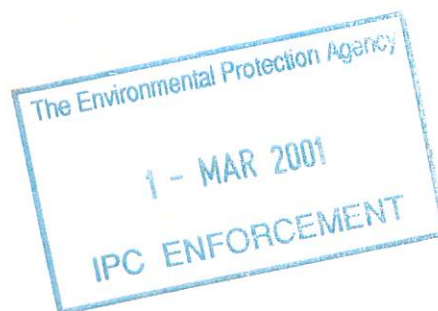


BORD NA MÓNA
BORD NA MÓNA ENERGY LIMITED
Derrygreenagh, Rochfortbridge, Mullingar, Co-Westmeath.

Annual Environmental Report

March 2001

EPA
IPC ENFORCEMENT WEXFORD.
Main File ✓
Public File ✓
Evaluation File PS
Date 2/3/01 EL
For Assessment by Inspector



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1 Introduction

1.1 Company Details

Name: **Bord na Mona Energy Limited.**

Address: **Derrygreenagh Group
Derrygreenagh Works
Rochfortbridge
Mullingar
Co Westmeath.**

Telephone No: **044 / 22181** **Fax No: 044 / 22344**

Contact Name: **Finn Campbell**

Position: **General Manager.**

National Grid Reference: **E249450 N238140**

1.2 Activities

The Derrygreenagh Group consists of the Derrygreenagh and Ballivor Groups and Rossan Bog.

The Derrygreenagh group of bogs is located in North Offaly and Southeast Westmeath. The Derrygreenagh group comprises of 3664 acquired hectares, of which there are 1300 nett production hectares. The main catchment of these areas is the River Boyne.

The Ballivor group is made up of the bogs in the Ballivor, Carranstown, Bracklin and Lisclogher areas. There is a total of 283 hectares in production and each of these areas are linked by peatland railway to the Bord na Mona horticultural factory, situated between Ballivor and Raharney villages. Drainage from these bogs is to the Deel and Stonyford rivers, tributaries of the Boyne.

Rossan bog is situated one mile from Kinnegad village. There are currently 142 hectares in milled moss production. This bog drains to the Kinnegad River, a tributary of the River Boyne.

The Derrygreenagh Group currently employs 96 permanent and 31 seasonal workers. Transport operations are carried out on a seven day cycle throughout the year. Production operations are typically carried out over a seven day week (weather permitting) for 12 to 15 hours per day.

Peat Milling Operations.

For milled peat production the bog is laid out in a series of rectangular fields of varying length and 15m wide with drains located between. There are essentially four operations involved in milled peat production:

- Milling.
- Harrowing.
- Ridging.
- Harvesting.

Milling.

Special milling machines work their way along the fields, milling approximately 15mm of peat of the top of the bog in a pass.

Harrowing

In the course of drying, the milled peat is turned a number of times to avail of the drying conditions. This is achieved with a machine called a harrow. The milled peat is harrowed until its moisture content is down to approximately 40-50%, which can take up to two to three days, weather depending.

Ridging

The dry peat is then scraped into long ridges running down the centre of each field. This is done with a ridger, a machine consisting of a series of blades in the shape of a v that opens the full width of the field.

Harvesting

During harvesting every eleventh field is used to stockpile the peat, with this field receiving the milled peat from the five fields either side.

The milled peat is then transported via the existing network of peatland railways to one of the following locations.

- Power station (ESB)
- Briquette Factory.
- Horticultural Factory.

1.3 Environmental Policy



Bord na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's peat resources in the national interest.

Bord na Mona Energy Limited is committed to gather and make available information on all aspects of its environmental impact and to help improve understanding among the public generally of its role and the importance of Irish peatlands.

Bord na Mona Energy Limited recognises the importance of peatland conservation.

Bord na Mona Energy Limited will leave behind all areas it owns as either an economically or socially integrated resource of a high environmental value.

Bord na Mona Energy Limited seeks to conduct all aspects of its business in an environmentally sensitive value.

