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## **Can we trust the market ?**

### **Incomplete institutionalisation of the new energy markets**

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#### **Abstract**

This communication tried to describe and explain the selling and purchasing practices between energy suppliers (gas and electricity) and industrial customers in France. It reports on the diffusion of different transactions practices, in terms of organisation of call for tenders, consultations, consumption prevision, price hedging (fixed prices, indexed prices, with different price references), and on alternatives like purchasing consortium and regulated tariffs. The communication refers to two theoretical frameworks: the sociology of market questions the conditions under which energy suppliers and industrial customers are calculating and trading practically; the neo-institutional organizational theory questions the emergence and the competition between alternatives transactions practices. Our research reveals the importance of “calculation capabilities” as a condition of institutionalisation of a new market, and show that this condition isn’t valid already on the French energy markets.

#### **Introduction**

The deregulation of the energy markets in Europe brings a major change, since it implies the creation of market mechanisms where previously there were public monopolies. The creation of these market relationships means the introduction of new energy selling and procurement practices, between producers and distributors and between distributors and consumers.

Our research tried to describe and explain the selling and procurement practices between energy suppliers and industrial customers in France. Practices remain highly diverse: industrial customers can still purchase at the former regulated tariffs whilst others have “exercised their eligibility”, ie: opted for the free market. Practices here are not standard, either in terms of organisation of consultations, consumption prevision, price guaranties (fixed prices, indexed prices, with different price references). More generally, two market models stand against each other, with the British market system on the one hand, and the “continental market” system on the other. The British market is organised around wholesale markets (both for electricity and gas); contracts between distributors and customers are indexed; and the dominant purchasing procedure is the call for tenders. The British model, which is broadly supported by the European Commission, is gaining some ground in Europe. However, it is in competition with an alternative market model, a sort of rebirth of integrated channels which existed at the time of the public monopolies; a model that is more based on

long-term contracts and contract negotiations “*over the counter*”, with other price references (Platts Brent Index for example) than those dictated by gas market forces.

Erratic, short-term market price variations for gas and electricity have convinced many French industrialists that the new market places could not meet their need for reliable supply and sufficiently stable prices. For gas, industrial customers encouraged distributors to source from producer countries with long-term contracts. For electricity, intensive industrial users of electricity have grouped into purchasing consortia, with the approval of the industry ministry and parliament, drawing up long-term contracts with the historical suppliers.

We propose to report on the diffusion of these different forms of transactions and how they compete with each other. We will look closely at the construction of offers by distributors, but also at the ways in which industrial purchasers calculate and decide between offers, in terms of consumption characterisation, comparison of tenders, assessment of price risk, etc... Our presentation refers to the sociology of market: we try to understand the conditions under which transactions between producers, distributors and industrial customers are organised in practical terms. It takes particular inspiration from the works of Beckert (2003) and Karpik (2007), who support a pragmatic approach to economic action analysis, which puts the emphasis on perception, and judgement in economic relationships.

The market practices we observe are changing, which can be explained in terms of institutional change. Clearly, this institutional change originated from new rules instigated by the European Commission and the member states, but also involves the emergence of new practices, new cognitive assumptions, new values. The deregulation of markets creates a empty space which promotes the emergence of new transactional forms. This raises the question of the stabilisation and the institutionalisation of these forms of transaction. In addressing these issues, we will consider the different typical forms of transaction, such as the call for tenders, contracts, marketplaces, as “institutions” (Hargrave, Van den Ven, 2006).

Our communication follows the following plan: in the first part, we propose to look back at the different ways of understanding the process of construction and institutionalisation of the markets. The case studied presents the specific characteristics of several forms of transaction coexisting in a sustainable manner. According to the sociology of market (Callon, Muniesa, 2005), we will question the place of “calculative practices” in purchasing process. According to the neo-institutional organizational theory (Hargrave, Van den Ven, 2006), we will question the competition between alternatives “incomplete” institutions. In the second part, we will look in more detail at our methodology. We will explain how we collected and then characterised the issues faced by industrial customers, the strategies they have adopted to meet those challenges, how they assess the market and how they justify their own actions. In the third part, we will concentrate on several situations where different forms of transaction compete: regulated tariffs vs. market price, “gas index” vs. “crude oil index”, “call for tenders” vs. “private contract”, “direct purchase” vs. “buying consortium”, and describe the institutional dynamics behind them. We will close with a discussion of the neo-institutional organizational theory and sociology of market in assessing trading practices on these not-completely-institutionalised markets.

## **1. How new calculation practices are developed and institutionalised**

The creation of a market requires major organisational changes: transactions need a strict framework for trading to be properly organised, where the ownership of goods is established and the roles of buyers and sellers, rights and responsibilities (Fligstein, 1996), preferences, calculation methods (Callon, Muniesa, 2005) are defined.

However, the energy markets we observe are not yet completely stabilised. There is a diversity of transaction types (regulated tariffs, short-term contracts or contracts with short-term price references, long-term contracts with long-term price references, purchasing consortia). The key to this is understanding whether this irregular mix is a logical response to the diversity of customers and their needs or if it reflects the low level of institutionalisation of the market.

This diversity of practices, whatever the cause, begs the question as to how the market is organised, not only as the direct or indirect result of the institutional action of the European Union and its member states, but also as the result of a process that is endogenous to the actors involved: these actors, no longer willing to trade within pre-defined frameworks, are organising themselves and defining the rules governing their business (Leblebici, 1991). They accept to comply with prevailing institutionalised practices as they simplify uncertainties and make transactions easier, or, on the contrary, seek to get around them (Beckert, 1999) when they feel such practices are a disadvantage to them.

