

# **IEA DSM Task X – Performance Contracting**

## **Country Report Netherlands**

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## **1 EXECUTIVE SUMMARY**

As of the time of writing, 2002, Energy Performance Contracting still does not exist in The Netherlands energy market. The electricity market will be open in 2004. It is not expected that the then deregulated market will, of itself, increase the emphasis on energy efficiency. Energy distribution in The Netherlands is restricted to energy distribution companies only, under the terms of distribution legislation. However, if the legislation is changed so that other parties, not energy companies, could offer Energy Performance (service) Contracting (EPC) services in the future, either as a sole service or combined with other services, there are possibilities. The technical energy saving potential in office buildings is considered to be quite substantial, especially with the high energy taxes in The Netherlands (about 50% of the gas price is tax).

## **2 INTRODUCTION, RATIONALE**

This report is a part of the International Energy Agency Implementing Agreement on Demand Side Management, Task X, Energy Performance Contracting. It is intended to be read in conjunction with the introduction and rationale of the common report.

## **3 ADMINISTRATIVE INFORMATION**

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## 4 GENERAL ENERGY CONTEXT

### 4.1 Deregulation and The Netherlands' electricity market

The Netherlands' electricity market has not yet been deregulated as far as supplies to small consumers are concerned. This is expected to occur in 2004.

The situation in The Netherlands has been typified by a locally organised energy supply system with a strong municipal involvement, which has been following a process of amalgamation and concentration. The Netherlands has sub-divided the electricity and gas systems into four different horizontal levels: Production, transport (the high-voltage grid or gas trunk mains), regional distribution (the medium-voltage grid or regional gas mains), and distribution (the low-voltage grid and local gas network).

Four national electricity producers – EPZ, EZH, EPON and UNA – controlled the high-voltage grid, which was part-owned by the regional authorities (the provinces). These companies were united in the SEP organisation (Co-operating Electricity Producing companies). Every two years, an electricity plan had to be prepared in agreement with the national authority, which outlined the amount of power to be produced and the planned input of fuel.

Individual companies owned the low-tension grid networks – there was a conscious desire to avoid monopolistic distribution companies. However, the financial arrangements meant that in practice they were *regional* monopolies with shares owned by local and regional authorities. These companies bought energy from the energy producing companies, and distributed and sold it to the small and medium customers. These distributors largely owned the low-voltage grids. Prices and profits were regulated according to the Electricity Act. Only the largest purchasers had any choice of supplier, by virtue of the fact that they were allowed to import energy.

The Netherlands is a large producer of gas and the Government has kept a fairly tight grip on the resources because of the financial implications. The main producer was NAM, a consortium of Esso and Shell, with smaller gas producers exploiting the smaller fields. All production was carried out in cooperation with EBN (Energy Management Netherlands), which is 100 % state-owned. The gas price was linked to the oil price. Gasunie, which is 10 % state-owned, took care of the supply to large users (industry), the distribution companies and foreign sales. It also owned the extensive transport grid. Gasunie's profits exceeding a certain threshold were returned to the Dutch producers and then taxed by the State. In other words, natural gas profits were of considerable importance to the national authority. The distribution companies, including the distribution grids, were mainly taken over by the electricity distributors to form amalgamated distribution companies.

The Netherlands has the highest level of cogeneration in the European Union, with widespread district heating. The Not-More-Than-Otherwise-principle (*NMDA-principe*) has regulated the tariffs for district heating up until the present. Customers

who are connected to public district heating supplies do not have to pay more for their heat than comparable users of gas. If the NMDA principle were to be abandoned, heat consumers who are not free to choose or change their connection to the infrastructure would probably face a rise in prices.

Liberalisation is a hot potato in Netherlands' politics, especially after the California disaster. The new minister of economic affairs (Herman Heinsbroek) announced in summer 2002 that he is willing to stop the privatisation of regional energy-supply companies until January 2004. His motives are that he finds the rules far too complicated and that he wants to give all citizens the assurance that, as he said, the light can be switched on and the gas will flow at all times. He wants the rules to be simplified and on some matters tightened up. He will soon make proposals in that direction. Until that time, no new requests for privatisation will be dealt with (with only one exception, for Intergas, whose request was already being processed).