Bord na Mona Energy Limited will establish an environmental management system specifically addressing the following impacts.

- Discharges to water.
- Emissions to atmosphere.
- Waste disposal.
- Use of natural resources.
- Noise, vibration, odour, dust and visual effects.
- Natural environment and eco-system.

The environmental management system will be monitored, maintained and continually improved.

A system of regular environmental audits will be put in place.

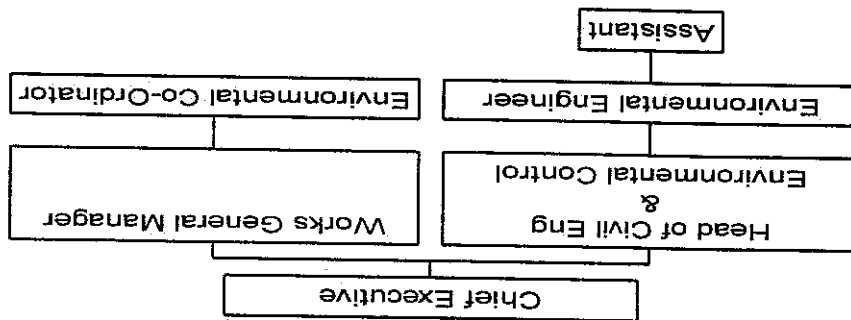
Bord na Mona Energy Limited will continue research and development into all aspects of its environmental impact.

This statement is published and is available at all locations within the division and its contents are brought to the attention of all employees.

1.4 Environmental Management of the Company

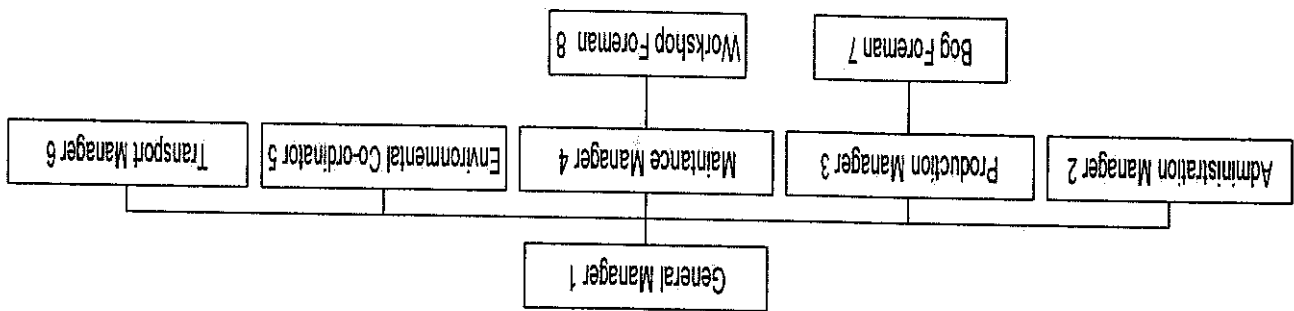
The organisational structure within Bord na Mona and the Derrygreenagh Group is presented in the flow charts below.

Environmental Responsibilities



Derrygreenagh Group

Environmental Responsibilities



- (1) Overall environmental responsibilities
- (2) Records of complaints and registers
- (3) All production related issues
- (4) Machine maintenance
- (5) Co-ordinating environmental affairs
- (6) All peat transportation matters
- (7) Silt pond maintenance, tea centres codes of practice
- (8) Fuel loading, oil traps, weekly workshop inspections.

2 Summary Information

2.1 Emissions to Water Summary

2.1.1 Silt Pond Emissions

The attached tables are a summary of the emissions to surface waters from within the Derrygreenagh Group. As the emission sampling point proposal, was not required to be submitted, until six months after our IPC licence was issued, only one round of sample results, covering Sep/Oct/Nov could be submitted with the AER.

Therefore the results in the table are the actual results as opposed to an average.

