

next decade (a new licensing round in the British sector is planned for later this year). How commercial they prove to be will depend on their size, the ease of recovery and the closeness to existing fields (which should help transporting costs), as well as on the price of oil. Already there is a feeling in the oil industry that the plums of the North Sea have been picked.

In the short to medium term, oil and natural gas must inevitably play a dominant role in the EEC's energy use—around 64% of total use if the Community's plans come to fruition, a large proportion of these hydrocarbons coming from the North Sea. The importance of natural gas should not be underestimated—the EEC hopes to obtain at least 175 million tonnes of oil equivalent from member countries by 1985; if possible some 225 million tonnes. But what happens when these valuable resources start to dry up? It would be fanciful to predict that some of the more colourful ideas will fill the gap. True a lot of research is going into harnessing energy from waves, tides, the wind and the Sun. On paper many of these possibilities look attractive. For instance, the energy theoretically available from waves is immense—the equivalent to about 70 kW per metre on the Atlantic-facing coastline of Britain alone. The sheer cost and technical problems put such schemes well into the future, however.

Even if one adds in geothermal heat, which has received so much publicity recently, it is unlikely that these newer methods of raising energy will provide more than 6–8% of requirements by the end of the century—at least this is the conclusion of a Department of

Energy 'think tank' (Energy Technology Support Unit) set up in June 1974.

This, then, leaves nuclear power and the 'old faithful', coal, to fill any gap left by a fall-off in oil or gas; or at least to take up much of the energy growth over the next 25 years or so. In some ways this is a daunting prospect, for in Britain this implies an expansion by 20 times of the country's present nuclear capacity by the year 2000; daunting because it poses the problems of technology (which type of reactor should be used), lack of indigenous uranium resources, and public attitudes (the row in the UK over nuclear waste disposal cannot be ignored).

Looking further afield, on present projections nuclear power would need to provide the EEC with 16% of its energy requirements if the Community is to reach 60% self-sufficiency by 1985. This is a big leap from the 1.4% share provided in 1973. The more optimistic projections for the use of nuclear fuel put the amount of installed EEC capacity at 200,000 to 225,000 MW (electrical) by 1985 whereas even the ambitious national plans of member countries go no further than 160,000 MW.

All these problems highlight the folly of writing off the coal industry as outdated and unloved. The coal industries in both the UK and Germany are likely to be given a boost over the next few years. Britain, for instance, has just begun to plan for an expansion programme that could take its output back up to 200 million tonnes a year by the end of the century. (In the past decade output has fallen from that



Europe's Energy Commissioner,  
Henri Simonet

level to around 130 million tonnes a year.)

World resources of all types of coal have been estimated to be about 11 million million tonnes of which 700,000 million tonnes are known to be economically recoverable. But, coal or geothermal power, it is too early to assess with accuracy the relative importance of different forms of power even over the next decade. Policies are still emerging. But at least the industrialised world has learned the hard way that it must make the most of all available resources. It must be efficient in its use of energy, but above all it must be flexible. □

### Turkish poppy industry

## Straw cogs

*The results of Turkey lifting its ban on the cultivation of opium poppies may surprise the sceptics, argues Peter Collins*

THE Turkish Government seems to have scored a major success with its programme to control opium poppy cultivation and hence the illicit production of opium for the world's black market in drugs. Reporting on a visit to the poppy-growing areas at the harvest season, a United Nations official responsible for advising the Turkish government said that "no evidence could be found of opium production in Turkey in 1975". This should reassure those who may have had doubts about the Turks' ability to carry out their intentions, and confound certain United States senators and others who in 1974

foresaw America being flooded with heroin (the most dangerous opium derivative) when the Turks lifted their complete ban on opium poppy cultivation—a ban imposed largely because of pressure from the United States.

An important factor has always been that the Turkish farmers in the areas concerned have never grown poppies primarily as a source of opium, but rather for the seed and the oil derived therefrom which has traditionally been used as a normal part of their way of life. The Turkish government has prevented disruption of the local farming system by allowing the farmers to grow the poppies, though only on registered, and limited, areas. At the same time it has forbidden the lancing of the fruiting capsules, which must be done to get the opium. By harvesting the poppy straw (as the rest of the plant is called) as a monopoly, the government has also been able to continue supplying the world's pharmaceutical trade with the

raw material from which codeine, and hence various other materials, are extracted. All this has helped avoid a world shortage of codeine as well as cut off a potential source of illicit heroin.

No one expects a major programme like this to be a total success immediately. At least one of the problems raised could hardly have been foreseen. During an inspection tour of the growing areas, the UN team found that the government measures were if anything being too harshly applied. The areas that farmers had been allowed to sow were laid down in hectares, and a considerable number of farmers were found to have sown more than the area for which their licences allowed. The local farmers, it seems, think in terms of the dunum, an area which is actually slightly larger than the decare (1/10th of a hectare). Although this was a genuine mistake, understandable in a country where almost every region has

a local system of weights and measures, the law was extremely harsh on these men. Nor could any respite be obtained for them when the UN team pointed out that the excess area planted was in fact very small, and that officialdom as much as growers had made a mistake. The official argument has been that the arrest of the offenders will emphasise that the government really does mean business, and that to release them will bring the law into disrepute. Each must wait till the law has run its course; but if he can show that a mistake was genuinely made, he will eventually be released and granted a licence to grow poppies again, which would not otherwise be the case.

