

Third International Conference **CONSOLFOOD2020**

Advances in Solar Thermal Food Processing

22-23-24 January 2020

INSTITUTE OF ENGINEERING; UNIVERSITY OF ALGARVE; CAMPUS DA PENHA; FARO-PORTUGAL

SunStore Cooker – A battery type solar cooker charged by an automated sun tracking system



HELIAC

Akiko Ishibashi, Jonn Reim, Jakob Jensen
Heliac ApS, Denmark

CONSOLFOOD2020



District Heating Plant in Denmark

Heliac Solar Cooker



- Tested in 4 countries
- Cooks at temperatures comparable to biomass

Heliac Solar Cooker

- Challenges
 - the size too big to store and to transport
 - tracking of the sun
 - cooking stops when a cloud appears
- Cultural barrier and behaviour change





The concept of SunStore Cooker

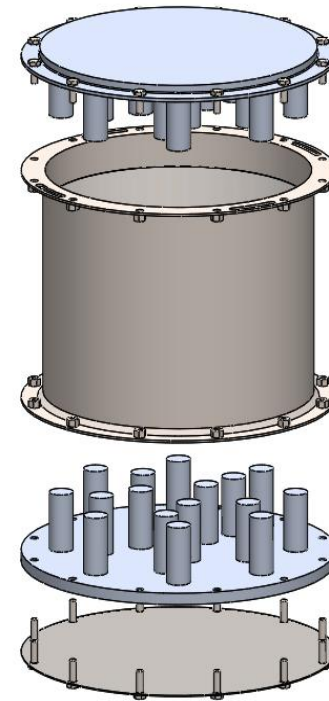
- Solar cooking after dark
- No need to adjust timing of cooking
- Easy use – no need for long-term follow up
- Central charging system

SSC facts

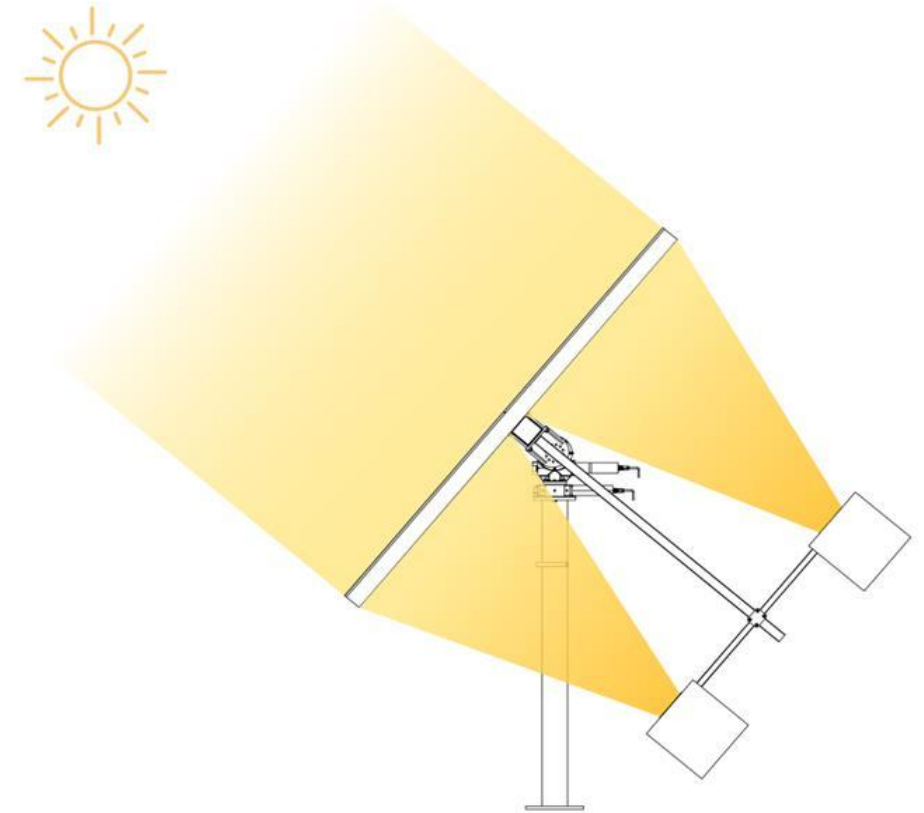


- Content: a mixture of molten salt
- Size (ø25cm, height 25cm)
- Weight 23kg
- Max temperature 300°C
- High heat 2 - 3 hours
- Lower heat 6 - 7 hours