We are attempting to keep our perspective symmetrical by taking as much interest in the construction of supply as in demand: in many markets, demand is far from being constructed, restricted and marked out by supply. We add an additional level of complexity to existing research work which concentrates either on public action or on the work of marketers and sales people on the supply side (Callon, Muniesa, 2005). Those studies do not take the “purchasing” side into account, on the assumption that demand follows supply. We think it is appropriate to include purchasers in our analysis: whilst marketing and sales practices contribute to the heterogeneous nature of transactional forms on account of the diversity of what is out there, purchasing practices contribute too, since the choice of purchasers maintains the overall diversity of options.

So we need greater understanding of purchasing practices, in particular to examine if the diversity of practices is linked to different economic situations or if it is linked to doubts as to which approach to adopt, difficulties understanding different supply solutions or how a given strategy will affect the future, etc... Therefore, it is interesting to understand purchasers’ “calculation practices” (Callon, Muniesa, 1998) in depth, understand how they construct their sourcing and price control strategies and how they assess what is on offer. It is important to look at their economic reasoning when they choose one form of transaction or another. Their independence, skill and access to information will all determine their capacity to “calculate”, i.e. to interpret physical and financial energy markets and to act in these markets.

In fact, as a broad premise, we can qualify two levels of action: first of all, the adoption of transaction type (regulated tariff or eligibility, direct contract or consortium, fixed or indexed price, prices indexed to the gas or petroleum markets, etc..) and then, within the chosen transaction form, the ranking of different solutions the various suppliers propose. The first action involves dimensions which are difficult to evaluate and quantify. Thus, this first level of action requires an understanding and interpretation of the way energy markets work (marketplace, long-term contracts, etc...) and of the implications for one’s company (risk associated with supply, price fluctuations, etc...). The second level of action operates in a more structured way and is more to do with optimisation, but it can also include a part of “judgement”, in particular as to the supplier’s capacity to support the buyer in the dynamic management of the financial part of the contract (consumption variations, price fluctuations). These two actions do not occur sequentially: purchasers will drift from one level to the other to compare product offerings. They “test” each form of transaction before opting for one or other of them, or opting for a mix of them.

The fact that several forms of transaction are possible allows us to pose the following question: is there any real institutionalisation of the market? The fact is that if institutionalisation was complete, the actors on the market would not have so many alternatives. One form of transaction would prevail and become “taken for granted” (Leblebici, 1991). Or is it a process of institutionalisation of a new form which will lead to greater diversity of organisational forms ?

Hence, we will look in more detail at the processes via which different forms of transaction emerge, are disseminated and compete between themselves. This question has been extensively addressed through neo-institutional organizational theory. Neo-institutional organizational theory applies several conditions to the emergence and stabilisation of organisational forms (Maguire, Hardy, Lawrence, 2004, Hargrave, Van den Ven, 2006).

The first condition is the position of the actors, their legitimacy and their ability to access key resources in determining their ability to initiate any institutional change. In the case of the energy markets, we will look at the resources (strategic resources such as infrastructure, long-term contracts, but also cognitive resources such as an understanding of how the market works, political legitimacy, etc...) that market actors, industrial customers, distributors, consultants and commercial banks have at their disposal.

The second condition is the theorisation of new practices: this must provoke the mobilisation of other actors through arguments which represent their interests and allow them to form stable coalitions based on that reasoning. Consultants, banks, historical suppliers and alternative suppliers all have their own approach to industrial customers’ interests to attract them to their product. The same applies to industrial “opinion leader” customers, who need reasoned arguments to mobilise other customers in their collective action.

Finally, the third condition for the institutionalisation of new practices is that they match with existing practices, stabilise the relations of actors in the field, relate to the values of those actors and thus create new standards within the market itself. New energy purchasing practices must connect to a whole range of practices in the same way as applies to commodity purchasing (raw materials, petroleum products) on international markets. This also raises the question of the compatibility of practices with the regulations and principles of a competitive energy market.

So, do these conditions exist today? To what extent is the institutionalisation process complete or incomplete? Such is the question that underscores this research.

## **2. Methodology: studying the construction of supply, getting information about practices and the line taken by energy purchasers**

Our research is based primarily on interviews with sales people and energy purchasers (60 interviews in all). It is also based on the positions of most influential French industrial customers as expressed during parliamentary debates on French energy policy.

We carried out in-depth semi-directive interviews. We asked them about their activities and what was at stake for them, but also how they were developing their role and how they perceived their commercial contacts. The interviews, lasting between 1½ and 3 hours, were recorded and what was said entirely transcribed to keep a complete track of the arguments put forward. The industrialists and energy consumers that we talked to had between 2 and 6 years’ experience in the market.

The energy form (gas or electricity) presents as a commodity, i.e. a perfectly standardised product. Standard marketing conditions are, in principle, wholly present... except that the

two energies present some other characteristics: electricity cannot be stocked and gas, only to a limited extent. They are distributed via a network which must guarantee a minimum of equilibrium. An industrial customer faces three problems:

- The price is negotiated with the supplier and not defined by the State: competition is necessary to reduce supplier margins;
- Contracts must accommodate and define consumption and the industrial customer must stick to it in order to avoid penalties;
- The energy markets face variable prices over time: the industrial customer is confronted with a price risk which it must manage with a fixed or indexed price or using financial instruments as derivatives.