As part of the silt pond upgrade programme a number of the sampling points have been improved over the past months. These improvements include the enlargement of ponds where required and the installation of piped outlets, to accommodate the measurement of flow. A copy of a silt pond inspection form is attached in **Appendix 4**

Bord na Mona Group : Derrygreenagh

IPC Licence No.: 501

Emissions to water summary

Location: SW1.

Sept/Oct/Nov (Final Quarter 2000)

Parameter	Average Emission (mg/l)	Emission Limit Value (ELV) (mg/l)
pH units	7.5	
Flow (L/sec)	0.4 (L/S)	
Suspended Solids (mg/l)	< 5	35mg/l
Total Solids (mg/l)		
Total Phosphorus (mg/l)	<0.05	
Ammonia (mg/l)	3.2	
Colour (Pt Co units)	88	
COD (mg/l)	56	

Location: SW6.**Sept/Oct/Nov (Final Quarter 2000)**

Parameter	Average Emission (mg/l)	Emission Limit Value (ELV) (mg/l)
pH units	7.6	
Flow (L/sec)	31.1 (L/S)	
Suspended Solids (mg/l)	6	35mg/l
Total Solids (mg/l)		
Total Phosphorus (mg/l)	<0.05	
Ammonia (mg/l)	<0.2	
Colour (Pt Co units)	60	
COD (mg/l)	42	

Location : SW14.**Sept/Oct/Nov (Final Quarter 2000)**

Parameter	Average Emission (mg/l)	Emission Limit Value (ELV) (mg/l)
pH units	7	
Flow (L/sec)	5.2 (L/S)	
Suspended Solids (mg/l)	<5	35mg/l
Total Solids (mg/l)		
Total Phosphorus (mg/l)	<0.05	
Ammonia (mg/l)	2.5	
Colour (Pt Co units)	249	
COD (mg/l)	66	

Location : SW30.**Sept/Oct/Nov (Final Quarter 2000)**

Parameter	Average Emission (mg/l)	Emission Limit Value (ELV) (mg/l)
pH units	7.3	
Flow (L/sec)	No Flow	
Suspended Solids (mg/l)	<5	35mg/l
Total Solids (mg/l)		
Total Phosphorus (mg/l)	0.08	
Ammonia (mg/l)	2.1	
Colour (Pt Co units)	176	
COD (mg/l)	69	

Location : SW32.**Sept/Oct/Nov (Final Quarter 2000)**

Parameter	Average Emission (mg/l)	Emission Limit Value (ELV) (mg/l)
pH units	7.1	
Flow (L/sec)	No Flow	
Suspended Solids (mg/l)	15	35mg/l
Total Solids (mg/l)		
Total Phosphorus (mg/l)	0.19	
Ammonia (mg/l)	2	
Colour (Pt Co units)	278	
COD (mg/l)	95	

Location : SW43.**Sept/Oct/Nov (Final Quarter 2000)**

Parameter	Average Emission (mg/l)	Emission Limit Value (ELV) (mg/l)
pH units	7.3	
Flow (L/sec)	.7 (L/S)	
Suspended Solids (mg/l)	<5	35mg/l
Total Solids (mg/l)		
Total Phosphorus (mg/l)	<0.05	
Ammonia (mg/l)	2.6	
Colour (Pt Co units)	312	
COD (mg/l)	117	

* Total solids to be included in future results.

2.1.2 Surface Water Discharge Monitoring Location Programme Review

The surface water discharge monitoring location programme remains the same as was submitted and accepted by the Agency in June 2000.

Pipes have been fitted at each location in order to accommodate flow metres and the provision of safe access is also ongoing.

Emission point signs have been designed for these sampling points and are being put in place.