Intermediate states of liberalisation have been introduced in a transitional phase. Unbundling of network and commercial services has been introduced. SEP was dissolved and Tennet set up to manage the high-voltage network. Distributors are licensed to deliver to captive small and medium size energy users until the market is fully liberalised and control over maximum prices is maintained. From 1st July 2001, all consumers have been free to buy green electricity from any supplier at the market price. Most local energy distributors have enlarged their companies or have been sold – at the time of writing, there were 13 distribution companies in total. Of them, three are large and the others are small and local (mostly for gas). They are not allowed to own the low-voltage grid, and to regulate this there are 21 regional network companies left. In addition, a large and increasing number of local authorities have sold their shares in the energy companies. They are considered to be an unsafe investment and now operate outside the administrative borders within which the municipality can be held (politically) liable.

The green market has been opened earlier than the fossil market to promote renewable energy, a factor reinforced by the new Ecotax system and the system of green certificates set up to oversee the system

The Netherlands is blessed with a strong and active national energy agency, Novem, which is responsible for administering many Government initiatives (e.g. Climate Covenants). This had been converted into a separate semi-independent agency in the 1990s to enable it to compete for funds on the open market, but is currently being reintegrated into the civil service structure.

## 4.2 Organisations involved in the Energy Sector

### *Government Ministries involved*

The Ministry of Economic Affairs is responsible for energy issues.

NOVEM is the national energy agency. For a number of years, it had been a semi-independent structure, but from 1st July 2002 it is being reintegrated as part of the Ministry of Economic Affairs.

### *Relationship between local authorities and Government ministries*

The Netherlands is a unitary state administered by three levels of government: national, provincial and municipal. Some difficult areas, which cross borders, have been dealt with on a regional scale. Since 1998, the Dutch Government has levied an *Ecotax* on energy use (see below under Tax Background).

## 4.3 National regulatory organisations, agencies and similar organisations

**TenneT** = TSO

**NMa** = *Nederlandse Mededingings autoriteit* (supervising authority ensuring free competition).

**DTe** = *Dienst uitvoering en Toezicht Elektriciteitswet*. This is the regulator for electricity, a 'chamber' of NMa.

**Novem:** *Nederlandse Onderneming voor Energie en Milieu* (Dutch Company for Energy and Environment). Carries out a major part of the national energy efficiency programme. Is now being reincorporated as a direct part of the Ministry of Economic Affairs.

**Senter** pays out subsidies. Also a direct part of the Ministry of Economic Affairs.

**EG-Liaison:** part of Senter, stimulates Dutch participation in European energy programmes.

**Syntens:** regionally organised and focused on SME. Advises on energy efficiency since the end of 2000.

A new study is planned, to look at how the supervision of companies can be tightened up, and the Minister wants energy suppliers to provide more information on what exactly they are doing. He has already proposed a zero-tolerance policy for companies not achieving targets. This is a direct break with the policy of the former Government,

which fell in June 2002, and it proves how sensitive an issue liberalisation is and how difficult the outcome is to predict.

#### **4.4 National private companies in the field (including district heating and energy service companies where relevant)**

- Four electricity power companies.
- Mainly regional energy companies.
- Gasunie
- Triodes Bank: a private bank offering special rates for green energy projects, especially renewable energy.

#### **4.5 Taxes on energy**

*VAT or taxes in general:* The Dutch Government wants to 'green' the tax system. This will mean that more taxes will be levied on raw materials and products, and less taxes on labour. The only visible action till now is the Ecotax.

*REB: Regulating Energy Tax (Ecotax).* A levy on energy prices for private persons and medium-sized users. This levy is mainly used to lower expenditure on wages. A smaller part will be used to replace the abandoned MAP tax through the Energy premium arrangement. Green electricity is exempt from the Ecotax.

A levy has been placed on coal to discourage its use for electricity production.

The energy premium arrangement has been established to recycle 15% of the Ecotax to households. Private persons can receive a grant if they purchase energy-efficient apparatus or implement energy-saving measures.

## **5 WHO IS RESPONSIBLE FOR:**

### **5.1 Electricity**

#### *Production in the early 1990s*

Four main electricity production companies: EPON, EPZ, EZH and UNA.

