

STATE-OF-THE-ART OF DECISION SUPPORT SYSTEMS FOR THE CHOICE OF RENEWABLE ENERGY SOURCES FOR ENERGY SUPPLY IN ISOLATED REGIONS

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ABSTRACT

The promotion of renewable energy sources (RES) and ecologically clean technologies to reduce greenhouse gas emissions is a key policy of the European Commission. In isolated regions with great and unexploited RES potential, RES technologies can exploit local resources for electricity supply and substantial energy savings. The use of decision support systems (DSS) aims the multidimensional decision-making process regarding the choice of RES for energy supply in isolated regions. The network integration issues for the distributed energy resources (RES in our case) are challenging, since, in particular, the design of hybrid systems is strongly influenced by two components: one is the amount of energy that is expected from the renewable resources and the other is the ability of the power system to maintain a balance of power between generation and consumption. This paper reviews the DSS for the choice of RES in isolated regions and proposes some future developments.