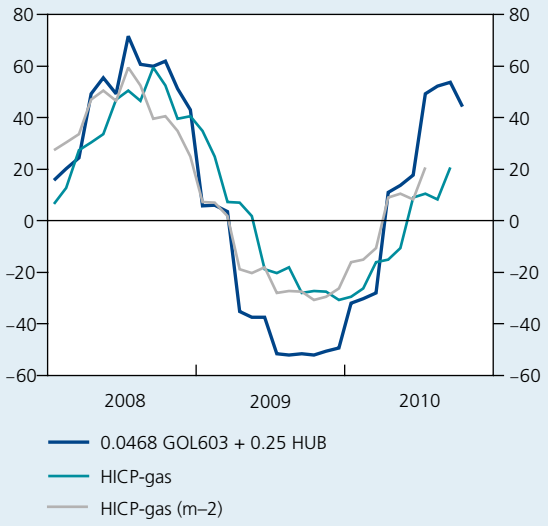
In Belgium, the change in the method of HICP recording with effect from 2007, switching from a "payments" approach (based on annual invoices) to an "acquisition" approach (based on the monthly prices recorded at the time of acquisition of the product) corresponds to an alignment with the methods of recording monitored prices in other countries (Cornille, 2009). However, the actual monitoring of the monthly prices actually paid is subject to an initial delay of one to two months between the price published in the price lists and the monthly price used for invoicing, a delay resulting from the non-availability of the parameters at the time when the operators communicate those data to the regional regulators. A second one-month delay in the transmission of data from the Walloon and Flemish regulators to the Directorate General of Statistics and Economic Information is reflected in the calculation of the HICP (NAI Price Observatory, 2010). Whereas in neighbouring countries the HICP reflects the price charged for the corresponding consumption month, in Belgium it reflects figures which are two months out of step with the prices which will actually be invoiced[1]. That delay is evident in chart 13, showing year-on-year changes in the "0.0468 GOL + 0.25 HUB" component used by many operators in their indexation formulas, and the corresponding movements in the HICP for natural gas (HICP-gas). These two curves display a very similar pattern, and the similarity is even more marked in the timing of the changes if the figures for the HICP two months ahead are considered (HICP-gas (m–2)) in order to compensate for the delay in communicating the data. However, the similarity between the GOL+HUB component and the HICP-gas is not perfect in regard to the range of the fluctuations, as the latter reflects an average price and is therefore influenced by price changes other than those linked to the parameters GOL and HUB (introduction of fixed-price contracts, use of the parameters HFO, TTF and DAH, increase in the proportion of stable components, inclusion of distribution costs and suppliers' margins in the HICP-gas, etc.)[2].

(1) This means that changes in the price of gasoil affect the consumer price of gas after a lag of seven to eight months (NAI Price Observatory, 2009).

(2) The same applies to the movement in the HICP for electricity (Coppens, 2010).

**CHART 13** YEAR-ON-YEAR CHANGES IN THE HICP-GAS AND THE "0.0468 GOL + 0.25 HUB" COMPONENT

(percentage changes)




## Conclusions

As commercial intermediaries, gas resellers pass on the cost of buying the gas plus a margin, so that the movement in purchase costs is generally reflected in the selling price.

This article has adopted the approach of analysing in more depth the mechanisms governing pricing on the retail market on the basis of the price lists of the operators active on the Belgian market. It turns out that the method which the various operators use to set the retail price is very similar in its principles, and is based on indexation of the selling price to parameters which reflect the movement in the cost of buying the gas, thereby passing on the price risk to the consumer. That indexation is based on formulas specific to each operator and applied at monthly intervals, which is a very convenient situation for all the operators since a major part of the price risk is automatically transferred to the consumer without entailing any additional information costs. On the other hand, it leads to monthly price adjustments and short-term volatility. Adjustments to the tariff formulas themselves, left to the discretion of the operators, do not stand out very clearly. Their justification in view of the real movement in the costs incurred in purchasing gas on the wholesale market remains an issue, as the relevant data are not published. On that point, verification by the competent institutions regarding the representativeness of the indices used in terms of the movement in costs

and the justification for successive adjustments merits support.