Monitoring May to December 2000

Emission Pt.	Parameter	Emission Mg/l	Emission Limit Value (ELV) Mg/l for 75% of grab samples.	% Compliance
Sw no.1	Suspended Solids	< 5	35mg/l	100%
Sw no.6	Suspended Solids	6	35mg/l	100%
Sw no.14	Suspended Solids	< 5	35mg/l	100%
Sw no.30	Suspended Solids	< 5	35mg/l	100%
Sw no.32	Suspended Solids	15	35mg/l	100%
Sw no.43	Suspended Solids	< 5	35mg/l	100%

2.1.3 Yard Run-off

The attached tables are a summary of the emissions to surface waters from yards and workshops within the Derrygreenagh Group. This summary is the average of the results submitted, covering the periods June/July/August and Sept/Oct/Nov 2000.

At present work is on going on the rationalisation of yard run off at the various workshops, in order to ensure that all run off be diverted through a properly designed oil trap as per condition 9.1.8.

Some of this work is being carried out in conjunction with the construction of adequate bunding at the various locations.

Emission point signs have been designed for these sampling points and are being put in place. A copy of workshop/yard inspection form has been attached in **Appendix 5**

Bord na Mona Group : Derrygreenagh

IPC Licence No.: 501

Emissions to water summary yards/workshops

Location: Derrygreenagh SWE-1.
June - December
2000

Parameter	Average Emission (mg/l)	Emission Limit Value (ELV) (mg/l)
COD (mg/l)	62	NA

Location: Derrygreenagh SWE-2.
June - December
2000

Parameter	Average Emission (mg/l)	Emission Limit Value (ELV) (mg/l)
COD (mg/l)	49	NA

2.1.4 Composite Sampler Programme

A composite sampler location proposal has been submitted to the Agency and accepted verbally. This acceptance occurred after december 2000 therefore no results are available for submission in this AER. However results will appear in next years AER in tabular form.

Work on the installation of the sampler is underway and monitoring will commence in the near future.

Selection of sampling programme.

Our proposal is based around the provision of equipment , which would require going to each site once a week rather than daily.

The equipment would have the following features:

a) **Multi-bottled.** We propose that the sampler would have 8 x 2 litre bottles. (This will allow for a full weeks sampling to be carried out, where upon each bottle would represent exactly 24 hours flow. These samples would be taken flow proportional over this 24 hour period.

b) **Portable and battery operated.**

No permanent power source available

c) **Built in data logger.**

This will store the flow and sampling data for each week, which could be downloaded when the samples are being collected.

Our proposal is as follows:

For sampling we propose the Isco 6700 8 x 2 litre composite sampler which is set up at the proposed site and would collect a full week of flow proportional 24 hour samples. The sampler is powered by a deep discharge marine lead acid battery.

For flow measurement, we propose that a concrete pipe be installed at the end of the silt pond. The flow would then be measured by the Isco 710 Ultrasonic Flow Module, which plugs into the sampler. Flow data is stored on the sampler and can be accessed using the Isco 581 Manual transfer device.

The operator would thus have a weekly requirement to arrive at each site with a 2nd newly charged battery which he would exchange, the 581 RTD to down load the flow data and 7 collection bottles to take the samples and restart the sampler.

The most recent 24hour sample of the 7 should be considered for any specific parameter that may be required to be analysed within 24 hrs.

The parameters to be analysed below are in accordance with Schedule 1(ii)
Monitoring of Emissions to Water:

Parameter	Monitoring Frequency	Location of analysis
pH units	Weekly	On-site
Flow L/sec	Daily	On-site
Suspended Solids mg/l	Daily	Laboratory
Total Solids mg/l	Daily	Laboratory
Total Phosphorus mg/l	Weekly	Laboratory
Ammonia mg/l	Weekly	Laboratory
Colour Hazen units	Weekly	Laboratory
COD mg/l	Weekly	Laboratory

2.1.5 Bunding Programme

At present tenders are out for the provision of adequate bunding at our oil/diesel storage facilities. The successful contractor will be expected to commence the work by the beginning of March 2001.

A number of locations have been identified for the construction of bunds, some at existing storage/loading facilities and some at completely new locations.

