

ENER/FP7/296003/EFENIS



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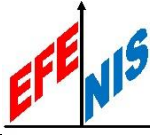
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Dissemination Level

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|----|---|---|
| PU | Public | |
| PP | Restricted to other programme participants (including the Commission Services) | |
| RE | Restricted to a group specified by the consortium (including the Commission Services) | X |
| CO | Confidential, only for members of the consortium (including the Commission Services) | |



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This report describes a new methodology for cooling water system design and retrofit applicable for the total site level. According to conventional approach the design of cooling water systems is not typically carried out until the design of heat recovery systems is completed. There is an economic incentive to reduce overall cooling water flowrate required by reusing cooling water between coolers. The methodology developed is based on limiting cooling water profiles for each cooler and cooling water composite curve. This composite curve shows overall characteristics of cooling water use for the whole cooling water network, which can be a design basis for reducing cooling water requirement in a holistic manner. Maximum reuse of cooling water may be chosen as optimal conditions for minimizing cost of cooling water systems. The report provides detailed description of the design methodology, both for a single plant and for the total site level. Another topic which the report is focusing on is retrofit of the existing cooling water system.