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RENEWABLE ENERGY COMMUNITY'S BARRIERS AND IMPACT ON CENTRALISED ENERGY PRODUCTION

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Abstract – Major changes are taking place in the energy sector. In order to achieve climate neutrality, it is crucial to increase energy production from renewable energy sources. One way to accomplish this is to establish energy communities and cooperatives, which require optimal development and expansion solutions. Energy cooperatives are, by definition, community projects whose primary goal is to generate electricity and heat for their own use as well as for sale and distribution. The main reasons for establishing such communities are to reduce costs and the negative impact on the environment, as well as to democratise and decentralise production, reducing reliance on larger producers. This kind of collaborative effort also allows people who lack the necessary funds and knowledge to participate in the production of renewable energy. The goal of energy communities is to use energy produced primarily from renewable energy sources; the easiest way to do this is to use solar panels, but there are also other options. Although the European Union has launched several programmes to increase the number of energy communities, there are several barriers that prevent them from being established. In the conditions where energy communities are connected to largescale energy systems, it is also important to assess how energy communities affect centralised energy production and overall energy efficiency. This study provides a thorough analysis of the barriers to establishing energy communities as well as their impact on centralised energy production and overall energy production efficiency.

Keywords – District heating; energy communities; legislation; RES integration