The disclosure of the automatic indexation mechanisms has the advantage of being relatively simple and transparent (certainly after in-depth analysis) in regard to fundamental movements in the parameters and their influence on prices. However, for the average consumer, the calculation of indexed prices appears complex and the information supplied seems incomplete, as it is not easy for consumers to find out about movements in the monthly price, even if only to understand the price on the invoice. Consumers wishing to hedge against the price risk can always eliminate the uncertainty associated with variable-price contracts by signing a fixed-price contract, but they have to do so on their old contract renewal date, giving due notice if they want to avoid any additional charges.

The use in Belgium of automatic indexation with publication of the underlying formula applied differs from the practices prevailing in neighbouring countries. Except for Denmark (though maximum prices do apply there), none of the countries analysed had any systematic indexation mechanism like that adopted by all the suppliers active in Belgium. In those countries, prices are adjusted less frequently or on an *ad hoc* basis, always with prior notification of the consumers. That limits the frequency of adjustments in view of the costs associated with those procedures, hence attenuating gas price volatility.

Moreover, the freedom to set prices enjoyed by operators in Belgium has led to discretionary adjustments to indexation involving an increase in the stable portion of the price unconnected with movements in the energy parameters.

For the purpose of international comparison, this finding has to be viewed in the European context in which varying situations coexist and distort the movement in gas prices. The European gas market is in fact undergoing a process of liberalisation, with the actual arrangements and agendas varying between Member States. Depending on the country, there may be regulated prices, price approval procedures, maximum prices or totally unregulated prices. However, these prices are still at least subject to supervision owing to the authorities' concern that the retail prices charged should reflect the true cost of a product which is subject to a public service obligation, which is an item of essential household expenditure, and for which the price must be determined by the market.

The scope for creating effective competition on the retail market remains also dependent on the competition conditions prevailing on the wholesale market and the associated issues, which are often international in scale. They concern in particular the eventual emergence of a European oligopoly on the wholesale market, the development of LNG transactions and their impact on supplies, the breaking or continuation of the structural link between gas prices and oil prices, etc.

# Annex 1 : Main price adjustments made since liberalisation

## Transition from regulated indexation to indexation at the discretion of the suppliers

Before the full liberalisation of the market on 1 January 2007, the indexations used were based on the gas acquisition index (IGA) reflecting the movement in the natural gas price paid to public distributors. Before that date, this index was based on the G parameter, the "all gas" border price, the weighted average of gas import prices (in €/MWh) at the Belgian border[1] for supplies to the Belgian market in the long term, including all fixed and proportional charges associated with these regular imports : G = P + F

with

$$P = P_{NL}\frac{ACQ_{NL}}{ACQ_{TOT}} + P_{Nor1}\frac{ACQ_{Nor1}}{ACQ_{TOT}} + P_{Nor2}\frac{ACQ_{Nor2}}{ACQ_{TOT}} + P_{Alg}\frac{ACQ_{Alg}}{ACQ_{TOT}}$$

F = fixed costs associated with the gas supply to the market, such as costs of shipping and regasification of Algerian gas, costs of transporting North Sea gas to the Netherlands, and the Zeebrugge terminal charges.

The G parameter was calculated by the CREG up to December 2006, and was then replaced by a new reference parameter, the "New G", as the historical operator stopped notifying the old G parameter following the full liberalisation of the gas market in Belgium on 1 January 2007. The "New G" was very similar to the old G parameter in its value and movement, and referred to the price of Brent crude, GOL gasoil, and HFO extra heavy fuel oil, and to the consumer price index, the CPI.

New G = 1/3 (0.300 Brent) + 1/3 (0.069 GOL) + 1/3 (0.072 HFO) + 1.16130 $\{(CPI_{n-1}/CPI_{n-2}) - 0.02\}$.

Publication of the IGA ceased in November 2007, and all suppliers now use their own indexation formulas. The IGA values were used in chart 4 and extrapolated, in part, beyond November 2007 on the basis of data supplied by the *Institut de conseil et d'études en développement durable* (ICEDD, 2009a).

