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Creating the electric energy mix of a non-connected Aegean island

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As the electric energy in the non-connected islands is mainly produced by oil-fueled power plants, the unit cost is extremely high. Here the various energy sources are examined in order to create the appropriate electric energy mix for a non-connected Aegean island. All energy sources (renewable and fossil fuels) are examined and each one is evaluated using technical, environmental and economic criteria. Finally the most appropriate energy sources are simulated considering the corresponding energy works. Special emphasis is given to the use of biomass and the possibility of replacing (even partially) the existing oil-fueled power plant. Finally, a synthesis of various energy sources is presented that satisfies the electric energy demand taking into account the base and peak electric loads of the island.

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