BRIEFING NOTE

PEAT AS A FUEL IN NORTHERN IRELAND

PEAT IS EXTRACTED FROM PEATLANDS IN NORTHERN IRELAND TO PRODUCE HEAT FOR DOMESTIC USE AND TO PROVIDE HORTICULTURAL SUBSTRATE.

WHILE USING THIS RESOURCE MAY APPEAR ATTRACTIVE IN FINANCIALLY DIFFICULT TIMES, THERE ARE SERIOUS LONG-TERM DISADVANTAGES IN HARVESTING PEAT.

WHILE A LOW LEVEL OF HAND HARVESTING MAY DO LITTLE LONG-TERM DAMAGE, DRAINAGE AND MACHINE CUTTING DESTROY THE INTEGRITY OF THE BOG AND ITS ABILITY TO FORM PEAT AND DELIVER MANY OUTPUTS.

NORTHERN IRELAND HAS EXTENSIVE PEATLAND, BUT ONLY 15% REMAINS INTACT, 10% HAS BEEN DRAINED AND 46% HAS BEEN HAND-CUT FOR FUEL.

ALTHOUGH MUCH OF THE BLANKET BOG IN NORTHERN IRELAND HAS BEEN PHYSICALLY MODIFIED OVER CENTURIES, MOST IS STILL CAPABLE OF FORMING PEAT.

DAMAGE TO PEATLANDS IS HARD TO REPAIR AS PEAT ACCUMULATES VERY SLOWLY – AROUND 1MM A YEAR IN ACTIVE BOGS – WHICH REPLENISHES ONLY 2% OF THAT EXTRACTED EVERY YEAR.

PEATLANDS PROVIDE A DISTINCTIVE SCENIC WILDERNESS AND CONTRIBUTE SIGNIFICANTLY TO THE CULTURAL HERITAGE, LANDSCAPE AND SENSE OF PLACE AND ARE VALUABLE FOR WILDLIFE.

IN THEIR NATURAL STATE PEATLANDS ACT AS CARBON SINKS. THEY ABSORB CARBON DIOXIDE AND STORE THE CARBON FIXED THROUGH PHOTOSYNTHESIS. THEY HAVE A VITAL ROLE IN STORING AND PURIFYING WATER.

COMMERCIAL EXTRACTION REQUIRES PLANNING CONSENT BUT THE COMPLEXITY OF LAND OWNERSHIP AND TURBARY RIGHTS CAN MAKE THE DISTINCTION BETWEEN COMMERCIAL AND DOMESTIC CUTTING DIFFICULT TO DETERMINE AND NEARLY IMPOSSIBLE TO CONTROL.

THE CUMULATIVE IMPACTS OF EVEN RELATIVELY SMALL-SCALE MECHANICAL EXTRACTION CAN HAVE MAJOR IMPACTS ON THE INTEGRITY OF NORTHERN IRELAND'S PEATLANDS AND IMPACT NEGATIVELY ON THEIR ABILITY TO DELIVER A RANGE OF ENVIRONMENTAL OUTPUTS.

PEAT IS AN INEFFICIENT AND EXPENSIVE FUEL, EMITTING TOXIC MATERIALS WHEN BURNED.

PEAT IS NOT A RENEWABLE RESOURCE AT CURRENT RATES OF FORMATION.

THERE IS NO AGREED CERTIFICATION MECHANISM THAT CAN ENSURE THE SUSTAINABILITY OF PRODUCTS DERIVED FROM PEAT, AS THERE IS FOR OTHER RENEWABLE ENERGY SOURCES SUCH AS BIOMASS (WOODEN BRIQUETTES AND PELLETS).

KEY RECOMMENDATIONS:

- Fuel poverty needs to be addressed by ensuring families have carbon efficient heat sources and adequate insulation, not by encouraging peat harvesting.
- Mechanisms to promote renewable energy sources should be integrated with addressing fuel poverty and this should be seen as a major driver for development of renewable energy provision.
- Peat harvesting should not be encouraged as it can lead to degradation of the ability of peatland to sequester carbon and therefore decrease Northern Ireland's ability to meet carbon reduction targets.

BRIEFING NOTE

PEAT AS A FUEL IN NORTHERN IRELAND

PEATLANDS STORE CARBON

- Northern Ireland has approximately 140,000 ha of blanket bog vegetation. About 15% of this area (22,000 ha) remains intact, with 10% (14,000 ha) having been drained and 46% (64,400 ha) hand-cut for fuel. The remaining 29% (40,600 ha) of blanket bog vegetation is a mix of vegetation types including large areas of eroded peatland.
- 42% of Northern Ireland's soil carbon is in peat soils.
- Peat lands can sequester an estimated 200 kg per hectare per year of carbon more than forestry and slightly less than grassland. Peatland stores around 2.8 tonnes of carbon per hectare per year.
- The estimates of carbon loss from peat extraction in 2008 range from 42,751 to 47,452 tonnes of carbon per year (tC/yr), between 30% and 40% of estimated losses in 1990/91.
- In 1990/91 peat extraction for fuel (hand and mechanical) accounted for around 80% of carbon loss from all peat extraction; in 2008 it accounted for around 20%, with extraction for horticultural peat now dominant.
- Drainage and damage from mechanical extraction can have wide ranging and long term negative impacts on biodiversity and the ability of peatlands to store and purify water.
- In the Republic of Ireland 40% of the peatland resource has been lost due to turf cutting for domestic use; this represents the single greatest loss of habitat in Ireland.

PEATLANDS ABSORB POLLUTANTS

- Unmodified peat and peatland ecosystems can absorb elements and compounds which have been released in toxic amounts into the environment. Often heavy metals such as mercury, lead, cadmium, arsenic, zinc and selenium are tied up in peat deposits, as are organic pollutants such as PCBs and other polycyclic hydrocarbons which are used in agriculture and controlling pests and diseases.
- Peat contains concentrations of heavy metals and burning it will release these toxins into the environment.
- The sudden release of stored phosphorus from peat following habitat damage into surface waters can cause pollution of downstream freshwaters.

PEAT IS AN INEFFICIENT AND EXPENSIVE ENERGY SOURCE

- Peat, with a water content of around 35%, produces around 2,600 kcal/kg while coal has a calorific value of around 6,000 kcal/kg (Hamilton 1982).
- Also ignition occurs between 150˚C and 210˚C, a temperature at which much of the carbon is lost.
- The energy yield of peat is much lower than wood, oil or coal. It takes 2.7 kg of peat for 1 kWh of energy and more than 372 kg of peat to get 1 MWh of electricity.
- The price of peat extraction and loss of carbon mean that it is a very expensive fuel.

PEAT IS NOT A RENEWABLE RESOURCE

- Estimates of annual peat growth today vary between 0.5 and 1.0 mm but the subsidence rate is 15 to 30 times this growth rate. Peat cannot therefore be defined as a renewable energy source. Only on a geological time scale can it be regarded as renewable. Northern Ireland's peatlands have been accumulating for the past 10,000 years.