With the full liberalisation of the Belgian market, all suppliers are free to define their own tariff formulas for energy costs. The indexation adopted by the suppliers has retained the indexation formula used in the days of regulation, with :

annual standing charge = (a x IGD)

energy cost (proportional charges) = (b x Igm) + (c x IGD)

where a, b and c are tariff coefficients specific to each supplier, each tariff formula and each consumption class ;
IGD = the gas distribution index, published by the CREG and reflecting the movement in distribution costs other than those relating to gas purchases ;
Igm or GPI = an index reflecting the movement in the cost of purchasing natural gas and calculated by each supplier instead of the old gas acquisition index (IGA). Initially, these indexation formulas were very similar for all suppliers, being of the type : (0.25 HUB + 0.0468 GOL603 + x * (CPIy–1/CPIy–2) + constant) / 21.21479

The successive tariff adjustments are detailed below for each supplier. They concern the annual consumption class ranging between 5,001 and 30,000 kWh/yr, which corresponds to the use of gas for cooking and heating. The movement in the proportional charge covering the energy cost is indicated in the chart by a thick blue line, while the thinner lines show the prices which would have applied if the tariff formulas adopted successively had been retained. The period in which the tariff shown applies is specified in the key to each line which then coincides with the thick blue line.

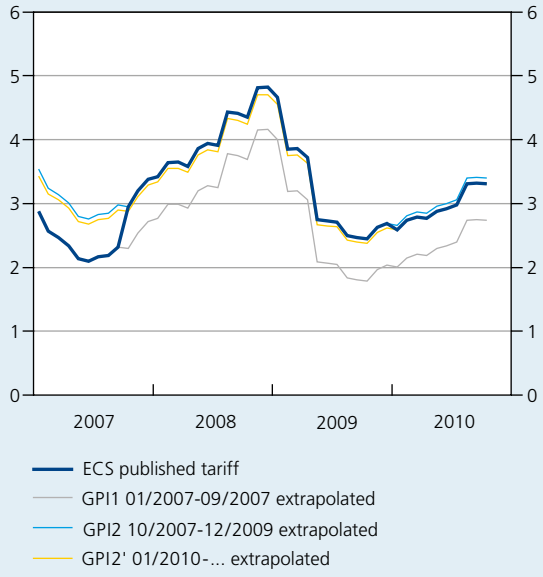
(1) Average purchase price weighted by volumes of gas bought by Distrigas from its suppliers : Gasunie, North Sea I, North Sea II and Sonatrach (CREG, 2006).

## Electrabel Customer Solutions

In October 2007, ECS modified its indexation formula by increasing the value of the constant (this amounted to attenuating the reduction effect of the ECS constant, which is negative – see section 2.1.2.2). In February 2010, the value of the coefficient applicable to the CPI was reduced from 4.83 to 4.63, leading to a cut of 0.02 cent/kWh, the supplier thus passing on part of the 35 % decline in the transmission charges included in the energy price (CREG, 2010b). The 2 % reduction applicable to the EnergyPlus deal was also passed on in the unit price.

**CHART 14** MOVEMENT IN THE PRICE OF ENERGY EXCLUDING VAT AT ECS ACCORDING TO ITS SUCCESSIVE TARIFF FORMULAS

(cents/kWh)



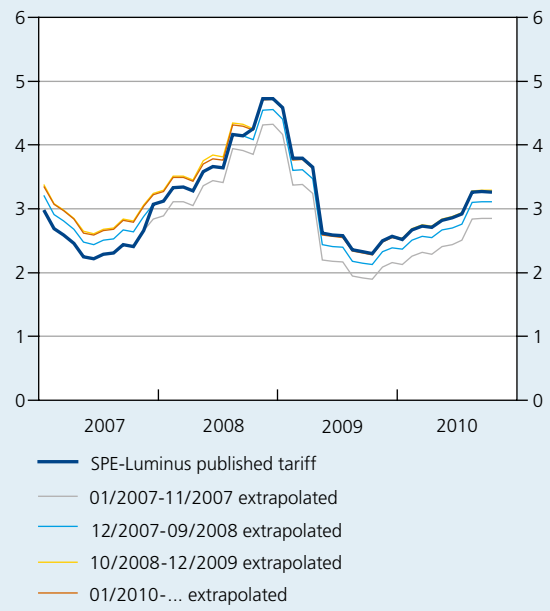
## SPE-Luminus

The SPE-Luminus tariff formula (proportional component of the energy price) was adjusted in December 2007, October 2008 and March/April 2010. The changes concerned the coefficient applied to the IGD (energy cost = ((b x Igm) + (c x IGD)) which was increased in December 2007 (from 0.3 to 0.47 = +8 %) and October 2008 (from 0.47 to 0.6 = +4 %). The constant changed from –3 to –3.2 (–1 %) in March 2010 (and to –3.23 in April 2010) with retroactive effect from January 2010, giving customers the benefit of the change in transmission charges.