Purchasing strategies can be divided into several types: regular consultation, call for tender or membership of a purchasing consortium.

Several different forms of contract are possible. For gas, there are:

- fixed-price contracts (one year)
- contracts indexed to the gas market price (NBP Index, Zeebrugge), that of Brent market (Platz Brent Index) or even to regulated tariffs (STS tariff),
- contracts which include the possibility of “fixing” part of the indexed price in order to seize a market opportunity.

A given combination of these different dimensions (supply and purchasing strategy) constitutes a form of transaction.

For each industrial customer studied, we reconstructed the background of its purchasing practices by considering events and outside influences but also their own learning curves. We were able to measure the institutionalisation process through a prism of these purchasing practices. Thus, we attempted to track:

- the skills of those involved in these new activities and their training in energy purchasing;
- changes in their purchasing practices;
- the reasons behind these changes: events, influential messages, experience.

The interview is a good method of getting a comprehensive position and understanding purchasers' thinking. We were particularly sensitive to their doubts as to market practices, the intensity of criticisms expressed on product supply and their difficulties explaining their choices. All these findings seem to indicate a low level of institutionalisation.

### **3. The case : how different transactions framework compete**

We will present different situations of competition between transactions framework. The first of them relate to the transition from regulated tariffs to free market transaction, and will focus on new constraints of forecasts and monitoring. The second part focus on the price definition and the risk management offers. We show that energy suppliers defend offers that combine physical and financial dimensions. The question is whether the British market model will diffuse or a new market model emerges. We will focus on the purchaser learning process. The last part presents a collective initiative that creates a large purchasing consortium of

electricity: we will question the condition of these collective initiative and the consequences on purchasing practices.

### **3.1. How can the new constraints of forecasts and monitoring be integrated into the purchaser's calculation?**

In France, the opening of markets was led in several stages between 2000 and 2004. Since July 2004, all non-residential consumers are eligible, i.e. legally, if they wish, they can purchase their gas and electricity on a competitive market. Market operating rules and rules governing access to networks have been defined which allowed competition to develop in spite of the natural monopoly of the transport network.

However, at the request of industrial customers, the State has maintained regulated tariffs. The State's regulatory action has therefore led to the co-existence of two different forms of transaction: the regulated tariff and market forces. The question is to understand how the transition from the former to the latter operates.

The historical suppliers have developed their sales operations so as to facilitate their customers' transition. They have tried to develop their supply in other countries, either by buying out existing distributors or by investing in their sales activity. In the early years (2000 to 2004) the market supply both for electricity and gas was (with a few exceptions) cheaper than the regulated tariff. The State, professional bodies and alternative suppliers strongly encouraged the trend through extensive communications. A large number of customers switched from the regulated price to the market, in most cases staying with their historical supplier, because their prices were more attractive. But competition would appear to have worked since a non-negligible market share has been won by alternative suppliers. Most major European energy suppliers have substantially increased their volumes sold abroad, whilst accepting a reduction in volumes domestically.

However, this general observation does not explain how this transition was made. What is the "calculation capacity" (Callon, 1998) of an industrial purchaser faced with this type of choice? How does he identify alternatives and prioritise them? Before answering such a question, we should look in detail at the economic and technical context in which a purchaser operates.

In the gas and electricity markets, the regulated price proposal (the tariff) and the "eligible" contract (market price) do not follow the same rules in terms of physical supply: with a regulated tariff, the industrial customer is unperturbed by peaks and troughs in consumption. Prices are primarily based on quantities actually consumed, without a requirement for forecasting or follow-up. This is not the case with "eligible" contracts. The contractual separation between transport infrastructures (which have remained a monopoly) and trading in energy has led to additional constraints for industrial customers in terms of forecasting and monitoring of consumption. These constraints are explained by a new distribution of roles in the market: the different suppliers are responsible for the balance between what they deliver on the network and what their customers consume. The pressures on the network to maintain the balance are transferred from the network manager to the supplier. For the supplier, the only way of guaranteeing this balance is to impose strict consumption forecasting and monitoring rules on their customers, or have them pay for the privilege of flexibility their own customers need.

Transport pricing also influence the decision: in the case of gas for example, transport prices depend on consumption profile and location. The industrialist must reserve transport capacity (maximal capacity subscribed to), and the longer the distance, the higher the price. An

industrialist based in the south of France with very variable consumption may pay much more for his gas on the open market compared to the regulated market, since the main alternative suppliers supply industrial sites via the north and the east of France. However, for industrialists having stable consumption based in the north of France, eligibility is more attractive, with the possibility of pitching different European suppliers against each other. This difficulty was the subject of a major project undertaken by France's energy regulation committee (Commission de Régulation de l'Énergie) which organised "gas releases"; the sale of large quantities of gas by the historical supplier to alternative suppliers to trading points in the south of France, so that the alternative suppliers could compete with the historical supplier and thus encourage industrial customers to leave the regulated tariff system.

Looking more closely at how the industrialist compares the two supply contracts (regulated tariff vs. market price), we note that his assessment of consumption and its fluctuations and of future consumption are major questions to be taken into account in the calculation. Our survey showed that many buyers have major problems assessing and managing these issues, which is why some of them prefer not to take the risk of turning to the free market. And those who did take the risk did so because they were not immediately aware of the consequences.

We observe that energy purchasers who opted for eligible contracts for gas did not always fully understand the subscription rules in terms of power requirement for their equipment. Not all these rules were fixed at the outset. When the rules had been firmed up, the network managers were accommodating with their customers to help them access the market as easily as possible: many penalties for subscription overruns were not applied. At the end of the period, the effective application of penalties provoked unrest amongst industrial customers who felt they were trapped. Today, they are challenging the method for calculating power consumed and the severity of sanctions applied in the case of consumption overruns before the Energy Regulation Committee.

