PORTABLECRAC
Portable Solution for the Electrochemical Regeneration of Activated Carbon

PORTABLECRAC: AN EUROPEAN PROJECT THAT PROPOSES A PORTABLE SOLUTION FOR ELECTROCHEMICAL REGENERATION OF ACTIVATED CARBON

PORTABLECRAC is a flexible solution tackling different niches (water treatment, chemical industries, etc.), that will allow an in-site regeneration of exhausted activated carbon (AC) by compact/portable prototypes able to adapt to client´s needs with economic and environmental positive impacts.

PORTABLECRAC project has the purpose of developing an environmentally friendly and economically beneficial technology to regenerate the activated carbon used in small and large industry for water filtration. Major focus will be in the adaptation of a compact device that will improve significantly flexibility, operational and investment costs with respect to existing equipment (assuring replicability and up-scaling of the proposed solution.

Nowadays, the **chemical and water sector** requires large amounts of **activated carbon** to remove contaminants from water. Water is a valuable and limited resource and will be a key one as established in EU policies.

On the one hand, activated carbon is manufactured overseas (30% of production occurs in CHINA). Europe imports about 80% of their internal consumption of AC. **PORTABLECRAC** will provide a successful business case to reduce overseas imports with negative competitive and environmental impacts in key industries in Europe. Furthermore, great exploitation and replication opportunities for circular-local economy development, at business and environmental perspectives, will be pursued and exploitation path will be assessed as key implementation task after feasibility analysis is completed.

On the other hand, due to continuous use, EXHAUSTION of AC filters is a common issue with the consequent high cost in producing virgin filters again. Indeed, there is a side problem related to the manipulation and management of exhausted AC, that has to be considered as highly contaminant waste. Accordingly, the viability of AC use at industrial level roots in the regeneration and reactivation of exhausted AC. Regeneration of AC is mainly done by thermal regeneration. However, it requires off-site service, high energy input and carbon losses with negative environmental impacts. **PORTABLECRAC** will study the use of electrochemical regeneration. Three different prototypes, for small, medium and large industries, will be designed and tested.

PORTABLECRAC will bring a sustainable and long term solution creating a direct and indirect employment in the EU “service-sector”. PORTABLECRAC key value proposition is providing a solution to water treatment with 86% reduction in cost per kg/AC and 4 times reduction in CO_2 emissions.

Thus, PORTABLECRAC shows great potential looking at industrial acceptance and wide market opportunity against actual THERMAL regeneration. Advantages are **variety on size equipment, GHG emissions, wastes and energy consumption reduction, cost reduction**.

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement nº768905

PORTABLECRAC will have a duration of 36 months and it has received funding from the European Union's Horizon 2020 research and innovation programme. **PORTABLECRAC** is estimated to have a total eligible cost of 2.883.012,82€ and it will receive funding of about 2.206.719,07€

Project partners

The consortium is composed by seven partners organizations from three different countries: CONTACTICA S.L. (project coordinator) (Spain), ENVIROHEMP S.L. (Spain), Universidad de Alicante (Spain) GRADO ZERO INNOVATION S.R.L. (Italy), EMIVASA (Spain) and AGRI-PRO (Portugal); and two partners are RTD (Research and Innovation) and Universidad de Vigo (Spain).

The **kick-off meeting** of this research project took place in Alicante (Spain), on October 10 - 11th.

For more information:

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