NERC FUNDING RESEARCH TO ENHANCE SUSTAINABILITY OF THE MINERAL SUPPLY CHAIN

Growth in the developing economies has resulted in an increase in the global demand for minerals and energy. At the same time the actions required to mitigate and adapt to increased levels of carbon dioxide in the atmosphere demand significant changes in energy generation, distribution and utilisation. Increased energy production from renewable resources, including wind and solar; growth in the numbers of electric and hybrid vehicles and improving the efficiency of domestic and industrial electronics will increase demand for the specific elements required for these green developments. Environmental technologies are evolving rapidly and so it can be difficult to make accurate predictions on future requirements but rapid growth in demand has raised concern over the security of supply.

The Natural Environment Research Council (NERC) is launching a £7 million research programme into the Security of Supply of Mineral Resources (SoS Minerals). This will support research that will address some of the key challenges within the NERC Sustainable Use of Natural Resources strategic theme. The overall objective is to provide the science that will enable the optimisation of the use of renewable and non-renewable natural resources whilst living within the Earth's environmental limits. The SoS Minerals programme will focus on those elements that are required for the production and more efficient use of energy – defined as E-tech elements.

The global security of supply of E-tech elements can be improved through a better understanding of their abundance and distribution of existing ore deposits, locating new resources and by improving the processes used to recover them. Research is needed to enhance understanding on the transportation, concentration and deposition of these elements to form viable resources where these elements are the main target for exploration or where they could be recovered as a co-product.

The production of E-tech elements is critical for many low carbon technologies so it is important that research is conducted to enhance the viability of the processes used to extract and refine these elements to minimise the impact on the environment and thus the overall sustainability of the supply chain.

The SoS Minerals programme will deliver evidence that will inform decision makers on ways to minimise the environmental impact of exploring for and developing E-tech element resources as well as ameliorating the extraction processes. The programme will support coordinated projects targeting research into the environmental context and wider implications of the extraction and recovery of E-tech elements. Another aim will be to develop an interdisciplinary community that that can build on strengths and resources in the UK to support this global industry and to develop links with relevant international initiatives.

The SoS Minerals programme will run for five years with funds being allocated in two phases. Successful applicants from the first stage will receive funding to support development of interdisciplinary research teams with industrial partners to prepare detailed proposals for stage two funding applications. To ensure that the outputs from the programme can deliver global impact all projects will be required to secure the active participation of industrial partners with the need and ability to deploy the outputs.

Details of the Science and Implementation Plan are available and further information will be released on the NERC website where details on related NERC Research Programmes can also be found (e.g. Resource Recovery from Waste: Challenges for the Health of the Environment).