

A Cultural History of Peat in Ireland

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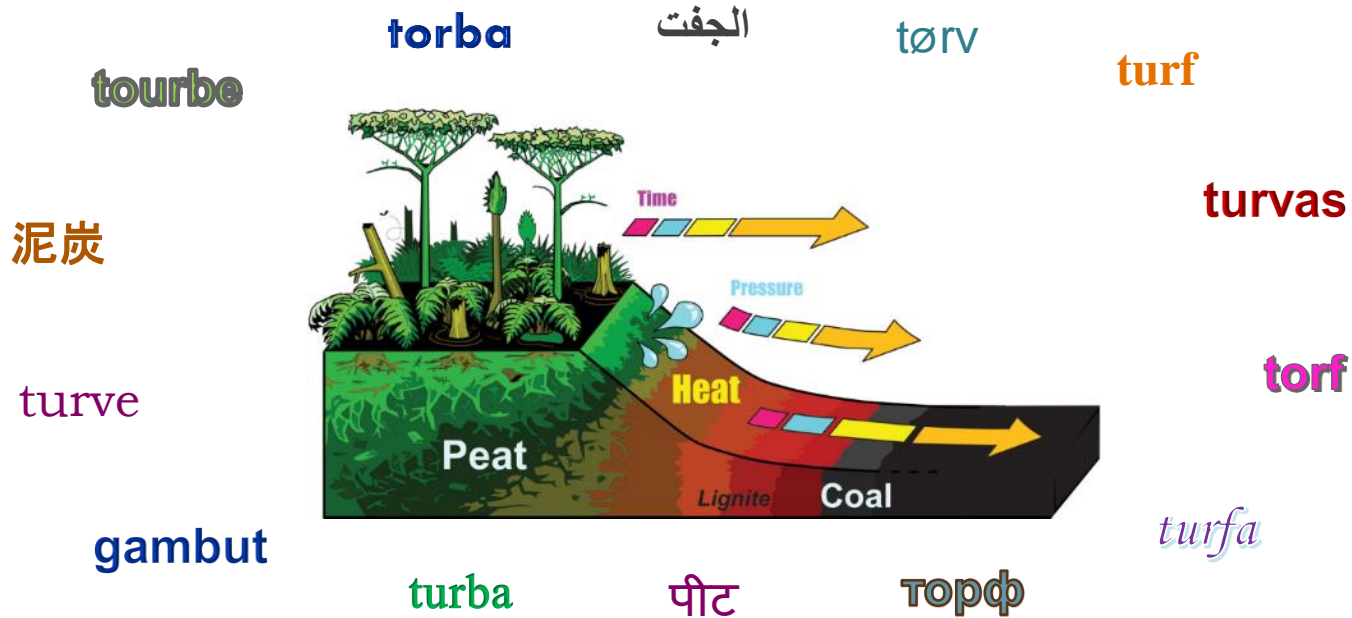
International Symposium on Combustion - 30th July 2018





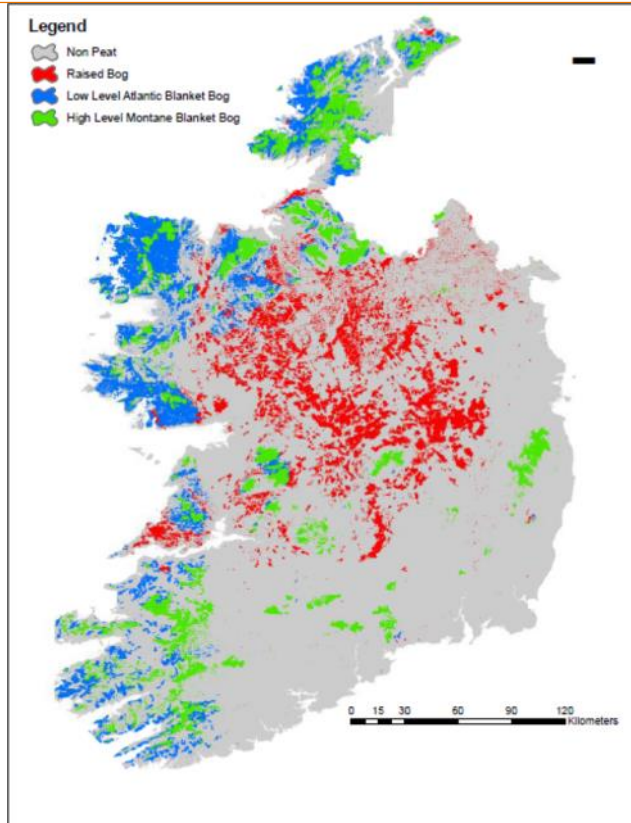
What is Peat ?

