# COMMISSION

## COMMISSION DECISION

## of 30 March 1999

## on the aid for the project 'Process Integrated Gas Turbine at the Nerefco refinery' which the Netherlands is planning to implement in favour of Nerefco

*(notified under document number C(1999) 904)*

**(Only the Dutch text is authentic)**

**(Text with EEA relevance)**

(2000/17/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community, and in particular the first subparagraph of Article 93(2) thereof,

Having regard to the Agreement on the European Economic Area, and in particular Article 62(1)(a) thereof,

Having called on interested parties to submit their comments pursuant to that provision [1],

Whereas:

### I. PROCEDURE

(1) By letter dated 10 October 1997, registered on 14 October 1997 by the Secretariat-General of the European Commission, the Netherlands, in accordance with Article 93(3) of the EC Treaty, notified an aid for the project 'Process Integrated Gas Turbine at the Nerefco refinery'.

(2) The Commission has requested additional information by its letter dated 4 December 1997, to which the Netherlands replied by a letter dated 8 January 1998. A second letter for further information was sent on 26 January 1998 and a reply was received by a letter dated 9 March 1998. A third request for further information was sent on 8 April 1998 and a meeting between representatives of the Netherlands and the Commission was held on 25 May 1998. In response to this meeting the Netherlands authorities have transmitted a faxed message dated 28 May 1998.

(3) By letter referenced SG(98) D/5699 dated 13 July 1998, the Commission informed the Netherlands Government of its decision to initiate the procedure laid down in Article 93(2) of the EC Treaty in respect of this aid.

(4) The Commission decision to initiate the produre was published in the *Official Journal of the European Communities* [1]. The Commission called on interested parties and other Member States than the Netherlands to submit their comments.

### II. DESCRIPTION OF THE AID

(5) The project involving a process-integrated gas turbine at the Nerefco refinery forms part of a general $CO_2$ reduction plan launched by the Netherlands Government in the autumn of 1997. The Government's aim, through this plan, is to encourage projects that will lead to a significant reduction in $CO_2$ emissions, thus contributing to sustainable economic growth.

(6) The purpose of the project is to help reduce $CO_2$ emissions. The project entails the construction of a gas turbine that is fully integrated with a process unit of a refinery, replacing conventional separate heat and electricity generation. The use of gas turbines in combined heat and power plants results in a substantial improvement in energy efficiency and lower $CO_2$ emissions than conventional, separate heat and power generation. However, gas turbines have not so far been used in process installations, because they are less reliable. Gas turbines tend to break down much more frequently than conventional equipment and require more maintenance. The installation of gas turbines also involves higher investment.

[1] OJ C 334, 31.10.1998, p. 3.

(7) The project is being carried out at the Nerefco refinery at Rotterdam. The following companies are involved:

— Texaco Nederland BV,

— Eneco BV, a regional electricity provider,

— Nerefco, a joint venture of BP and Texaco.

The recipient is a joint venture, to be established between Eneco BV and Texaco Nederland BV.

(8) Nerefco operates a refinery at Rotterdam Europoort. The refinery has two distillation towers for the primary distillation of crude oil. At present, the crude oil is heated to process temperature in two oil-fired furnaces. During the distillation process, Nerefco produces process heat (available capacity [...] (*) MW thermal energy), steam for the refinery in its own boilerhouse (available capacity [...] * kte/year) and part of its electricity requirements.

(9) The installation of a process-integrated gas turbine will increase energy efficiency. The integrated gas turbine works as follows. Primarily, the gas turbine drives a generator. In a heat exchanger, the exhaust gases of the gas turbine directly heat the crude oil to process temperature (375 °C). Subsequently, the remaining heat in the exhaust gases is used to generate steam for the refinery. By directly heating the crude oil to a high temperature, a very high level of efficiency is obtained. The new installation will replace 40 % of the heating (to process temperature) capacity of crude oil, will replace 10 % of steam production and will produce 70 MW of extra electricity. Implementation of the project will not result in an increase in distillation capacity.