Another theme is the relationship between suppliers and their customers concerning the respect of consumption commitments (over a year, over a quarter, over a month, etc...). The sales people of some suppliers sought to teach their customers to take these needs for flexibility into account in their calculations. They worked to identify their industrial clients' flexibility needs. Sales people's knowledge of industrial sites and their consumption and procedures were used to inform energy purchasers (who were often not aware of these problems) of the risks they were taking with overly-rigid contracts.

In this market readjustment process, the historical suppliers had a key role to play. They understood their customers' sites. But more importantly, they benefited from a wider spread of their consumption portfolio, facilitating flexible contracts: the more a supplier has customers who have unpredictable consumption, the less those fluctuations cost because customers' fluctuations (unless they inter-correlated, on account of the weather for example) are diluted by the mass, and in part, cancel each other out. The historical suppliers are generally at an advantage compared to new arrivals on the market. Progressively, as the rules became clearer, the historical suppliers regained their dominant position (which they never really lost) by making one key resource crucial to their customers: their spread capacity.

Thus, from the "physical side" of supply, we note an incomplete institutionalised market in operation: coexistence of regulated contracts and market contracts, incomplete implementation of new rules, absence of sanctions in the case of non-application of those rules, a major effort by suppliers to make the most of their supply-spreading capacities and reciprocally, collective action on the industrialists' part to make rules more flexible and penalties lower.

### **3.2. Integrating the price risk management element into the calculation**

The deregulation of the markets created a major difficulty for the purchaser, in the form of price risk management. He switched from a situation where prices were fixed by the State according to clear rules and based on a production-cost calculation, to a situation where prices were fixed by market forces. Since more often than not gas or electricity procurement is subject to annual contracts, the issue of price risk management arises. Short- or medium-term market prices are subject to rapid change and there is always the risk of purchasing at the wrong moment when the price is at its peak. Inevitably, the purchasing of energy has become “financialised”, in the sense that purchasing calculations must integrate this price-risk dimension.

We have gone into particular depth on the supply side with this issue of price construction and, on the demand side, that of price risk in the gas purchasing field. Our description is based on the French case but stands up to comparison with practices in other European countries.

#### *The construction of the supplier price: transferring their purchase price to their selling price*

In order to understand supplier (or distributor) pricing, we have first of all to examine how distributors buy from gas producers, given that the selling price defined by the distributor depends a lot on the negotiation of prices upstream. A distributor has two options for purchasing: either going via the wholesalers or on long-term contract.

As suppliers are not authorised to take risks, they have a choice between two solutions: either they transfer the uncertainties which affect their supplier portfolio onto the sale price which reflects their own supply, or they join forces with the banks to offer their customer a different price structure based on a combination of their sourcing arrangements and financial instruments.

The UK and Holland have gas production in their countries and have high-volume gas markets. The vast majority of transactions between producers and suppliers operate transparently on a limited-sized market. The other European markets do not have their own production and are dependant upon imports from producer countries. Before deregulation, these imports were organised according to long-term contracts “take-or-pay” indexed with crude oil prices index like Platts Brent Index. In these contracts, the supplier is committed to buy a constant annual volume of gas from the producers, but at a price which was not fixed in advance: this price was indexed to the price index with a 3-6 month delay. The deregulation of markets did not fundamentally change this practice. In 2003, around 95% of gas imported into France was purchased via take-or-pay long-term contracts (10 to 20 years) from gas producers. More recent events show that this strategy is still favoured by suppliers. The gap between the volumes purchased under long-term contracts and customer needs for the coming year is managed by gas wholesale market. In continental Europe, the gas wholesale markets only account for a very small proportion of overall supplies: the Zeebrugge market in Belgium and the TTF market in Holland are the most developed but are not yet liquid enough to provide sufficiently representative indicators of market prices. Since they account for only a small part of the trade between producers and suppliers, they are very sensitive to gas availability.

The prices practised by suppliers either reflect a supply portfolio or combine this portfolio with financial instruments. In the UK, prices on the wholesale market being common knowledge, the supplier’s price reflects supply perfectly: the formula is indexed to the wholesale market (it includes wholesale prices plus a distribution margin). Customers are

better advised to seek support from specialised banks to manage the risks attached to these fluctuating formulae. Price risk management has developed in a disconnected fashion: services are proposed directly by the banks and target not energy purchasers but finance departments.

The key role of long-term contracts in gas purchasing in continental Europe, and the limited influence of wholesale markets make it impossible to establish a market reference for suppliers and industrial customers. And suppliers, of course, do not want to reveal their supply price structure and therefore offer their customers a diversity of price structures, with fixed and indexed prices. The indexing formulae use oil price index (such as Platts Brent) or gas wholesale markets index (such as “Zeebrugge”). Suppliers use financial teams to buy “derivatives” which spread the financial risk of the difference between the price formula at which they purchased the gas (their supply portfolio which are mostly long-term contracts) and the formula (or fixed price) proposed to the client<sup>1</sup>.

However, this modus operandum is far from stable. Today, the UK is characterised by an increasingly volatile market. Having become an importer of gas, the UK is increasingly dependent on other European wholesale markets thus increasing volatility. The NBP has become extremely sensitive to weather fluctuations. It climbed sharply at the end of 2005 and the beginning of 2006 (with prices approaching €40/MWh) because of a very hard winter and then a very sharp drop in price at the end of 2006 on account of a more clement winter (under €10/MWh). These variations apply to both spot prices and one-year contract prices. At the same time, long-term contract gas prices stabilised at around €20/MWh.

