

AREC's Vision, Mission, Approach and Impact

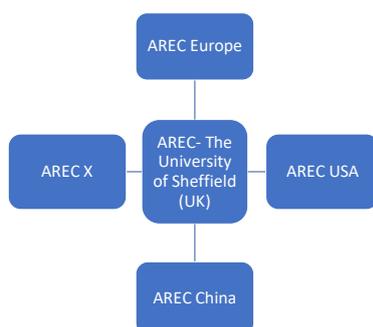
What does AREC do?

[The Advanced Resource Efficiency Centre's \(AREC\)](#) mission and vision advocate efficient and responsible use of resources throughout the supply chain across sectors, industries and governments. Initially focussing on some of the world biggest resource security such as advanced materials and manufacturing, energy and civil nuclear, agrifood and water, AREC expands its portfolio to examine those challenges in the automotive, mobility & transport, construction, digitalisation, Industry 4.0, autonomous system, blockchain, intelligence management, waste recycling and circular economy domain. Our key question is with these advances of science and technology, are they resource efficient and sustainable? In the pursuit of our mission and vision, AREC supports the development of resource sustainable supply chains by proposing new ways of reducing risk for stakeholders in overcoming the challenges of resource availability.

How does AREC do it and what are the impact?

AREC's structure and collaborative approach draw in experts from specific domain to solve the challenges faced by the specific sectors, industries and governments. AREC's pool of experts include scientists, researchers, analysts, modellers, consultants, with a combined knowledge and experience ranging from senior leadership positions of major firms in world leading industries, senior leaders from academia who have won awards, highly cited and published widely, and experts from a diverse background ranging from science, engineering, management and technology who will operationalise the programme of work. AREC is supported by a [large team of members](#) including academics leads, post-doctoral research associates, research and knowledge exchange fellows, PhD researchers, business development and partnerships team.

AREC uses a combination of methods, tools, models, technologies, processes and systems accordingly to address the specific challenges. Where applicable, cross learning takes place where knowledge sharing occurred. AREC owns intellectual properties of some of these solutions making [its stakeholders and partners](#) more competitive. Partners share with AREC their knowhow and technology, jointly making our co-produced outcome even more attractive. AREC's partnership with world leaders such as Microsoft, Rolls-Royce, Jaguar Land Rover, Tata Steel, Hovis, Whitbread / COSTA, Hovis, DLA Piper, IBM, Munton, Nestle, Wardell Armstrong; innovative SMEs such as Sheffield Forgemasters International, DBL Logistics, Brocklesby, Shaping Cloud, Olympia Electronics; organization bodies representing industries such as Minor Metals Trade Association (MMTA), Institute of Materials, Minerals and Mining (IOM3), Chambers of Commerce, British Standards Institute, Manufacturing KTN; government bodies representing policies such as All Parties Parliamentary Energy Studies Group (PGES), Sheffield City Region Local Enterprise Partnership (LEP) Sustainability Partnership / low carbon sector group, Sheffield Green Commission, Cold Commission, European Parliament, European Energy Research Alliance (EERA), National Development and Reform Commission (NDRC) China, DRTTA of Development Research Centre (DRC) China; and community and NGO bodies such as Community Energy England, Green Alliance, WWF; resulting in major impact to resource efficiency and supply chain sustainability. These impacts range from improvement in regulatory compliances, carbon tax savings, cost savings, won procurement contract and green award, reduced negative environmental impact, increased supply chain competitiveness, improved productivity, enhanced energy efficiency, and others.



AREC's structure and approach put it in the unique position to provide comprehensive solutions that benefit all stakeholders, address environmental concerns and issues of resource efficiency, and are applicable in different contexts. In the scale up, AREC's hub and spokes in key regions in the world will take leadership roles to implement and tailor the AREC model to maximize the outcome and performance.

How to get involved

AREC partners with individuals and organisations globally from industry, education, government and third sector. If you are interested in becoming involved, please email arec@sheffield.ac.uk. To learn more about AREC, please visit us at www.sheffield.ac.uk/arec