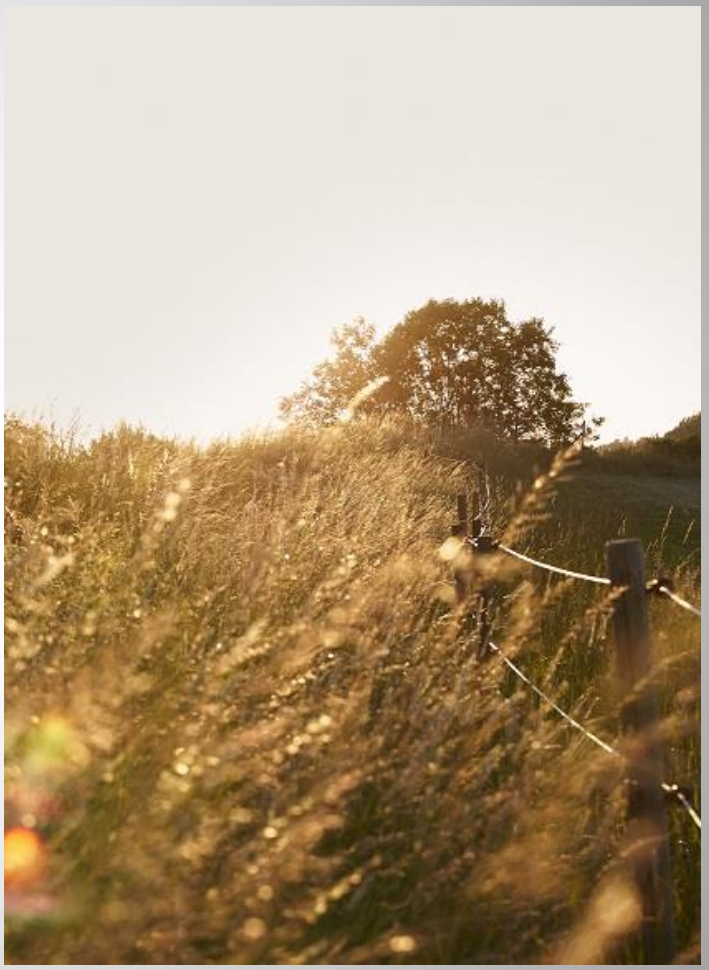
Renewables Academy (RENAC) AG
German Energy Solutions Initiative
Seminar
„Energy Efficiency and Renewable Energies in Buildings“
Dubai, 12 November 2018
EcoSyst GmbH, Saman Nakhdjavani (Representative)

„Modern and sustainable room conditioning solutions – with EcoSyst.”

EcoSyst

EcoSyst – topics today

1. EcoSyst GmbH – the company
2. Looking for business partners
3. EcoSyst Climate Elements
4. EcoSyst Systems Engineering
5. EcoSyst heating & cooling system
6. EcoSyst cost model
7. Advantages of the product
8. Reference objects
9. Contact



EcoSyst - the company

EcoSyst GmbH was founded in 2017, is based in Chemnitz, Saxonia.

CEO of the company is Mr. Dipl.-Ing. Oec. Jörg Viertel. His entrepreneurial experience goes back to 1993.

EcoSyst carries a unique know-how in the fields of healthy buildings and mechanical engineering.

To establish successful partnerships in Dubai, we are here today.

