

TH121 Spanish biofuels sustainability assessment, by means of life cycle analysis L. Herrera, CIEMAT / Energy Dpt. - Energy Systems Analysis Unit.

Sustainability criteria have been set to biofuels to be consumed in Europe. Following these criteria, only biofuels that can prove greenhouse gas (GHG) emissions savings of at least 35% (and 50% from 2017 onwards) can be taken into account in order to (a) measure compliance with the requirements of Renewable Energy Directive (RED); (b) measure compliance with renewable energy obligations and (c) be eligible for financial support. In order to implement these sustainability criteria, the purpose of this study is to carry out updated and developed life cycle assessments of biofuels produced and used in Spain during 2010. This study included the current characteristics of the biofuels consumed in Spain. Furthermore, some default and typical GHG emission values for many biofuel pathways are provided disaggregated in the different stages of the cycle namely: raw materials cultivation, processing and transport & distribution. The study includes sensitivity analyses showing the impact on changed raw material and origin. Results show the best sustainable pathway for sugarcane in the case of imported ethanol and the barley for internal production. For biodiesel, soybean would be the best raw material for imported, and in the case of domestic production is the waste vegetable or animal oil the raw material with the best environmental behaviour.