A heterogeneous mixture of partially decomposed plant residues that have accumulated in a water-saturated and anoxic environment.





Peatlands in Ireland



Raised Bog, midlands region



Blanket Bog, west coast

Peatlands cover 1.2m ha, 17% of the land area



Mesolithic to Early Christian Period

Post-glacial lakes were infilled by reed-swamp, forming fens and then progressing to raised bogs. Wooden trackways were built to connect areas of dry land.





Peatland Archaeology



Early Christian Single Plank Trackway,
650-685 AD



Neolithic Stone Enclosure, 3880 - 3800 BC



Bronze Age Trackway, 1100 – 900 BC

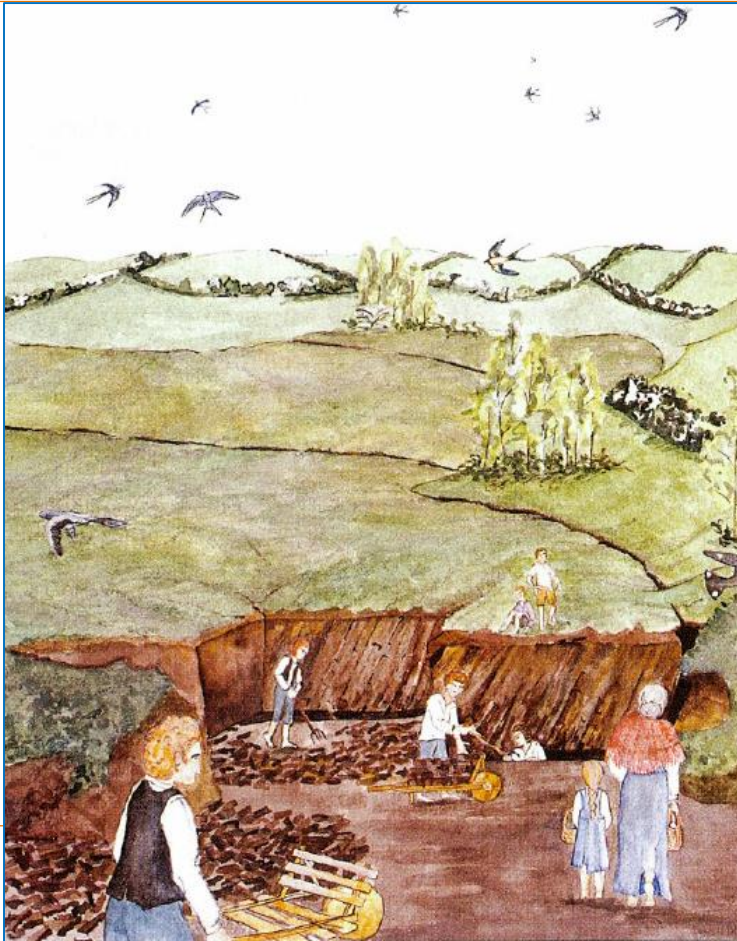


Early References to Peat Use

- *Old Irish law text from the 7th Century: includes fines for the illegal cutting of turf*
- *Senchas Már, from the 7th/8th Centuries: describes turf cutting*
- *Aislinge Mheic Con Glinne, a late 11th Century tale: fire made with two sods of turf and some oat chaff*
- *Anglo-Norman documents from the 13th & 14th Centuries: reference to turbarry – the right to cut turf - and the value of turbarry*
- *Late 16th Century Commission: evidence of tenants cutting turf from bogs on the Earl of Ormond's estates*