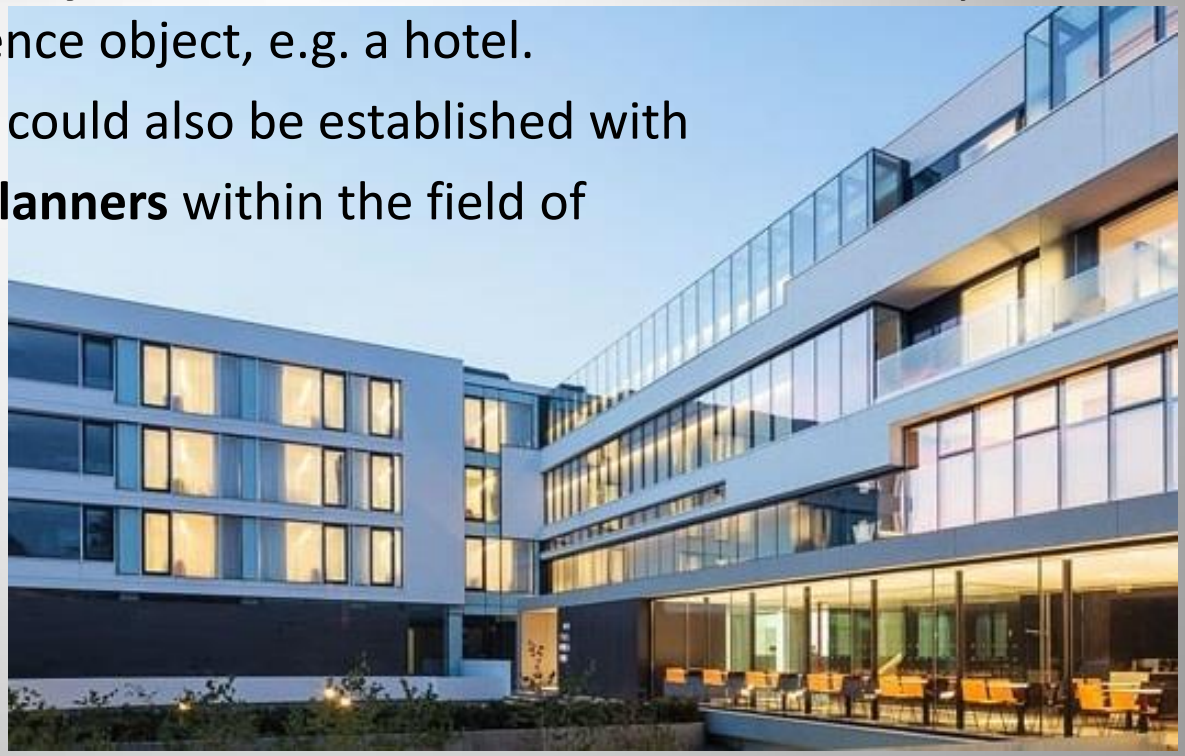
Looking for partners

1. Reference objects

EcoSyst is applicable for refurbishment and new build developments.

We are looking for **property owners** who are interested in an EcoSyst installation with a reference object, e.g. a hotel.

Interesting partnerships could also be established with **architects and project planners** within the field of Green Buildings.



Looking for partners

2. System partners

EcoSyst aims to aquire system partners:

- manufacturers and merchants of building materials
- machine building companies
- project planners/ installers of air conditioning and house automation.

The concept is to enable the partners to manufacture the EcoSyst Climate Elements themselves by providing them the EcoSyst Systems Engineering.

Autonomously or using their network, system partners can offer the EcoSyst technology on the local market.

EcoSyst - Climate Elements

EcoSyst Climate Elements are the basis for a highly efficient system of energy distribution and energy release.
The system provides an optimal dew point management.
By using clay, a healthy and comfortable indoor climate is created.

