

Strategies and Technologies to achieve a European Fossil-Energy-Free Agriculture AgroFossilFree

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AIM AND APPROACH

AgroFossilFree is an H2020 research project aiming to create a framework under which critical stakeholders will cooperate to evaluate and promote the currently available Fossil-Energy-Free Technologies and Strategies (FEFTS), with a special emphasis on photovoltaics (PV), in EU agriculture. The AgroFossilFree project will contribute to the High Level EU Strategies (*i.e.* [EU Green Deal](#) and [Farm to Fork strategy](#)) as it aims to decrease the use of fossil energy in any farming process from cradle-to-farm gate, while maintaining yield and quality of the end-product. It will also contribute in closing the gap between the available FEFTS with the everyday EU agricultural practices by promoting effective exchange of novel ideas and information between research, industry, extension and the farming community. If this gap closes, European agriculture could become more sustainable with minimum energy, environmental and socioeconomic impact. In order to integrate all the available tools/practices that previous research and industrial efforts have developed; it is significant to adequately train all the professionals involved in the process. Consequently, only when agricultural stakeholders gain knowledge of existing and future technological advancements in energy sector and adequate training is achieved within the EU will agriculture be able to fully align with the fossil energy use reduction policies, the related legal and regulatory frameworks and sustainable food production practices.

SCIENTIFIC INNOVATION AND RELEVANCE

AgroFossilFree is directly related to biomass strategies and policies towards a bioeconomy, as it explores de-fossilisation activities that lead to GHG emissions reduction. AgroFossilFree will facilitate the development of interactive innovation processes in the national/regional agricultural value chains, by bringing together farmers, advisors, researchers, industrial partners and other actors in interactive innovation workshops (physical and virtual). A conceptual framework will be implemented, by which the FEFTS inventoried will be adapted to the regional contexts for an effective and targeted dissemination. Grassroots-level ideas will be captured and channeled using the same approach, resulting in concrete future innovation-based projects developed in response to practical needs of end-users, which will be more quickly put into practice thanks to the empowerment of the actors and the co-ownership generated during the collaborations. This process will be widened to the EU level for generating cross-border collaborations in the area of FEFTS. As to the authors' knowledge, this is the first effort for such an innovative FEFTS inventory to be created.

EXPECTED RESULTS AND CONCLUSION

The expected results of the project are:

- Assessment and evaluation of the current energy use status in EU agriculture and the requirements to achieve a European fossil-energy-free agriculture.
- Identification and presentation of available and directly applicable FEFTS from applied research results to market solutions and explore existing financing tools for de-fossilising activities.
- Collaboration with all relevant stakeholders in thematic groups using interactive physical and online methodologies to produce community-based ideas for FEFTS integration in agricultural systems at regional and EU levels.
- Creation of an online platform with all available FEFTS for stakeholders and a Decision Support Toolkit to propose interventions and financing tools.

Topic 6.2 PV in Infrastructure, on Water and on vehicles; PV and Agriculture

- Creation of policy guidelines on EU, regional and national levels to be communicated promote FEFTS in real agricultural activities in the near future.

The project will provide a clear research roadmap for FEFTS and important policy guidelines to be implemented in the near future. A presentation at the EUPVSEC will summarize the past, on-going and future activities of the AgroFossilFree project, highlighting the opportunities of PV integration in agriculture.