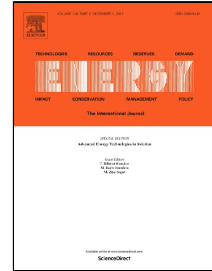


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Design of district heating networks through an integrated thermo-fluid dynamics and reliability modelling approach

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**Highlights**

- An approach for District Heating design and energy-reliability optimization is proposed
- An integrated thermo-fluid dynamic and Monte Carlo tool has been developed
- The effects of Thermal Energy Storage on efficiency and quality of service have been considered
- A scenario analysis on a case study related to an Italian District Heating has been implemented
- The results underlined the benefits of including reliability in the design phase

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