

Studies of feasibility for the energetic exploitation of the agricultural biomasses in the Lazio Region (central Italy)

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Introduction

With the purpose to be able to translate in investments the numerous U.E. and national directives promoted in the last years to push the diffusion of the biomasses for energetic uses, the Region Lazio has commissioned to the Experimental Institute for the Agricultural Mechanization in Rome a study directed to identify technologies that, in the field of the energetic exploitation of the biomasses, can be suited better for the regional realities. Thus in terms of availability of biomass and of uses of thermal or electric energy.

Specification of the area of investigation

The investigation has been realized on the whole regional territory and has pointed out some zones in which exists availability of biomass and also concentration of potential uses. In relationship to the regional agricultural reality it has been possible to identify some zones to great availability of residual biomass and precisely: olive crops zones: we refer to the area located in the Sabina, between the provinces of Rome and Rieti, and in the hilly part of the province of Latin. In these zones it is possible to hypothesize the energetic exploitation of the pruning of olive trees and the by-products of the treatment of the olives (sane virgins and exhausted); walnut tree zone in the mountains of the Viterbo. Here it is possible to hypothesize the exploitation of the hulls for energetic uses. Such activity already exists in domestic boilers however their are obsolete installations; different zones in the province of Latin and Rome with remarkable presence of the fruit-growing not from hull (peach, cherry, apricot tree and kiwi). In these zones it is possible to use the prunings for energetic purposes; zone of the Roman castles characterized by a great concentration of specialized vineyards. The usable biomasses are represented by the pruning and by the by-products of the processing of the grape (rasp and skins). As this zone is close to Rome is possible to hypothesize some synergies with the utilization of the town parks prunings; dry hill of the viterbo and the north part of Rome where are grown cereals. In this zone it is possible to foresee the energetic exploitation of the straw.

As it regards the identifications of the biomass users the investigation has been addressed on three typologies users in relation to the power installed: domestic uses; small industrial fittings: ovens, greenhouses, wine cellars, etc... great industrial fittings: fittings for the production of electric energy for self uses or to introduce in net, etc...

Definition of the proposable interventions and realization of studies of pre-feasibility

Once has identified the intervention areas on the base of the information technical and environmental collected, the initiatives entrepreneurial and the necessity of financings are been identified through studies of pre-feasibility. These studies as taken in account: necessary investments (typology and amount); times of realization of the investments; potential location of the intervention inside the territory regional and relative basin of provisioning; coverage of the investments (possibility of co-financing); examination of juridical-administrative feasibility. The evaluation of the impact of the initiative has evaluated through the identification: of the direct occupation; of the induced occupation; of the environmental impact; of the rural development.

Diffusion of the most promising pre-feasibilities with the purpose to favor the activation of investments

The aim of the project is to activate a narrow relationship between the researchers and the regional technicians so that to guarantee an result diffusion activity not only during the project developing.

With the aims to spread to the Region agricultural trainers the technologies of energy production from biomass, has been organized some seminars, open also to leaders of the different agricultural and agro-industrial regional realities. The seminars has concerned general aspects (legislation and classification of the biomasses), the technical aspects to the energetic exploitation of the biomasses and the economic aspects. To allow the spread of the knowledge on the regional territory, an informative brochure has been elaborated on the use of the biomass for energetic purposes and particularly:

- definition and classification of the biomasses
- conversion processes and technologies
- quantities of available biomass in the Lazio Region (also through elaborate regional maps);
- level of diffusion in the Lazio Region of the technologies for the energetic exploitation of the biomasses classified for typology of market;
- opportunity of diffusion of new technologies: characteristics of the feasibilities;
- the legislative aspects, the system of the incentives and the sources of financing.

Conclusions

The paper reports the studies of more promising feasibility in terms of environmental impact and economic return and the necessary financial tools for their activation. Activation of two sour-energetic filieres are anticipated.