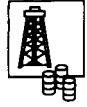


OIL & GAS TECHNOLOGY



THERMIE PROGRAMME: promotion of energy technology in Europe

EXPLORATION remains an important area where improvement of technology can be achieved through promotional activities.

European Community-supported projects have confirmed this with projects enhancing signal processing and developing software for a more integrated interpretation.

In the framework of the new THERMIE programme, the last Commission decision for 1991 has allocated ECU 4.8M - 22% of the

EDITORIAL

total amount granted to the hydrocarbons sector - to projects in this technical discipline.

The reported decline in hydrocarbons production in the states of the former USSR underlines the importance of developing improved exploration methods to find new reserves, and to exploit existing ones more efficiently.

The forthcoming EC Berlin Symposium on Oil & Gas Technology in a Wider

Europe (see page 3) will focus on the latest technologies for the exploration, production and transport of oil and gas developed in Community states, and will address the theme of the transfer of technologies outside the EC.

There is much potential for the THERMIE programme to assist Community enterprises to penetrate new markets, while still offering support to them in their efforts towards application of their technology in the North Sea.

New software to improve identification of Spanish commercial gas reservoirs

AN INTERACTIVE exploration software package to study seismic attributes and reservoir quality in shallow gas fields is being developed by Pydhesa, a Spanish company, to raise drilling success rates. Its first use will be in the Guadalquivir Tertiary Basin of Southern Spain.

Pydhesa claims that using exploration techniques first developed in the 1980s, gas is discovered every time a well is drilled in

a seismic prospect, although the probability of finding a *commercial* gas accumulation is only 50%, due to variability in the reservoir (deep marine turbidite sands) quality.

The current project to enhance identification of commercial reservoirs will use all available data: well log information, core analysis, geological and test data, integrated with the seismic data and seismic-derived attributes.

EC supports energy technology transfer to Central and Eastern Europe

FIVE MILLION ECU have been allocated by the European Commission from its 1991 budget, under the THERMIE programme, to finance energy technology transfer to Russia, the Ukraine, Byelorussia, the three Baltic republics, Poland, Czechoslovakia, Hungary and Bulgaria.

The main thrust will be towards energy efficiency, with the first concrete measures probably taken this winter. Other areas covered will be the clean use of coal, better utilisation of oil and gas, and the development of renewable energy sources.

The extension of the Commission's energy technology promotion activities to the countries of central and eastern Europe will involve members of the OPET (Organisations for the Promotion of Energy Technology) network, which has been enlarged as a result of this decision (see page 4).

Greek hydrocarbon data to be re-assessed

THE POTENTIAL of hydrocarbon bearing formations of the greater Epanomi area, which lies 30km south of the city of Thessaloniki in Northern Greece, is to be redefined by Greek company DEP-EKY through a new study of the internal structure and fluid distribution in the tight carbonate reservoirs of the area.

This will be accomplished by geological analysis, re-processing and special processing of selected seismic data, and by attempting to construct a geological model.

The geological part of the investigation will attempt (a) to identify reservoir heterogeneities, (b) to determine useful indicators for the carbonate environment

and surrounding formations, and (c) to examine relationships between diagenesis and reservoir rock development.

The geophysical element of the project will involve re-processing and special processing of data on about 200 line kilometres of seismic data, followed by seismic inversion and interpretation.

A final evaluation and synthesis of all results will follow.

The EC is supporting this dissemination project, which commenced in March 1991, and is to run for two-and-a-half years, by contributing ECU 500,000; amounting to approximately 35% of costs.

Commission of the European Communities
Directorate-General for Energy



C.E.E. xvii/27

Modelling and monitoring: Caring for the offshore ecosystem

AN INTEGRATED SYSTEM of modelling and monitoring discharge water from offshore oil and gas production platforms is being constructed under a Dutch-Norwegian research project, which brings together twelve partners.

Discharges from offshore platforms contain more than just oil. They also comprise chemicals and oil-contaminated solids such as inhibitors, drilling mud and household sewage.

These different pollutants act in different ways: oil may form slicks on the surface, while other matter remains suspended in mid-ocean or sinks to the bottom.

A model solution

The project involves a review of existing software for modelling the behaviour of discharges - not only in the immediate vicinity of the platform, but also up to 100 kilometres away. Measurement techniques, necessary to calibrate these models, will also be investigated for use on rigs, in the open sea, on the sea bed and - by remote methods - on the surface. The most appropriate methods will be selected for improvement and brought together to form an integrated system.

