



IEAGHG Information Paper; 2014-IP6: Octavius 'International Workshop on Emissions from Post-Combustion CO₂ Capture Processes

A significant amount of progress has been made over the past few years since several other international meetings have been held on the state of the science, such as the IEAGHG/CLIMIT workshop in February 2010 and the EPRI workshop in May 2012. This information has led to a better understanding of emissions phenomena and the potential risks of post-combustion CO₂ capture processes with respect to these emissions.

The international workshop on emissions from post-combustion CO₂ capture processes held on 13-14 February 2014 in Heilbronn (Germany). This conference which was hosted by EnBW has been organised by the EU FP7 OCTAVIUS project. The main objectives of the workshop which gathered 33 scientists, were to present the OCTAVIUS results on emission studies but also to share and discuss them with the invited organisations:

- Gassnova
- University of Oslo
- CO₂ Technology Centre Mongstad (TCM) & STATOIL
- The Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia
- University of Texas
- Electric Power Research Institute (EPRI)
- Consultancy for Environmental & Human Toxicology and Risk Assessment (CETHRA), France
- IEA Greenhouse Gas R&D Programme (IEAGHG).

At this workshop, the progress made in amine emission were presented and discussed covered the following aspects:

- toxicology,
- sampling and analysis methods,
- emission measurements in pilot plants,
- degradation mechanisms,
- emission modelling and counter measures.

Main Conclusions and Recommendations

The main conclusion drawn from the workshop is that there should not be any showstoppers in terms of emissions for most of the post-combustion CO₂ capture processes using amines as solvents. The knowledge developed and presented at this workshop shows that risks are much lower than previously reported for key configurations.

It was found that potential environmental impact and risk assessment studies for preparation of discharge permits for industrial scale CO₂ capture units are highly case specific and should be evaluated separately for each case study.

The aspect of aerosol based emissions has drawn considerable interest recently. Much progress has been achieved in understanding this phenomenon from both theoretical and experimental point of view. Further work must be undertaken to study mist composition, various counter-measures and its techno-economic feasibility to address this issue.



It is also important to continue research through international collaboration in order to develop standards in terms of emission levels and emission measurements.

A round robin test on synthetic liquid and gas samples containing nitrosamines will be organised by the OCTAVIUS project and other labs are invited to join.

Overall this workshop was a success in terms of participation, quality of the discussions and information exchange.

The programme and the presentations are available for download from the OCTAVIUS public website www.octavius-CO2.eu.

Prachi Singh
15/5/2014