By the Late Middle Ages



Raised Bogs were dominant in the Irish Midlands landscape

Blanket Bogs on mountains and along the west coast

Clearance of woodland and rise of population in the 17th Century

More extensive use of sod turf cut from the edges of the bogs for fuel



Hand-won Sod Turf Production



Sleán



Cutting sods of turf



Footing – stacking the sods to dry



The easier way



Bringing it home



Stacking Turf for the Winter





Selling Turf in a Local Town





Bog Commissioners' Map - 1810





Early Peat Entrepreneurs

Promoter	Enterprise	Location & Date
Charles Wye Williams	Mechanical dewatering	Cappagh, 1844
Rees Reece	Peat distillation	Kilberry, 1849
Jasper W. Rogers	Peat charcoal	Derrymullen, 1850
Charles Hodson	Peat briquetting	Derrylea, 1860
McQuaid	Peat litter & board	Umeras, 1890
W. M. Callender	Peat paper	Celbridge, 1903
Norman Palmer	Peat litter	Drumcooley, 1906
J. B. Bessey	Electro-peat coal	Kilberry, 1906
Count Louis Hamon	Peat briquetting	Bellair, 1917
John Purser Griffith	Mechanised sod peat	Turraun, 1924



National Turf Cutting Competition





War-time Emergency: Turf Camps



Camp for peat workers at Killinthomas, Co. Kildare



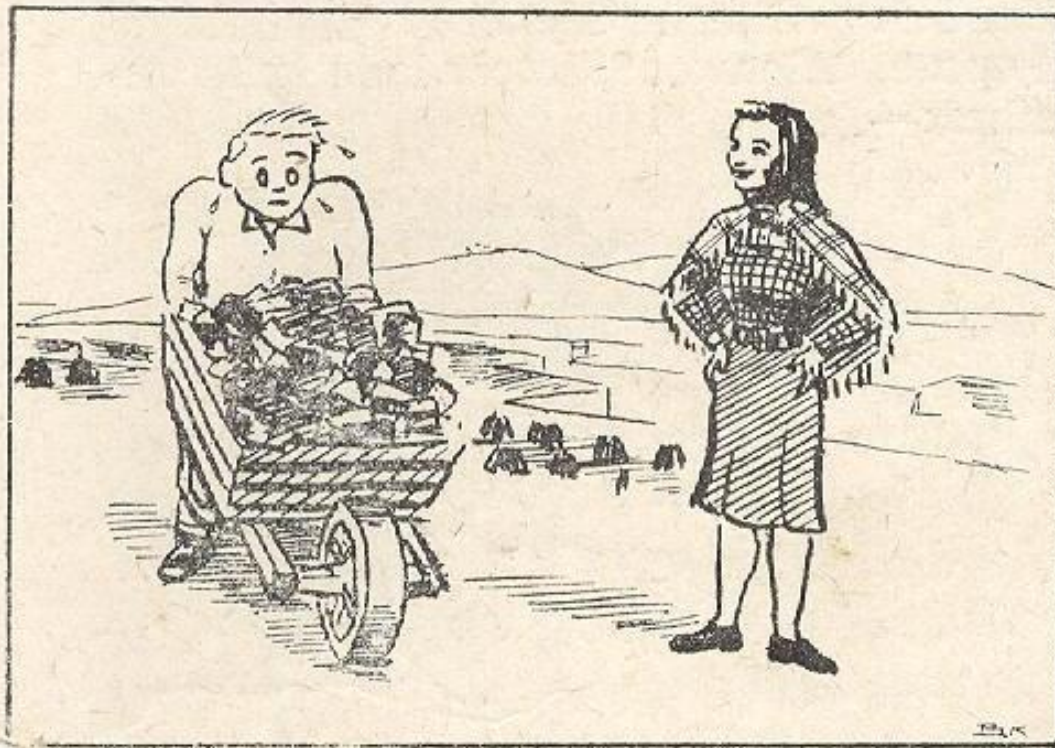
TDB - Sports Competitions



Tug-o-war competition at Newbridge, 1945