In the second quarter of 2008, SPE-Luminus introduced another variable-price contract (Luminus Connect) using a new Igc index based partly on the spot price of gas as well as the HUB and the GOL with a reduced weighting (50 % x [0.0468 GOL603 + 0.25 HUB + 0.995999 DAH] – 1.53897). The DAH is based on forward prices at the Zeebrugge Hub Day ahead market, the weighted monthly value being calculated with the aid of the SLP consumption profile. Only the aggregated Igc is published.

**CHART 15** MOVEMENT IN THE PRICE OF ENERGY EXCLUDING VAT AT SPE-LUMINUS ACCORDING TO ITS SUCCESSIVE TARIFF FORMULAS

(cents/kWh)

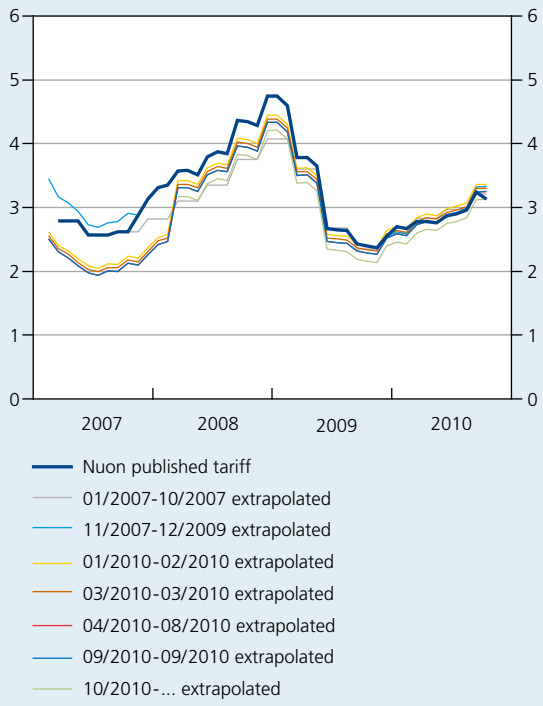


## Nuon

In November 2007, Nuon adopted the same formula as ECS (Gni index based on the parameters HUB, GOL, CPI + constant), abandoning its Ign index based solely on petroleum products (GOL, Brent and HFO). In January 2010, a new parameter Gni2 was defined with reintroduction of the reference to the price of heavy fuel oil HFO (parameters HUB, GOL and HFO). The reference to the CPI was abandoned and replaced by a higher constant. Also, the weighting applied to the IGD was halved. The weighting coefficients applied to the IGD were revised in March and in April 2010, as the weight of the IGD tends to disappear. With effect from September 2010 an intermediate consumption class was introduced in regard to tariffs for consumers using gas for cooking and heating: the class ranging from 5,001 to 30,000 kWh/yr was extended and divided into sub-classes 5,001 to 20,000 kWh/yr and 20,001 to 40,000 kWh/yr. The IGD coefficient was slightly reduced for the higher band. In October 2010, the IGD coefficient was increased substantially (multiplied by 200) and a negative value completed the indexation formula, which had the effect of neutralising the constant incorporated in the Gni2 index. In the end, that amounted to replacing the constant with the IGD without modifying the definition of the Gni2 index.

**CHART 16** MOVEMENT IN THE PRICE OF ENERGY EXCLUDING VAT AT NUON ACCORDING TO ITS SUCCESSIVE TARIFF FORMULAS

(cents/kWh)

