

# Integrated solar heating and cooling unit based on a novel zeolite chiller and heat pump

## Fact Sheet

### Project Information

**ZEOSOL**

Grant agreement ID: 760210

[Project website](#)

#### Status

Closed project

#### Start date

1 June 2017

#### End date

29 February 2020

#### Funded under

H2020-EU.3.

H2020-EU.2.

#### Overall budget

€ 2 741 375

#### EU contribution

€ 2 167 437,50

#### Coordinated by

NATIONAL TECHNICAL  
UNIVERSITY OF ATHENS - NTUA  
Greece

## Objective

The overall objective of this project is to develop a new advanced solar cooling and heating product, using advanced heat exchanger technology and integrating a heat pump for covering peak demand. This new product is based on the further improvement and integration of the products already commercialized by Fahren and Akotec. It uses synergies between the technologies of thermal chillers (heat to cooling technology) and heat pump (electricity to cooling technology) and combines know-how on design and manufacturing of adsorption chillers and solar thermal

collectors in Germany, with the know-how in heat pump and dry cooling systems of CNR and NTUA. The main innovation of the project is the adsorption chiller unit based on Fahren's patented zeolite coating technology, reducing the unit's volume and cost by about two times. This new product is expected to become cost-effective and with high flexibility for providing both cooling (during summer) and heating (during winter) from the same compact product, being more competitive than existing mainstream solution, reducing energy costs of the end-users and leading to short ROI. The main target market is the heating, ventilation and air-conditioning (HVAC) market, with the ambition to become front-runners and provide the first cost-effective product, with low maintenance requirements. The target cost is to reach just 2000 €/kW (with solar field and cooling, heating and thermal storage included) and secure a short return on investment. The new product will be commercialized by a new joint venture established between Fahren and Akotec with Diadikasia being a strategic partner for promotion and sales in south Europe. The initial target markets are in Greece, Italy and Germany, while further expansion steps will follow once sales increase.

## **Field of science**

/social sciences/economics and business/business and management/commerce

/engineering and technology/mechanical engineering/thermodynamic engineering/heat engineering

/engineering and technology/environmental engineering/energy and fuels/renewable energy/solar energy

## **Programme(s)**

## **Topic(s)**

## **Call for proposal**

H2020-FTIPilot-2016-1

## **Funding Scheme**

IA - Innovation action

# Coordinator



## NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA

Address

**Heroon Polytechniou 9  
Zographou Campus  
15780 Athina  
Greece**

[Website](#)

Activity type

**Higher or Secondary  
Education Establishments**

[Contact the organisation](#)

EU contribution

**€ 493 875**

## Participants (4)

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### AKOTEC PRODUKTIONSGESELLSCHAFT MBH

Germany

EU contribution

**€ 476 437,50**

Address

**Grundmuhlenweg 3  
16278 Angermunde**

[Contact the organisation](#)

Activity type

**Private for-profit entities  
(excluding Higher or  
Secondary Education  
Establishments)**



### CONSIGLIO NAZIONALE DELLE RICERCHE

Italy

EU contribution

**€ 334 375**

Address

**Piazzale Aldo Moro 7  
00185 Roma**

[Website](#)

Activity type

**Research Organisations**

[Contact the organisation](#)



### FAHRENHEIT GMBH

Germany

EU contribution

**€ 672 875**

Address

**Siegfriedstr 19  
80803 Munchen**

Activity type

**Private for-profit entities  
(excluding Higher or**

[Contact the organisation](#)

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**DIADIKASIA BUSINESS CONSULTING SYMVOULOI EPICHEIRISEON AE**

Greece

EU contribution

**€ 189 875**

Address

**Kifissias Ave 296 & Navarinou  
40 Halandri  
152 32 Athina**

Activity type

**Private for-profit entities  
(excluding Higher or  
Secondary Education  
Establishments)**

[Website](#)

[Contact the organisation](#)

**Last update:** 17 February 2020

**Record number:** 210846

**Permalink:** <https://cordis.europa.eu/project/id/760210>

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