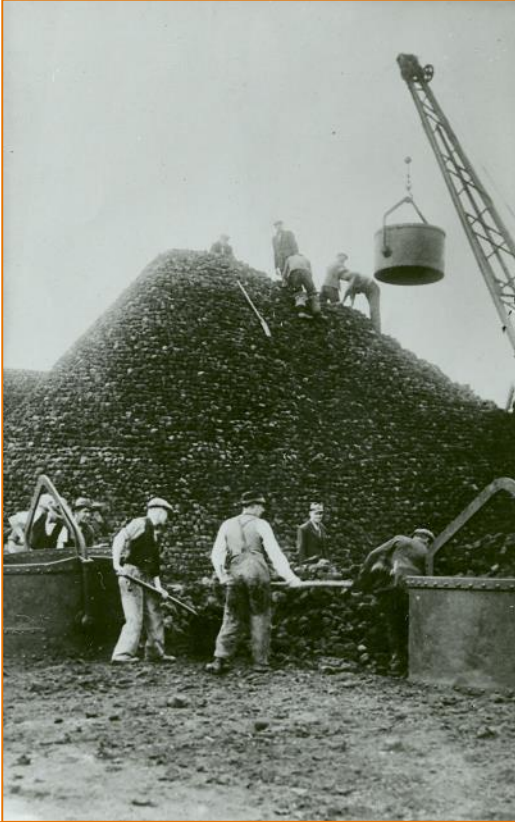
Social Competition



So! Last night you were an
Engineer!



War-time Emergency: Dublin



Sod turf stockpile in the Phoenix Park, Dublin



A cartoon from the Dublin Opinion



Bord na Móna



The final meeting of the Turf Development Board, early June 1946

Todd Andrews, the first MD of Bord na Móna, is on the left

Bord na Móna was formally established on 21st June 1946



Mechanised Sod Turf Production



An electrically-powered Bagger, which cut and spread the turf



Sod Turf Collection



Bord na Móna - fully automated collection of sod turf



1st Generation - Sod Turf Stations



Gweedore, 5 MW - 1957



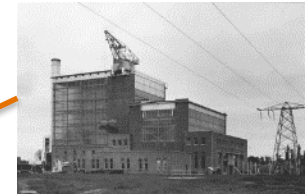
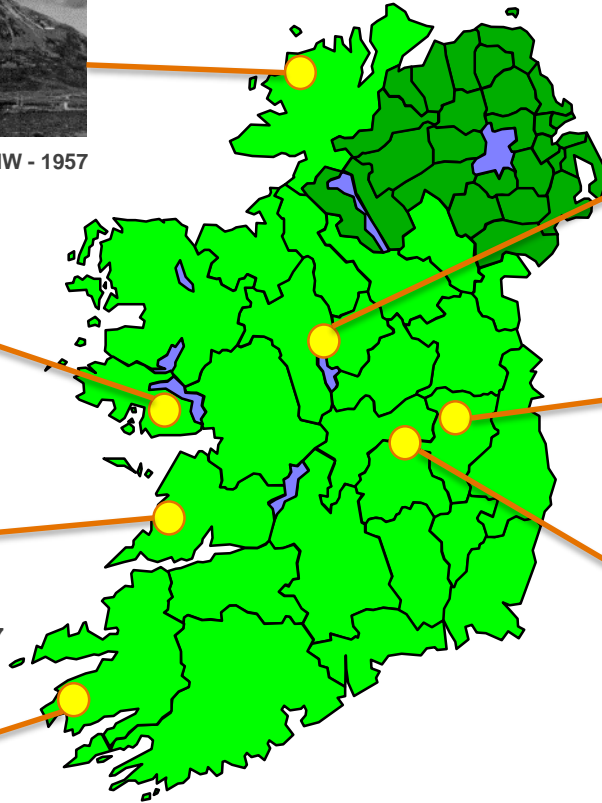
Screeb, 5 MW - 1957



Milltown Malbay, 5 MW - 1957



Cahirciveen, 5 MW - 1957



Lanesborough, 20 MW - 1958



Allenwood, 40 MW - 1952



Portarlington, 38 MW, 1950



Bord na Móna Housing Schemes



Aerial view of the housing scheme at Coill Dubh, Co. Kildare



Milled Peat Production



Milling



Harrowing



Harvesting into stockpiles



Ridging



Types of Peat Fuel

Peat Fuel Type	Moisture Content (%)	Calorific Value (GJ/t)	GHG Emissions (tCO ₂ /TJ)
Milled Peat	45 - 55	7.7 – 10.0	116.7
Sod Turf	30 - 35	12.2 – 13.3	104
Peat Briquettes	10	17.9	98.9