#### *Production currently*

Mainly foreign companies (takeovers + importation) are now responsible for electricity production.

The four Dutch electricity producers received payments from the national Government to compensate for their "stranded" investments, such as a research plant for coal gasification and several co-generation plants, which they expected to be unable to recover in the liberalised market. This freed the Government from drawn-out lawsuits.

At present, about 40% of electricity-production in The Netherlands comes from CHP-installations (compared with the E.U. average of 15%). Dutch policy designed to promote such technologies is based on the efficiency of the power-plant (the Senter efficiency, being at least 60% for existing plant and 65% for new plant). The Dutch CHP industry is strongly against the CHP directive proposed by Brussels, which proposes to provide support for plant based on its electrical capacity rather than on its efficiency. The latter is, in their opinion, a far better criterion.

### ***Transport in the early 1990s***

The high-voltage grid was in the hands of the four national electricity producers: EPZ, EZH, EPON and UNA. As the regional authorities (the provinces) had a share in these companies, they were in effect semi-public. The companies were united in the SEP organisation (Co-operating Electricity Producing companies), and had an agreement with the national authority. Every two years, an electricity plan was prepared which outlined the amount of power to be produced and the planned input of fuel.

### ***Transport currently***

TenneT – the Transitional System Operator, is 100 % state-owned.

Initially, the national Government planned to privatise the high-voltage grid. However, they increased their share to 100% for a couple of years at the request of Parliament, which wished to ensure the secure transport and delivery of electricity via a high-quality high-voltage grid. The future goal remains privatisation.

A supervising authority, Dienst Toezicht Elektriciteitswet (*DTe*), has been established for full liberalisation. This organisation will, in co-operation with the Nederlandse Mededingsautoriteit (*NMa*, the supervising authority for free competition between enterprises), regulate access to the electricity grids, transport rates and secure the supply of energy to consumers. The supervising authority may force the owners of the grid to improve the quality and capacity of the grid. A series of codes have been drawn up to govern supply, including one affecting the grid.

### ***Distribution in the early 1990s***

Individual companies owned the low-tension grid networks. There was a conscious desire to avoid monopolistic distribution companies. There were individual monopoly companies organised on a regional basis, which largely owned the low-voltage grids. These companies bought energy from the electricity generating companies, distributed it and sold it on to medium and small customers. Local and regional authorities were shareholders of most of the regional energy distributors.

### ***Distribution currently***

Distributors have to apply for a licence to supply to captive energy users, which will be valid until the market is liberalised for these users. The distributors are obliged to supply energy to users in their licensed area. Every year, the Minister of Economic Affairs establishes the maximum energy rates for small and medium consumers, but energy companies can propose lower prices.

Following the introduction of unbundling, most local energy distributors have enlarged their companies or have been sold. At the time of writing, there are 13 distributors in total in The Netherlands, including three large regional energy distributors and a few small local energy distributors (mostly for gas). There are 21 network companies left.

An increasing number of local authorities are selling their share in the energy companies, since they are considered an unsafe investment. In addition, the companies now operate outside the administrative borders within which the municipality can be held (politically) liable.

The law no longer permits distributors to own low-voltage grids. In practice, distributors simply create separate holdings for this purpose. Consequently, grids are sold along with the distribution companies. Parliament expressed concern about this, especially in regard to those cases where the companies are sold into foreign hands, and they wanted more secure supervision. The minister responsible and the companies themselves argued that the grid is too large a part of the capital to separate. If it were to be illegal to sell grids as well as the distribution companies, Dutch companies would not be able to survive the changes in the European market. The compromise achieved in April 2001 is that the legal ownership will remain in the hands of local and regional authorities, but the economic ownership will be in the hands of the network companies.

The codes referred to above concern the operation of and connections to the network and continuity of supply.

## **5.2 Gas**

### ***Production in the early 1990s***

The Government handed out the concessions for extraction. The main producer was NAM, which was a consortium of Esso and Shell, while smaller gas producers (BP, Elf, Mobil) exploited the smaller fields. All production was carried out in co-operation with EBN (Energy Management Netherlands), which is 100 % state-owned. Gasunie, which is 10 % state-owned, took care of the supply to large users (industry) and to distribution companies and foreign sales. Gasunie's profits exceeding a certain threshold were returned to the Dutch producers and then taxed by the state. In other words: natural gas profits were of considerable importance to the national authority.