Thus, the different practices of gas trading between producers and suppliers, leads to different offers towards industrials customers. The British model of market organization, on which the deregulation politic is based, is not generalised to the European countries (as France) that import all their gas consumption, and that purchase it with long-term contracts. These practices has consequences on the price structure of their offer.

#### *Strategies recommended by consultants: call for tenders and indexing on the gas markets*

The buyer needs a strategy which combines price negotiation and financial risk management: the question is whether to go for fixed prices, gas index, crude oil index, domestic oil index or even those regulated gaz tariffs that continue to apply.

Industrial customers have also been strongly encouraged by consultants (sent by distributors or British, Norwegian producers) to adopt UK practices: organising a call for tenders at a given date which is planned in advance on the basis of an indexed formula. With the help of a consultant, the purchaser compares the formulae proposed by suppliers via a simulation on the basis of probable index evolutions. The objective of the call for tenders is to reduce supplier margins as far as possible, but also to identify the most favourable price formula and the one that best suits the company need.

Having purchased their gas according to an indexed formula, a customers can also use a trader (from the supplier, or from the bank) to “switch to a fixed price” thanks to market “derivatives” when they feel they have a good price or need to fix energy spending as part of their internal budget procedures.

Consultants advise their customers to initiate calls for tender with indexed formulae primarily on the Zeebrugge gas wholesale market, relying on the development of a short-term gas

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<sup>1</sup> E.g.: to offer a fixed price to a customer, the supplier will buy a “swap” on the financial market which covers the risk of an increase in the prices it pays for its gas.

market and because the Zeebrugge market is becoming the price reference for the continental market. A number of industrialists (during the first years of deregulation) bought into the idea that the reference price for gas was the Zeebrugge price, seeing limited risk, because it was a common price reference and because only Zeebrugge offered real price reductions (this had also been the case a few years earlier during the deregulation of the English market).

*Strategies recommended by suppliers: private contract and pegging to petroleum markets*

Besides consultants, other actors play a decisive role in forming the practices of purchasers: the sales people of the main “continental” suppliers (who have no production activity and depend on long-term contracts). The latter have substantial influence on purchasing practices. The criticism concerns two dimensions: the fixed date call for tenders and the use of the Zeebrugge index or the NBP index, the two wholesale gas markets. The sales people try to convince their customers that the Zeebrugge wholesale market is not representative either of their supplier portfolio or of the purchasing practices of industrial competitors, and that it is preferable to construct an formula on the basis of oil index to which long-term gas contracts between producers and major continental suppliers are associated. These sales people are now winning over customers who had observed spectacular price variations on the British market, the NBP and the Zeebrugge market to which it is correlated.

Suppliers’ sales people also explain to their customer that the call for tenders strategy recommended by consultants is not perfect either: the formulae proposed during the call for tenders also depend on the date of the call for tenders (suppliers already use financial markets to construct these formulae). And a call for tenders put out at the wrong moment runs the risk of being unfavourable to both customer and supplier (who will have no room for manoeuvre in constructing the formula).

Sales people encourage their customers to adopt a third purchasing strategy, the so-called “at the right moment” strategy. In it, the purchaser defines one (or several) supplier(s) specifying their need and the type of formula with which they wish to work. They leave it to the supplier(s) to inform them regularly about prices, in particular when they are attractive. They make contract when they think they have a good deal. Thus, the customer benefits fully from their supplier’s abilities of anticipation and intervention on the financial markets. The disadvantage is that they have to react quickly within a few hours, making it difficult to compare competing proposals, since suppliers do not table their prices at the same time.

By proposing the “right moment” strategy, some suppliers manage to combine different activities: the sale of gas, price engineering, market information. The relationship developed with the customer around purchasing advice leads to a reduction (albeit limited) in competitive intensity: the customer can trigger competition between suppliers (proposals are valid for shorter times and suppliers do not have the same opportunities at the same time); the customer can build a close relationship with the supplier to seize upon “buy at the right time” opportunities and get better advice in fixing prices.

This commercial approach tends to convince customers that there is value generated by the synergy between the sale of gas and price engineering, in particular by making market opportunities more accessible. However, this offer is not without ambiguity because the integration between supply and financial engineering makes the relationships with the supplier more complex and makes the customer doubly dependent on its supplier (for access to market information and price level).

*How the buyer chooses his purchasing method*

The Zeebrugge index and the fixed-date call for tenders were abandoned by a large part of the French industrial customers interviewed during the survey. Customers prefer fixed pricing,

oil index and the “buy at the right time” principle. In this respect, the commercial message seems to have beaten the consultants to the post.

Customers are not prepared to simply accept their suppliers’ prices. Through their use of oil index, they encourage the suppliers themselves to buy using the same index. And the choice of this reference seems to be stabilising. Long-term contracts between users and suppliers associated to oil index are preferred by French industrialists whilst decried by the European Commission. Philippe Rosier, chairman of Rhodia Energy Service, and chairman of the energy committee at the MEDEF (Employers’ Union) outlined before a Senate committee in March 2007 his strong criticism of the action of the European Commission’s Directorate-General of Competition which, according to him, “*was compromising the future of long-term contracts and with it, the long-term visibility they offer (15 to 20 years) and the necessary investment potential of producers*”.

