CURRENT TASK ACTIVITIES

IEA HPT TCP – Annex 54
Low-GWP Refrigerants

Thore Oltersdorf, Lena Schnabel, Peter Schossig

Contribution of FhG ISE (Germany)

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www.ise.fraunhofer.de
Introduction

- Fraunhofer ISE (ISE) participates based on a related national project for R290 HP development project (safeSENS)

- Project started 1\textsuperscript{st} January 2020, Task activities have started and OA was informed that input for tasks that have already been officially finished (Task 1) will be sent until second / final deadline (3\textsuperscript{rd} quarter 2020)

- Based on that ISE and OA agreed that ISE should cover R290 activities for each task → contact requested to each task leader for clarifying deadlines

- Synchronization on country report writing process has been started with other active German parties
Task 1 – Review of SOTA

- Review of literature
  - > 500 publications identified dealing with R290 research topics as refrigerant (contains anything from htc and dP investigations to system comparisons)
  - Focus on experimental activities is ongoing
  - Filtering for studies in which AC/HP systems were compared with other refrigerants (e.g. ORNL study on R22 room AC etc.). This was done to identify techno-economical constraints usually applied for these system comparisons. Less than ten very relevant studies identified.
  - Country report writing process until 11/2020 (incl. synchronization with other active national parties)
Task 2 – Case studies and design guidelines

- Analysis of literature and findings of national projects on R290 research will be used to describe available case studies
- Base cases (incl. risk assessment, charge reduction, efficiency analysis) will be defined based on this, too
- Activities for the country report have not yet started
Task 3 – Design optimizations and LCCP

- Review on all input parameters for LCCP started. Especially input parameters with large unknown variables:
  - What are carbon footprints for refrigerants that will be important from now on?
  - What are EOL leakage rates in Europe
    - Identified and analyzed studies from Norway, Denmark, Belgium, Netherlands, Spain, Germany
    - Depending on device class and country EOL leakage rate varies between 6-40%
  - The country report writing process have not yet been started.
Task 4 – Outlook for 2030

- Activities for this task and the country report have not yet started
Task 5 – Report and information dissemination

- We understand a compilation on all other tasks
- Activities for this task and the country report have not yet started
Thank you for your attention!

Fraunhofer Institute for Solar Energy Systems ISE

Thore Oltersdorf

www.ise.fraunhofer.de
thore.oltersdorf@ise.fraunhofer.de