Water quality is to be measured directly at the platform, and the spread of the discharge will then be simulated according to the computer model that has been created. The number of sensors required will depend on the accuracy demanded.

The system will simulate water movement, the transport of material, chemical and biological processes, and their effects; and will allow the modeller to sit at a computer screen and simply manipulate the various parameters to find out what will happen.

It will predict, for example, the time taken for a pollutant to be degraded by the ecosystem. The monitoring system will also allow provision of an automatic discharge warning system for use on the rigs.

Regulatory approval

As potential future users of the technology, NAM, Statoil, Conoco and Saga took the initiative for the project. Project work, especially the modelling, is to be led by OCN with support from Delft Hydraulics and TNO, and the Norwegian partner OCEANOR.

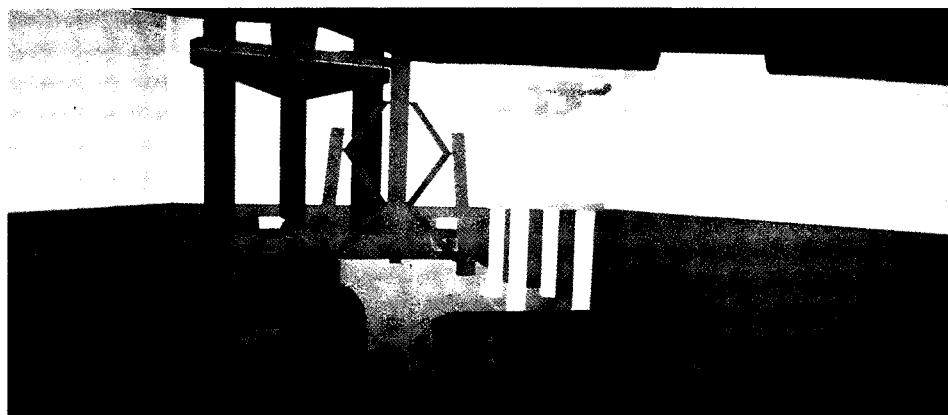
OCEANOR will carry out the monitoring part of the project, while overall project coordination will be by IRO.

Since it is crucial that the system is not

only used by the operators in planning for environment-friendly design and operation, but is also accepted by the authorities, the regulatory agencies from both countries are involved in the project as observers.

A prototype to demonstrate the use of an operational modelling and monitoring system is under development, and the total package is expected to be on the market by the end of 1993.

Danish Maritime Institute extends simulator



Real-time simulation of the operation to position the barge ready for platform lift-off is invaluable for planning and training

EXTENSION of its offshore simulator facility has been developed by the Danish Maritime Institute, in cooperation with, and supported by, Maersk Oil and Gas AS.

The simulator has frequently been used for the training of personnel involved in tow-out operations of Norwegian gravity platforms, eg Statfjord, Oseberg, Gulfaks A, B, C and Draugen.

Technical advances now allow simulation of motion in all six degrees of freedom, all effects of waves, wind and current, and visualisation of roll/pitch motions on the large graphic screens.

Maersk Oil and Gas subsequently applied the system to the planning and training of the Dagmar field STAR platform tow and positioning.

Since the platform was to be lifted by the jack-up drawworks, barge positioning between the jack-up legs was critical and characterised by small tolerances. At the same time, evaluation of the STAR top motions was essential to ensure the success of hook connections and lifting.

The result of real-time simulations undertaken by the professional tug masters and operational managers was presented in an operations catalogue showing effective tug handling and coordination.

It was decided to rearrange the tug attachment points at an early stage in the simulations; and subsequent fast-time simulations provided full statistics of barge motions, including at the moment of lift-off.

STAR satellite platform installed in Dagmar Field

THE FIRST STAR PLATFORM was installed at DUC's Dagmar Field in the North Sea by the Danish company Maersk Oil and Gas AS during late summer 1990 followed by hook-up and production start by June last year.

The STAR (Slim Tripod Adopted for Rig) project was initiated in order to install the platform jacket and topside module using the jack-up drilling rig which is already mobilised and in position for drilling the wells, and thereby eliminate the use of expensive cranebarges for installation of satellite wellhead platforms.

The requirement to use a drilling rig for

the installation has resulted in a new jacket design and introduced certain limits to the weight and dimensions of the topside module.

Handling and installation of the 75m long piles can now be carried out entirely by the jack-up rig by means of a special patented pile chute system on the jacket.

The use of the jack-up rig, already available for drilling the wells, means that installation of the jacket and topside can be carried out at any time between drilling of the individual wells. As a result, major savings in costs and time can be achieved in the development of satellite fields offshore.

