

INTRODUCTION

- 7.1 Hydrocarbons (oil and gas) are not extracted as a commercial energy mineral in the Plan area. But planning issues associated with exploration were significant during the 1980s and there may be further interest during the Plan period.
- 7.2 The geological process by which hydrocarbons are formed is relatively well understood. Oil and gas are generally thought to be produced by the decomposition of plant and animal remains deposited in sediments on the seabed, and subsequently buried by other sediments and subjected to great heat and pressure over millions of years. Over time the oil and gas migrate from the compressed sediments (the source rock) into and through more permeable strata, such as limestones and sandstones, and eventually much of it escapes at the surface. However, some becomes trapped beneath overlying strata of impermeable rock, and these trapped accumulations, or reservoirs, represent the oil and gas resources which are exploited today.
- 7.3 On-shore oil and gas finds in the UK have been on a small scale and generally at a depth of between 1000 and 3000 metres. Wytch Farm in Dorset, which is undergoing further development, is the largest on-shore reservoir currently being exploited in the UK. This and other smaller developments in the 'Wessex Basin' of southern England encouraged the oil and gas industry to include the Plan area within a favoured area for exploration for hydrocarbons in the 1980s. Natural gas was previously found at shallow depth in East Sussex. Between 1895 and the early 1960s it was used to light Heathfield railway station, following an accidental discovery during the drilling of a water well.
- 7.4 Whilst a detailed geological study can assist the process of discovery and, for example, in southern England has identified rocks of Jurassic, Permian and Triassic age as being potential oil and gas bearing formations, there are rarely surface indications that oil and gas may exist. Therefore, extensive geological exploration is necessary, and seismic survey is an essential first stage of this process. These surveys should identify those 'traps' where oil and gas may be located but its existence can only be confirmed by drilling an exploratory borehole.
- 7.5 About 1 in 10 exploratory boreholes locate hydrocarbons. Thereafter a process of appraisal, to determine the size, depth and characteristics of the potential reservoir, has to be undertaken. Only after that stage has proved successful can proposals for development be set in motion.

THE LICENSING FRAMEWORK

- 7.6 The licensing system for on-shore acreage administered by the Department of Trade and Industry is entirely separate from the statutory planning system. But planning permission is required for exploratory drilling and all subsequent

development. No exploration, appraisal, or development work for hydrocarbons can take place without the appropriate licence. These licences are granted for blocks of land on-shore to industrial companies or consortia, who then have exclusive right to search for, and produce, hydrocarbons within the licensed area. Details of the present licensing system are set out in Appendix 3.

- 7.7 From the mid 1970s, exploration licences were issued (under the previous licensing regime, which was somewhat different to that now in force) to cover virtually the entire Plan area, and this was followed by an intensive programme of seismic surveys. Licensed blocks were held primarily by consortia headed by four major companies - BP, Amoco, Carless and Conoco.
- 7.8 Ten planning applications were submitted for exploratory boreholes, following interpretation of the seismic data within individual blocks, between 1983 and 1987. These applications raised significant planning issues for the mineral planning authority, as five were in Areas of Outstanding Natural Beauty; accordingly three were refused. One refused site, at Martineau Lane, Hastings was replaced by a nearby location (Rock Lane, Guestling) which was permitted on appeal. A refusal of consent at a second site, at Coleman's Hatch in Ashdown Forest, was not contested. In total eight exploratory boreholes were drilled between August 1984 and November 1990, all of which were dry.
- 7.9 Following the fourth round of on-shore licensing in 1991, interest in the potential of the southern coastal strip has been abandoned, and with the exception of Amoco, the major companies have withdrawn. Licensed acreage is now largely held by smaller companies, who during the course of 1991 and 1992 repeated earlier seismic investigations over central, eastern and northern parts of the Plan area. None of the companies have yet progressed to further exploratory drilling.

FUTURE PROSPECTS

- 7.10 The environmental implications of oil and gas development differ from those arising from the extraction of other minerals. Deep drilling is a very temporary operation but can have short-term noise, traffic and visual implications, although experience in the past has shown these to be exaggerated. Furthermore, because a borehole has to be as close as possible to the crest of the underground reservoir being tested, there is often little scope in sensitive locations for selecting alternative sites.
- 7.11 Production of oil and gas, should this stage be reached, involves an industrial form of development. Although a gathering station or appropriate processing plant can be remote from a producing well, it has to be located within a reasonable distance, again leading to possible quite major planning problems.
- 7.12 Although the prospect of the development of a commercial field in the Plan area would appear from current evidence to be remote, further exploratory boreholes are possible. Experience elsewhere in the south of England indicates that any future discoveries are likely to be on a small scale; nonetheless, the planning issues need to be addressed.

POLICY 30 Proposals for oil and gas operations which meet the requirements of the Structure Plan policy on oil and gas development will normally be permitted provided they also meet the following criteria :-

- (a) the proposed location for the development is the most suitable taking into account environmental, geological and technical factors;
- (b) the scale and nature of any development should wherever practicable be compatible with the surrounding landscape;
- (c) there will be a preference for the use of derelict or under-used non-agricultural land for production facilities separate from a well-head, provided that the land is not of significant archaeological, geological, landscape or wildlife value;
- (d) proposals for appraisal or production should be supported by an overall scheme submitted to the mineral planning authority. The scheme should allow for the full exploration and appraisal of an oil or gas field together with any other fields in close proximity so far as it is reasonable and practicable before commercial production commences;
- (e) there will be a preference for the movement of oil and gas by underground pipeline from well-heads to a gathering station and from a gathering station to an export terminal and a preference for the movement of oil and gas by rail from an export terminal.