

Rhode

Generating Station
Co. Offaly



3988

Rhode peat-fired generating station is situated beside the village of Rhode in County Offaly, 7 miles from Edenderry, 18 miles from Tullamore and 16 miles from Mullingar. It was constructed as part of the Peat Development Programme and makes use of the 13,000 acres of local bog in North County Offaly.

The station was completed in two separate developments: "A" station in 1960 and "B" station in 1963. "A" station consists of two 20,000kW Boiler-Turbine Units, and "B" station consists of one 40,000kW unit. The station stands on a site of 70 acres and has a permanent staff of 155. Total Capital Investment is £6 million. Electricity is generated at 10,500 volts and the station transformers step up this voltage to 110,000 volts for transmission to the national grid. Two 110kV lines transmit the power to Maynooth and one 38kV line transmits power to Srah near Tullamore.



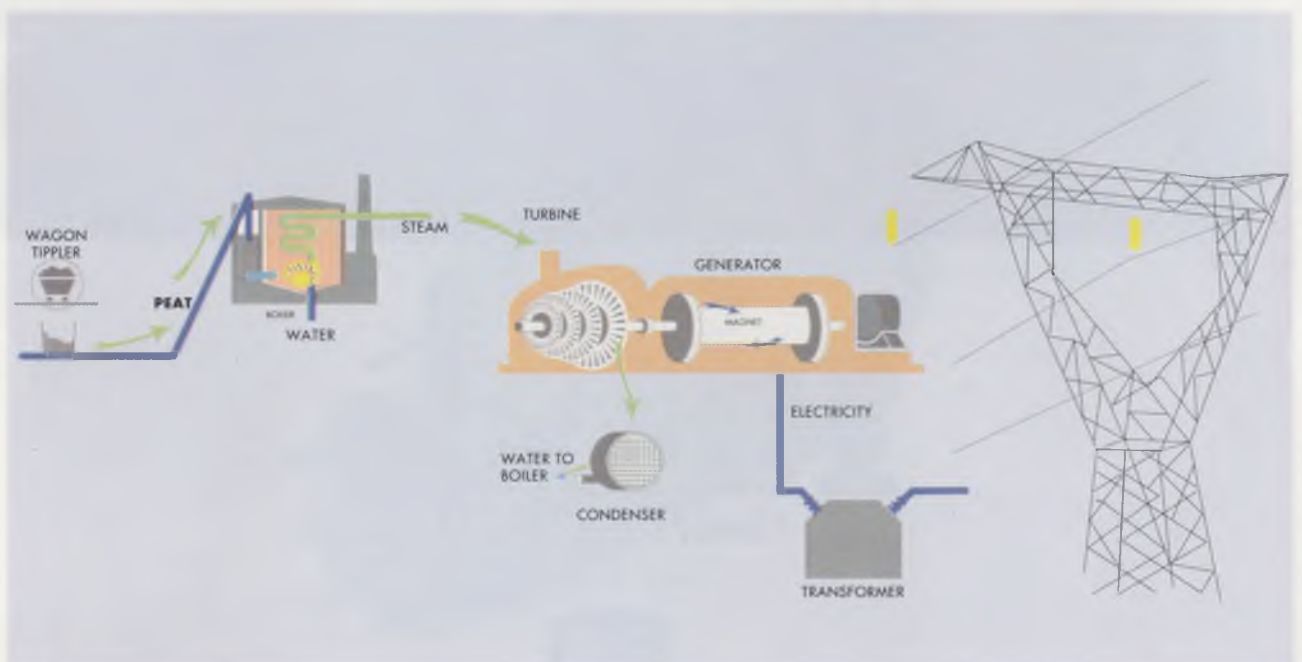
Administration Unit



Wild Hyacinths at Rhode



Turbine Control Panel



How the process works



Boiler House



The Bord na Móna connection.

As there is no large natural supply of water nearby, it is necessary to use a recirculating system of cooling water to cool the condensers. Two cooling towers reduce the temperature of the water so that the same water can be used over again. 60,000 gallons of water flow through the towers per minute in order to condense the steam passing through the turbines. Water to supply the towers is pumped from the nearby Yellow River.

Clean water for domestic purposes and for boilers is pumped from springs at nearby Toberdaly and in recent years is complimented by water from two wells sunk on station site. This water is specially treated in our Water Treatment Plant for use in the boilers.

Turf from local bogs is delivered to the station by narrow gauge railway. Wagons, each containing 5 tonnes, are emptied automatically by the tippler and the peat is then transported by conveyer belt to the bunkers at a rate of 2,000 tonnes per day. An automatic weighing system is used to weigh the peat on its way to the bunkers. The total bunker capacity is 1,000 tonnes and an average 550,000 tonnes of peat are used per annum.



Electrical Control Room



Turbine Hall

Technical Data

Fuel

Milled Peat	55% Moisture Content
Size	Dust and up to 1/2 inch Diameter
Net Calorific Value at 55% Moisture	3350 B.T.U./lb.
Ash Fusion Point	1100°C. – 1150 °C.

Boilers

	1st Development Two 20,000kW Units	2nd Development One 40,000kW Unit
Numbers	1 and 2	3
Maker	Walther & CIE	Walther & CIE
Economic Rating	85 Tonnes/Hr.	176 Tonnes/Hr.
Maximum Continuous Rating	97 Tonnes/Hr.	176 Tonnes/Hr.
Steam Pressure	47 Kg/Cm2	65 Kg/Cm2
Steam Temperature	457 °C.	512 °C.
Firing	Pulverised Milled Peat 34 Tonnes/Hr at 55% M.C. At Economic Rating	Pulverised Milled Peat 61 Tonnes/Hr. at 55% M.C. At Economic Rating

Electrical Equipment

Transformers	A.C.E.C., B.T.H., Electromekano and Unidare
Switchgear	A.S.E.A., Galileo, Siemens-Schuckert, Voigt & Haeffner:

Turbo-Alternators

Number	1 and 2	3
Maker	De Laval Lungstrom	Siemens-Schuckertwertwerke
Type	Radial Flow	Two Cylinder Double Shell High Pressure Impulse- Reaction, Double Flow Exhaust.
Economic Rating	18,000kW	40,000kW
M.C.R.	20,000kW	40,000kW
Speed	3,000rpm	3,000rpm
Steam Pressure	46kg/cm2	64kg/cm2
Steam Temperature	454°C.	510°C.
Voltage	10,500 Volts	10,500 Volts
Power Factor	0.8	0.8

Cooling Towers

Numbers	1	2
Type	R-C Hyperbolic	R-C Hyperbolic
Height	260ft	.280ft.
Internal Diameter at Base	190ft.	205ft.
Water Quantity	1.96 Million g.p.h.	1.85 Million g.p.h.
Temperature Range	29°C. to 21°C.	22°C. to 16°C.

Ireland's Generating Stations

- Steam Stations
- Hydro Stations
- ▼ Pumped Storage Stations