CONFERENCE DIARY

Natural Gas Policies and Technologies

Vilamoura, Portugal • 2-3 April 1992
and
Athens, Greece • 14-16 October 1992

IMPORTANT ISSUES relating to the promotion of natural gas technologies and their impact on society and the environment are to be examined this year in a two-part conference, under one title, and organised by the European Commission in its THERMIE programme.

The first conference is to be held in Vilamoura, the Algarve, and will partly coincide with the informal meeting there of EC Energy Ministers on 3 and 4 April. This conference will discuss:

- * The establishment of the internal market in the natural gas sector.
- * The Community's policy regarding natural gas supplies.
- * The improvement of economic and social cohesion arising from the introduction of natural gas.
- * Encouraging a dialogue between consumers and producers.
- * Protection of the environment and the implications for gas.
- * Compliance with the energy policy targets of the Community.
- * The identification of key problems when a country or region is introducing natural gas.

The Commission is assisted by an Honorary Committee which consists of the following members: Chairman CS Maniatopoulos, Director General for Energy, Commission of the European Communities; Dr AHP Grotens, President of Gasunie; Mr F Gutmann, President of Eurogas and President of Gaz de France; Dr C Liesen, President of Ruhrgas;

Dr L Meanti, President of SNAM; Mr C Miguens, General Director of the Portuguese Ministry of Energy; Mr W Ricardo, President of Gas de Portugal.

For first conference details contact:

Mr JP Scheins
 Conference Techniques and Organization Unit
 Rue Froissart 36, B1040 Brussels, Belgium
 Tel: (32) 2 235 8905 - Fax: (32) 2 235 3736

The second conference will be held in Athens, Greece, and will:

- * Present the latest European technologies in the natural gas sector.
- * Underline the contribution of natural gas toward environmental protection and the rational use of energy.
- * Stimulate the exchange of experience between international and local manufacturers to create joint ventures in novel technologies and equipment.
- * Promote market penetration of natural gas technologies.
- * Facilitate the transfer of appropriate technologies to developing countries.

The conference will give participants the opportunity to become familiar with the most recent technological advancements in natural gas and will help develop further dissemination strategies in Greece and other countries where natural gas has not yet penetrated the market to a significant degree.

For second conference details contact:

Mr S Pavlidis
 The Conference Organiser
 LDK Consultants
 7 Sp Triantafyllou Street
 Athens, GR 113 61, Greece
 Tel: (30) 1 862 9660 - Fax: (30) 1 861 7681

For further details please contact:

Mr IS Samouilidis
 Commission of the European Communities
 Directorate for Energy Technology
 226-236 Avenue de Tervuren
 B-1150 Brussels, Belgium
 Tel: (32) 2 235 0967/236 0832
 Fax: (32) 2 235 0150

Oil and Gas Technology in a Wider Europe

4th EC Symposium
Berlin, Germany
3-5 November 1992

THE LATEST TECHNOLOGIES for the exploration, production and transport of oil and gas developed in the member states of the EC are to be presented in a symposium entitled 'Oil & Gas Technology in a Wider Europe', during the period 3-5 November 1992.

The location of the symposium, in Berlin, underlines the Community's proximity to the new markets in the emerging democracies of eastern Europe. Strong emphasis will be placed on the transfer of technologies outside the EC and there will be invited participation from a delegation of key individuals from eastern Europe and the Commonwealth of Independent States (formerly the USSR).

To cater for differing fields of interest there will be four concurrent conferences as follows:

- Conference 1: Basins and Reservoirs
- Conference 2: Production Technology
- Conference 3: Operations & Structures
- Conference 4: Safety & Environment

In addition to the above there will be a special, half-day, plenary seminar on: Promotion of European Oil and Gas Technology: Prospects and Problems.

For further information and details on registration please contact:

The Symposium Secretariat: Oil and Gas Technology in a Wider Europe
 c/o The Petroleum Science and Technology Institute
 Dunedin House, 25 Ravelston Terrace,
 Edinburgh EH4 3EX, United Kingdom.
 Tel: (44) 31 451 5231 - Fax: (44) 31 451 5232

CONFERENCE REPORTS

Energy Technology Promotion: A Challenge for Europe
Brussels, Belgium
5-6 December 1991

MORE THAN 150 energy journalists from all over Europe were provided with information about the economic and social benefits of energy technology promotion programmes, and the most recent technical details of new energy technologies and their potential uses.

The conference, organised by the EC Directorate for Energy, focused on the general political and economic aspects of energy technology promotion, and gave inside news about technological developments. Debate covered the greenhouse effect, the introduction of the so-called

'green tax', and the signing of the European energy charter.

