6th International Conference on Smart Energy Systems
6-7 October 2020
#SESAAU2020

HEATflex

Ways to tomorrows district heating Green and more efficient

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The HEATflex project

Co-funded by the Horizon 2020 programme of the European Union

- Duration: 05.2019 – 04.2022 (36 months)
- Call for proposal: ERA-NET SES RegSys 1st Joint Call
- Project lead: Plan Energi (DK)
- Project partner
  - Energy Cluster Denmark (DK)
  - Viborg Fjernvarme (DK)
  - 4ward Energy Research GmbH (AT)
  - Reiterer & Scherling GmbH (AT)
  - Güssing Energy Technologies GmbH (AT)
  - Regelungs- und Verteilerbau GmbH (AT)

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Motivation

- Contribute to the modernization of district heating grids – "Green and more efficient"
- Show ways to increase the share of waste heat and renewables
- Learn from each other

Expected Results

Technology	• **An Excel tool on the benefits of waste heat integration and the use of renewables** • **An Excel tool on the benefits of lowering temperatures and extending the network** • **Design of a „prosumer-unit“ which can control the delivery of waste heat**
Market	• Guideline for the increase of grid efficiency and flexibility • Guideline for lowering temperatures in grid • Guideline for the integration of waste heat and renewables
Adoption	• Spread the good stories about efficiency and utilization of waste heat

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Guideline(s)

- When, where and how to connect prosumers to the grid
  - Location
  - Temperatures
  - Heat transfer stations
  - Economic issues
  - etc.

- How to increase the efficiency and the flexibility of a heating grid
  - Lower the temperature levels
  - Business and operation models
  - Missing links and components
  - Best practice examples

HEATflex Calculation Tool

Goal: Show the (positive) effects of the integration of waste heat and renewables

- Excel based tool
- Comparison between two scenarios
- Includes different options for production units
  - Biomass, Gas boiler, Oil boiler
  - Heat pump (air and water)
  - Solar power plant
- Possibility of storage integration
- Consideration of part load behaviour
- and much more (to come)