calcium silicate board

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capillary tube network

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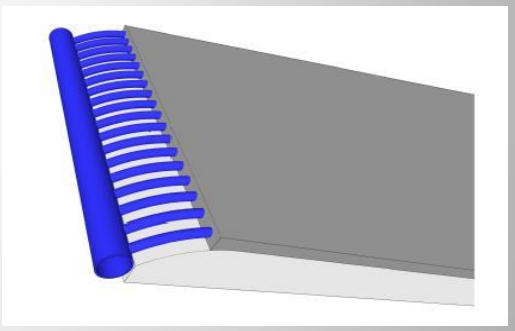
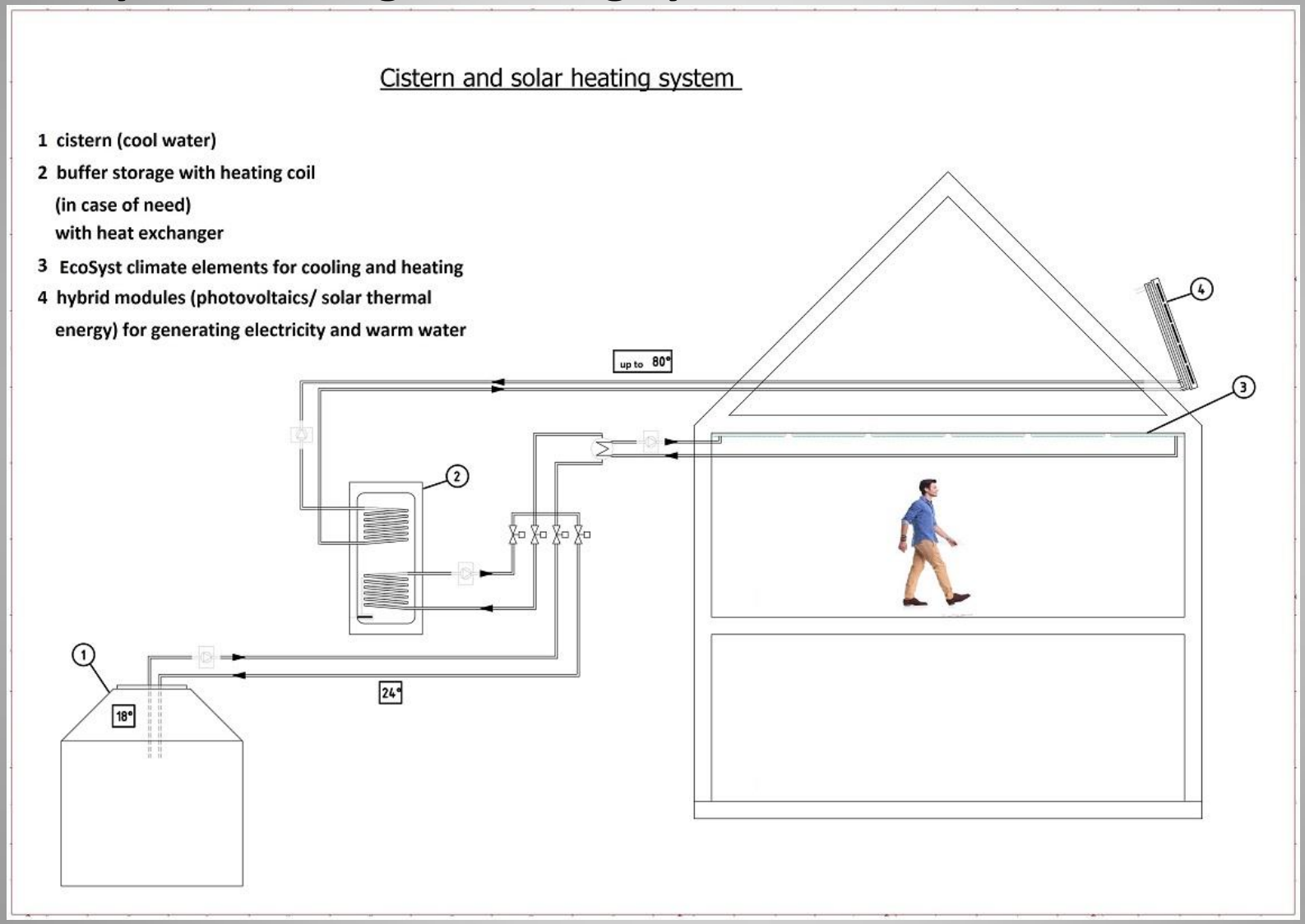


EcoSyst Climate Element

EcoSyst

The semi-automatic **EcoSyst Systems Engineering** allows a decentralized fabrication of EcoSyst Climate Elements by local production units.

