Sun Coupled Innovative Heat Pumps

The main objective of SunHorizon is to demonstrate innovative and reliable Heat Pump solutions (thermal compression, adsorption, reversible) that acting properly coupled and managed with advanced solar panels (PV, Hybrid, thermal) can provide heating and cooling to residential and tertiary building with lower emissions, energy bills and fossil fuel dependency.

SUNHORIZON TECHNOLOGIES

The project will analyze heat pumps and building integrated solar solution. Such integration aims to cover the whole H&C demand of the building. The technologies that will be installed are:

- Hybrid PV/T panels
- Hybrid adsorption Compressor cascade chiller
- Hybridation of HP, solar thermal and PV
- Thermal Compression HP
- Vacuum solar thermal panels
- Stratified thermal storage tank

<table>
<thead>
<tr>
<th>SUNHORIZON TP</th>
<th>SOLAR/HP INTEGRATION CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP1</td>
<td>TVP+BH</td>
</tr>
<tr>
<td>TP2</td>
<td>DS+BH</td>
</tr>
<tr>
<td>TP3</td>
<td>TVP+FAHR</td>
</tr>
<tr>
<td>TP4</td>
<td>DS+BDR</td>
</tr>
<tr>
<td>TP5</td>
<td>TVP+BH+FAHR</td>
</tr>
</tbody>
</table>

DEMO ACTIVITIES

SunHorizon Demo activities will be held in different EU contexts to evaluate different climatic and energy market solutions.

SunHorizon innovative technologies will be deployed in small and large scale residential (single house and apartment blocks) and tertiary buildings (public buildings, sport centers).

THE MONITORING PLATFORM

SunHorizon consortium will develop also a cloud based functional monitoring platform that will act as the “performance data mine” for the development of Data Driven/KPI oriented optimized algorithms and tools for predictive maintenance. In this way, it will be possible to optimize the management towards maximisation of solar exploitation and give to the manufacturer inputs for enhancing the design of their components.

CONSORTIUM

www.sunhorizon-project.eu
This Project has received funding from the European Union’s Horizon 2020 Research and Innovation Programme under Grant Agreement N. 828329

Contact:
Stefano Barberis - Project Coordinator
RNA - stefano.barberis@rina.org