Question 3

Provide further information on the CO_2 absorption solvent(s) proposed, and the potential environmental risks that they may pose, including but not limited to:

a. Identification of all chemical components in the proposed solvent, as supplied, and relevant hazard information on those substances (e.g. MSDS etc)

b. A summary of chemical reactions and pathways in the absorber that may lead to degradation products, such that the linkage between supplied solvent composition, and chemical substances in, and removed/released from the circulating solvent, can be clearly understood (mass balance). All significant chemical substances should be identified. Significance must be based upon substance concentration and properties, i.e. the possible harm/hazard it presents.

c. Identification of whether introduced or generated chemical substances may be potentially emitted to the air, or otherwise to the environment. With robust justification of why their emission is not possible, if they are present in the system but it is argued that they will not be emitted. If breakdown products are generated, explanation of their fate other than air emissions, i.e. how you will ensure they are removed from the circulating solvent/wash water to prevent build up and eventual emission.

d. As already done for some nitrosamines, consideration of any further potentially significant breakdown products that may be generated by atmospheric reaction following emission (nitrosamines etc).

There is some further bespoke guidance in Appendix 1 to this letter as to our expected response to this request. We need this information so that we can make a complete determination environmental assessment of the proposed carbon capture plant.

We have provided the list of chemical components in the solvent in response to part a. We have also reviewed other degraded substances along with the potential reaction pathways whilst possible these are theoretically improbable based on reaction rate, temperature, presence of reactants or pathway. These are considered not to be emitted or are below any practical (reasonably achievable) detectability. This highly conservative risk based approach addresses points b, c and d.

We understand there may be more questions around this subject and welcome further discussion on this through the determination phase.