

UNITED NATIONS DEVELOPMENT PROGRAMME



UNDP

Distr.
GENERAL

DP/438
2 April 1980

ORIGINAL: ENGLISH

GOVERNING COUNCIL
Twenty-seventh session
June 1980
Agenda item 7 (j)

OTHER FUNDS AND PROGRAMMES

ENERGY FUND FOR EXPLORATION AND PRE-INVESTMENT SURVEYS

Proposal of the Administrator

Summary

This document proposes the establishment of an Energy Fund for Exploration and Pre-Investment Surveys to help stimulate capital-intensive, high-risk petroleum exploration and the development of alternative conventional and new and renewable sources of energy. The proposal responds to recommendations of numerous international fora that the United Nations System urgently increase assistance in the energy sector.

The Fund would serve two objectives: (a) to undertake petroleum exploration surveys, exclusive of drilling; and (b) to investigate other sources of conventional and new and renewable sources of energy. The Fund's expenditures on petroleum surveys would be recovered at least partially from the proceeds when the participating Government, pursuant to its agreement with the Fund, sells the findings to public and private petroleum companies. Expenditures for non-petroleum energy sources would be repaid, to the extent feasible, by the Government or private entity which exploits the resource.

The Fund would be managed by the Administrator using the existing administrative machinery of the United Nations Revolving Fund for Natural Resources Exploration (UNRFNRE) and would be advised by the same Joint Operations Group comprising representatives of UNDP, the United Nations and the World Bank. Its activities would be complementary to and supported as appropriate by projects financed under country programmes and by the Interim Fund for Science and Technology for Development. No additional staffing requirements are envisaged at this time. The Administrator proposes to explore the eventual absorption of the Fund into the operations of UNRFNRE.

I. INTRODUCTION

1. Various international fora both within and outside the United Nations System, (most recently the Independent Commission on International Development Issues) 1/ have stressed the need for urgent increased assistance to developing countries faced with ever-increasing difficulties in meeting their energy needs.
2. UNDP has long provided assistance in the field of energy, notably with regard to petroleum, hydropower and coal, but also with respect to new and renewable sources of energy, such as geothermal, peat, biomass and solar energy. However, the UNDP country programmes of the lowest income developing countries suffering the most serious energy problems rarely include pre-investment energy surveys because these are characterized by both a high cost and a high degree of risk. Nevertheless, numerous opportunities do exist in the developing countries for the exploration of both conventional and new and renewable sources of energy and the potential economic viability of many of these unproven resources has increased in the light of rising costs of imported fuels.
3. In the petroleum sector, UNDP has supported projects involving legislation and negotiations; establishment or strengthening of national petroleum companies or specific units thereof such as drilling, production (including enhanced oil recovery), research and refining; and training in all related specialized disciplines. Only occasionally has it been involved in petroleum exploration and, since the introduction of country programming in 1971, scarce UNDP resources have been applied to the lower risk and less expensive, non-exploration aspects of the petroleum sector outlined above. An additional constraint to petroleum exploration is that developing countries, particularly the low-income countries, are often reluctant to incur additional public debt in respect of costly, high-risk exploration.
4. Similar considerations have limited UNDP's survey activities in other forms of conventional and new and renewable sources of energy. Prior to the introduction of country programming in 1971, UNDP (and its predecessor the United Nations Special Fund) had initiated three large-scale geothermal energy projects which included the funding of drilling operations. However, since 1971, UNDP funding for drilling has been requested for only one geothermal project, although in two others, funds were made available for that phase either by a multilateral lender (European Economic Commission) or by the Government itself. In the field of hydroelectric power, the number of large-scale projects has declined substantially in recent years. In the area of new and renewable sources of energy, only a few large-scale pre-investment projects are in operation.
5. Limitation of funds for exploration for natural resources led to the establishment in 1973 of the United Nations Revolving Fund for Natural Resources Exploration (UNRFNRE) 2/ . The founding resolution provided for mineral, ground-water and energy exploration; however, in practice, the mandate was limited by

1/ North-South: A Programme for Survival, The Report of the Independent Commission on International Development Issues under the chairmanship of Willy Brandt, pps. 163-171, see in particular recommendations on page 171.

2/ General Assembly resolution 3167 (XXVIII) of 17 December 1973 and Economic and Social Council resolution 1762(LIV) of 17 May 1973.

the Operational Procedures and Administrative Arrangements 3/ which specify that, because of the high cost of certain types of exploration, "..... the Fund should concentrate its activities during the initial stages on exploration for solid minerals" and noted that a different replenishment formula would be needed for UNRFNRE to embark on surveys for geothermal energy and petroleum.

