

*Bord na Móna
Energy Ltd.*

**Integrated Pollution Control
Licence Application**

ATTACHMENT No. 18

CESSATION OF ACTIVITY

ECOLOGICAL POLICY: THE SUSTAINABLE AFTERUSE OF INDUSTRIAL PEATLANDS

Introduction

Bord na Móna has commitment to the long-term planning of its cutaway bogs. Considerable research has been carried out on the optimum afteruse of each peatlands area, depending on its subsoil and drainage capability. Initial research into the afteruse options for the industrial cutaway peatlands began in the mid-fifties with the planting of a forestry trial site at T14 Clonsast. Many of the tree species planted at that time have now reached maturity.

Over the following four decades the boards of Bord na Móna have continued to invest in research into various future uses of cutaway. Many uses which showed promise at research level later proved to be unsuccessful when transferred at demonstration scale. Today a very sound base of scientific knowledge has been established on the many complicated factors associated with the future use of cutaway. Three distinct uses of the cutaways have emerged; these are grassland and forestry on well-drained cutaway areas, and wetland wilderness on the areas which exhibit drainage difficulties. Ongoing research is adding to the existing knowledge pool each year with particular emphasis at present on the ecological processes underway on recently developed wetlands.

Peat Extraction Policy

One clear factor to emerge over the decades is that there is no economic or ecological reason to leave in situ, peat that can be extracted economically. In fact, it has been demonstrated that maximum ecological diversity is best achieved after maximum peat removal. The policy of Bord na Móna is, therefore, to remove as much peat as is economically feasible. It should be noted, however, that maximum economic removal does not equate to total removal of peat. It is not economically viable to remove all the peat. In general residual peat depths typically range from 0 - 2 m in a total random manner as determined by the degree of undulation of the underlying glacial deposits.

Factors Influencing Future Use

The resulting cutaways are extremely complex with three key factors interacting to determine future use. These factors include: (i) drainage capability (ii) depth and type of residual peat (iii) nature of the underlying subsoil.

(i) Drainage Capability

In order to harvest peat for energy purposes it is essential to lower the water table below surface level. For raised bogs this is effected by excavating 15 m "field drains" through which drainage waters flow by gravity to the surrounding arterial drainage. In some instances, especially in those bog units in the Boyne and Barrow catchments, continued drainage to the bog floor by means of gravity is possible. However, in the case of the bog units in the Shannon catchment, as peat removal continues it is necessary to install pumping stations in order to lift drainage waters into the surrounding arterial drainage. The continuous use and maintenance of these pumping stations is not envisaged after the peat extraction phase is complete, therefore, such areas will be allowed to naturally re-flood. On the other hand in the case of those areas drained by gravity, it is envisaged that the drainage channels will be maintained post the peat extraction phase in order to facilitate afforestation and grassland uses. It should be noted that in many instances, surrounding agricultural land benefits from these drainage outfalls.

The ability, therefore, to drain a bog unit or part thereof by gravity and economically maintain such a drainage infrastructure, is a key determinant in designating the future use of each bog unit.

(ii) Depth and Type of Residual Peat

A clear understanding of the nature of the peat and its depth is essential prior to designating the future use of the bog unit or relevant part thereof. As previously stated, the depth of the residual peat within a cutaway typically ranges between 0 - 2 m in a totally random manner which is determined by the degree of undulation of the underlying glacial deposit. The type or nature of the residual peat is also of importance. Differing peat types are encountered and when subjected to similar conditions they react differently.

(iii) Nature of the Underlying Soils

The soils that underlie the Midland peats, which were deposited by the retreating glaciers 10,000 years ago, are all of carboniferous limestone origin and, therefore, alkaline in nature. The range of soil types vary from sands and gravels to highly impervious alluvial deposits. Some of the soils are easily drained while others pose extreme difficulty.

Designating Future Use

Prior to designating the future use of each bog unit or part thereof the drainage capability, the depth and type of residual peat, the nature of the underlying soils and their inter-relationship must be known. Essentially if an area cannot be drained by gravity then the choice of future options is very limited and is generally confined to wetland recreation. If sustainable drainage is possible then the creation of grassland or the afforestation of the areas with conifers or hardwoods is a possible option. In summary, the new landscape which will evolve, after industrial peat production is complete, will be mosaic, dominated by coniferous forestry, but mixed with open water development with a patchwork of diverse wild habitats.

The first substantial cutaway areas to emerge from industrial milled peat extraction were located at Boora Works, Leabeg, Tullamore, Co. Offaly wherein each of the three options (grassland, forestry and wetland wilderness) have been put in place. Today the area is referred to as Boora Parklands (an area of some 2,000 hectares) wherein grassland farming by private landholders, coniferous and hardwood forestry under lease to Coillte and wetlands have been created. Within the wetland areas a number of angling lakes for coarse and game fish have been developed and are operating successfully. In 1996 the developments at Boora received the Ford Conservation Award and the Turraun Wetland area received an An Taisce Award from President Robinson in 1997. A pre-feasibility study on the Boora Parklands and the Proceedings of a Cutaway Conference held in Kilcormac, Co. Offaly, are attached.

Potential Niche Uses

The vast majority of the emerging cutaways will be developed as above i.e. grassland (20 - 30%), forestry (40 - 60%), and wetland wilderness (40 - 50%),. However, there may be some areas where niche developments may take place as follows:

(i) Sand and Gravel Extraction

The Derrygreenagh group of bogs on the Offaly-Westmeath border are underlain by substantial quantities of sands and gravels which have been shown to have some commercial extraction possibilities. When the peat overlay is removed these bog units may be developed for wet extraction of sands and gravels with the resultant excavated areas allowed to develop as lakes.

(ii) Fruit Production

The potential of some areas to grow cranberries and blueberries is at present under investigation. Should this research prove successful then this afteruse of cutaway peatlands may be implemented in certain specific areas.