

## **Scotland's International Environment Centre: The Forth-Environmental Resilience Array**

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"Scotland's International Environment Centre (SIEC) is a £22 million Scottish and UK Government investment in a new research and innovation centre designed to work across sectors and communities to drive research and innovation at scale, so that the protection and enhancement of our natural resources becomes an enabler of inclusive growth and supports the just transition to a net zero carbon economy. Headquartered within the major regional economy, the Forth Valley, this transformation will be achieved by truly embedded, collaborative approaches that translate into sustainable solutions and outcomes.

The first phase of SIEC is delivering the Forth Valley Environmental Resilience Array (Forth-ERA). This is a regional scale living laboratory with near real-time data flows to transform environmental management, stakeholder collaboration and business innovation, reduce carbon consumption and emissions, and promote sustainable technologies, products and services. As "Water is the primary medium through which we will feel the effects of climate change" (UN Water; COP21), Forth-ERA will harness sensor networks and satellite technologies, as well as autonomous vehicles, and couple these with modelling and artificial intelligence (AI) capabilities to deliver a 'digital twin' of the Firth of Forth Catchment. Forth-ERA will provide the evidence to mitigate the extreme effects of climate, provide the digital fabric to support innovation in sustainable water management across the water continuum in both the built and natural environment while also enhancing our natural capital. The presentation include examples of water reservoir management, water abstraction and discharge and bathing water quality. "