6. Since the founding of UNRFNRE, the needs for technical co-operation in the energy field have changed radically. The Administrator in 1979 conducted a survey, through Resident Representatives, on conventional energy, non-conventional energy and energy conservation 4/. The findings confirmed, inter alia, that many countries have either unproven or insufficiently proven prospects for the occurrence of petroleum or of partial substitutes for petroleum such as coal, lignite, peat, geothermal energy or hydropower, and that many have the potential for the occurrence and development of other new and renewable sources of energy. The survey also showed that there is a need for a comprehensive approach to planning the development and use of non-conventional sources, but that there exists a severe shortage of basic data for this purpose.

7. To meet these needs in part, the Administrator recommended 5/ to the Governing Council at its twenty-sixth session that UNRFNRE be authorised to provide assistance in the pre-drilling phases of petroleum exploration and in evaluation or up-dating existing petroleum survey data. The Council took no action at that session, and the matter will not be taken up again until 1981 when the working group of Government experts, appointed by the Secretary-General in consultation with the Administrator 6/, has reviewed the activities of UNRFNRE.

8. The World Bank, following an assessment of the requirements for petroleum exploration and development 7/, has embarked on a broadly based lending programme in the field of petroleum exploration, including surveys. It has estimated that lending for this category alone might reach \$70 million to \$90 million during the year beginning in July 1980. The programme includes technical assistance with petroleum legislation and negotiations and the strengthening of national institutions.

9. The Administrator believes that there is an urgent need and considerable scope for additional funding for pre-investment survey activities which would complement the World Bank programme:

(a) For petroleum in those low-income countries which may not be in a position to incur additional debts, and in those which are not members of the Bank;

(b) For other energy resources, including new and renewable energy sources, and,

3/ See document DP/142.

4/ See DP/437.

5/ See DP/368.

6/ See Economic and Social Council resolution 1979/65 and General Assembly resolutions 34/201 and 34/109.

7/ See document E/1979/73.

- (c) For intercountry and regional surveys of energy resources.

He believes additional funds are needed for this specific purpose because sufficient financial resources are not available to UNDP for increased activities in this high cost and high risk sector. In consideration of both the difficulty in obtaining additional funds and of the benefits accruing from successful projects to individual recipients, he believes that projects financed from such a fund should be executed on a conditional reimbursible basis which is not possible with present legislation covering IPF-funded projects. The constitution of a new financial facility would be without prejudice to the outcome of either the intergovernmental experts' review of the activities of UNRFNRE or the United Nations Conference on New and Renewable Sources of Energy. It should be viewed as a temporary expedient to permit immediate response to developing countries' urgent needs and would be reviewed in the light of the recommendations of the Conference and the review of UNRFNRE. An urgent need is also seen for comprehensive national energy planning as an important means of identifying opportunities and priorities, but UNDP assistance for this work should normally be funded from the national IPFs.

II. PROPOSAL FOR AN ENERGY FUND FOR EXPLORATION AND PRE-INVESTMENT SURVEYS

10. The Administrator ^{8/} recommends that the Council consider establishing, on an interim basis, an Energy Fund for Exploration and Pre-investment Surveys within UNDP to finance pre-investment surveys, exploration and demonstration projects which:

- (a) Have the potential to attract large-scale investment from public or private, internal or external sources, or a combination of these, for further exploration, development and/or exploitation of the resource concerned;
- (b) Have the potential to make a major contribution to a developing country's energy resource situation; and
- (c) Cannot be financed from other sources, including the World Bank.

11. The Fund would have two components:

(a) In the petroleum sector, exploration activities would produce survey data which the Government could use to attract investment from public and private sources which have the technical and financial capacity to move into the exploration drilling, development and production phases. Costs of the exploration surveys would be reimbursed to the Fund by the Government from the sale of the survey data to such interested investors;

(b) In the case of alternative conventional and new and renewable energy resources, the Fund would undertake pre-investment survey, assessment and demonstration activities, up to and including the pre-feasibility stage. The Fund's expenditures on individual projects would be recovered as far as possible from the Government or other financial sources which invest in the exploitation of the resource uncovered by a successful project.

^{8/} The Administrator has held informal discussions with several potential contributors who have indicated an interest in this proposal.

