

Government investment in fusion energy boosts British economy by £1.4 billion

The British economy has gained £1.4 billion from the Government's direct investment in fusion energy over the past decade and an average of 4,000 jobs each year.

The findings were revealed in an [economic study conducted by London Economics and released today by the Department for Business, Energy and Industry Strategy](#).

London Economics looked at the financial and economic impacts of the UK's public investments in the UK Atomic Energy Authority's (UKAEA's) fusion research from 2009-2019 and found:

- Allocated funding of £346.7 million resulted in a direct gain of £1.4 billion
- For every £1 invested in UKAEA, approximately £4 is generated in return
- Approximately 36,900 direct and indirect job years were created through direct employment and related activities – equivalent to the creation of 4,000 jobs on average each year
- The UK economy gained up to £363.7 million from contracts directly won by UK organisations for the international fusion megaproject, ITER
- UKAEA's contribution to understanding of fusion energy was identified to be significant, with UKAEA having increased the volume, quality and reputation of UK fusion and related research. Without UKAEA, the field of fusion research in the UK would likely be heavily fragmented with far less cooperation
- Advances to "fusion-adjacent" technologies through technology transfer from fusion. These include advancements in robotics, developments of new materials and contributions to computing and artificial intelligence. Future applications are expected in other fields, such as space exploration, mining and healthcare, and transport.
- Indirect benefits in upskilling of the UK workforce through an improvement in skills, knowledge transfer between academia and industries, improved fusion reactor designs and the creation of standards for fusion and contribution to public policy and strategy.

Fusion energy is a form of low-carbon energy whereby the power of the sun is replicated on earth.

At equal mass to traditional energy sources, fusion energy releases nearly four million times more energy than the burning of coal, oil or gas, and four times as much as nuclear fission reactions.

It promises minimal impact to the environment, long-term reliability and weather independence.

In addition to the direct benefits listed in the report, fusion research is

expected to deliver numerous additional economic gains, such as market, network and knowledge spillovers, which arise when economic activities in one part of a market have effects elsewhere.

The study provides strong evidence that there are already significant benefits flowing from the UK Government's investment in fusion.

This points to significant future benefits to the UK economy from further development, demonstration and commercialisation of fusion technology over the coming decades.

Since the report was compiled, the UK Government has announced £220 million of funding for UKAEA's [Spherical Tokamak for Energy Production \('STEP'\) fusion power plant programme](#).

Professor Ian Chapman, UKAEA CEO, said: "The report highlights much that is positive about UKAEA's work.

"However, this is just the tip of the iceberg with regards to UKAEA's capabilities and fusion energy's projected contribution to our shared economic, ecological and social future.

"Fusion energy research and development needs long-term and large-scale investments.

"There are substantial benefits fusion research and development can deliver not only to the economy, but also to the UK's net zero target by 2050, which means going beyond the decarbonisation of electricity.

"Our mission is to lead the delivery of sustainable fusion energy and maximise scientific and economic benefit."

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