Purchasing and financial intervention practices are characterised by considerable diversity. There is a “financialisation” dynamic, where financial techniques of the “derivative” type are used for some customers. We shall now look in detail at why customers are so keen on the integrated supply offer.

Our interviews show that the influence of sales people on purchasers is mainly to do with a cumulative logic on the basis of different situations where the purchaser has been able to assess its partner’s behaviour, commitment, skills, availability and personalised attention. The strong commitment of sales people during the pre-sales period and whilst monitoring the contract often allows them to convince buyers of their skills and commitment.

Particularly amongst historical suppliers, sales people contribute substantially to the purchaser’s understanding of price construction and risk cover and support them in formulating their strategies, taking account for example, of the price dynamics of their own markets.

*“We learn about energy from our suppliers”. “We receive all the suppliers we can and hold meetings of between 2 and 3 hours. We discuss, ask questions and learn stuff”. “I probably dedicated more time to (one supplier). They had more to teach me. Time was set aside for meetings to define the mechanisms of the trading rooms”* (extracts of interviews with various purchasers).

Most purchasers see an opportunity to develop a specialised and higher profile purchasing function in the forward planning of market trends and playing the markets.

*“The added value of the energy purchaser is his understanding of the market and the timing of his purchase. What makes the price is the market. Timing is much more important than negotiating the supplier’s margin”.*

Whatever the purchasing strategy used (“at the right time” or according to a formula including fixing the price), purchasers are permanently informed and advised. The commercial interaction continues during monitoring of contracts, where the salesmen will comment on price trends, explain his forecast and, in general, “train” the buyer.

*“I am impressed by the quality of the follow up, the daily support and the reactivity of this supplier. Since we signed the contract, he’s even turned up the heat; they are there for us at a level I would never have imagined”* (purchaser).

The co-operation relationship can take several forms of varying intensity. It can also result in the joint definition of a purchasing strategy, for example, by fixing intervention thresholds, i.e. prices from which the customer would ask his supplier to purchase, to switch to fixed prices or to return to variable prices.

This general trend doesn't change the fact that we also noted a certain diversity of practices amongst French energy purchasers. The least experienced customers adopt a general purchasing strategy of "at the right time" on the basis of a fixed price. This is the least sophisticated purchasing strategy, but the one which passes most responsibility to the supplier.

However, as buyers' skills have improved, they have adopted increasingly sophisticated purchasing strategies, allowing them to manage indexing formulae more easily and so make a greater distinction between gas purchasing (from suppliers) and the use of financial advice (from specialised experts or banks). In this way, the purchaser feels that he can better control the different dimensions of the relationship and be less dependent upon his supplier. Furthermore, some customers continue to use financial services and suppliers' advice whilst purchasing part of their gas from another supplier. Other customers purchase all their gas from their historical supplier, using a formula primarily indexed to oil prices: the fact that supply contracts are indexed to oil prices considerably facilitates delegation of dynamic management to banks, because they are capable of managing these types of formulae using derivatives from the petroleum markets. In a way, for a financier, indexing to oil prices simplifies gas as a product and makes it equivalent to petroleum products.

The institutionalisation of new purchasing practices also implies the support of managers whom the purchaser represents. The energy purchaser more often than not seeks to obtain the broadest delegation possible to purchase gas and negotiate prices. In interviews, purchasers systematically talked about the problems of overly-restrictive mandates and the low reactivity of management committees when ruling on price proposals, which are only valid for an hour or two. They also talk about top management's unwillingness to allow them to take these decisions themselves, whereby they could, for example, switch to fixed prices for a certain volume of gas.

*"It wasn't easy to get the management committee to understand that I needed the freedom, that I couldn't refer to them every time because otherwise, I would miss out. They accepted the idea. (...) but because of them, I missed a bargain once and I showed them that I had lost €20 million in a single week (...) I can tell you, it's just like the Ariane rocket: It's got a slot, if you miss it you have to wait two months until you get another chance. And with energy, you have to be careful. It seems really simple, but you really have to get everything right at the right time".*

The more importance the management committee attributes to the purchasing strategy, the greater the purchaser's influence. In general, it's a virtuous circle: the better the purchaser's work on the markets, the more lease the management committee will give, and so the greater the purchaser's mandate (having the possibility of fixing price when they think, for example, that the best opportunities are there). As they gain experience from this heightened independence, the more effective they will be on the market. In principle only, because top managers do not like such responsibility eluding them. They are little involved in day-to-day exchanges and have difficulty judging, allowing themselves to be influenced by informal information sources. This makes them reticent to increase the purchaser's mandate. They may even be tempted to reduce the mandate of a purchaser who is suspected of having overly-strong ties with a supplier. Of course, it is worse when managers are not subject to the same influences as purchasers (British managers, for example, are broadly influenced by their knowledge of the English market), do not use the same index references or purchasing prices and send their consultants to organise the work of their purchasers.

Thus, the institutionalisation process for gas purchasing is dependent on several different and sometimes contradictory influences: consultants, suppliers and other industrial customers.

These influences impact the purchasers but also the managers to whom they report. This influence is effective most importantly, but not exclusively, in the training action of purchasers and managers. Experience counts too and purchasers progressively develop their skills at interpreting market trends, which is the basis of their new “calculation capacity”.

For price calculation, the electricity market does not follow the same rules as the gas market. The Powernext marketplace plays an important role and is relatively representative of transactions between producers and distributors. However, integration is high between producers and consumers, and very few customers or banks can second-guess price fixing. Producers are probably the most adept at this sort of forecasting, because they know their own products, costs and energy mixes. However, price formulation is still a real mystery for industrial customers.