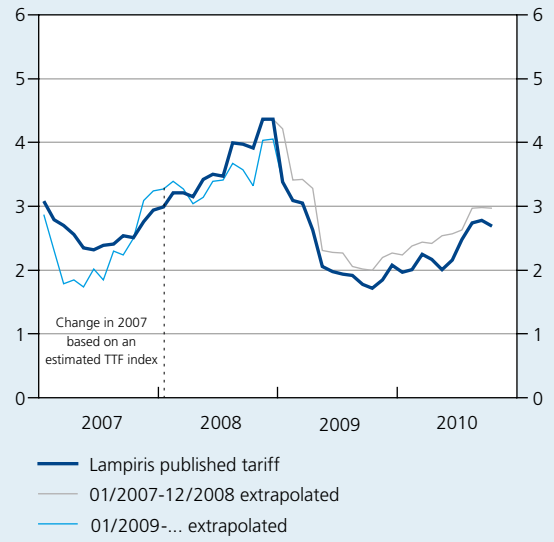


## Lampiris

The Lampiris tariff formula was modified in January 2009 and since then its only energy reference parameter has been the TTF, an index in €/MWh of forward natural gas contracts in the Netherlands for delivery in baseload the following month (published by Heren ICIS). The old index (0.25 HUB + 0.0468 GOL – 3.068 + 3.2 IGD) was replaced by (TTF + 5.1 IGD). In February 2009, the change in the indexation represented a cut of 10 % in relation to the old tariff, and remained of the same order of magnitude throughout 2009, although it reached 20 % (04/2009 and 05/2010) as a result of the respective movements in prices of oil and of gas on the spot gas markets.

**CHART 17** MOVEMENT IN THE PRICE OF ENERGY EXCLUDING VAT AT LAMPIRIS ACCORDING TO ITS SUCCESSIVE TARIFF FORMULAS

(cents/kWh)



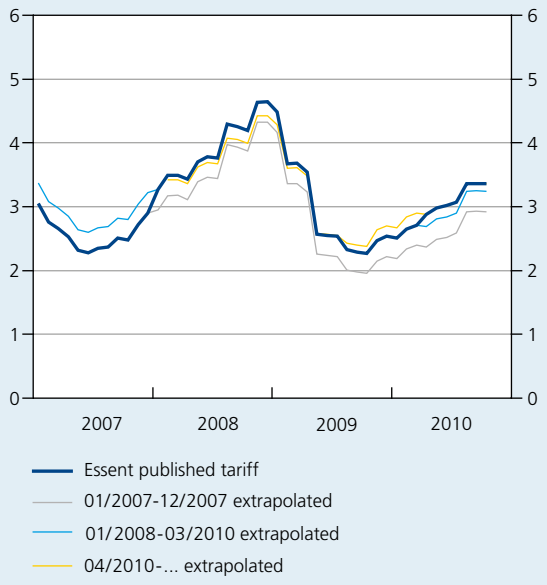
## Essent

In January 2007, Essent adopted an indexation system based on the HUB and GOL, without reference to the CPI but applying a slightly positive constant. The adjustment of its tariff formula in January 2008 consisted in increasing that constant (from +0.143 to +3.17) and the IGD weighting (from 0.092 to 0.1), resulting in a 10 % increase in the proportional charge. The annual standing charge was also increased from 22.82 IGD to 25.41 IGD, representing an 11 % increase in the annual standing charge due per access point. The latest tariff revision entered into force in April 2010; in that instance, the constant went up again (from +3.17 to +6.16) and the HFO parameter was introduced (with weightings shared between GOL and HFO), which amounted to a price increase excluding VAT of around 6 %.

Since October 2010, Essent has offered another variable-price contract, Essent Eco, in which the indexation moves in line with that applied by Lampiris according to the formula (0.1 $TTF_{1.0.1}$ + 0.507 IGD) for the consumption class from 0 to 30,000 kWh/yr (the only difference being that the $TTF_{1.0.1}$ is published by the Endex exchange).

**CHART 18** MOVEMENT IN THE PRICE OF ENERGY EXCLUDING VAT AT ESSENT ACCORDING TO ITS SUCCESSIVE TARIFF FORMULAS

(cents/kWh)



# Annex 2 : ERGEG – situation regarding end-user price regulation as of 1 January 2010

Table 2 is taken from a publication issued by the European Regulators' Group for Electricity and Gas (ERGEG) setting out the results of their latest survey of the actual liberalisation of gas and electricity end-user prices. It presents an overview of market opening and price regulation in the national gas market segments open to competition within the EU.

