

DEVELOPING WORLD LEADING TECHNOLOGY  
TO CREATE THE ULTIMATE,  
LOW-CARBON ENERGY SOURCE



UK Atomic  
Energy  
Authority

# UKIFS candidate recruitment pack



Guidance for you on our recruitment process you will be engaging with and some key organisational information that will support your journey with us

STEP Programme

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# Join UKIFS and Make History!

## A MESSAGE FROM OUR CHAIR, PROFESSOR DAVID GANN CBE

Do you want to be part of a moon-shot project that will change the world? Do you have the passion, knowledge, and influence to help us lead the development of fusion energy? Do you want to work with a team of world-class scientists, engineers, and industry partners to commercialise fusion power?

If you answered yes to any of these questions, then you might be the person we are looking for.

UK Industrial Fusion Solutions Ltd. (UKIFS) is a new company established by the UK Government to deliver one of the most important and exciting challenges of our time – delivering fusion energy. Fusion energy is the ultimate source of safe, sustainable, and carbon-free energy that can power our planet for generations to come. It is the same process that powers the sun and the stars, and we are on the verge of harnessing it here on Earth.

UKIFS is the next step in the UK's fusion journey, building on the scientific and technological achievements of the UK Atomic Energy Authority (UKAEA), the national fusion research centre. UKIFS has access to world-leading science and technology in key areas necessary to design and construct a power plant – plasma physics, tritium handling, robotics, new materials, advanced manufacturing, data analytics, skills, training, and digital design engineering.

In 2024, UKIFS will become a stand-alone public-private partnership with the remit to deliver the world's first fusion powerplant, to establish a fusion industry and to explore opportunities for further commercialisation. This is a historic opportunity to create a new sector that will generate jobs, growth, and prosperity for the UK and beyond.

We are recruiting for a variety of roles, and we are looking for people who have the relevant knowledge, skills and experience to help achieve our ambitious mission. We are also looking for people who share our values.

We particularly welcome applicants from a diverse set of backgrounds, as we believe that diversity is a source of strength and innovation. We are committed to creating an inclusive and respectful culture where everyone can thrive.

If you are interested in joining us on this exciting journey, please read the information in this job pack and apply by the deadline. We look forward to hearing from you.



**David Gann CBE**  
UKIFS Chair

## A MESSAGE FROM OUR CEO, PAUL METHVEN CB

Welcome to UKIFS, the company that will make fusion energy a reality!

I am thrilled to be leading this amazing organisation and I am looking for talented and motivated people to join us. We have a lot to do, and we need the best of the best to help us achieve our ambitious goals.

We are not just solving technical problems; we are helping to solve humanity's biggest challenge – climate change. We are not just working for ourselves; we are working for the future generations. We are not just building a power plant; we are building a new industry and, through that securing the UK at the forefront a new global strategic technology.

This is a once-in-a-lifetime opportunity to be part of something truly transformative and impactful. You will have the chance to work with some of the brightest minds in the world, to learn from cutting-edge science and technology, to collaborate with leading industry partners, and to shape the future of energy.

You will also have the chance to grow personally and professionally as we offer a range of benefits and opportunities to support your development and wellbeing. We are proud to be a diverse and inclusive employer, offering opportunities to people from all backgrounds and walks of life. We believe that every individual matters, and we value your unique contribution.

So, if you are passionate about fusion energy, if you have the character, capability, and capacity to help us, and if you are ready for a challenge, we would love to hear from you. Please join us in making history!



**Paul Methven CB**  
UKIFS CEO

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# What is Fusion?

Fusion is the process that powers the sun and stars. When light nuclei fuse to form heavier atoms, huge amounts of energy are released. This is the opposite of nuclear fission – the reaction that is used in nuclear power stations today – in which energy is released when a nucleus splits apart to form smaller nuclei.

There are several ways to produce energy from fusion here on Earth and, in our work, we are pursuing magnetic confinement. This uses a combination of hydrogen gases – deuterium and tritium – which are heated to temperatures ten times hotter than the centre of the sun (around 150 million degrees Celsius). At this temperature, atoms in a plasma state are energetic enough to fuse, releasing a huge amount of energy which can be used to generate electricity.

