

At the launch of Cambridge University's Big Data Institute, the BBC asked the physicist Stephen Hawking to describe the one idea that would transform our society. He chose nuclear fusion.

[Stephen Hawking: Why we should embrace fusion power - BBC Future](#)

Prof Hawking reiterated this view in his 2018 book *Brief Answers to the Big Questions*.

*I would like to see the development of fusion power to give an unlimited supply of clean energy [...]*

*Nuclear fusion would become a practical power source and would provide us with an inexhaustible supply of energy without pollution or global warming.*

# Impacts of STEP

- STEP will be a world-leading fusion programme. Securing STEP for Ardeer means further consolidating Scotland's role as a global energy leader - with Ayrshire at its heart.
- Fusion and tokamak technology have enormous potential to deliver zero-carbon energy and support the step change needed to achieve net-zero targets.
- Fusion energy has the potential to be a major component in addressing climate change. It produces no pollution or long-lasting radioactive waste. The fuels needed for fusion are found in abundant supply in water, a sustainable and reliable resource.
- The delivery of STEP is a central element of UK Government's [Fusion Strategy \(Towards Fusion Energy\)](#). The two overarching goals of this strategy are:
  - For the UK to demonstrate the commercial viability of fusion by building a prototype fusion power plant in the UK that puts energy on the grid
  - For the UK to build a world-leading fusion industry which can export fusion technology around the world in subsequent decades

# Estimated economic impacts

- The programme will deliver an initial £222m UK Government investment for initial work and concept design. The actual value of delivering STEP and what it will then attract and catalyse is expected to be many more times this.
- Initial estimates of job numbers created are:
  - 2,500-3,500 in construction
  - 600-1,000 in operationswith an estimated 2.5% - 5% apprenticeship intake in both phases, and a similar number graduate intake.
- As estimates, these numbers may change but the volume of employment created will be significant.
- As well as bringing a disused industrial site back into use, STEP can help trigger wider regeneration of the local economy. It is expected to attract a range of associated and supporting activity to the area and create a new economic ecosystem and industry base.
- STEP is also expected to bring significant educational and R&D opportunities, from primary school through to post graduate levels.

# Local impacts

- Our Community Wealth Building approach will ensure we achieve maximum benefit from STEP for local communities and businesses. Today's event forms part of what we hope will be an ongoing dialogue with communities and other stakeholders to help us ensure the opportunities STEP affords will address local need and priorities.
- The investment in STEP will provide significant opportunities to improve the environment of Ardeer, with a commitment to enhancing biodiversity central to UKAEA's approach.
- We are already working jointly with the Universities in the wider region as well as Ayrshire College, Skills Development Scotland and the Energy Skills Partnership to demonstrate how a pipeline of skills to support the delivery and operation of STEP can be developed locally and regionally.
- Active engagement with schools is also key; we will work with local schools to ensure the next generation workforce is ready for this technology.
- We will engage industry across the region to explore supply chain, skills and employment opportunities we anticipate the investment will deliver.