

Workshop – Launch Phase II of Model Demonstrator Regions - Gaseous Industrial Effluents as Non-Fossil Feedstock for Sustainable Chemicals Production

Representation of ECRN – Regione Lombardia Office (Place Champ de Mars 2, 1050 Brussels, BE) – 9th November 2016

Summary

In order to lower current CO₂ emission levels as part of activities included in the Circular Economy Action Plan in 2015, it is important to promote innovative industrial processes. For example, industrial symbiosis allows waste or by-products of one industry to become inputs for another. For the production of more sustainable chemicals the re-use of gaseous effluents is another example of an innovative process. Hence, the objective of this workshop was providing information about different activities in different European Regions on using CO₂ and other industrial gaseous effluents as a feedstock; facilitating the energy challenge by providing stored energy at a large scale and offering a solution to inter-seasonal challenges of supply and demand; decreasing GHG emissions; boosting the resource efficient use of gaseous resources including CO₂ utilisation with and without transformation by also discussing the different aspects related to a policy framework for this use of CO₂ and other gaseous effluents as a feedstock. An additional objective was also to inform and to discuss about a systemic approach in support of such activities and new forms of industrial symbiosis using such feedstock for the manufacturing of more sustainable chemicals by also discussing industries current activities. The Workshop was structured along introductory presentations by different Regions; two panel discussions and a final general discussion; and provided the opportunity to Regions and other interested parties to obtain a detailed hands-on insight into the completed Self-Assessment (SAT)-Tool developed by the European Sustainable Chemicals Support Service (ESCSS).

This event highlighted the following aspects related to the different use of CO₂ and other gaseous effluents:

- A change of the mind-set regarding the use of CO₂ and other gaseous effluents is required. This needs also to include that a new term or wording regarding Carbon Capture and Utilization (CCU) needs to be found, since CCU is not one single technology but rather a combination of different systemic approaches leading towards a circular economy for CO₂ and other gaseous effluents where European Regions play a prominent role in the implementation phase.
- There is a need for de-risking industrial symbiosis by facilitating the needed structural change including the required infrastructure establishment making this a reality and a success, where again European Regions could play this de-risking role. Especially as far as piping, networks, and other related infrastructure aspects are concerned. This will also require:
 - providing answers to different complex questions;
 - providing new wording and information on status for CCU;
 - creating cross-political knowledge and understanding at various levels (from regional to EU-level) in the EU leading towards coherence in Circular Economy, Fuel Quality, Emission Trading and Renewable Energy Policies;
 - facilitating public acceptance for the needed infrastructural development;

- finding technical solutions allowing to integrate systems based on different feedstock (CO₂, biomass, etc.);
- developing a suitable sustainable assessment including the right acceptance criteria especially for resource efficiency and use of secondary raw materials including gases. This approach needs also to include the necessary materialisation of industrial scale installations, investments as well as research and development for lower Technical Readiness Levels (TRLs) of relevant technologies/approaches by maintaining the required functionality towards the manufacturing of sustainable chemicals.
- Facilitating large scale investment for realising mature approaches for the use of CO₂ and other gaseous effluents is urgently necessary by addressing different current legal frameworks including especially the Fuel Quality Directive (FQD), Renewable Energy Directive (RED), the Emission Trading System Directive (ETS) and the Carbon Capture and Storage (CCS) Directive by taking into account that there is a level playing field for various fuel types, carbon uses as well as robust business and ecological cases using the right "carrots and sticks" as well as establishing suitable links to different international activities.
- COM representatives stressed that there are already several funding instruments that can be used to co-finance the investments needed to develop infrastructure, to modernise industrial plants and to research and develop the technology for the re-utilisation of CO₂ and other gaseous effluents.

Finally, we express our sincere thanks to ECRN and the Representation of the Lombardy Region for their work and help in co-organising and hosting this workshop as well as to all speakers and panellists for their active participation.