A new bund will be constructed at Derrygreenagh.

Incorporated into this work will be the construction of a fill area, which will satisfy condition 9.1.7 of the Derrygreenagh Licence.

The bund size will satisfy condition 9.1.4

Testing of this bund will be carried out as per condition 9.1.6 and the results of this testing will be reported on as part of next years AER.

2.2 Emissions to Air

2.2.1 Dust Monitoring Locations Programme

Approval for the dust sensitive locations was not received until after production finished in 2000 therefore no results can be reported on in this AER.

In order to comply with Condition 5.4 of the licence in relation to Dust Sensitive Locations the following sampling method are proposed to be adopted for the 2001 production season.

Methodology

Dust monitoring will be conducted using the Bergerhoff method as referred to in the TA-Luft guidelines (VDI-guidelines 2119/Part 2). The input of the atmospheric material will be determined over a planned period of measurement, probably one month, by exposing the collection pots. The sample is then evaporated down and the dry residue is determined gravimetrically, the result being reported in mg/m²/d.

In addition to this a control sampler will be set up in a location free from the influence of peat production in order to establish the background levels.

The apparatus consists of a plastic collecting pot and a post with a protective basket, set at 1500mm above the ground level in accordance with the guidelines set out in the VDI 2119/Part 2.

Measurement, collection and determination will be carried out in accordance with the guidelines in an ILAB accredited laboratory. The environmental co-ordinator will change the sample pots or an employee nominated by him/her. The samples will be sent to the laboratory under a strict chain of custody and the results will be reported on each year as part of the AER.

In addition to this, Bord na Mona have adopted the following codes of practice in relation to dust.

Dust Control

- Identify and record sensitive areas.
- Plant shelter belts in sensitive areas.
- Avoid harvesting in sensitive areas during windy weather.
- Use grassed passways for machinery.
- Keep headlands clean-remove loose peat.
- Slow down when travelling along dusty headlands.
- When harvesting keep jib low on stockpile.
- Roll final harvest on uncovered stockpiles.
- Plant shelter belts around outloading facilities.
- Clean road crossings after use.

2.2.2 Boiler Combustion Efficiency

The boiler at Derrygreenagh works was tested in April 1999 as part of the original application. Derrygreenagh didn't receive its licence until April 2000 therefore under condition 5.1 of the licence, testing will be required during 2001 and the results will be submitted in next years AER.

The results of the boiler efficiency test are attached in **Appendix 7**.

Boiler Details

Twin Danstoker solid fuel units each rated at 725KW, fuelled by loose briquettes. Operating from Oct-Mar approximately.

2.3 Waste Arisings

2.3.1 Hazardous Waste

Derrygreenagh being a central location, is used as a collection point for all hazardous wastes emanating from all the areas in both the Allen and Derrygreenagh Groups. All waste oils, filters, spent batteries, etc are collected centrally at Derrygreenagh before being removed by a licenced waste contractor such as Atlas Waste Oil, Hammond Lane, Returnabatt, etc.

A system is in place where by every area has its own waste oil and filter barrel. These barrels are painted yellow to distinguish them from ordinary barrels and are clearly marked waste filters or waste oil.

When the barrels are getting near full, the area team leader informs our Derrygreenagh stores and a truck is dispatched to collect the full barrels and replace them with empties. Any spent batteries will also be collected if the need arises. The following table is a record of all the hazardous wastes handled by the Derrygreenagh Group from May-December 2000

Waste Management Record (Hazardous)

Group : Derrygreenagh IPC Licence no. : 501

Works : Derrygreenagh

[illegible]

DETAILS OF ANY REJECTED CONSIGNMENTS

[illegible]

2.3.2 Non-Hazardous Waste

The following table is a summary of the Non-Hazardous wastes produced on site, from the period May-December 2000.

Of the total amount of waste produced and collected from the Derrygreenagh works, 92% was attributed to silt pond waste, 6% emanated from the Works itself and the remaining 2% came from the various tea centres.