Construction



The charging unit

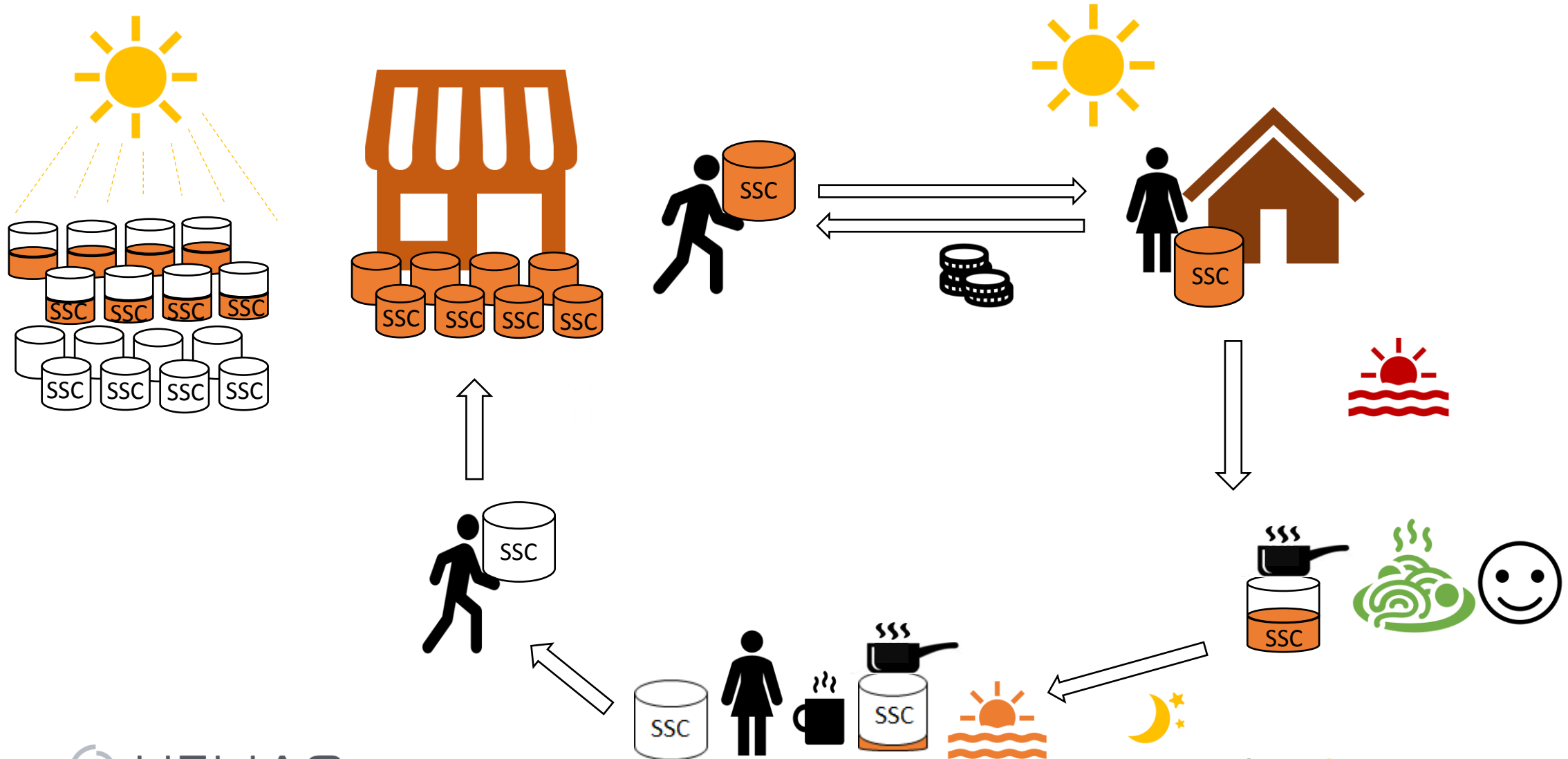


Charging unit – how it works

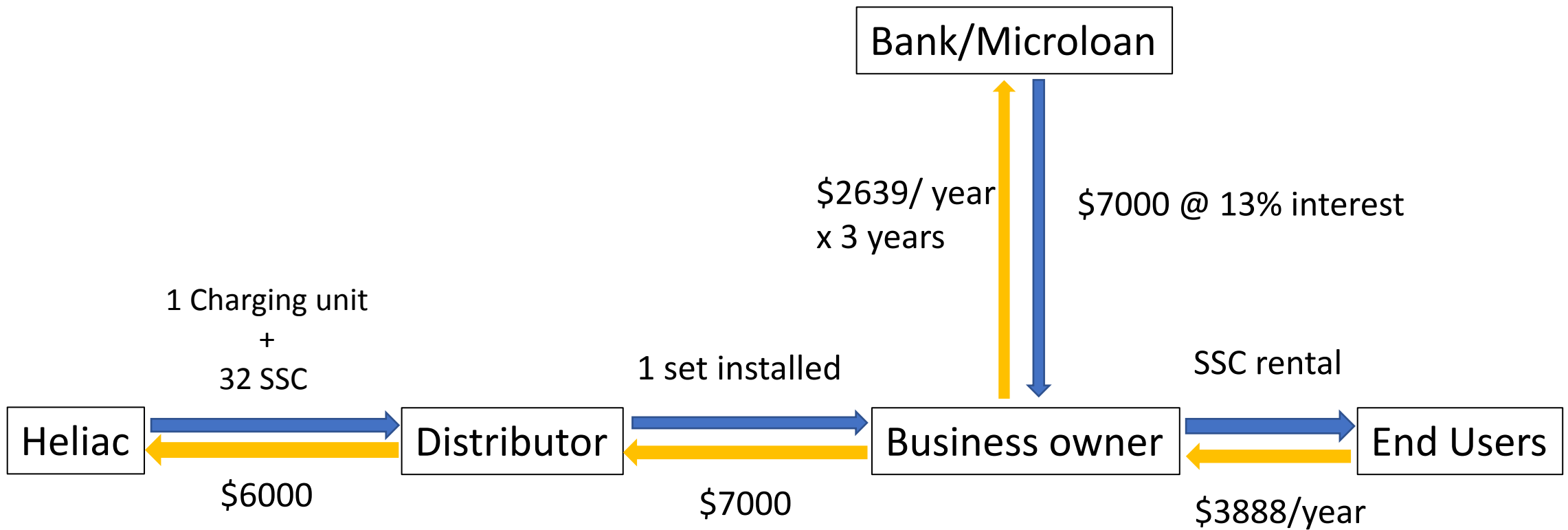
- 8 lenses – 8 SSC charging at once
- Automatic tracking system
- Charging takes 3 - 4 hours
- Each lens produces 1.2 kW



SSC operation model



Ecosystem



Further development

- Identifying best materials for SSC
- Insulation to keep high heat for a long time
- Develop and test business model





Thank you!

Contact

Akiko Ishibashi

ai@heliac.dk

<https://www.heliac.dk/solar-cooker/>