The Energy Transition: an integrated system of emerging sustainable technologies

"The success of any carbon neutral energy transition requires orchestrating a complex network of different technologies that will all be integrated. In all this, energy efficiency and circularity will remain important, and more thought must be given to how the waste of one industry can serve as input for another. This industrial symbiosis will not only require technical solutions but also non-technical ones such as regulatory frameworks. It will be integrated not only from a demand-side management point of view: ie. matching consumption with production but it will also be closely linked to the gas grid and vice versa. Molecules, made either from biomass or from renewable electricity, will be required not only for long term renewable energy storage and transport but also for some hard to abate industries (cement, steel, glass,…) and heavy mobility (shipping, aviation,…).

In this presentation we focus on some emerging technologies which will play a significant role in this complex integration of technologies. We will present a (small) part of the entire network of integrated technologies but we will underline the interconnection and industrial symbiosis including the connection between electricity and molecules in a concept which we called 'CirculAir' fuels."