*“Fusion will play its part alongside renewables, to maintain net zero in the second half of this century.”*

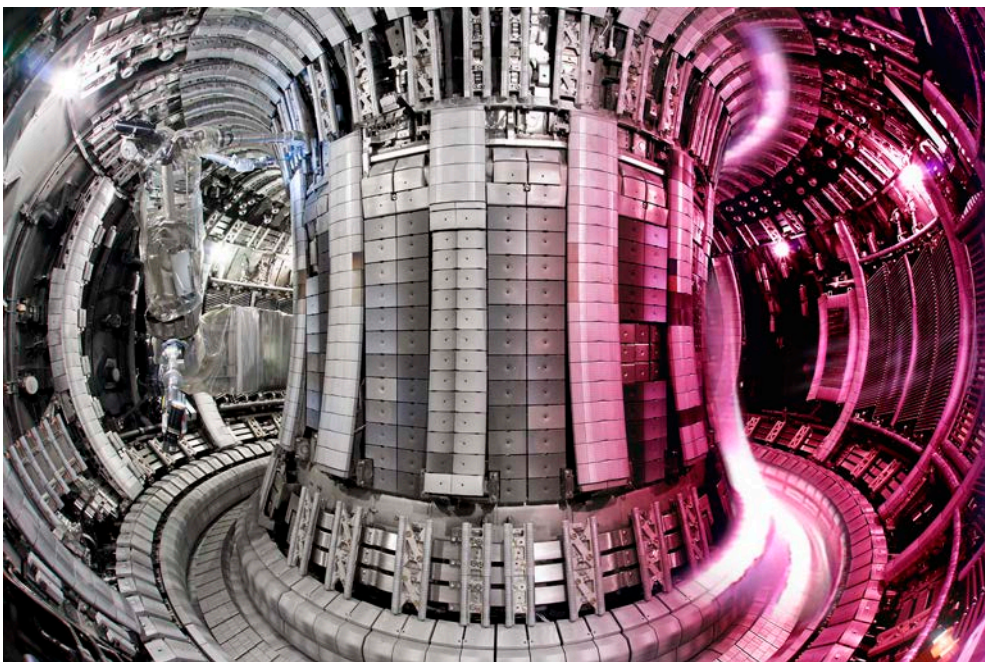


**Professor Ian Chapman**  
CEO, UKAEA

## Why Fusion?

The UK government is committed to net zero by 2050 and, in order to achieve that and to sustain net zero beyond 2050 as global energy demand grows, we need new, better ways to meet our growing energy demands. Fusion offers the opportunity to produce virtually limitless energy that will power low-carbon economies across the world in the second half of this century.

Fusion can be one part of the long-term solution, taking its place alongside renewables and other low carbon generation sources.



## Advantages of Fusion Power

With increasing energy demand globally, finite natural resources and challenges with energy security we need new, better ways to generate energy everywhere across the planet.

The benefits of fusion power make it an extremely attractive option:

- No carbon emissions
- Abundant fuels
- Energy Efficiency
- Less radioactive waste than fission
- Inherently safe
- Reliable power

## UK Government Fusion Strategy

The **fusion strategy** aims to convert the UK's world leading position in fusion science and research into a world-leading position in its commercial delivery. The strategy has two overarching objectives:

1. For the UK to demonstrate the commercial viability of fusion by building a prototype fusion power plant in the UK that delivers net energy
2. For the UK to build a world-leading fusion industry that supports different fusion technologies and is capable of exporting fusion technology in subsequent decades

**The STEP programme is key to the achievement of these two goals.**

*“I am determined to ensure that the UK remains at the forefront of global fusion leadership and can reap the benefits of commercialising a technology that could transform the global green energy market.”*

**Andrew Bowie**  
Parliamentary Under Secretary of State at the Department for Energy Security and Net Zero



# About UKAEA

United Kingdom Atomic Energy Authority (UKAEA), the national fusion research centre, is based at Culham Campus in Oxfordshire.

UKIFS is a subsidiary of UKAEA responsible for delivering the Spherical Tokamak for Energy Production (STEP) prototype fusion energy plant in West Burton, Nottinghamshire.

## UKAEA Mission

To harness the power of the sun — to deliver sustainable, low-carbon fusion energy with maximum scientific and economic benefit. And we've got four interconnected goals that will get us there:



Be a leader in world fusion research and development.



Enable the delivery of sustainable fusion power plants.