(10) According to the Netherlands authorities, the integration of process unit and energy generation on this scale has never before been carried out in the Community. The advantages of such integration are as follows:

(a) $CO_2$ emissions from the refinery will be reduced from 790 000 tpa (tonnes per annum) to 530 000 tpa, giving a reduction of 260 000 tpa. This means a reduction of 0,2 % for the Netherlands as a whole;

(b) a number of other noxious emissions will be reduced. This is in particular the case with $SO_2$ and NOx, which will be reduced by 16 % and 11 % respectively;

(c) the energy consumption for the generation of electricity, steam and process heat, expressed in oil equivalent, will be reduced from 270 000 tonnes to 205 000 tonnes. This decrease corresponds to an increase in energy efficiency from 60 % to 80 %.

In order to increase the chances of follow-up projects, the companies are setting up a user group, in which interested people from other companies participate. The group will be directly involved in the preparation of the project.

(11) The technical risks associated with the project are as follows:

(a) the operational reliability of a gas turbine is less than that of a conventional furnace;

(b) a reliable control system must be developed for the gas turbine, the heat exchangers and the furnace.

In order to limit the risks associated with the new unit and ensure continuous heat supply, the old energy-inefficient unit is to be kept as a back-up system.

(12) The overall investment amounts to NLG 93 million (around EUR 42,2 million). This includes the construction of the gas turbine, a furnace and a residual-heat boiler.

(13) At the time when the proceedings were initiated, the eligible costs were calculated by the Netherlands authorities as follows. In the first place, a correction was made to the anticipated saving in energy costs. Over a ten-year period, such saving was estimated at NLG 39 million (around EUR 17,7 million). These future savings were deducted from the total investment cost in determining the eligible costs. Subsequently, a correction was made to the replacement cost of the furnace and the maintenance costs of the old furnace of NLG 3,3 million (around EUR 1,5 million). The eligible costs of the project thus amounted to NLG 50,7 million (around EUR 23 million).

(14) The aid proposed by the Netherlands authorities in notifying the project amounted to a maximum of NLG 15 million (around EUR 6,8 million) — equivalent to 29,6 % of the eligible costs.

In the notification, the construction period was expected to last from the end of 1997 to the beginning of 1999. However, the project has been postponed until there is greater certainty as to the admissibility of the aid. The construction period will be a little over one year.

(15) There are no statutory environmental requirements that make it necessary for Nerefco to change the refinery's present energy-supply arrangements.

(*) Parts of this text have been edited to ensure that confidential information is not disclosed; those parts are enclosed in square brackets and marked with an asterisk.

## III. REASONS FOR INITIATING PROCEEDINGS

(16) The Commission informed the Netherlands by letter dated 13 July 1998 that it was initiating proceedings because it had doubts as to whether the aid complied with the conditions laid down in the Community Guidelines on State aid for environmental protection [1]. The doubts related to the determination of the amount of the extra investment costs. The Community Guidelines stipulate that the eligible costs must be strictly confined to the extra investment costs necessary to meet environmental objectives (point 3.2.1). The following are briefly the points at issue:

(a) The replacement costs. It is the Commission's usual practice to calculate the extra investment costs by comparing the new, environmentally friendly investment with the costs of setting up similar production capacity using conventional technologies.

The Commission was unable to determine the extra investment costs on the basis of the information received, since information on the replacement costs was lacking. The Commission believes that the preservation of the old unit does not dispense the Netherlands authorities from the obligation of comparing the planned investment with the overall costs of a conventional unit calculated at current prices.

(b) The 70 MW increase in electricity generation. It is stated in the notification that the project will result in an increase in electricity capacity. Total capacity for the Netherlands will be increased by some 0,3 %. When the proceedings were initiated, it was not clear to the Commission how this was taken into account in calculating the eligible costs.

(17) Lastly, the Commission noted that in calculating the eligible costs, cost savings were deducted at a discount rate of 10 %, after deduction of corporate taxes. Furthermore, these costs were calculated over a period of only ten years, which did not seem to tally with the amortisation period for the relevant investment. With a view to determining the eligible costs of the proposed aid, the Commission asked the Netherlands authorities to apply the Commission's current reference interest rate in discounting future costs and benefits. Furthermore, the Commission pointed out that, in order to be able to compare the calculated aid intensity with the aid intensities laid down under 3.2.3.B of the Community Guidelines mentioned in point 16, the relevant amounts should be gross (before tax). Finally, the period for the discounting of future benefits should be the same as the amortisation period.

