Development of carbon-rich biochar-mineral complexes for soil amendment, carbon sequestration and beyond (CarboPlex)

Fact Sheet

Project Information

CarboPlex

Grant agreement ID: 661323

Project website

DOI
10.3030/661323

Project closed

EC signature date
12 March 2015

Start date
1 April 2015

End date
31 March 2017

Funded under
EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost
€ 183 454,80

EU contribution
€ 183 454,80

Coordinated by
THE UNIVERSITY OF EDINBURGH
United Kingdom

Objective

Aim of this project is to investigate and exploit the potentials of a new material termed biochar-mineral complex (BMC). The simple yet ground-breaking idea is to use common waste streams to produce BMCs with distinct properties. Primary target is the use of BMCs as soil amender, especially in soils, where the delicate but crucial

structure of organo-mineral complexes is threatened by unsustainable soil use or climate change. Where pure biochar is known to face its limits, BMC because of its mineral part is assumed to enable much higher functionality (i.e. water and nutrient storage). To provide evidence-based information on production, properties and soil effects of BMC, a systematic study will be conducted. The highly interdisciplinary work is split into five strongly interconnected work packages, which cover the whole BMC lifespan from production to soil use and technology assessment. Most of the work will be conducted at the University of Edinburgh (UoE). A secondment is planned at Enrich Environmental Ltd., an innovative Irish waste treatment SME, where the potentials and requirements for successful large-scale implementation will be investigated. Introducing this original work to the scientific communities (i.e. waste, agriculture, soil, material science) is expected to make enormous impact. Strong attention is also paid to dissemination of the results to the industry, other stakeholders and the general public. The ER, in addition to the expected excellent research, profits greatly from new experiences with pyrolysis (UKBRC) and business management (Enrich) supporting his strive for an academic career as professor. The UoE benefits from the ER's experiences in hydrothermal carbonization and gaining competence in BMCs. Enrich, in return, has strong interest to expand its range of products and to integrate innovative processes such as BMC production. Naturally, the ER, UoE and Enrich are strongly committed to the planed action and a most successful outcome.

Fields of science (EuroSciVoc)

engineering and technology > materials engineering > **composites**

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

natural sciences > earth and related environmental sciences > atmospheric sciences > climatology > **climatic changes**

engineering and technology > environmental engineering > waste management > **waste treatment processes**

social sciences > economics and business > **business and management**

Programme(s)

H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions MAIN PROGRAMME

H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

Topic(s)

MSCA-IF-2014-EF - Marie Skłodowska-Curie Individual Fellowships (IF-EF)

Call for proposal

H2020-MSCA-IF-2014

See other projects for this call

Funding Scheme

MSCA-IF-EF-ST - Standard EF

Coordinator

THE UNIVERSITY OF EDINBURGH

Net EU contribution

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Region

Scotland > Eastern Scotland > Edinburgh

Activity type

Higher or Secondary Education Establishments

Links

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

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