Silt pond cleanings are anhydrous (2% solid matter) and their weight is calculated accordingly (tonnes dry weight). This will explain the great difference in the tonnage's between 1998 and May-Dec 2000 on the summary data tables. As the 98 figures were calculated on the actual pond volumes.



Waste Management Record (Non-Hazardous)

Group : Derrygreenagh

IPC Licence no. : 501

Works : Derrygreenagh

[illegible]

*. The figures for silt pond waste are tonnes dry weight

2.4 Energy and Water Consumption

The table below is a summary of the energy consumption for the Derrygreenagh Group, from the dates May – Decemder 2000.

Water is not included, as it is not used as part of the production process. It is only used in offices, canteens and workshops on a domestic scale.

Bord na Mona Group : Derrygreenagh
IPC Licence No.: 501
Energy Consumption
Summary

Fuel May - Dec 2000	Volume	Tonnes	MW/Hours
Diesel	624m3	518	6117
Petrol	1.26m3	0.956	11.45
Electricity	NA	NA	636
Peat Briquettes	NA	79.4	397

2.5 Environmental Incidents and Complaints

There was one incident within the Derrygreenagh Group, which occurred in December 2000. Although only a minor incident, the Agency was informed.

Environmental Incidents	Number of Incidents
Incidents	1
Incidents requiring corrective action	1
Categories of Incident	
Odour	
Noise	
Water	1
Air	
Procedural	
Miscellaneous	

There were two complaints within the Derrygreenagh Group, both were received in July 2000. The Agency was informed.

Environmental Complaints	Number of complaints
Complaints received	2
Complaints requiring corrective action	2
Categories of complaint	
Odour	
Noise	
Water	
Air	2
Procedural	
Miscellaneous	

A copy of a complaint form is attached in **Appendix3**

2.6 De-Silting Report**Summary Data Table of Ponds De-Silted From May-December 2000**

Bog	No Silt Ponds	Cleaned Once	Cleaned Twice	Cleaned Three Times	Notes
Ballivor	7	4			
Carranstown	5	3			
Bracklin West	6	2		4	
Lisclogher	7				*
Kinnegad	8	1	3	2	
D/Arkin	2				**
D/Hinch	4	4			
Drumman	5	2			
Ballybeg	6	5			
Toar	6	5			

*: Bog still under development, no production.

**: Bog cut out, no production at this Bog.

% Ponds Cleaned May-Dec 2000

% Ponds Not Cleaned	% Ponds Cleaned Once	% Ponds Cleaned Twice	% Ponds Cleaned Thrice
38%	46%	5.3%	10.7%

The reason why some of the silt ponds listed above have been cleaned up to four times, is that if the cleaning machine is passing a pond on its way to clean a full pond, the operative will clean it, no matter if it is only one quarter full.

Special long reach machines are primarily used in the cleaning of the ponds, although more conventional machines that have been working on the silt pond up-grade programme are also being used to clean ponds. This is another reason why some ponds have been cleaned more frequently between May-Dec 2000.

Fortnightly Silt Pond inspections are also on going and a cleaning roster is being established from these inspection records. A copy of a silt pond inspection form is attached in **Appendix 4**

All the inspections forms are on file at the Derrygreenagh office.

2.7 Silt pond Up-Grade Programme

A silt pond up-grade programme has been submitted and accepted by the Agency.

A copy of this programme is attached in **Appendix 2**.

This programme has been ongoing from receipt of licence and some ponds have been improved in order to meet condition 6.1 of the Derrygreenagh licence.

The work so far has included the construction of new ponds, the enlargement of ponds where necessary, the installation of controlled inlet and outlet pipes, and the construction of pond by-passes, to accommodate cleaning and flood conditions.

Approximately 5000 cubic metres of material have already been excavated in the progress of these works.

Further to this, operatives cleaning ponds have been instructed to deepen the ponds if possible in order to increase the volume.