Meanwhile, the area any one farmer may cultivate has increased to a maximum of 5 decares from the permitted area in 1975 of 2 decares, which many farmers considered was too small to

be worthwhile. But it looks as though most of the farmers who have suffered arrest will not have had their cases heard in time for this year's sowing.

As far as the mechanics of the control system are concerned, the government programme seems to have been well organised and implemented. A number of 5-man teams were set up to inspect and control cultivation, and they are backed by 80 teams of gendarmes for detailed inspection. Vehicles for these teams have been provided through UN funds, and the same source of finance is being used to set up a telecommunications network between such major centres in the poppy-growing area as Afyon and Konya and the mobile inspection teams.

Other UN assistance is directed towards providing equipment for laboratories in Turkey for morphine

detection, carrying out training in this field at the Narcotics Laboratory in Geneva and training law enforcement personnel. The funds have also been used initially to underwrite a good guaranteed price for farmers. In 1975 they received 17 Turkish lira a kilogram for poppy "straw" and retained the seed which is their main interest. Although research is in hand to evolve more productive varieties of poppy in terms of both seed and morphine content, it is also hoped that eventually more farmers will turn to other crops, in accordance with official plans for the overall development of the areas concerned. Finally, plans are well advanced, again with UN advice and assistance, for the establishment within Turkey of a processing plant to handle the poppy straw which is now the main export product of the former opium-producing region. □

THE energy plan proposed last summer by the Minister for Industry, Sr Donat-Cattin, was approved on December 23 by the CIPE, the inter-ministerial committee for economic programming. The crux of Sr Donat-Cattin's plan is to supplement the three nuclear power stations already in existence with twenty or more by 1985, which will double the country's electricity production capacity.

In the heated debate over the plan this autumn, one of the most frequent criticisms has been that Italy will simply replace its dependence on the oil-producing countries with one on the uranium-producing countries, without gaining anything. It is also felt that the tremendous increase in capacity, which assumes growth of 4-5% a year, is unnecessary. The electricity board (ENEL) has countered this by pointing out that in the sharp recession of 1975 consumption decreased by only 1% of 1974 consumption, and claims that its plans are flexible enough to be adjusted in the future if necessary.

The US companies Westinghouse and General Electric are to build the 1,000 MW water-cooled reactors, and this has not pleased the Italian trade unions. Italian companies would, in fact, have been capable of doing a large part of the construction work, greatly relieving the balance of payments burden and the unemployment problem. And of course there are the worries about the safety of the US reactors.

A miniature and more furious version of the national debate has been going on in Lombardy, where Sr Donat-Cattin wants sites for two of the reactors to be found. The

regional government wants only one reactor. Instructed by the central government to find one site on the Po near Mantua and another near Lake Como, it has missed the deadline for doing either. The central government now has to choose.

## Letter from Italy

from Gillian Boucher



● What elsewhere has been reported as Italy's blocking of the EEC project for nuclear fusion research has been seen in Italy as resistance by the other EEC countries to the Italian site for the project, Ispra. The EEC Commission felt Ispra to be the most suitable site for the experimental thermonuclear plant, the Joint European Torus (JET); led by the Minister for Science, Sr Pedini, to believe that the decision was virtually final, Italians were startled by the inability of the research ministers to agree about it when they met in Brussels in December.

As enumerated by the Commission, the advantages of Ispra over its competitors—the chief of which is

Culham in the UK—include its connections with Euratom, abundant electricity, available skill, experience of safety measures, and a pleasant environment (on the shores of Lake Maggiore) with an international school. Fears that work may be interrupted by labour problems seem exaggerated; Ispra has suffered industrial action in the past, but in 1975 only 34 hours were lost through strikes. The Euratom link, however, is not an entirely positive attribute: Ispra has constantly suffered from a lack of proper organisation and last summer faced a crisis which only a special grant of 2,000 million lire from the EEC averted. If it does not win JET its future looks extremely uncomfortable.

● After centuries of shooting anything that flutters or cheeps, the Italians have suddenly become wildlife-conscious. A bill on hunting has just been approved by the Senate; when the Camera, or House of Deputies, has approved it, it will provide general principles to guide regional governments in drafting their own rules.

According to the bill anyone who wants a gun licence will in future have to pass an examination on the applied biology and zoology of hunting, the law on hunting, firearms and how to use them, and conservation. Italians wishing to shoot will be required to take out third-party insurance, a protection which can hardly make them more carefree about where they point their guns than they are at present. Wildlife reserves will be established, and what may be shot where, when, and in what numbers will be specified in detail.