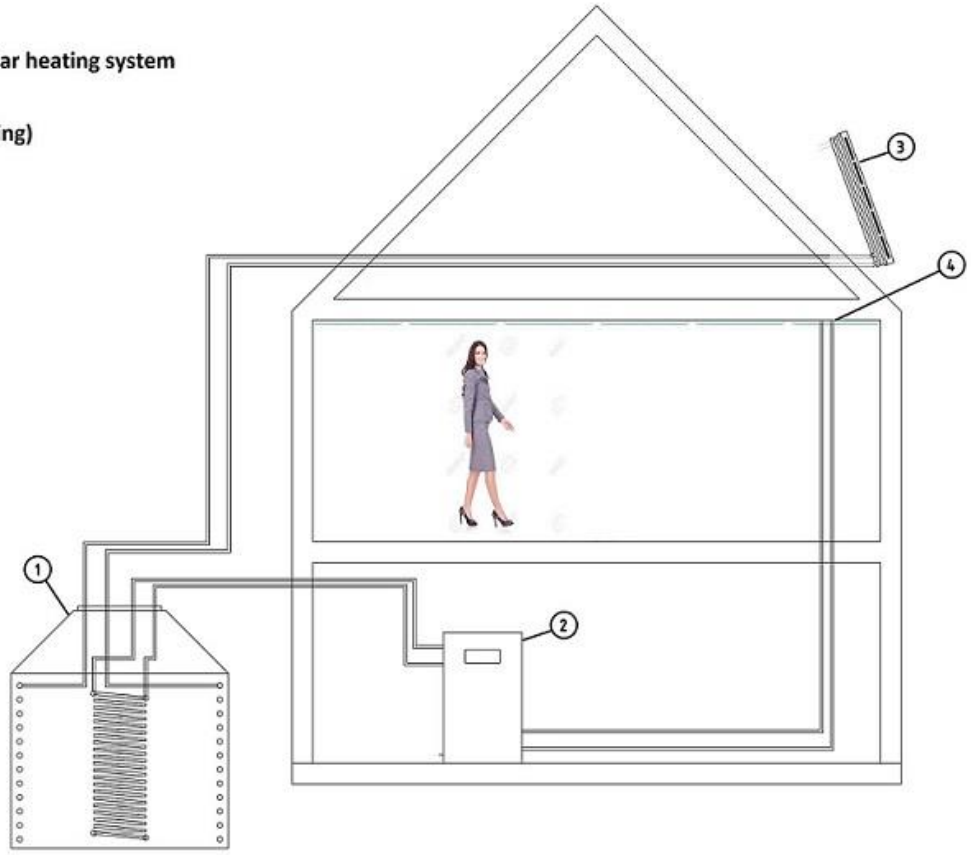
EcoSyst – heating & cooling system 1



EcoSyst – heating & cooling system 2

heat pump / ice bank / solar heating system

1 ice bank (extraction of heat and cold)
2 heat pump (extracts heat from ice bank)
3 photovoltaic panels (electricity generation), solar heating system (heat supply to ice bank)
4 EcoSyst climate elements (for heating and cooling)



EcoSyst – cost model

A) air condition solution (VRF type)					B) EcoSyst					
year	invest EUR	electricity EUR	maintanance EUR		year	invest EUR	electricity EUR	maintanance EUR		EUR
0	59.000				0	79.264				
1		1.462	650		1		0	130		-18.282
2		1.462	650		2		0	130		-16.300
3		1.462	650		3		0	130		-14.318
4		1.462	650		4		0	130		-12.336
5		1.462	650		5		0	130		-10.354
6		1.462	800		6		0	160		-8.252
7		1.462	800		7		0	160		-6.150
8		1.462	800		8		0	160		-4.048
9		1.462	800		9		0	160		-1.946
10		1.462	800		10		0	160		156
11		1.462	800		11		0	160		2.258
12		1.462	800		12		0	160		4.360
13		1.462	800		13		0	160		6.462
14		1.462	800		14		0	160		8.564
15		1.462	1.000		15		0	190		10.836
16		1.462	1.000		16		0	190		13.108
17		1.462	1.000		17		0	190		15.380
18		1.462	1.000		18		0	190		17.652
19		1.462	1.000		19		0	190		19.924
20		1.462	1.000		20		0	190		22.196
ttl		29.240	16.450		ttl		0	3.230		
gttl		104.690			gttl		82.494			

EcoSyst – advantages at a glance

1. Heating & cooling with one system
2. No dew point- surface condensation, no mildew
3. Applicable for refurbishment and new buildings
4. Significant cost savings, also considering public subsidies
5. Considerable reduction in energy usage
6. Low-maintenance and durable
7. User friendly system
8. Benefits from a good indoor climate
9. 100% CO_2 neutral

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EcoSyst – references Climate elements

2013 equipment of a **holiday home** on Mallorca

The scientific coaching was taken over by the Department of Building Physics of the University of the Balearic Islands (Palma, Mallorca).

2015 lecture hall of the **University of the Balearic Islands**

The object has met all requirements on building physics and building biology, and proved that a CO2-neutral air conditioning with the Climate Elements is possible.

2016 Scientific presentation "**Net sero emissions for a seminar room in the University of the Balearic Islands**" at the congress of the International Solar Energy Society (ISES) by Dr. Moia, (University of Palma), et al.

2018 prototype of **EcoSyst system engineering** to substitute the former time-consuming, labour-intensive manual methods of making the Climate Elements by a semi-automatic production.

EcoSyst GmbH

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