Milled Peat



Sod Turf



Peat Briquettes



2nd Generation – Milled Peat Stations



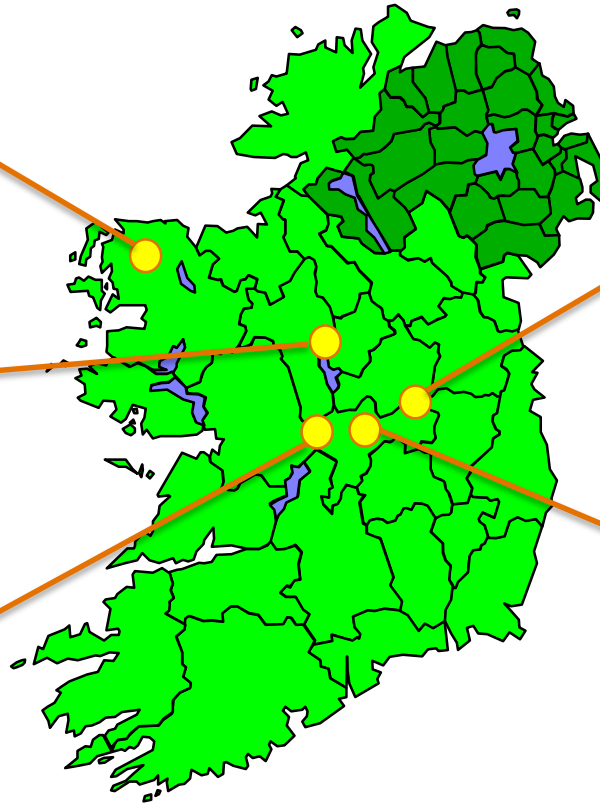
Bellacorrick, 40 MW - 1962



Lanesborough, 85 MW – 1966



Shannonbridge, 125 MW – 1964



Rhode, 80 MW - 1960



Ferbane, 90 MW - 1957



Private Bog Development Scheme



Chain excavator machine



Fieldpress machine



Cutting 'sausage' turf



Spreading 'hopper' turf



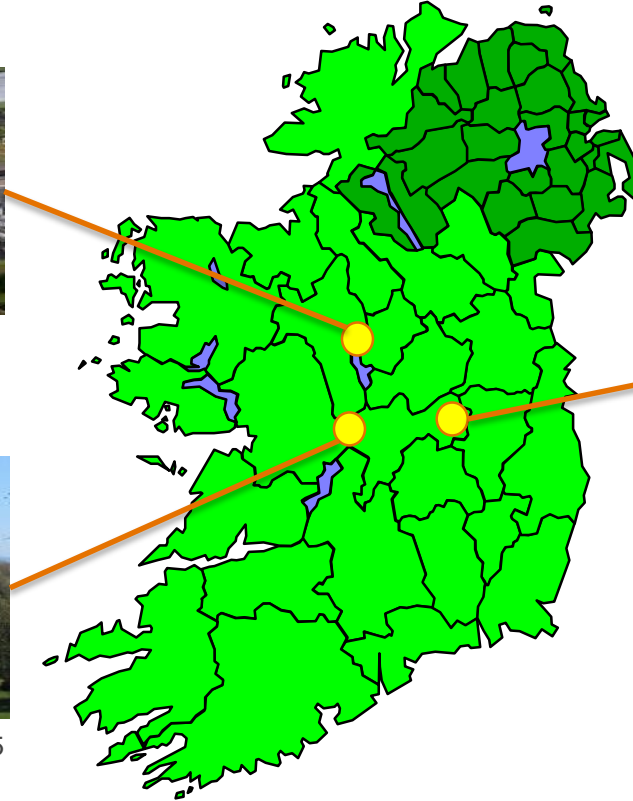
3rd Generation – Fluidised Bed Stations



Lough Ree, 100 MW CFB – 2004



West Offaly, 150 MW CFB – 2005



Edenderry, 128 MW BFB – 2000



Climate & Energy Transition

Conservation

103 Special Areas of Conservation (SAC)

148 Natural Heritage Areas (NHA)

- Reduction in peat cutting

Carbon

EU Emissions Trading Scheme

EU Effort-Sharing Regulation

- Reduction in peat use





The Future



Thank You