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Answer to Reviewers' Comments
Paper: Analysis of Solar Thermal Polygeneration Systems for the Residential-Commercial Sector

We would like to thank the Reviewers for their efforts and insightful contributions to this manuscript.

Reviewer

This study has been well presented with a clear aim and methods. Some interesting results were achieved.

Answer: Thank you very much for your kind comments.

Sone minor parts may need to be clarified:

1. *for the performance simulation, if a commercial package was applied or just the theoretical calculations were used?*

Answer: As it is explained just before the subsection 2.3.1: "*A mixed-integer linear programming (MILP) model in LINGO (Schrage, 2016) has been developed to minimize the total annual cost of each system and to analyze its operation hour by hour throughout the year.*"
Therefore, the software used for the calculations is only LINGO. No other commercial package has been used. In order to clarify this aspect, the next sentence has been included in subsections 1.3.1; 1.3.2 and 1.3.3: "*The objective function implemented in the LINGO software minimizes the total annual cost […]*"

2. *How to validate the calculations?*

Answer: The three systems modeled do not exist, therefore it is not possible to use experimental values for the validation. Nevertheless, we have compared the obtained results with those obtained by other authors as it is explained in the paragraph after Fig. 7 and previous to Section 3.2:
"*The previous results are consistent and in agreement with those obtained by other authors, as for instance: Roumpedakis et al. (2020) proposed the design optimization of small-scale solar-driven ORC plants in Cyprus, Greece, and Turkey, considering different types of solar thermal collectors (flat plate, evacuated tube, and PTC). The results showed that the PTC presented better economic performance, with the lowest payback periods. Wu et al. (2018) assessed the economic and environmental performances of three solar-biomass hybrid Combined Cooling, Heat and Power (CCHP) systems, and obtained that the solar-ORC configuration had the best economic performance. Petrollese and Cocco (2019) proposed the pre-design of solar-based ORC systems taking into consideration the effects of heat source and heat sink variations. Shirazi et al. (2016) assessed the energy, economic and environmental performances of five solar heating and cooling absorption chillers taking into account the type of chiller and solar collector, as well as different climate conditions. It was observed that RATE with PTC resulted in the most energy-efficient and cost-effective plant configurations for regions with very high Direct Normal Irradiance (DNI) levels. Nevertheless, RADE with EFPC were also good alternatives for most regions.*"

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