## IV. COMMENTS SUBMITTED BY INTERESTED THIRD PARTIES AND BY OTHER MEMBER STATES

(18) The Commission did not receive any comments from third parties nor from other Member States.

[1] OJ C 72, 10.3.1994, p. 3.

## V. COMMENTS SUBMITTED BY THE NETHERLANDS

(19) The Netherlands responded to the initiation of proceedings by a letter dated 15 October 1998. The comments may be summarised as follows.

(20) In order to take account of the Commission's comments, the Netherlands applied a new approach in determining the eligible costs. According to the Netherlands authorities, the new approach complies with the principles and provisions of the Guidelines at point 16. Under the new approach, the increase in electricity production capacity (extra 70 MW) is entirely separated from the project. For this purpose, the eligible amount of investment is corrected by the investment amount that would be necessary to achieve the same extra electricity generation capacity at a small electricity plant. Such investment in conventional electricity capacity is estimated by the Netherlands authorities at NLG 43,9 million (around EUR 19,9 million). Consequently, in determining the eligible costs, the investment amount should be reduced by this sum.

(21) A second correction in determining the eligible costs is made by taking into account the benefit deriving from the operating costs of the heating part in comparison with conventional generation. This benefit is capitalised. In calculating this benefit, the Netherlands authorities have taken account of the current reference interest rate applied by the Commission, and gross amounts have been used in the calculation that is, before tax. The calculations have also been based on a realistic depreciation period of 15 years. The benefit amounts to NLG 2,6 million (around EUR 1,2 million). This benefit is deducted from the investment.

(22) The Netherlands authorities take the view that, following these corrections, the investment amount consists of the extra investment required to achieve the environmental improvement. They do not consider it necessary to make a correction in connection with partial replacement of the conventional unit. A number of arguments are adduced in this respect. In summary, the Netherlands argument boils down to the following.

(23) That part of the new installation that can be used for the production of process heat and steam is entirely necessary in order to achieve the environmental effects. The new installations will be built alongside the existing installations at the Nerefco refinery. Although the new installation will take over part of the production of process heat (40 %) and steam (10 %), there will still be a need to keep the old installations functional. The closure of the conventional installations would lead to an unacceptable reduction in the operability and reliability of the refinery installations. It must also be borne in mind

that what is involved here is a risky project. The reliability of the integrated gas turbine has still to be demonstrated in practice. Furthermore, the planned and unforeseen maintenance periods for gas turbines are more frequent than for the existing refinery installations. During such periods, the conventional installations will be used in full, so that whether or not the gas turbine installation is operating, this will not have any effect on refining activities. The Netherlands authorities take the view, therefore, that the investment here is entirely extra investment. In this connection, they also point out that there is no increase in the capacity of the refinery installations. Although the capacity for heating crude oil will increase, the capacity for processing crude oil will not. That will be determined by the distillation towers, whose capacity will remain unchanged.

(24) On the basis of this line of argument, the Netherlands calculates the eligible costs as follows:

*(Million NLG)*

| | |
|---|---|
| Total investment | 93,0 |
| Correction for electricity production capacity | – 43,9 |
| Correction for advantages in respect of lower variable costs | – 2,6 |
| Total eligible investment costs | 46,5 |

(25) In the light of this, the Netherlands has reduced the proposed aid from NLG 15 million (around EUR 6,8 million) to NLG 13,91 (around EUR 6,33 million). This is equivalent to an aid intensity of 30 %, on the basis of the abovementioned eligible costs of NLG 46,5 million (around EUR 21,1 million).

## VI. **ASSESSMENT**

(26) The notified aid will favour a specific firm and therefore falls within the scope of Article 92(1) of the EC Treaty.

By notifying the aid measure, the Netherlands has fulfilled its obligation under Article 93(3) of the EC Treaty.

(27) The Commission has to assess whether the aid can be considered to be compatible with the common market under Article 92(2) and (3) of the EC Treaty.

(28) The provisions of Article 92(2)(a), (b) and (c) are not applicable in this instance, since the aid is not aid having a social character, aid to make good the damage caused by natural disasters or exceptional occurrences or aid granted to an area referred to in Article 92(2)(c).

(29) Article 92(3)(a), (b) and (d) are not applicable, since the aid is not intended to promote the economic development of a disadvantaged area, to remedy a serious disturbance in the economy of a Member State or to promote culture and heritage conservation.