Petroleum surveys component

12. The petroleum surveys component would finance the execution of airborne magnetometer surveys over land or sea; marine seismic surveys; land seismic and other geophysical surveys; and re-interpretation, including reprocessing, of existant exploration data. While the magnetometer surveys would be executed mainly to localize specific areas for seismic surveys to be financed subsequently by the Fund, other activities would produce data as the basis for investment decisions by public or private petroleum interests to carry out further exploration, including the drilling and subsequent development phases. The Fund's activities would aim to create conditions that are competitive yet equitable to the parties concerned. Land seismic surveys would be executed only on a very selective basis during the initial years of the Fund's operations because of their complexity and high cost.
13. In view of the World Bank's lending programme in the petroleum sector, it has been mutually agreed that the Fund's activities under the petroleum component will be concentrated in low-income countries having a per capita GNP of less than \$500, since those having a larger per capita GNP are in a position to receive similar assistance under loan terms from the Bank. The net positive effect of this agreement is an increase in the flow of non-loan resources to the low-income countries. The Fund would also be open to requests from states not members of the World Bank system and to regional projects.
14. The Fund would finance petroleum surveys in areas selected in consultation with the Government concerned after a thorough review and evaluation of all existing data had confirmed their possible petroleum potential. The surveys would be undertaken at the risk of the Fund. The survey's findings would become the property of the Government, which, in the normal case, would agree to sell them under competitive conditions to public or private sector petroleum companies. The Government would return the gross proceeds of the sale to the Fund, irrespective of the amount actually spent by the Fund on the individual project. In this manner, successful projects (i.e. those generating substantial investor interest) would compensate for less successful projects; and the sales' proceeds would permit the Fund to continue operations in other areas or countries.
15. Special repayment arrangements would need to be made with individual Governments in respect of regional projects and in those cases where a Government wishes to reserve to itself or to its national petroleum company the exclusive right to follow up the survey's results. In such cases, repayment to the Fund would be subject to negotiation.
16. The creation of the Fund would serve to further disaggregate the petroleum exploration process into stages which would be funded from the most appropriate source at each stage - i.e. the IPF system (as required), the Fund, and finally, a capital source such as the World Bank and/or private or national petroleum companies. In this progression of funding - from grant through reimbursible grant to loan or equity participation - the risks decrease as the requirements for funding increase and as the source of funds shifts from international organizations to public or private petroleum interests. This progression is logical, given the high cost of petroleum exploration, the scarcity of development assistance funds and the nature of the petroleum industry.

17. The period of time for which funds would need to be committed under the petroleum component of the Fund would be quite short. For example, funding would be needed for about one and one-half years for marine seismic surveys. With an initial funding of \$30 million, 20 such surveys could be operational simultaneously, assuming an average cost of \$1.5 million per survey although, as noted above, land surveys would cost considerably more. Some need for re-financing, perhaps on the order of \$2 million annually, might develop, but requirements would have to be determined, based on operational experience.

Non-petroleum component

18. The second component of the Fund would finance pre-investment assessments (up to and including the pre-feasibility stage) of non-petroleum energy resources which require large capital investments for their development. Conventional and new and renewable sources of energy to be assessed would potentially include: carbon 9/ (coal, lignite, peat), nuclear 9/ (uranium), geothermal (including exploration drilling), oil shales, tar sands, and large to medium-scale hydro-electric. Other new and renewable sources of energy, such as biomass, solar, small-scale hydropower, wind and waves, would also be investigated through surveys, demonstrations and small pilot plants.

19. In selecting projects in the area of new and renewable sources of energy, the Fund would pay particular attention to:

- (a) Projects that have been identified in a country's energy plan; and
- (b) Projects whose results could have application in other countries having similar resource endowments.

The survey mentioned in paragraph 6 above has identified a number of opportunities of this kind.

20. The Fund's costs of a given project in the non-petroleum component, plus reasonable interest, would be reimbursed by the Government in convertible currency through the loan or other investment contract entered into by the Government for financing subsequent development of the resource.

21. Surveys in the non-petroleum component of the Fund would take a longer time to generate investment (up to five years, depending on the energy source) and the Fund would need to be replenished for projects that did not lead to investment. Financial requirements are estimated to be about \$10 million annually for three consecutive years, with a \$5 million annual replenishment thereafter.

Provisional operational criteria

22. The aim of the Fund is to increase developing countries' self-reliance in energy and reduce their related balance of payments deficits. The selection of projects will be based on a thorough appraisal of, inter alia, the following factors:

9/ Carbon and uranium resource surveys can, in principle, be financed by individual UNDP country programmes and the UNRPNRE, but there is likely to be a need for additional financial resources.