The ERGEG reported a number of findings :

– in fifteen of the twenty-five countries analysed in the ERGEG study, regulated retail prices exist alongside market prices in at least one of the gas market segments (households, small businesses, medium-sized to large businesses and energy-intensive industries) ;
– the higher the level of consumption in a segment, the less likely it is that the segment will be subject to regulated prices : regulated prices still apply in fifteen countries in the case of the household segment, in eleven countries for small businesses, eight countries for medium-sized to large businesses, and six countries for energy-intensive industries ;
– in most of the countries with regulated prices, over 80 % of customers are eligible for supply at those prices, in each market segment, which indicates a lack of competition in the retail market. However, that percentage is often lower for the segments where consumption is heavier ;
– it is not possible to draw any firm conclusions about the relative level of regulated and free market prices when the two coexist. The results for each consumption segment differ considerably from one country to another. In France, the regulated price is higher than the free market prices offered to households, as suppliers offer discounts on the regulated price. In Spain, the regulated price is similar to the market price. In Lithuania, the regulated price is lower than the liberalised prices. These diverse situations reflect the many varying motives justifying the maintenance of regulated prices (ERGEG, 2009) ;
– in most countries with regulated prices, customers who have opted for liberalised prices can revert to regulated prices either when they like or after a certain period of time ;
– in three-quarters of cases, it is the regulator that sets the regulated prices (otherwise it is the minister). In roughly a quarter of cases, the decision to remove regulated prices rests with the regulator (or otherwise with the minister, the government or parliament).

**TABLE 2** SITUATION REGARDING END-USER PRICE REGULATION AS OF 1 JANUARY 2010

| Country | Final market opening date | Price regulation on 1 January 2010 | | | |
|---|---|---|---|---|---|
| | | Households | Small businesses | Medium-sized to large businesses | Energy-intensive industries |
| Austria | 2002-10 | | | | |
| Belgium | 2007-01 | | | | |
| Bulgaria | n. | | | | |
| *Croatia* | *n.* | | | | |
| Czech Republic | 2007-01 | | | | |
| Denmark | 2004 | | | | |
| Estonia | 2007-07 | 2009-07 | | | |
| France | 2007-07 | | | | |
| Germany | 1998 | | | | |
| Greece | 2009-2030 | 2031-11 | 2031-11 | 2031-11 | |
| Hungary | 2007-07 | | | | |
| Ireland | 2007-07 | | | | |
| Italy | 2003-01 | | | | |
| Latvia | 2014-04 | | | | |
| Lithuania | 2007-07 | | | | |
| Luxembourg | 2007-07 | | | | |
| The Netherlands | 2004-07 | | | | |
| Poland | 2007-07 | | | | |
| Portugal | 2010-01 | | | | |
| Roumania | 2008-07 | | | | |
| Slovakia | 2007-07 | | | | |
| Slovenia | 2007-07 | | | | |
| Spain | 2003-01 | | 2009-07 | 2009-07 | |
| Sweden | 2007-07 | | | | |
| The United Kingdom | 1998 | | | | |

Finland exempted from market opening. No gas in Cyprus and Malta.

Price regulation:

| | |
|---|---|
| | Yes |
| | No |
| | Closed market |
| XXXX-XX | Scheduled date of price regulation removal |

Changes between July 2008 and January 2010:

End-user price regulation in open market segment removed

Segment closed in July 2008

Source: ERGEG – Status review of end-user price regulation as of 1 January 2010.

## Annex 3 : Liberalisation – regulation in the United States

As elsewhere, local distribution companies provide the local transmission and distribution services. Concerning the supply to the retail market (residential consumers and small-volume gas users), levels of liberalisation vary from one State to another according to the laws and regulations : twenty-seven States are not considering unbundling programs in the residential gas sector ; the other twenty-one and the District of Columbia have adopted laws and regulations to that end, but have not all made the same amount of progress in the liberalisation process. Finally, only three States and the District of Columbia have a fully liberalised market, active and accessible to all consumers in the residential sector. Four other States have full market liberalisation, but the lack of active suppliers has hampered the development of a competitive market in their territory (fewer than 5 % of active customers despite 100 % eligibility). The large consumers of gas have been able to obtain supplies from the liberalised market for many years.

Sources : EIA/DOE (2010a), *Status of natural gas residential choice programs by State as of December 2009* and EIA/DOE (2010b), *Natural gas residential choice programs – US summary 2009*.

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