(30) The only provision under which the aid may be accepted is Article 92(3)(c), which covers measures to facilitate the development of certain economic activities. The State aid in this case relates to an environmental objective. The Commission has accordingly assessed the project in the light of the Community Guidelines on State aid for environmental protection. If the aid meets the criteria laid down in the Guidelines, it can, under the derogation provided for in Article 92(3)(c) of the EC Treaty, be considered to be compatible with the common market.

(31) The Commission notes that the notified aid is to be granted to help reduce $CO_2$ emissions, which is an important objective of the Community ([1]). Carrying out the project will substantially reduce the amount of $CO_2$ emitted and will also bring considerable energy savings and reduce other harmful emissions such as $SO_2$ and NOx.

(32) There are not as yet any national or Community mandatory standards requiring firms to reduce their $CO_2$ emissions. Consequently, the aid comes under heading 3.2.3.C of the Community Guidelines mentioned in point 16 ('Aid in the absence of mandatory standards'). Under heading 3.2.3.C of the Guidelines, firms undertaking investment that will significantly improve on their environmental performance are eligible for aid. The Commission notes that the project is to cut $CO_2$ emissions by 260 000 tonnes a year. The Commission takes the view that this is a significant improvement in environmental performance and that the result is sufficiently substantial to meet the criterion set out in 3.2.3.C.

(33) Point 3.2.1 of the Community Guidelines stipulates that the eligible costs must be strictly confined to the extra investment costs necessary to meet environmental objectives.

([1]) COM(97) 481 final: 'Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions — Climate Change — The EU Approach for Kyoto'; SEC(1998) 615: Energy policy options for responding to the climate change challenge: towards the definition of a 'post-Kyoto energy policy strategy'.

(34) The Commission's doubts regarding the way in which the Netherlands had determined the amount of eligible investment costs were the reason why the proceedings were initiated. The Commission's comments focused in particular on the way in which account had been taken of electricity production and of replacement costs. In its reaction to the initiation of proceedings, the Netherlands presented a new approach for determining the eligible costs. As was described in section V, total electricity production is separated from the project in the new approach. Investment in new production capacity is not eligible under the environmental guidelines. It is normal Commission practice to separate costs for new production capacity from eligible costs. The Commission takes the view that, through the exclusion from the total investment amount of the investment cost relating to electricity generation, an appropriate correction has been made to determine the eligible costs. The Commission therefore considers that the costs incurred in extending electricity generation capacity by 70 MW, namely NLG 43,9 million (around EUR 19,9 million), are not eligible.

(35) In the new approach, the Netherlands has made a correction to the eligible investment amount by taking account of the benefit stemming from the operating costs of the heat section as compared with conventional generation. The Commission takes the view that this correction of NLG 2,6 million (around EUR 1,2 million) by the Netherlands is appropriate. The future benefit does not exert any pressure on the investment burden, and a correction is therefore necessary in order to determine the actual extra investment. In calculating this benefit, the Netherlands has taken account of the current reference rate stipulated by the Commission and has based its calculations on gross amounts — pre-tax amounts — as was requested by the Commission in its letter of 13 July 1998. The actual amortisation period has also been taken into account.

(36) With regard to the replacement costs, the Netherlands argued, as was noted in points 22 and 23, that a correction was not necessary. However, the Commission takes the view that it is in fact necessary to take account of the replacement costs of a conventional unit. The Commission's normal practice is to calculate the amount of extra investment costs by comparing the environmental investment with the costs of establishing similar production capacity using conventional technologies. The fact that the capacity of the old plant is being maintained as a back-up for breakdowns or maintenance periods for the gas turbine integrated with the refinery process, is of no relevance. In fact, the new plant will be inseparably linked to the refinery process and will account for 40 % of the heating of crude oil and 10 % of steam production. Only in the event of breakdown or maintenance will the old plant be used. What is clearly involved, therefore, is functional replacement by modern equipment. The fact that the old equipment is being maintained as a back-up is not relevant. The Commission therefore considers that, in this situation too, a correction must be made for the costs that would be incurred in the event of the replacement of the crude-oil heating capacity and steam production by conventional equipment.