The work began on Drumman and Derryhinch bog, which is almost complete, and is about to move to Toar bog in early March 2001.

The work completed so far has included programme one, and some of stages one and two of programme two, of the silt pond up-grade programme.

2.8 Bog Development and Operational Programme

The bogs in the Derrygreenagh Group are well into their productive lives, therefore there will be no development in the year 2001.

However in the Ballivor Group, Carranstown bog is currently under development, with approximately 120 acres to be developed.

It is proposed to develop initially part of this total for the 2002 production season, with no production planned at the site for 2001.

Expressed as a percentage this equates to 12% of the total number of bogs in the group.

2.9 AER Summary Data Table

Summary Of Emissions			
Company	Bord na Mona Energy Ltd		
Address	Derrygreenagh Rochfortbridge Mullingar Co Westmeath.		
Contact Name	Finn Campbell		
Telephone	044/22181		
E-mail	finn.campbell@bnm.ie		
GPS Co-ordinates(4N, 4E)	E249450 N238140		
IPC Register Number	501		
IPC Class	1		
IPPC Class			
NOSE-P Code			
NACE CODES			
	Section	C	
	Sub-Section	A	
	Division		
	Group		
	Class	1.4	

Emissions to Waters

Indicate with "X" if emissions are to :

Freshwater or Sewer or Sea

Parameter	Unit	Licensed emission	1998	1999	2000	2001
Volume	M ³	Not Applicable see 2.1.1				
Suspended Solids	Kg					
BOD	Kg					
COD	Kg					
Total Dissolved Solids	Kg					
Total Nitrogen	Kg					
Phosphate	Kg					
Toxicity	TU					
Hg	Kg					
Cd	Kg					
Pb	Kg					
Cr	Kg					
As	Kg					
Zn	Kg					
Cu	Kg					
Ni	Kg					
% Compliance	%					
Number of samples						

Emissions to air		Licensed emission	1998	1999	2000	2001
Parameter	Unit	Not Applicable see 2.2.1				
Particulates	Kg					
Sox	Kg					
Nox	Kg					
Co2	Kg					
TA Luft Class I	Kg					
TA Luft Class II	Kg					
TA Luft Class III	Kg					
Total Organic (as C)	Kg					
Non-Methane VOC	Kg					
Ammonia	Kg					
Total Heavy Metals	Kg					
% Compliance	%					
Number of samples						

Bord na Mona Energy Ltd

IPC Licence Reg No. 501

Boiler Emissions to air					
Parameter	Unit	Licensed emission	1998	1999	2000
Dust	Kg	Not Applicable see 2.2.2			2001
Sox	Kg				
Nox	Kg				
CO2	Kg				
CO	Kg				

Energy Consumption	Unit	Sulphur Content	1998			1999			May-Dec 2000			2001		
Heavy Fuel Oil	M ³								NA					
Light Fuel Oil	M ³								625					
Natural Gas	M ³								NA					
Electricity	MW								636					
Coal	Kg								NA					
Environmental Complaints														
Categories of complaint	Complaints received		1998			1999			2000			2001		
	Complaints requiring corrective action													
	Odour													
	Noise													
	Water													
	Air													
	Procedural								2					
	Miscellaneous													

Water	Unit	1998	1999	2000	2001
On-site ground water use	m ³			N/A	
On-site surface water use	m ³			N/A	
Municipal water use	m ³			N/A	

Bord na Mona Energy Ltd

IPC Licence Reg No. 501

Registration No.	
EMAS (Yes/No)	NO
ISO 14000 (Yes/No)	NO
Certification Pending	NO

