

Workshop

on

**“Measures of Expansion and Modernisation in the Greek Tourism Sector”**

organized by the German Chamber of Foreign Trade

**Thessaloniki, 2<sup>nd</sup> April 2019**

**EcoSyst GmbH, Jörg Viertel (CEO)**



## **EcoSyst – topics today**

1. EcoSyst GmbH – the company
2. EcoSyst Climate Elements
3. EcoSyst Systems Engineering
4. EcoSyst heating & cooling system
5. EcoSyst cost model
6. Advantages of the product
7. Looking for business partners
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 1997.

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

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

## EcoSyst - Climate Panels

**EcoSyst climate panels** are the basis for a highly efficient system of energy distribution and energy release.

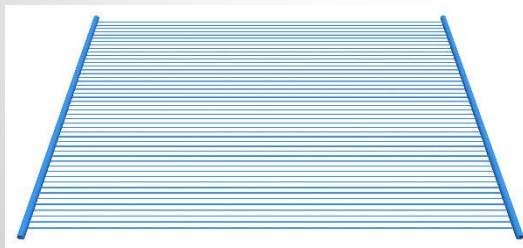
The system allows for cooling even below dew point whilst avoiding drip water.

By using clay, a healthy and comfortable indoor climate is created.



calcium silicate  
board

+



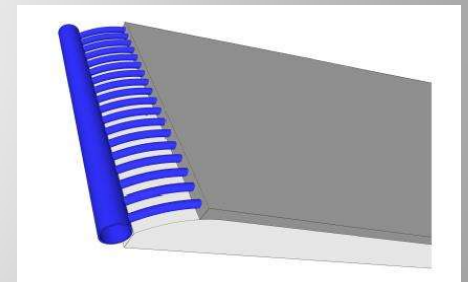
capillary tube  
network

+



clay  
adhesive

=



**EcoSyst Climate Element**

## EcoSyst – Systems Engineering

The semi-automatic [EcoSyst Systems Engineering](#) allows a decentralized fabrication of EcoSyst Climate Elements by local production units.