(37) The replacement costs of the furnace by a conventional one — applying a replacement ratio of 40 % and taking account of the extra maintenance costs for the old furnace — amount to NLG 3,8 million (around EUR 1,7 million) [1]. According to the Netherlands authorities, the replacements costs of the steam-production — of equal size of the capacity of the new installation — by a conventional boiler amounts to NLG 5 million (around EUR 2,26 million). The total correction for these replacement costs amounts therefore to NLG 8,8 million (around EUR 3,9 million).

(38) Correction of the total investment amount as regards the abovementioned points gives the following:

*(Million NLG)*

| | |
|---|---|
| Total investment costs | 93,0 |
| Correction for electricity generating capacity | – 43,9 |
| Correction for benefits as regards lower variable costs | – 2,6 |
| Correction for replacement costs | – 8,8 |
| Extra investment costs | 37,7 |

[1] To determine the replacement cost, 40 % (the replacement ratio, i.e. the heating capacity of the crude oil of the new installation related to the capacity of the old installation) of the costs of replacement (NLG 15 million) of the capacity of the old installation by a conventional one has been taken into account. Furthermore, 40 % of the extra maintenance costs of the old installation has been taken into account by taking the discount value of the annual amount of the real maintenance costs (NLG 0,56 million) over a period of 15 years with a reference rate of 5,5 % resulting in an amount up to NLG 2,2 million. The Commission considers the latter correction here appropriate, since the old equipment must be maintained as a back-up, partly because of the experimental nature of the integrated gas turbine, resulting in extra maintenance costs. Therefore, the total replacement costs of the ovens can be determined up to NLG 3,8 million (around EUR 1,7 million). The replacement costs of the steam capacity (corresponding with 10 % of the steam production) by a conventional steam unit are NLG 5 million (around EUR 2,26 million). Therefore, total replacement costs are NLG 8,8 million (around EUR 3,9 million).

(39) The remaining costs of NLG 37,7 million (around EUR 17,14 million) are, in the Commission's view, to be regarded as extra investment costs that are incurred solely for environmental objectives. Under heading 3.2.3.C of the Community Guidelines mentioned in point 16, aid for investment intended to achieve a higher level of environmental protection in cases where there are no mandatory standards may be authorised up to a maximum of 30 % of the eligible costs. The Commission can therefore authorise aid of NLG 11,31 million (around EUR 5,14 million).

(40) It should be noted in conclusion here that the Commission generally takes a very positive view of CHP plants [1]. Heat and power exchange is designed to take place in the integrated gas turbine. The fact that this equipment is being employed for the first time on such a scale is a positive factor in the Commission's assessment. The fact that no comments were forthcoming from third parties strengthens the Commission in its view in this case that trade will not be affected to an extent contrary to the common interest.

## VII. **CONCLUSION**

(41) The notified aid falls within the scope of Article 92(1) of the EC Treaty. In the Commission's view, aid amounting to NLG 11,31 million (around EUR 5,14 million) is in this instance compatible with the common market. Aid of NLG 11,31 million (around EUR 5,14 million) can therefore be authorised on the basis of Article 92(3)(c) of the EC Treaty and Article 61 (3)(c) of the EEA Agreement, given that the aid is in line with the Community Guidelines on State aid for environmental protectiont [2],

HAS ADOPTED THIS DECISION:

*Article 1*

The State aid which the Netherlands is proposing to grant to the Nerefco project, in respect of a process-integrated gas turbine, amounting to NLG 15 million, subsequently reduced to NLG 13,91 million, is, pursuant to Article 92(3)(c) of the EC Treaty and Article 61 (3)(c) of the EEA Agreement, compatible with the common market up to a maximum of NLG 11,31 million. The part of the proposed aid that is in excess of NLG 11,31 million is incompatible with the common market and may not be granted.

The granting of this aid measure to an amount of NLG 11,31 million is therefore authorised.

*Article 2*

This Decision is addressed to the Kingdom of the Netherlands.

Done at Brussels, 30 March 1999.

*For the Commission*

Karel VAN MIERT

*Member of the Commission*

[1] COM(97) 514 final, Communication of the Commission of 15 October 1997, 'A Community strategy to promote combined heat and power (CHP) and to dismantle barriers to its development'.

[2] OJ C 72, 10.3.1994, p. 3.