- (a) The project's potential for alleviating a country's energy constraints;
- (b) The technical and financial soundness of the project;
- (c) The severity of the country's energy situation;
- (d) The ability of the country to attract conventional exploration investment on equitable terms;
- (e) The Government's commitment to the project in terms of administrative, logistical and legislative support;
- (f) The Government's stated priority for energy development and its commitment of IPF resources in support of the project; and
- (g) Finally, in relation to the petroleum component, the Fund's activities would, in view of the World Bank's programme, be concentrated in countries having an annual per capita GNP of \$500 or less, non-Bank member states and regional projects.

23. The Fund is not intended to substitute for other financial resources which might be available to developing countries, including those of the World Bank, the regional development banks or bilateral sources, but rather to supplement these in a mutually supportive fashion. This could involve co-financing. Resources from the IPF of the country concerned might be required for the approval and initiation phase, supervisory activities and follow-up after completion of the work financed by the Fund. The IPF or, as appropriate, the Interim Fund for Science and Technology for Development could finance the necessary research, technology transfer, training and technical development.

Administrative arrangements

24. The principal partners in the Fund would be UNDP, the World Bank group and the United Nations (in particular the Department for Technical Co-operation for Development (DTCO)). The Joint Operations Group of the three organizations which was set up to oversee the operations of the UNRFNRE would oversee the energy Fund, with appropriate technical representation in the field of energy. Consultations would be held with other organizations of the United Nations System on projects related to their particular fields of competence, as appropriate. The association of the World Bank is important both in view of its parallel programme in petroleum exploration and as a potential source of follow-up finance in line with its programme for expanded lending in the petroleum sector and its interest in broader energy activities.

25. The Joint Operations Group would recommend to the Administrator projects for financing by the Fund. The Administrator, if so authorized by the Council, would approve projects up to a limit of \$2 million. He would refer projects to the Council for approval when they exceed \$2 million, or entail special considerations even though falling below this limit. He would report periodically to the Council on the status of approvals and the Fund's financial resources.

26. The Fund would not require additional resources for its administration initially, since use would be made of the existing administrative machinery of the UNFFNRE and the existing staff capacity and contracting facilities of UNDP augmented, as required, by the technical staffs of the Department of Technical Co-operation for Development or the World Bank, or consultants. When specific additional resources are required for administration of the Fund, appropriate arrangements would be made to reimburse the costs from the Fund's resources once the Fund becomes operational. These costs would not exceed 2 per cent of the Fund's disbursements on projects. Costs for consultants and World Bank or United Nations staff used in the appraisal or development of individual projects would be financed either from the IPF or from the resources of the Fund, and subsequently charged to the resulting project.

III. DRAFT DECISION

27. After consideration of this report and the details of the proposal of the Administrator, the Council may wish to consider a decision along the following lines:

The Governing Council,

1. Authorizes the Administrator to establish on an interim basis an Energy Fund for Exploration and Pre-Investment Surveys comprised respectively of components for petroleum exploration surveys and for pre-investment surveys on capital-intensive non-petroleum energy;
2. Requests the Administrator to seek, and authorizes him to accept, for this purpose, voluntary contributions from member Governments, multilateral assistance organizations and private sources aimed at reaching within three years a target of \$60 million, with annual replenishment thereafter of \$7 million;
3. Emphasizes the importance of using the Fund to augment and complement activities within country programmes funded from Indicative Planning Figures and other sources, including the Interim Fund for Science and Technology for Development;
4. Further authorizes the Administrator to approve projects up to a limit of \$2 million per project which meet the criteria identified in DP/438, paying due regard to the principle of equitable geographic distribution of projects, and with the condition that projects which, in his judgement, have special considerations and those exceeding \$2 million in cost, should be presented to the Council for approval;
5. Decides that the costs to the Fund of individual projects will be recovered to the extent possible:
 - (a) In respect of petroleum exploration surveys, by payment in convertible currency to the Fund by the Government of proceeds realized from the sale of exploration data generated by the Fund's intervention;

(b) In respect of non-petroleum projects, by payment to the Fund in convertible currency by the Government of the expenditures plus interest thereon, if and when development of the project's findings takes place;

6. Further requests that it be informed at its twenty-eighth and subsequent sessions on the progress made in implementing this decision, including information on the level of contributions, approvals, expenditures and general financial status of the Fund;

7. Decides to review at its twenty-ninth session the Energy Fund for Exploration and Pre-Investment Surveys taking into account: (a) the Council's own examination of the activities of the United Nations Revolving Fund for Natural Resources Exploration, including the question of the possible incorporation of the new Fund into UNRFNRE; and (b) such recommendations in respect of funding energy development as might be made by the United Nations Conference on New and Renewable Sources of Energy.

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