

Promoting Renewable Energy: Experience with the NFFO

A Presentation to the OECD Experts Group Meeting
on 16 September 1999
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Description of the NFFO

The Non-Fossil Fuel Obligation (NFFO) is a obligation imposed by an Order requiring the Public Electricity Suppliers (PESs) to secure specified amounts generating capacity from specified sources of renewable energy. The PESs choose to comply by contracting collectively through the Non-Fossil Purchasing Agency Ltd (NFPA) with renewables generators. By contracting collectively the above market costs of the arrangements made are reimbursed by a levy through which costs are passed onto consumers. The contract allows projects up to 5 years in which to commission followed by a 15-year 'must take' contract at the price generators' bid in competition which is index linked to retail prices.

History of the NFFO

The NFFO was introduced in 1990 with the 1989 Electricity Act initially with the aim of creating a market for power from existing nuclear generating stations. These were not at that time privatised along with other generation assets. The initial NFFO obligation for renewables (NFFO-1) made in 1990 also created a market for a small amount of existing renewable generating capacity contracted under the earlier 1983 Energy Act arrangements. Since then four obligations have been imposed (NFFO-2,3,4&5) in 1991, 1994, 1997 and 1998 to secure capacity from only new renewables projects. The technologies included so far are sewage gas, landfill gas, energy from waste (municipal and industrial) including waste-fired combined heat and power, onshore wind energy including small wind farms, small scale hydro, agricultural waste including both slurry for anaerobic digestion and dry wastes such as straw and poultry litter for combustion and energy crops and forestry residues.

The Process

The process involved in setting each obligation is briefly that the Government announces the intention of setting an obligation and specifies the technologies. This triggers the NFPA to launch a competition in which generators bid a price and describe the technical, economic, commercial and legal characteristics of their projects. The regulator, the Office of Gas and Electricity Markets (OFGEM) evaluate these characteristics to ascertain whether, if contracted, the project would secure the capacity required by the obligation. The Government set the obligation in the light of the cost and quality of bids received after consultation with OFGEM and the PESs. The PESs contract with sufficient of the cheapest bidders in order to fulfil their license condition to purchase economically and secure the capacity required by the obligation. OFGEM confirm that the obligation has been complied with.

The Target

The last Government's aim of working towards 1500 MW of new capacity by the year 2000 has been replaced by the aim of achieving 10% of the UK's electricity supply from renewables as soon as possible, hopefully by 2010. Arrangements already in place are expected to deliver 5% by 2003. Producing 10% of the UK's electricity from renewables could reduce carbon dioxide emissions by between 3.5-5.4 MtC above that from existing programmes.

The rationale for the policy are:

- environmental benefits, including greenhouse gas abatement;
- contribution to diversity and security of energy supplies; and,
- encouragement of internationally competitive industries.

The Key Barriers

The key barrier for most technologies, apart from landfill gas, has proved to be obtaining planning consent. Energy from waste projects, where the concerns are atmospheric emissions, visual intrusion and increased road traffic and wind farms, where visual impact on the landscape is the principal concern, are the technologies most affected. Although other barriers, for example, water abstraction licenses for small scale hydro, municipal waste disposal contracts for energy from waste projects and access to suitable heat loads for waste-fired combined heat and power projects have presented difficulties for some projects. By and large private finance has not been an impediment for well founded projects since the financial institutions became familiar with the contracts available under the NFFO arrangements.

Relationship with Other Measures

The NFFO arrangements operate largely in isolation and specifically the existence of a NFFO contract confers no special privilege in the planning approval process which must be undertaken in the normal way. However, there is pressure to ensure that the planning process is informed by the global and regional benefits of renewables as well as the more obvious local impacts. There have also been calls for the NFFO process to take into account in some way the local environmental impact of projects.

Ancillary Benefits

It has been estimated that combining the 10% aim with an exports drive might result in 10,000 - 45,000 additional net jobs in the renewables sector in the UK. However, there is little well founded analysis in this area and therefore estimates must be treated with caution. There is also little information on the extent to which investment in renewables would displace investment in other fields which could also have an impact on employment. The contribution to diversity and security of energy supplies is also difficult to quantify. Exports have risen from an estimated £15m/year to around £80-100m/year over the last few years.

Evaluation of Cost-Effectiveness

The NFFO has proved highly cost effective. For example, the average price paid under NFFO-3,4&5 is 3.33 p/kWh which compares favourably with an average wholesale electricity pool price of 2.6 p/kWh although this is expected to fall in the medium term. Power generated by projects which were contracted under NFFO-1&2 whose contracts ended at the end of 1998 has been sold by tender at an average price of 3.00 p/kWh with the possibility of enhancement if a premium market for green power is developed. Administrative charges amount to £1825/year for each NFFO-5 contract that has commissioned with a maximum charge of 3.5% of the electricity revenue to minimise the impact on very small projects.

Performance Monitoring

Progress through the planning process is monitored for all projects although some may be abandoned before applying for planning permission for the reasons outlined earlier. The performance of projects once commissioned is also monitored. Successive obligations are imposed in the light of the progress of projects contracted under earlier obligations.

Future Arrangements

Reform of the framework of utility regulation and in particular the splitting of Public Electricity Supply licenses into separate licenses for electricity distribution and supply has created the need to revise the NFFO arrangements. Consideration is being given to moving from a technology specific, capacity obligation on the PESs to secure new renewable capacity and have the above market cost reimbursed through a levy to an obligation on all suppliers to supply a certain percentage of their market from renewables with no levy. At this stage in the analysis of the options it seems the financing costs of such an approach could well be very significant. Separately some suppliers have been accredited for offering green electricity tariffs. There are also proposals for a Climate Change levy which may provide an exemption for renewables if a suitable scheme can be devised. It is not at present clear what new arrangements for promoting renewables will emerge.

Lessons from Experience with the NFFO

Interest by generators in competing for contracts has exceeded our expectations. This has led to a highly competitive process which has driven prices down. Progress of some projects has been frustrated by the planning process but there is little evidence that low prices have exacerbated these difficulties. There is limited evidence that smaller projects are more attractive in planning terms. There has been very limited interest by generators in developing community ownership schemes although when these have been promoted they are well supported. The source of the technologies deployed tends to reflect the world market shares of those technologies. Accordingly, technologies which generators have sourced from the UK are not particularly dominant.