Further discussion took in the role of energy technology in helping to meet the major political challenges facing Europe today, the protection and improvement of the environment, the situation in the countries of Central and Eastern Europe and the former Soviet Union, completion of the Single European Market, and the economic and social cohesion of the European Community. 'The message is clear.' Mr Cardoso e Cunha, the Energy Commissioner, said, 'If we are to have any impact on these problems, we must strongly promote new, clean and efficient technologies in the energy sector.'

Deep Offshore Technology Conference and Exhibition

Monte Carlo, Monaco
4-6 November 1991

ACTIVE PARTICIPATION on the advisory board and at the conference itself, and a prominent stand at the small accompanying exhibition, marked the EC's presence at DOT 1991.

The Community stand attracted a great deal of interest from all of the delegates, including those from outside the EC. A healthy distribution of THERMIE information and other related publications ensured that the message was well received by those visitors who expressed a desire to learn more about the Community and its ongo-

ing programmes in the energy sector.

The final comment from all those who attended was one which intimated that the conference and exhibition were most worthwhile and that they, the delegates, would look forward to the next one with eager anticipation.

The OPET Network

THE COMMUNITY'S NETWORK of 35 member-state OPETs (Organisations for the Promotion of Energy Technology), which was created on 14 December 1990, is now completely operational, with 1,500 experts in energy-related fields helping to encourage innovation and offer advice on how industry, the transport sector, homes and offices can reduce energy consumption and cut pollution.

For the period July 1991 to June 1992, eight OPETs are specifically involved in oil and gas technology promotion activities. The corresponding programme involves a budget of ECU 1.5 Million.

OPETs will provide mailing lists of manufacturers and customers, database collection, publication of technical brochures, dissemination activities *etc.* They will also provide local support for the organisation of international conferences and seminars, exhibition participation, market assessments and technical workshops. This active Network will contribute to European technology transfer and promote improved efficiency and competitiveness, not only in the single market perspective but also on world markets, with special attention towards eastern and central European countries.

The OPET network can also give guidance or information on oil and gas matters, in particular for the small and medium sized enterprises.

The OPET is there to help and advise. For further information please contact the appropriate office.

OPET CONTACT DETAILS

EAB

Energie-Anlagen Berlin GmbH
Flottwellstr 4-5
D-1000 Berlin 30
GERMANY

Tel: (49) 30 254 96 121

Fax: (49) 30 254 96 100

Herr T Mierke

ECD

Energy Centre Denmark
Suhmsgade 3
DK-1125 Copenhagen K
DENMARK

Tel: (45) 33 11 8300

Fax: (45) 33 11 8333

Dr F Oster

EVE

Ente Vasco de la Energia
Edificio Albia 1
San Vincente, 8 - Planta 14
E-48001 Bilbao
SPAIN

Tel: (34) 4 423 5050

Fax: (34) 4 424 9733

Snr J L Pena

FAST

Federazione delle Associazioni
Scientifiche e Tecniche
Piazza le Rodolfo Morandi 2
I - 20121 Milano
ITALY

Tel: (39) 2 7601 5672

Fax: (39) 2 782 485

dott. R Gandolfi

GOPA

GOPA-Consultants
Hindenburgring 18
D-6380 Bad Homburg v.d.H.1
GERMANY

Tel: (49) 6172 30040

Fax: (49) 6172 35046

Herr F Sauter-Servaes

LDK

LDK Consultants, Engineers & Planners
7 Sp Triantafyllou Street
GR-11361 Athens
GREECE

Tel: (30) 1 862 9660

Fax: (30) 1 861 7681

Mr S Pavlidis

NOVEM

The Netherlands Agency
for Energy and the Environment
Swentiboldstraat 21
PO Box 17
NL-6130 AA Sittard
The NETHERLANDS

Tel: (31) 46 595 276

Fax: (31) 46 528 260

Mr W v Kampen

PSTI

The Petroleum Science
and Technology Institute
Offshore Technology Park
Exploration Drive
Bridge of Don
Aberdeen AB23 8GX
UNITED KINGDOM

Tel: (44) 224 706 600

Fax: (44) 224 706 601

Dr P Bigg

This Newsletter is produced by the Petroleum Science and Technology Institute for the Commission of European Communities.
For further information please contact:

Michael Pelling, PSTI, Offshore Technology Park, Exploration Drive, Aberdeen AB23 8GX, UK.

Tel: (44) 224 706 600 Fax: (44) 224 706 601