

## Project outputs:

### H-CHP OPEN SOURCE DEVELOPMENT

- ✓ Small scale ≤ 50kW
- ✓ Provides heat and power for households
- ✓ Using locally available solid fuel renewables
- ✓ Suitable for on/off grid
- ✓ Affordable and durable
- ✓ Smart energy management solution
- ✓ Alternative power sources like solar and wind energy
- ✓ All are well come to participate in the development work!

### GASIFICATION AND ALTERNATIVE FUELS

- ✓ Wood and paper waste is converted into combustible gas for producing electricity and heat
- ✓ Development of a preprocessing solution of paper and wood waste for gasification
- ✓ Demonstrations with GEK gasifier kit owned by the University of Iceland arranged

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### Project Partners:

H-CHP pools the efforts of the transnational partners to develop a technological solution applicable to all with manufacturing, testing and piloting shared across the area. The Following organizations form the partnership:

#### FINLAND

University of Oulu (lead partner)  
Oulu University of Applied Sciences  
Finnish House Owners' Association

#### ICELAND

University of Iceland

#### IRELAND

Energy Action Ltd

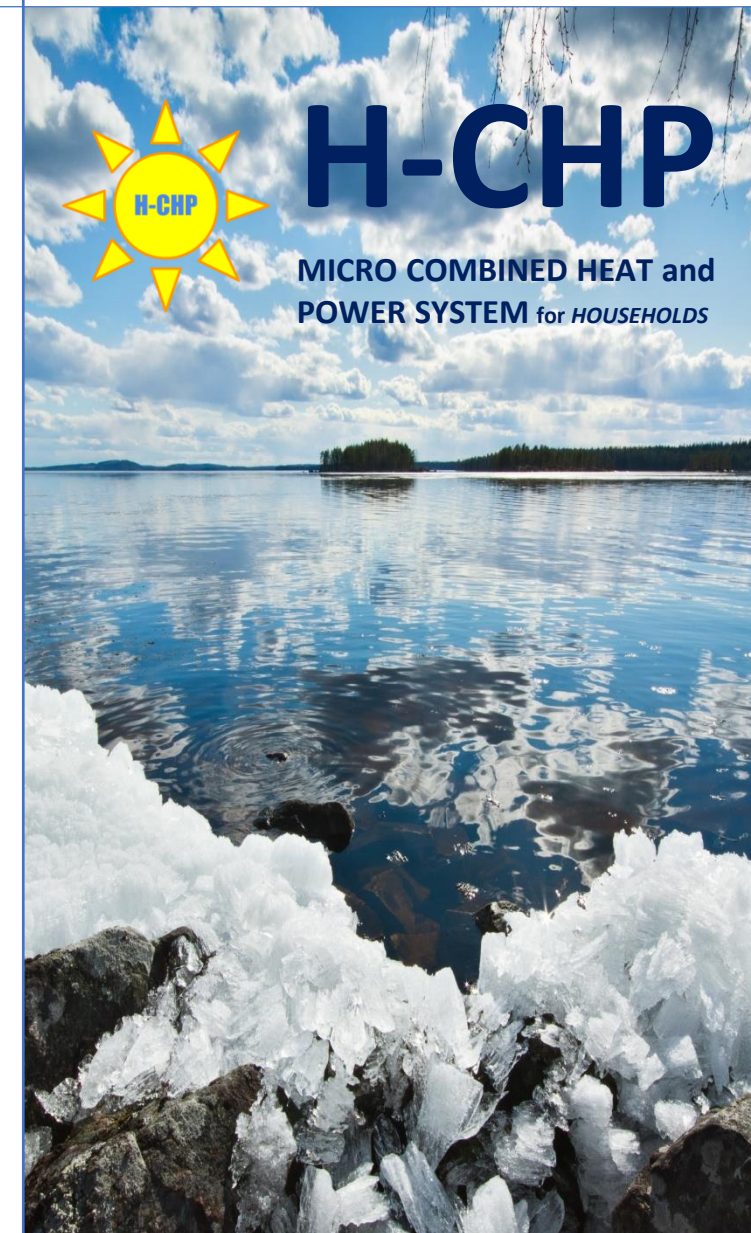
#### SCOTLAND

Tighean Innse Gall  
Lews Castle College – UHI  
Point & Sandwick Trust  
The Woodland Trust Scotland

