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# ASSESSMENT OF AIR POLLUTION POTENTIAL FROM NON-TRADITIONAL BIOMASS FUELS

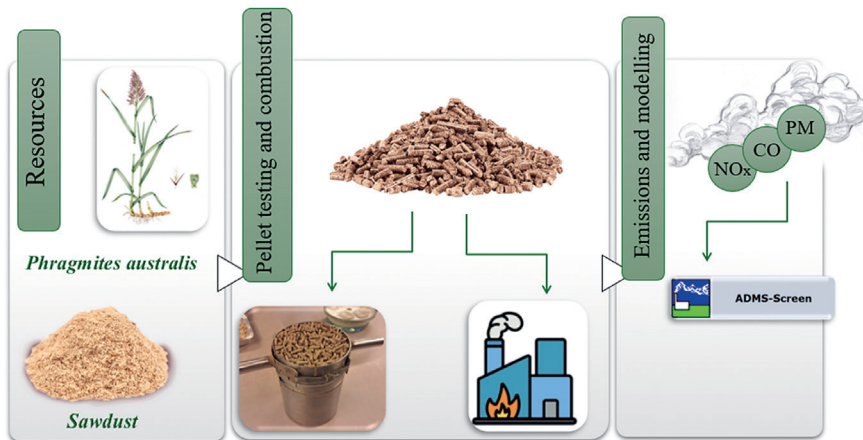
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**Abstract** – The United Nations Sustainable Development Goal (SDG) 7, on affordable and clean energy, aims to reduce the use of fossil fuels. In accordance with Directive 2023/2413 on the promotion of Renewable energy sources (RES), the European Union’s 2030 target for renewable energy has been increased from 32 % to 42.5 %, with the intention of raising it to 45 %. This has led to a growing use of local resources, especially wood, thereby raising concerns about forest degradation and prompting a search for alternatives. The common reed (*Phragmites australis*), characterized by high biomass productivity and low management costs, is a widely available yet underutilized resource with significant potential for thermal energy production. The study focuses on analyzing the quality parameters of the reed pellets and the emissions produced during the combustion process. Additionally, ADMS-Screen was used to model quasi-Gaussian emission dispersion. The findings indicate that common reed pellets can partially substitute wood biomass, as the ENplus® classification requirements were met for pellets containing 60 % and 80 % reed, mixed with 40 % and 20 % wood, respectively. The produced emissions during the combustion process of both optimal proportions are higher than those of wood pellets. Although an emission control system can reduce these emissions to some extent, a comprehensive cost analysis is required to evaluate overall efficiency.

**Keywords** – Alternative; bioenergy; biomass pellets; combustion emissions; common reed (*Phragmites australis*); modelling



Methodological framework for the alternative biomass study

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