Output: technical, economical and ecological evaluation

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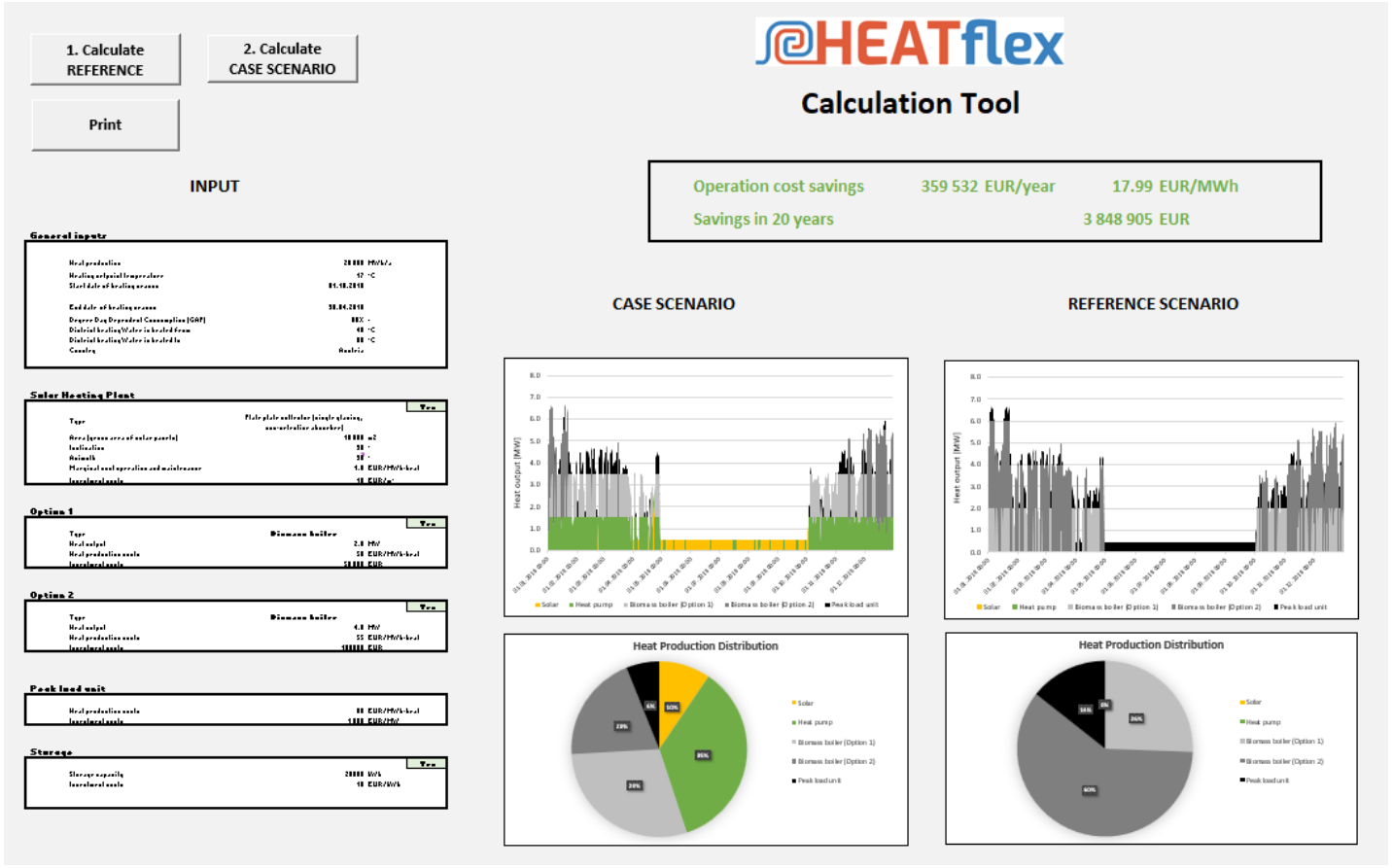
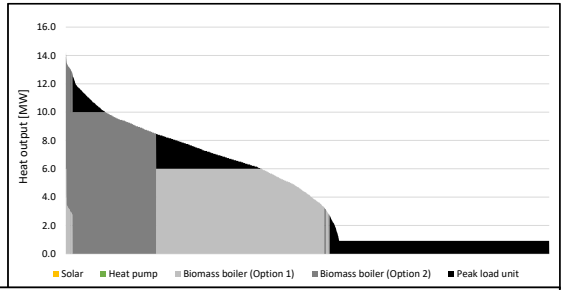
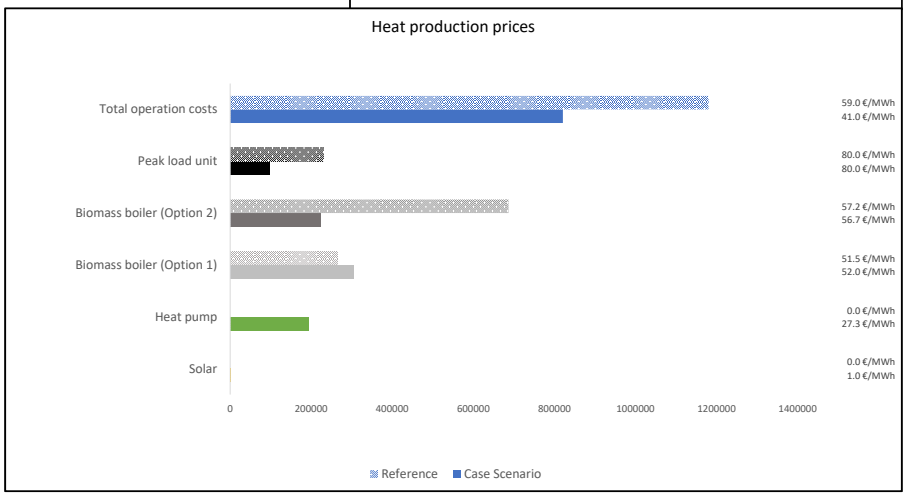
HEATflex Calculation Tool - Interface



HEATflex Calculation Tool – Output

- Technical details
  - Seasonal performance factor of the heat pump
  - Heat production distribution
  - Fully-load hours
  - …
- Economic details
  - Operation cost (savings)
  - Amortisation period
  - …
- Ecological details
  - CO_2 emission (savings)





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Outlook

- Finalization and further development of the tools
- Identification of missing links and components
- Development of business models and operation models
- Create guideline(s)
- Spread the good stories about efficiency and utilization of waste heat and renewables

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Thank you!

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