The gas price was linked to the oil price.

### ***Production currently***

In accordance with the new Mining Act, the Minister of Economic Affairs grants an extraction licence. In addition, import of gas becomes an alternative.

The liberalisation of the gas market provokes discussion due to the large role of Gasunie in the gas system. Gasunie will remain the owner of the transport grid and at the same time keep its role as a supplier and seller of gas, in contrast to the situation on the electricity market. In addition, the State has no interest in importing gas or the development of alternative gas producers because of the high revenues provided by the previous situation.

### ***Transport in the early 1990s***

Gasunie (10% Government stake) is the owner of the extensive transport grid.

The distribution companies, including the distribution grids, were mainly taken over by the electricity distributors in the same manner as described under electricity.

### ***Transport currently***

Gasunie will remain the owner of the transport grid and at the same time keep its role as a supplier and seller of gas. *Negotiated Third Party Access (nTPA) will apply, and there will be no supervisory authority*, in contrast to the situation on the electricity market.

Other gas companies dispute the accessibility of the gas transport system. In addition, the State has no interest in alternative gas transportation networks because of the high revenues provided by the previous situation. *In contrast to the electricity system, there will be no supervising authority.*

### ***Distribution in the early 1990s***

Private and municipal energy companies were responsible for the distribution.

### ***Distribution currently***

The distribution companies, including the distribution grids, were mainly taken over by the electricity distributors in the same manner as described under electricity – with economic ownership by the distribution company and legal ownership vested in the local authority.

New gas suppliers will have to negotiate price and conditions with the network manager before entering the gas grid. The unbundling is not as strict as with electricity and all in all, the future of the gas system seems less clear than the future of the electricity market.

### **5.3 District heating**

#### ***Production, distribution and sales in the early 1990s***

Heat has been produced either by the electricity production companies in large centralised plants, or by regional distributors with large local authority involvement. Distribution is exclusively by the regional energy companies.

#### ***Production, distribution and sales currently***

The municipal stake is often sold off. Otherwise there is no change.

## **6 ENERGY SERVICES**

### **6.1 In the early 1990s**

Dutch law imposes no requirement that energy supply and energy services must be carried out by separate bodies. This means that, in practice, the energy companies now can develop energy service activities.

In the transitional phase, they will experience competition from new ESCO's (Energy Service Companies) only with respect to eligible customers. In the future, this competition will be extended to all customers.

### **6.2 Currently**

The situation with regard to energy meter reading is more complicated. The Electricity Act opens the market for meters and metering services. Previously, the energy company provided the meters and meter-reading services: now the customer is responsible. This means that the customer explicitly owns his own measurement data. Still, the network manager has access to this data as far as is needed for the execution of network tasks. The customer can choose any company to supply the meter, as long as it meets the technical requirements prescribed by the DTe. These requirements, called the *Measurement Code*, include the meter itself, the transfer of measurement data<sup>1</sup> and the user profile<sup>2</sup>.

The Gas Act is less clear on this subject. It seems that gas meters are still the responsibility of the distribution grid manager, but DTe has noted that the Gas Act has

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<sup>1</sup> This defines to which extent the energy use is being measured with intervals.

<sup>2</sup> It is being considered too expensive to use continuous measurement for small users. Therefore, user profiles are to be defined yearly by the network managers. These profiles will be fed with real measurement data.

to be amended regarding this matter. Another new service is that which is known as *programme responsibility*.

According to the System Code, every eligible customer is programme-responsible. This means that customers must be able to predict their energy use per hour beforehand. In addition, large consumers must measure their energy use every 5 minutes. These data must be delivered to TenneT, who sums this up every hour (in the future, every 15 minutes). The difference between the programme and the measurements is called unbalance, for which TenneT sends bills to the Programme-responsible customer<sup>3</sup>. The customer can transfer its programme responsibility to an ESCO, against payment of course. It is expected that most customers will not be able to provide for the programmes themselves, and that the energy supplier will in most cases take over this responsibility.

