

## Details

Title	H2020-SC5-2018-2019-2020: Industrial partners with expertise in recycling and recovery of secondary raw materials from end-of-life products
POD Reference	RDES20180109001
Summary	A Spanish university is preparing a project proposal under the topic CE-SC5-08-2018-2019-2020 “Raw materials policy support actions for the circular economy”, focused on the search for sustainable, green and environmentally safe approaches to more efficient and economically viable recycling rates of secondary raw materials from end-of-life products, in particular in the nuclear industry, envisaging their eventual gradual partial substitution. Companies with expertise in this subject are sought.
Description	<p>The scarcity of practically all the critical raw materials (CRMs) in Europe represents a major challenge to the green growth, sustainability and clean energy objectives of EU industry. However, many of the most economically important metals are present in end-of-life products of which there are vast amounts in waste repositories and landfills scattered all over Europe awaiting to be efficiently recycled and subsequently reintroduced back in the supply chain. In particular, the present proposal addresses more efficient and practical recycling and recovery techniques of the CRMs of interest in the nuclear industry, with an eye in their eventual gradual partial substitution. These materials present specific complications concerning their disposal as waste, due to their proneness to activation, given the very demanding and extreme environments they face during their work life. Such complications have typically excluded them from novel industrial recycling efforts, leaving aside from the value chain relevant metal resources, which in a raw materials scarcity scenario Europe cannot indeed ignore anymore.</p> <p>A Spanish University is preparing, alongside with other EU partners, a proposal related to the H2020 call/topic CE-SC5-07-2018: Raw materials innovation for the circular economy: sustainable processing, reuse, recycling and recovery schemes, and specifically to subtopic b) Recycling of raw materials from end-of-life products. One of the strengths of the proposal lies in the nuclear fusion related background of several from the applicants. If fusion energy production is ever to reach the market consumers, and the proposers believe it will in the midterm future, the amounts of nuclear industry materials needed to build and maintain fusion reactors worldwide will exponentially grow during the second half of this century. It is clear that refractory metals as tungsten, niobium, tantalum, vanadium, but also molybdenum and chromium that are at the verge of becoming CRMs, will play a leading role, but also a light metal as lithium will be extremely demanded as the only present practicable precursor of the very scarce tritium, an essential participant of the Deuterium-Tritium typical fusion reaction. Moreover, graphite, another CRM, is likely to play a major role due to its refractory applications in high temperature environments.</p> <p>The recovery of highly valuable metals has been traditionally hindered by the predicted absence of financial benefits as compared to relatively cheap and mature traditional mining procedures. Nowadays, environmentally conscious societies increasingly demand a higher respect for the planetary resources and a parallel decrease of the insatiable consumption habits that have been ubiquitously followed in developed and developing countries. In that regard, reusing the technologically relevant materials present in waste repositories and landfills instead of allowing them to pile up and rot away appears as a mandatory attitude more than a just a sensible future option as it has been to date. However, it should be borne in mind that sustainable solutions imperatively require beneficial business models.</p> <p>The project aims at creating a pilot spin-off or SME capable of producing metals of interest to the fusion energy community from secondary raw materials as present in industrial waste repositories and landfills, all in a green, efficient and sustainable fashion. Additionally, the progressive substitution of all or a significant fraction of these critical raw materials is one of the declared main objectives of the research plan presented in this proposal as well.</p>

	<p>Framework programme conditions: Coordination and support action, single-stage.          Call deadline: 27/02/2018          EOIs deadline: 31/01/2018          Project duration: 4 years          Industrial partners and enterprises interested and experienced in the development of new technologies for the recycling and recovery of secondary raw materials from end-of-life products are sought.</p>
Technical Specification or Expertise Sought	The expected Technology Readiness Level to be achieved by the end of the project is TRL 7 (system prototype demonstration in operational environment.)
Stage of Development	Concept stage
Comments Regarding Stage of Development	The proposal is still in the idea phase, moving fast into project development under the auspices of all the identified partners.

### Keywords

Technology Keywords	<p>04001003 Storage of electricity, batteries          04004 Nuclear Fission / Nuclear Fusion          05004 Separation Technologies          10002013 Clean Production / Green Technologies          10003 Waste Management</p>
Market Keywords	08004002 Chemical and solid material recycling

### Partner Sought

Type and Role of Partner Sought	The identified profile sought for new partners is medium-sized companies or SMEs headquartered in north or eastern European countries with expertise in the recycling of batteries and energy storage devices and components, landfill mining and/or radioactive waste.
Type and Size of Partner Sought	<p>&gt;500          &gt;500 MNE          251-500          SME &lt;10          SME 11-50          SME 51-250</p>
Type of Partnership Considered	Research cooperation agreement

### Client

Type and Size of Client	University
NACE Keywords	<p>M.72.1.9 Other research and experimental development on natural sciences and engineering          P.85.4.2 Tertiary education</p>
Already Engaged in Trans-National Cooperation	No
Languages Spoken	<p>English          Spanish</p>
Client Country	Spain

### Network Contact

Issuing Partner	FUNDACION PARA EL FOMENTO EN ASTURIAS DE LA INVESTIGACION CIENTIFICA APLICADA Y TECNOLOGIA
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**Programme-Call**

Framework Programme	Climate action, environment, resource efficiency and raw materials
Call title and identifier	Greening the economy in line with the sustainable development goals (SDGS) Call identifier: H2020-SC5-2018-2019-2020
Submission and evaluation scheme	Single-stage
Anticipated Project Budget	EUR 10 million
Coordinator Required	Yes
Deadline for EOI	31 Jan 2018
Deadline for Call	27 Feb 2018
Project Duration	208 week(s)
Weblink to The Call	<a href="http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/ce-sc5-08-2018-2019-2020.html">http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/ce-sc5-08-2018-2019-2020.html</a>