#### SWEDEN

Luleå University of Technology

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# H-CHP

**MICRO COMBINED HEAT and POWER SYSTEM** for *HOUSEHOLDS*



## Northern Periphery and Arctic Programme

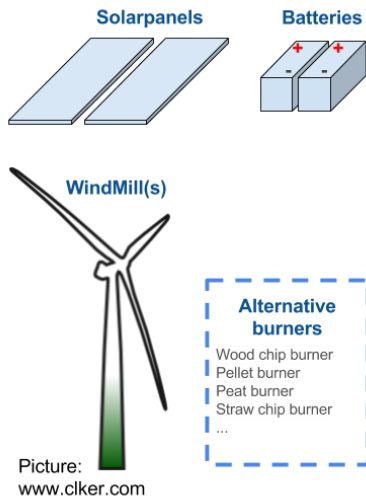
2014–2020



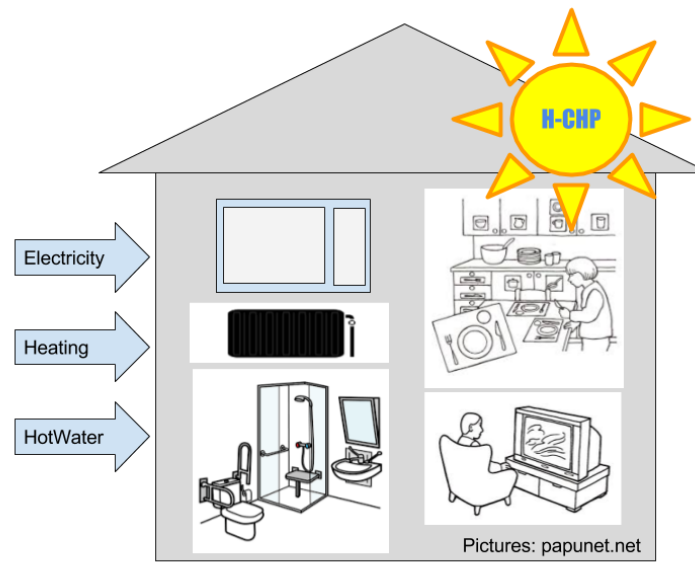
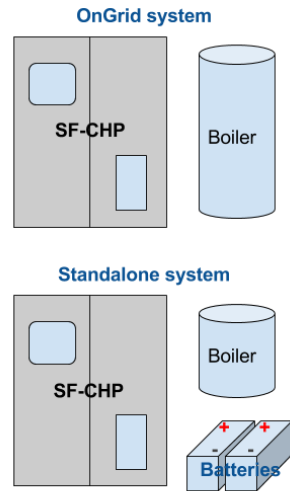
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### Optional components



### Basic configurations



### Project Solution

1. Promote and optimize reliable, sustainable and affordable small-scale heat and power supply solutions for households in remote and low population density areas with extreme climates.
2. Increased use of renewable energy in housing in the remote and sparsely populated areas.
3. Increased awareness of the small-scale renewable energy solutions suitable for the program area.
4. In addition, gasification methods will be investigated to allow a variety of fuel sources to be used with the existing experimental gasification CHP.

### Project background

The Northern Periphery Area is subject to a harsher climate than the rest of Europe – resulting in an increased domestic energy need often at premium cost; in many cases leading to fuel poverty. Remote communities typically suffer from weak grid infrastructure and unreliable power supply but this proposal seeks to ensure that, where possible, users have an independent supply of heat and electricity provided by local sustainable fuels.

Micro-CHP offers a robust solution for reliable power supply through home generation of heat and electricity.

### Challenge

A key objective is to develop a new low-cost system by establishing links with CHP manufacturers in the project countries and combining tried-and-tested components to make a new solid fuel micro-CHP system suited to the area.

The devices will be piloted across the region in houses of the type that are found in the survey to most benefit from the technology. There will be a particular focus on older, poorly insulated and possibly isolated homes with high heating costs in the region.

