Q19. Is there any credible event at the terminal that could lead to a major environmental accident?

It has been concluded that credible events at the Terminal could not give rise to a major accident to the environment (MATTE).

Within the site boundary there are no habitats of environmental significance. The designated significant environmentally sensitive receptors near the terminal are the estuary to the north and west of the site and the wetland along the northern shore of the site. Ballylongford Bay which borders on the north west corner of the site is a proposed Natural Heritage Area (pNHA). The estuary is also a candidate Special Area of Conservation (cSAC). Portions of the wetlands along the north border of the site have been designated as pNHA and cSAC.

A set of credible events has been considered for the purposes of assessing the Terminal's compliance with the EN 1473:2007 standard (please see earlier response to Question 9). A MATTE could result if the credible event were to:

- Give rise to pool fire thermal radiation hazard ranges that could harm flora or fauna at a terrestrial receptor of interest; or,
- Give rise to a flash fire harming flora or fauna at terrestrial receptor of interest; or,
- Give rise to extreme cold affecting flora or fauna (causing cryogenic burns).

When released to its surroundings, LNG vaporises rapidly, leaving no residue behind. Hence it does not result in long-term contamination of the environment or bio-accumulation.

A thermal flux of 5 kW/m^2 has been used as the threshold for consideration in this analysis. 5 kW/m^2 is below the level that could cause secondary fires at a receptor (piloted ignition of wood occurs at a thermal flux of 12.5 kW/m^2) and is also below the HSA's dangerous dose for people (7 kW/m^2 for a 75 s exposure). The use of 5 kW/m^2 as an end-point is therefore considered to be conservative.

In terms of the low temperature effects of a dispersing cloud, an end-point of -5°C has been considered. This corresponds to cold winter conditions and is therefore unlikely to result in significant environmental impact.

The credible events are discussed below:

Jetty Head and Transfer Lines

A fire from the jetty head or transfer lines (on water) to the 5kW/m^2 isopleths is calculated to be approximately 60 metres from the release source. The distance to lower flammable limit (LFL) in D5 weather is approximately 85 m; in F2 weather it is approximately 310 m. The distance to a temperature of -5°C

is approximately 20 m in D5 weather and 40 m in F2 weather. None of these effects would reach the wetlands pNHA / cSAC.

Pool fires or flash fires occurring on the surface of water are considered unlikely to have a significant effect on marine life. This is because water absorbs the thermal radiation emitted by fires.

Impoundment Basin

A fire from the impoundment to the 5kW/m^2 isopleths is calculated to be approximately 47 metres from the edge of the impoundment. The distance to lower flammable limit (LFL) in D5 weather is approximately 45 m; in F2 weather it is approximately 150 m. The distance to a temperature of -5°C is approximately 15 m in D5 weather and 25 m in F2 weather. None of these effects would reach the wetlands pNHA / cSAC.

Gas Sendout/Metering

A fire from the gas sendout/metering to the 5kW/m^2 isopleths is calculated to be approximately 140 metres from the source. The distance to lower flammable limit (LFL) is approximately 100 m in either D5 or F2 weather. None of these effects would reach the wetlands pNHA / cSAC.

In conclusion, none of the credible events considered have the potential to give rise to a MATTE.