## **7 LIBERALISATION**

### **7.1 How liberalisation has affected the general energy system**

The Netherlands has promoted the restructuring of the Dutch energy industry in response to growing trends towards liberalisation and globalisation. The intention has been to integrate the Dutch energy players into a small number of structures or a single structure able to act on a world stage. At the same time, the electricity and gas industry structures have been reorganised into four different levels: production, transport, regional distribution and local distribution. The market is being liberalised in stages, with full opening in 2004.

There is general support for public supervision and stipulated market regulations:

- Within the boundaries of environmental preconditions.
- Electricity and gas grids with sufficient quality and capacity.
- Access to the grid for suppliers and customers at as low as possible a price.
- Transitional phase: all customers (not only the eligible ones) must profit from increased efficiency and lower prices.
- Good supervision arrangements for the implementation of the liberalisation legislation, the grid and setting of prices.

The four major electricity producers have been targets for takeovers. The relatively high cost of the fuel input in The Netherlands (and in particular the high proportion of gas) has resulted in increasing imports in recent years, with the fear that stringent environmental conditions on fuel source and emissions may be foiled by the impact of imported “dirty” electricity (e.g. generated from brown coal).

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<sup>3</sup> As a result it will become important to predict the peak load, to shave the peaks and, in the case of gas use, to install cold and heat storage.

There has been a clear movement from relying on the energy industry itself – in particular, the distributors – to provide energy efficiency advice and services, to expecting other services to be provided either by the market or by public authorities such as national and local government.

The attitudes of the Dutch Government regarding gas have been less clear. Gas is a big revenue earner for the Dutch state. Gasunie will remain the sole owner of the grid, operating negotiated third-party access and will also be a supplier and seller of gas. There is no external authority. The Government is not keen to encourage gas import in competition with home producers, which is in contrast to the situation with electricity.

The attitude with regard to energy efficiency and RES is that the goals set are to be implemented on a voluntary basis. Voluntarism fits into the general development of decreasing regulation by the national authority. The Ecotax, gentlemen's agreements with large enterprises, benchmarking, premium systems, fiscal advantages, information and awareness raising are the incentives by which the targets should be achieved. The results of the incentives will be examined in 2002: if they are disappointing, more legislation or other compulsory measures will probably be proposed.

## **7.2 Laws introducing liberalisation and the role of the regulator and system operator**

### ***Electricity Act 1998***

The original timetable was later accelerated as follows:

- July 1999, large consumers became eligible (>2 MW).
- January 2002, medium-sized consumers became eligible (<2 MW and >3\*80 Ampere).
- January 2004, (perhaps 2003), small consumers such as small enterprises and households will become eligible.

From 1st July 2001, all consumers are free to buy green electricity from any supplier.

### ***Distribution Act 1997***

### ***Gas Act April 2000***

- Passed 10 August 2000: large gas consumers (> 10 million m<sup>3</sup> gas/year) are eligible.
- From January 2002, medium sized consumers (> 170.000 m<sup>3</sup>) became eligible.
- From January 2004, (perhaps 2003), small consumers will become eligible.

### *AmvB March 2001*

Construction of the energy infrastructure for new development areas (electricity, gas and heat):

Authorities may grant the construction of the new energy infrastructure according to a prescribed public procedure.

An electricity regulator called DTe (Dienst Toezicht Elektriciteitswet) has been established to regulate access to the market, but there is no equivalent for gas. DTe has drafted codes to guide operating practices, including a Tariff Code, a Grid Code, a System Code and a Measurement Code.

A separate system operator, Tennet, has been established, and is 100% owned by the State.

The pace of liberalisation is higher in many EU-countries than in The Netherlands. Therefore a national lobby exists to step up the domestic liberalisation process:

Businesses and consumers want to benefit from the advantages that the free energy market is supposed to offer (freedom of choice, lower prices).

Energy companies are afraid that foreign competitors, especially German ones, will be better prepared once the Dutch market opens up completely. However, the Dutch energy companies seem to be adjusting rapidly to the new situation. There are problems separating the eligible and captive consumers. Already, purchasing consortia are being established that are not in conformity with the regulations for the transitional phase as prescribed in the Electricity Act.