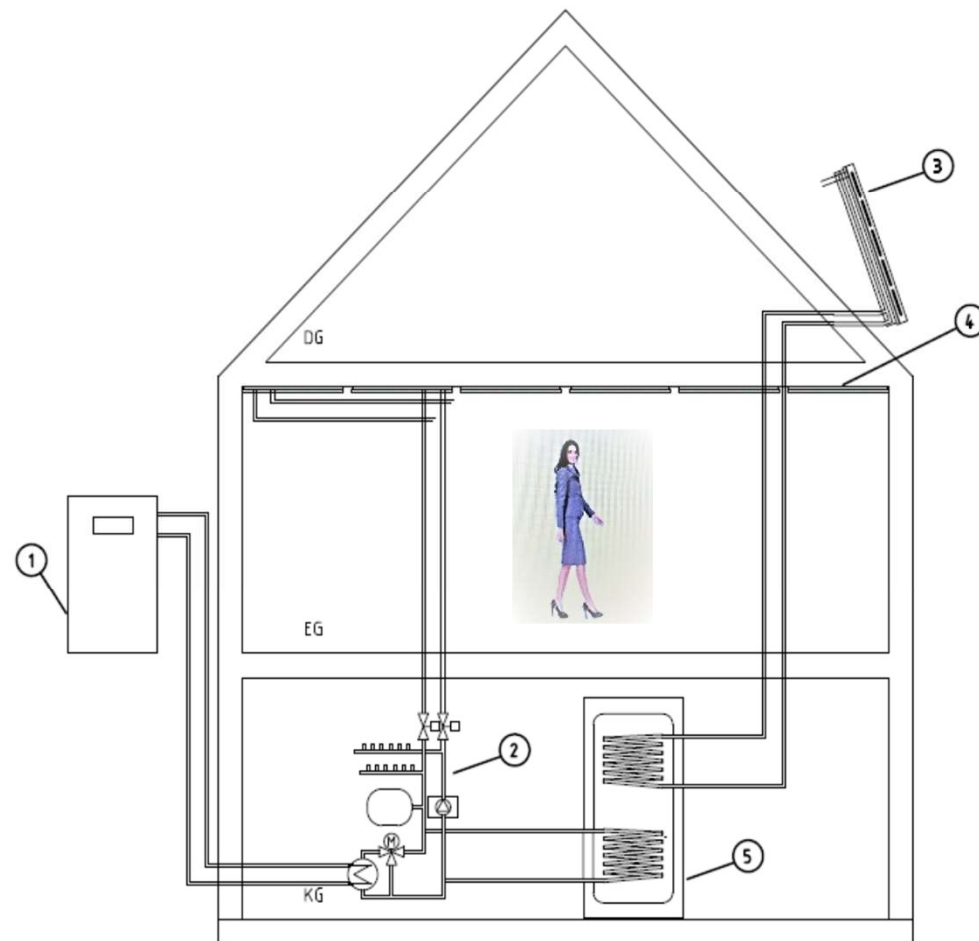


# EcoSyst – heating & cooling system 1



## Schema Heizen u. Kühlen Wärmepumpe und Solarthermie

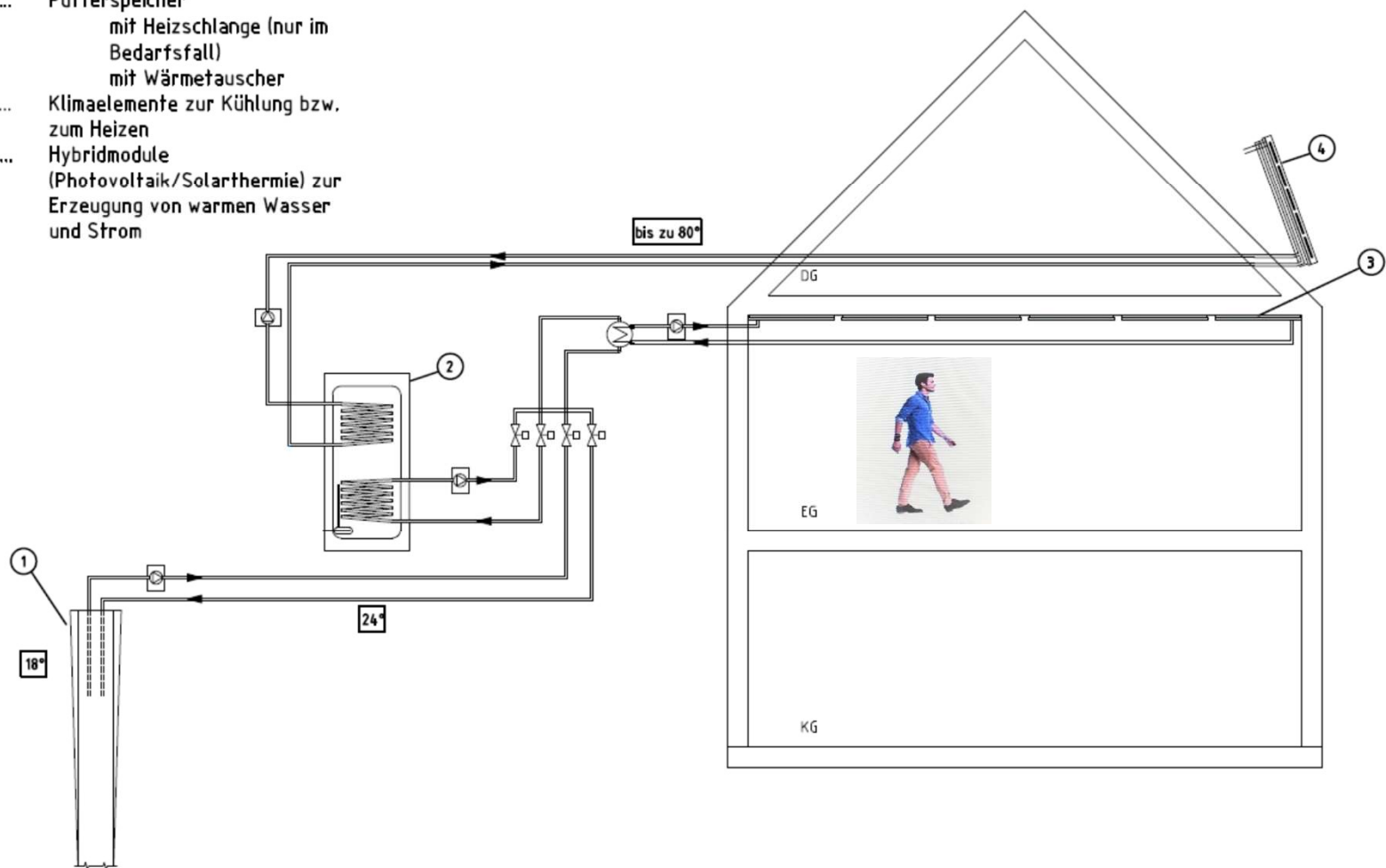
- 1... Luft-Wasser-Wärmepumpe
- 2... Trennsystem mit Wärmetauscher
- 3... Photovoltaikpaneele (Stromerzeugung),  
Solarthermie-Anlage (führt Pufferspeicher  
Wärme zu)
- 4... EcoSyst Klimaelement (zum Kühlen und Heizen)
- 5... Pufferspeicher



