Transforming fly ash waste from coal-fired power plants into lightweight engineered sand for multiple applications

Fact Sheet

Project Information

SMARTSAND

Grant agreement ID: 738759

Project website

DOI
10.3030/738759

Project closed

EC signature date
25 October 2016

Start date
1 December 2016

End date
31 May 2020

Funded under
SOCIETAL CHALLENGES - Climate action, Environment, Resource Efficiency and Raw Materials

Total cost
€ 1 155 763,75

EU contribution
€ 809 034,63

Coordinated by
ZAAK TECHNOLOGIES GMBH
Germany

This project is featured in...

Objective

Established in 2012, ZaaK Technologies GmbH is an eco-innovative SME, dedicated to the development and exploitation of technologies which recycle industrial wastes into value added products.
Over the past 3 years, we have developed and demonstrated a multiple award winning patent-pending technology which transforms fly ash, a waste product from coal-fired power plants, into value-added lightweight engineered sand, called ZaaK™Sand, which is in accordance with harmonized technical specifications DIN EN 4226-3, DIN EN 13139, and DIN EN 15033-1/2.
ZaaK™Sand is a superior and cost-effective alternative to natural sand, crushed stones, and lightweight fine aggregates, for use in the manufacture of advanced building and construction materials, and in certain niche applications like horticulture and hydroponic applications.
Replacing normal sand with ZaaK™Sand in buildings leads to:
(a) improving thermal efficiency by up to 500%
(b) reducing dead-load by up to 12% resulting in savings of energy intensive materials such as cement and steel
(c) increase life of buildings by up to 2 times due to a phenomenon called, internal curing
ZaaK™Sand aim is to arrest the depletion of dwindling natural sources of sand and thereby reduce destruction of precious ecosystem impacted by sand mining. It also addresses the economic and socio-environmental problems associated with the disposal of fly ash.
Our key objectives within the project timeframe are:
• To build an Integrated Pilot Plant (IPP) to produce ZaaK™Sand for customers in our introductory markets.
• To use the IPP to further optimise the manufacturing process.
• To use the IPP as a demonstration showcase, to disseminate and communicate the project results, and to attract new customers and investors.
Our objective is to enter the market in 2020, through a build, own and operate model,

contract manufacturing and joint ventures with power plants and construction material companies.

Fields of science (EuroSciVoc)

engineering and technology > mechanical engineering > **manufacturing engineering**

engineering and technology > environmental engineering > energy and fuels > fossil energy > **coal**

natural sciences > biological sciences > ecology > **ecosystems**

agricultural sciences > agriculture, forestry, and fisheries > agriculture > **horticulture**

Programme(s)

H2020-EU.3.5. - SOCIETAL CHALLENGES - Climate action, Environment, Resource Efficiency and Raw Materials MAIN PROGRAMME

H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument

Topic(s)

SMEInst-11-2016-2017 - Boosting the potential of small businesses in the areas of climate action, environment, resource efficiency and raw materials

Call for proposal

H2020-SMEInst-2016-2017

See other projects for this call

Sub call

H2020-SMEINST-2-2016-2017

Funding Scheme

SME-2 - SME instrument phase 2

Coordinator

ZAAK TECHNOLOGIES GMBH

Net EU contribution

€ 809 034,63

Total cost

€ 1 155 763,75

Address

EUREF CAMPUS TORGAUER STR. 12-15
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Germany

SME

Yes

Region

Berlin > Berlin > Berlin

Activity type

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

Links

Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Last update: 5 April 2023

Permalink: https://cordis.europa.eu/project/id/738759