European Waste Catalogue Code	Hazardous (Yes/No)	Description of Waste	Quantity (Tonnes/year)	Method of Disposal/ Recovery	Location of Disposal/ Recovery	Name of Waste Disposal Recovery Contractor
160104	NO	Scrap Metal	25	R4	Athlone, Westmeath	Hammond Lane
200304	NO	Septic tank sludge	6	D1	Mullingar Landfill	Pat Hinch Plant
200301	NO	Canteen Waste	4	D1	Tullamore Landfill	Midland Refuse
200301	NO	General Waste	6	D1	Mullingar Landfill	Tullamore Plant Hire
010102	NO	Silt Pond Waste	947*	D4	On site	NA
200301	NO	Tea Centre	1	D1	Tullamore Landfill	Midland Refuse
020104	NO	Polyethelene	71	R13		
130200	Yes	Waste Oil	5.95	R9	Portlaoise Co Laois	Atlas Waste Oil
130601	Yes	Fuel/Oil Filters	1.69	R9,R4	Portlaoise Co Laois	Atlas Waste Oil
050105	Yes	Contaminated Earth	0.4	R3	Portlaoise Co Laois	Atlas Waste Oil
130601	Yes	Empty Oil Barrels	0.9	R4	North Wall Dublin	Dempsey Drums

* The figures for silt pond waste are tonnes dry weight.

Waste	1998	1999	May-Dec 2000	2001
Total quantity of waste produced in calendar year (Tonnes)	1693		998	
total quantity of waste disposed of on-site	1339		947	
total quantity of waste disposed of off-site	15		17	
total quantity of waste recovered on-site	0		0	
total quantity of waste recovered off-site	339		34.858	
Quantity of non-hazardous waste produced in calendar year	1668		989	
quantity of non-hazardous waste disposed of on-site	1335		947	
quantity of non-hazardous waste disposed of off-site	15		17	
quantity of non-hazardous waste recovered on-site			0	
quantity of non-hazardous waste recovered off-site	318		25	
Quantity of hazardous waste produced in calendar year (Tonnes)	25.56		9.858	
quantity of hazardous waste disposed of on-site	4.14		0	
quantity of hazardous waste disposed of off-site	0		0	
quantity of hazardous waste recovered on-site	0		0	
quantity of hazardous waste recovered off-site	21.42		9.858	

3.0 Management of the Activity

3.1 Environmental Management Programme Report

The Derrygreenagh updated Environmental Management Programme was submitted after december 2000, but some of the works specified in that document are at present in progress.

Training has taken place for both management and operatives, as stated in project one and two of the EMP.

Codes of practice for all aspects of Bord na Mona's operations are at present in place. Emergency Response Procedures have also been put in place.

Projects 6 & 7 of the EMP are currently under way. This was mentioned earlier under section 2.1.5 Bunding Programme.

3.2 Environmental Management Programme Proposal

As stated above an updated Environmental Management Programme has only recently been submitted in Feb 2001.

A copy of this is attached in **Appendix 1**.

3.3 Environmental Expenditure

The table below lists the environmental costs incurred by the Derrygreenagh Group between May-December 2000.

Expenditure Related to the Operation of the Derrygreenagh IPC Licence During the Period March 2000 – December 2000	
Description	Cost (£)
Capital Costs	5138
Plant	48000
Labour	20000
Materials	3000
Overheads (ESB, Phones, Consumables)	150
External Environmental Consultancy	1000
EPA Fees	2779
Total	80067

3.4 Bog Rehabilitation Report

The above mentioned report is not due for submission until October 2001, therefore a summary will appear in next years AER based on that report.

4.0 Summary

As the reporting period only covered date of licence to December 2000 and the Quarterly results only cover Sept/Oct/Nov, an accurate assessment of the results cannot be made. However, the AER for 2002 will include a full set of quarterly results from the grab sampling and a full years composite sampling results allowing a more representative and accurate assessment of Bord na Mona Energy's impacts on the environment. The attached Environmental Management Programme has been implemented throughout the group, operating procedures have been put in place, and training has been provided for all personnel involved in compliance with the licence.

Bord na Mona Energy Ltd would like to take this opportunity to advise the Environmental Protection Agency of its continued commitment to improving its environmental performance by adopting cleaner production methods and improving its environmental protection measures.