Consumers whose consumption is only just below the division line between captive and eligible customers feel disadvantaged.

The dates for the phased liberalisation of the market have already been brought forward.

### 7.3 General impact of liberalisation on prices and incentives to save energy to date

#### *Electricity*

Those eligible to choose their supplier, about 650, pay lower energy prices than before, and a large proportion has switched suppliers. It is expected that two-thirds of Dutch industry will have changed supplier by 2005.

The general idea is: higher efficiency, lower prices and increasing taxes (Ecotax) to stimulate energy saving and RES.

Grid tariffs have a significant impact.

The regulated grid tariff or point tariff controlled by DTe is independent of distance. DTe establishes the maximum tariff, but grid operators are free to offer lower prices. This means that prices can vary by region.

The grid tariff consists of:

- Connection tariff: once-only contribution + regular charge for e.g. a transformer + monthly charge for maintenance of the connection.
- Transport tariff: depending on the voltage level of the connection.
- System services costs: contribution for continuity of voltage and frequency.

A specific price problem has been observed in the transitional phase concerning green electricity. Small producers are 'protected': the licensed energy supplier has to buy their green electricity, and also they are exempt from Ecotax and receive a government subsidy of 0.016 euro per kWh. However, the suppliers pay a low price for this electricity and charge high prices. The Minister of Economic Affairs has few powers against this, and it is hoped that the complete opening of the market will resolve this.

#### *Gas*

The *CDS* (Commodity Services System) tariff, operated by Gasunie, is dependent on distance<sup>4</sup> and is approved by the Minister of Economic Affairs. It consists of three elements:

- Commodity = gas
- Transport
- Capacity services: right place, right time, right amount.

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<sup>4</sup> 5 entry points have been appointed for 'other' gases

If other gas suppliers want to use the transport grid, the negotiations are based on the transport aspect of CDS. Capacity services can be added on request. Gasunie has imposed CDS without consulting third parties. Critics speak of dTPA: *dictated* Third Party Access.

Under CDS, gas use is measured every hour instead of the usual once a year. The natural gas price remains linked to the oil price, and special tariffs (e.g. for CHP) are to be abandoned.

50 of the largest eligible customers have switched suppliers. The distribution companies (who supply the smaller large customers) have long-term contracts with Gasunie and have limited possibilities to lower prices: indeed in the short to medium term, prices are expected to rise due to Ecotax.

Combined heat and power (CHP) and district heating have been affected by the competitive market. Cheap imported energy has resulted in an overproduction of energy in The Netherlands. The resale price of energy is therefore lower and CHP becomes unprofitable, squeezed between a rising gas price and reducing electricity price. The national Government is exploring possible avenues for promoting CHP.

New concepts by new players can have an unexpected energy-saving impact. Re-loadable energy cards, a new product for supermarkets, proved to reduce energy use.

#### **7.4 General impact of liberalisation on behaviour of major energy players**

##### ***National Government***

The role of the national Government changes from player to director. It is now playing an important role in raising awareness of energy efficiency.

##### ***Local and regional authorities***

The relationship between these authorities and the distribution companies changes from left hand – right hand to businesslike. Instead of being the partner or even the shareholder of the old and well-known regional energy companies, they increasingly have to profile themselves as buyers on a free market.

In a liberalised system, local authorities should play a more important role in public awareness raising.

##### ***Electricity producers***

- Mergers and take-overs are taking place across the national borders.
- Concluding the SEP.

### *Electricity and gas distributors*

- Mergers and take-overs.
- The top three companies in particular are developing new services and incorporating new products (e.g. water, cable television) or related products (e.g. energy meters).
- Branding has become an important issue. Notably 'comfort' and 'green' seem to be important terms now. It is possible that in a completely liberalised market, energy prices will become a more important issue.
- Local distributors had played a major role in public awareness raising about energy efficiency. This role, like other public service responsibilities, is being abandoned.

### *Consumers*

- Large (eligible): increasing purchase abroad.
- Small and medium (not yet eligible): no change except the establishment of some purchasing consortia (see above under Main Vested Interests...)

Some non-governmental organisations (for example, Greenpeace) are playing an important role in public awareness raising and education about energy efficiency.