## EcoSyst – heating & cooling system 2

### Schema Heizen u. Kühlen Brunnenbohrung und Solarthermie

- 1... Brunnenbohrung
- 2... Pufferspeicher  
mit Heizschlange (nur im  
Bedarfsfall)  
mit Wärmetauscher
- 3... Klimatelemente zur Kühlung bzw.  
zum Heizen
- 4... Hybridmodule  
(Photovoltaik/Solarthermie) zur  
Erzeugung von warmen Wasser  
und Strom



# EcoSyst – cost model



A) air-conditioning system (VRF type) life cycle: 20 years				B) EcoSyst climate elements life cycle: 20 years				Version A vs. B	
	Investment costs	Electricity costs	Maintenance costs		Investment costs	Increase in rent	Electricity costs	Maintenance costs	
Year	[EURO]	[EURO]	[EURO]	Year	[EURO]	[EURO]	[EURO]	[EURO]	
0	65.500			0	87.905				
1		1187	650	1		1200	175,15	130	-19673
2		1187	650	2		1200	175,15	130	-16941
3		1187	650	3		1200	175,15	130	-14209
4		1187	650	4		1200	175,15	130	-11477
5		1187	650	5		1200	175,15	130	-8744
6		1187	800	6		1200	175,15	160	-5892
7		1187	800	7		1200	175,15	160	-3040
8		1187	800	8		1200	175,15	160	-188
9		1187	800	9		1200	175,15	160	2664
10		1187	800	10		1200	175,15	160	5516
11		1187	800	11		1200	175,15	160	8368
12		1187	800	12		1200	175,15	160	11220
13		1187	800	13		1200	175,15	160	14072
14		1187	800	14		1200	175,15	160	16924
15		1187	1000	15		1200	175,15	190	19946
16		1187	1000	16		1200	175,15	190	22968
17		1187	1000	17		1200	175,15	190	25990
18		1187	1000	18		1200	175,15	190	29012
19		1187	1000	19		1200	175,15	190	32034
20		1187	1000	20		1200	175,15	190	35056
		23.744	16.450			24.000	3.503	3.230	
	<b>TOTAL:</b>	<b>105.694</b>			<b>TOTAL:</b>		<b>70.638</b>		
Break-even reached after <b>8,07</b> years									



## **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. CO<sub>2</sub>-emissions close to zero

## 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 acquire 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 – 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 CO<sub>2</sub>-neutral air conditioning with the Climate Elements is possible.

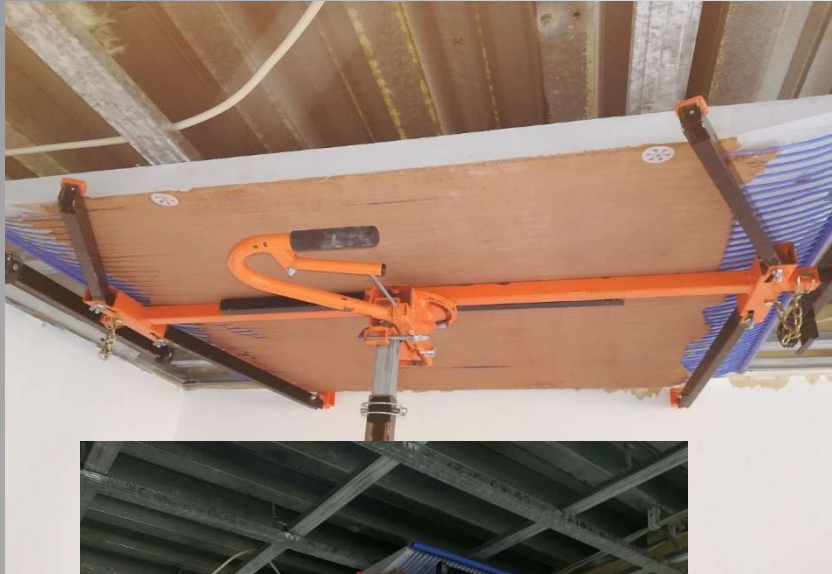
2016 Scientific presentation “**Net zero emissions for a seminar room in the University of the Balearic Islands**” at the congress of the International Solar Energy Society (ISES) by Dr. Moia, (University of Palma), et al.

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.

2019 installation of EcoSyst climate elements in a showroom at the premises of SLG Ingenieurtechnik GmbH, Chemnitz (Germany)



# EcoSyst – reference object... ...in the making at SLG Ingenieurtechnik GmbH





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