### **3.3 Giving up on the market: the electricity purchasing consortium**

Electricity market deregulation went through a euphoric period when industrial customers got really interested in new purchasing techniques similar to those described for gas purchasing: call for tender, private contract, fixed or indexed prices, auctions, etc... Most industrialists, when the markets opened up, exercised their eligibility for electricity purchasing (excepting those under long-term contract at preferential rates).

But after a period where prices were particularly attractive compared to the regulated market, the oil price explosion saw major hikes, way beyond the regulated prices<sup>2</sup>. The French electricity provider was apparently encouraged to align its prices to the market price, to make competition possible.

Exercising eligibility was an irreversible decision. Industrial customers could not return to the regulated price, making them the first to suffer from these price increases. Recently-nominated energy buyers found themselves in a particularly difficult situation: having defended the advantages of switching to the free market internally, suddenly the price bolted. Many of them refer to this as an “ambush”.

The professional associations militated for returning to regulated tariffs on account of the competitive distortions between the regulated tariff and the market price. During the debate on the energy framework law in the Spring of 2006 (which was supposed to transfer the European Commission’s directives on the deregulation of markets to France), the French parliament was very receptive to the worries expressed and adopted some of their proposals. A new regulated tariff (the TarTAM, the transitory market adjustment price) was set up for industrialists who had chosen the free market solution. This tariff was presented as a temporary solution (for 2 years) before regulated tariffs are phased out.

However, it is important to understand that many high electricity-consuming French industrialists (the chemical, metallurgy and aluminium sectors) had, until a short time ago, long-term supply contracts at very favourable rates, based on the cost of nuclear power production. The majority of the high-volume electricity users, either because they faced the increasing market prices, or because their long-term contracts were expiring, have, since 2005, joined forces in criticism of the market mechanism. They felt that market forces didn’t work: *“The prices we were being offered for stable, forecastable long-term consumption followed the ups and downs of market prices, adjusted to the production costs of the most*

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<sup>2</sup> Regulated prices remain fairly low due to the fact that the rates reflect production costs of French electricity, primarily based on nuclear energy, which has not risen in the same way as oil and gas has

*costly equipment, whereas they should have been adjusted to nuclear energy costs*” (energy purchaser). They criticise the European Commission for their exclusively technical vision of the energy market and the absence of investment planning and organisation.

They decided to create a purchasing consortium called Exeltium to draw up a long-term electricity supply contract with those suppliers who wished to do so (10 to 15 years), at a fixed price. This idea was debated in July 2005 during a round table chaired by the ministers of the economy and industry, with electricity producers and consumers. Electricity suppliers were also involved in the round table. The French and European competition councils accepted the proposals presented to it, on the understanding that volumes would be limited and would not put an end to the free market. The consortium would not be able to acquire more than around 20 TWh per year.

The real difficulty was then defining who would have the right to join the consortium. On May 15th 2006, at the signing of the Exeltium Consortium company by-laws, the conditions for joining the consortium were defined: consumption over 2.5KWh to generate €1 added value and off-peak consumption representing at least 55% of the maximum power. However, once fixed, rules for joining the consortium allowed a number of consumers (and the resulting volumes) to join, totalling a volume far in excess of that approved by the French and European competition councils. The different categories of industrial consumers (large and small consumers) each campaigned for a fair distribution within the consortium, thus introducing the energy purchaser to the world of politics.

In January 2007, further to a tender and lengthy negotiation, an agreement was reached between the consortium and EDF. The agreement protocol established the conditions of EDF’s supply to the consortium in terms of volume and price over periods ranging from 15 to 25 years, and the sharing of industrial risk between the parties. EDF which, at the outset, suggested supplying around 15TWh, accepted to increase volumes for a price of around €40 per MWh. The price was fixed in reference to the production cost announced for new nuclear power stations at that time under construction. However, this is still a moot point, judging by the declaration of the chairman of the French parliament finance committee on January 10th 2007: *“According to the atomic energy commissariat, the EPR nuclear reactor in Flamanville would be able to produce at a cost of between €33 and €35 per MWh; EDF is announcing an average cost of €46!”*

It is clear the French State, the main shareholder in EDF, brought pressure to bear to ensure that EDF would align to more customer-friendly prices. The industrialists justified the State’s action by putting forward the argument that French industry (and more broadly speaking, their employees) must benefit from the nuclear energy option. Those defending Exeltium do, nevertheless, need the French State to support them in justifying these prices in Brussels. Hence the position of Laurent Chabanne, representative of UNIDEN and Exeltium on January 10th 2007 before the French parliament finance committee: *“The regulations clearly prohibit dumping, i.e. fixing selling prices lower than retail prices, but competition does not prevent prices being fixed at a very low level if the cost price continues to be lower. It is important that the competition Directorate-General does not feel that the prices proposed by EDF are artificially low (...). It is important that the French public authorities think about defending this position in Brussels”*.

The industrialists who are consuming electricity take immediate advantage of these two new mechanisms. Those who are able to join Exeltium tried to cover the largest part of their consumption within the consortium. The rest is covered by the TarTAM.

