

**DIPARTIMENTO DI INGEGNERIA – UNIVERSITY OF PERUGIA  
PHD COURSE IN INDUSTRIAL AND INFORMATION ENGINEERING –  
41st CYCLE**

**TITOLO: E-FUEL PRODUCTION FROM CO2 CAPTURE FROM WASTE TREATMENT AND OTHER SECTORS FOR RENEWABLE ENERGY PRODUCTION AND STORAGE**

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The EU environmental policy is pursuing for more than 30 years a strong reduction of the exploitation of fossil fuels for decreasing the emission of GHG. This policy was also improved for reducing the union energetic dependency from abroad by the recent RePowerEU plan. Wind and solar energy are the most exploited options, but also other solutions based on other renewable sources are relevant as biomasses and waste and the production of e-fuels. For this reason, the present project aims to investigate innovative solutions able to produce e-fuels from CO2 capture in the waste treatment sector as in other sectors. E-fuels can efficiently replace fossil fuels but can also represent an effective way for producing but also for storing renewable energy during excess production from other renewable sources (e.g. PV and Wind).