So, the increase in market prices resulted in French industrialists organising themselves to construct alternatives to market forces. For French industrialists, the gap between the market price and nuclear electricity production costs created an opportunity for political action and the negotiation of alternatives. Two solutions emerged: the TarTAM whose principle is in total contradiction with European Commission policy and which can only be a temporary measure. The second, a purchasing consortium / electricity producer partnership, is more long term since it does not threaten the deregulation process. At the same time, in spite of its apparent coherence with new free market rules, it is important not to forget that this partnership was not possible without the intervention of the French State. Today, there is massive industrial customer membership to this alternative market institution, but at the same time, since Exeltium has not “served” them to the extent they might have expected, and because TarTAM is a temporary measure, they expect to be working again at some point with free market prices.

#### **4. Discussion**

Using examples from the French gas and electricity market, we have shown that in the same market, several radically different forms of transaction can coexist, both in terms of calculation principle and the social organisation within which they function.

The adoption of a supply/demand (or sale/purchase) symmetrical view has allowed us to show that industrial clients contribute fully to the organisation of the market: certainly, the industrial suppliers frame the market by offering standardised contractual clauses and price and service solutions, but the purchasers are also influencing the organisation of the market (and the competition). They use varying degrees of consultation to test the market and learn about it, call for tenders or private contract negotiations. They do this by defining their need for flexibility, the ground rules for managing financial risk and through political pressure on the State and regulation bodies. Their practices have a guiding influence on the practical operation of the market.

Industrial purchasers combine different forms of reasoning and juggle with different forms of transaction. Their independence, skill and access to information will all determine their capacity to “calculate”, i.e. interpret, physical and financial markets for energy and to operate within those markets (or ask others to do so on their behalf). Callon and Muniesa (2005) were therefore right in emphasising that the capacity for calculation is a crucial strategic resource which contributes to the position of those involved in the market place.

Between the market institutions defended by the European Commission and the reality of transactional forms on the ground, there is a considerable gap which is getting no smaller. Whilst the European Commission defends the setting up of substantial market places, the actors on the market – producers, distributors and consumers – are converging towards maintaining long-term contracts as the backbone of the electricity and gas markets. Those involved in the market seem increasingly convinced that long-term contracts make transactions more “calculable” (Callon and Muniesa, 2005) than more open markets can. They also feel that long-term contracts (with common reference index) are more effective in regulating the power struggle between producers and distributors than the development of market economics. They are trying to defend this alternative model for as long as possible against the model proposed by the European Commission.

If we review the 3 conditions for the institutionalisation of a new organisation (the position of the actors which defend it, the theorisation of practices and the inter-connection with existing institutions), it is clear that these conditions are not fully met for each offers and purchasing

practices. Thus the low level of institutionalisation. We will look at these 3 conditions in detail.

In this competition between the market's organisational forms, the position of actors, their legitimacy and their ability to assemble key resources will determine their capacity to initiate and defend a given organisational model. The historical suppliers as dominant economic actors, but also as public enterprises, maintain a key role, whether in developing or side-stepping the market. They hang on to essential resources (equipment, infrastructure, long-term contracts, ability to spread) for certain forms of transaction, but are not alone in holding resources. But this does not stop them taking on the competition – consultants, banks, alternative suppliers. Customers progressively develop resources and in particular, the capacity to calculate.

The theorisation of these new practices and the mobilisation of other actors via arguments which represent their interests, are expressed here primarily via commercial messages and positions of opinion leaders amongst industrial customers. The commercial line is an example of a message which contributes to the dissemination and stabilisation of a form of transaction: they propose a definition of the customers' threats and opportunities. Consultants, banks, historical suppliers and alternative suppliers do not necessarily tow the same line on the interests of an industrial customer: length of contract, purchasing procedure, reference index, etc... In all these actors, the commercial players have great credibility, because they have played a key role in training their customers and are capable of informing them of market trends... Most energy purchasers are dependent upon the message of sales people to theorise their purchasing practices with a view to defending it and justifying it to their upper management, given the sums involved. On the electricity market, industrial "opinion leader" customers participate in the theorisation of the economic interests of all customers, for example by supporting an economic argumentation on the dysfunctioning of the market, which allows them to justify long-term contracts or the creation of purchasing consortia. The existence of different theorisations sustainably maintains this diversity of practices.

These first two conditions are linked: it is a fact that the art of the theorisation of practices is making yourself indispensable (Callon, 1988), and thereby demonstrating the importance of the resources you have. In this, the definition of the problems and the solutions, and the distribution of resources between the various actors are the two face of the same piece of money (Friedberg, 2005).

Finally, new energy purchasing practices must manage to connect to a whole set of other institutionalised practices and regulations. For gas, two connections are possible: the gas market with existing marketplaces such as Zeebrugge, NBP and TTF, or the petroleum market via long-term contracts with oil price index. Maintaining these two foundations jointly creates a difficult situation for industrial customers who need a common reference. A reference is all that much stronger if it is adopted by the majority: an industrialist considerably attenuates his financial risk by adopting the same price reference as his competitors. The coexistence of two reference sets does not simplify the institutionalisation process. On the subject of long-term contract or purchasing consortium strategies, this question is raised more in terms of compatibility with the regulations and principles of a competitive energy market. Once again, compatibility is far from proven, thus threatening the institutionalisation of these practices.

The diversity of practices and transactions may go some way to explaining the incomplete character of the institutionalisation process. But it could also be explained as the result of the contingent, precarious arrangements between actors who are dependent upon each other (Friedberg, 2005, Cooks, 1977). Here, it would seem that the powers are spread quite wide

and that the distribution of resources between actors is not stable and therefore no stable arrangement is, for the moment, possible. The historical suppliers remain key players but their dominance is fragile. They are still substantially under the control of the State, whose action in this area seems far from having lost its legitimacy.

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