Drive economic growth and high-tech jobs in the UK.



Accelerate innovation and develop skilled people for the industry.

Integral to their success is a world-class inclusive workplace, with employees from all backgrounds. To solve one of the toughest challenges on the planet they need real innovation, and so they are working hard to further improve diversity. Their welcoming culture and innovative benefits are built to bring out the best in everyone — giving everyone what they need to bring about the future of energy.

# About UKIFS

The UK is world leading in the science and research of fusion energy. The heart of the UK's capability is our National Lab, the UK Atomic Energy Authority, based at Culham in Oxfordshire and with other locations now in Rotherham and Cumbria. UKAEA has developed the underpinning technology to a stage where it is now credible to start design and delivery of full-scale fusion energy plant.

Taking on that scale of delivery challenge requires a new form of organisation and so UK Industrial Fusion Solutions Ltd. (UKIFS) has been created to do just that. UKIFS' mission is "To bring together and integrate the capabilities needed to deliver a commercial fusion energy plant, by leading the design, build and operation of a cost-effective UK prototype."

We are now building UKIFS to be ready to lead this challenge, working in collaboration with the best of industry. The first Programme UKIFS will deliver is STEP.

UKIFS has been set up as a subsidiary of UKAEA Group, but as Company Limited by Shares will be capable of taking private investment in the future as we look to move from our first prototype plant work into supporting commercial plant development.

**Fusion is one of the most promising options for generating the cleaner energy the world badly needs. UKAEA scientists and engineers are developing the technology to bring fusion electricity to the grid.**



# The STEP Programme

STEP (Spherical Tokamak for Energy Production) is the UK's flagship programme to deliver a world first – a true prototype fusion energy plant and to show a path to commercial viability of fusion energy. This is more than an experiment – the STEP Prototype Plant is being designed to demonstrate the key attributes that subsequent commercial plants will need.

The scale is immense. The STEP Plant will be bigger than the world's current largest fusion facility, the ITER plant in France. In terms of infrastructure, STEP will be closer to the scale of the Hinkley Point C power station in Somerset but based on new fusion technology. This is a true mega-project.

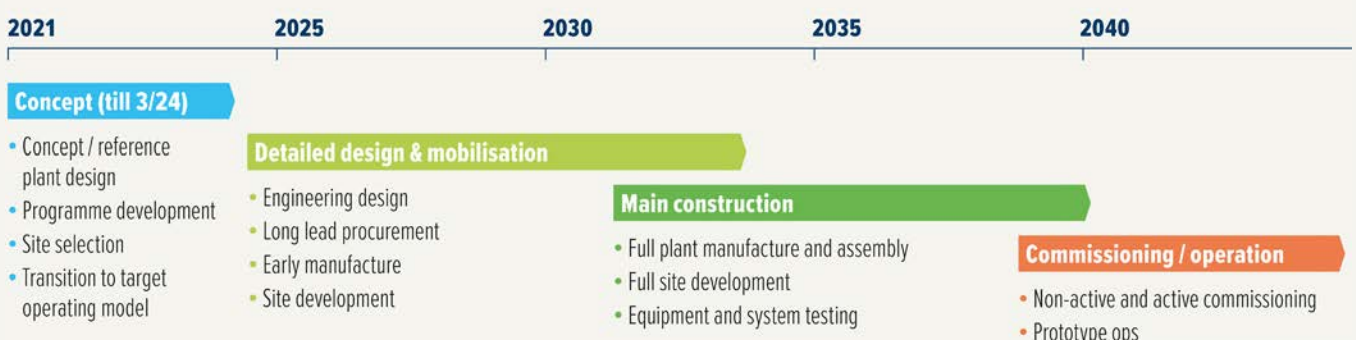
Through delivering a new prototype plant STEP will develop a new fusion supply chain that is capable of supporting an emerging global fusion sector. We are not just building a plant; we are building an industry.

## What are the different phases of the STEP programme?

The first phase of the programme runs through to March 2024. By then we will have defined our concept design and defined the full operating model for the remainder of the programme, where industry will deliver the bulk of the work, operating in a new collaborative arrangement with under the leadership of UKIFS. And we have already started to mobilise our chosen build site at West Burton. By 2028 STEP will be a well-founded programme with industrial partners onboard and working in a collaborative alliance, with a design maturing, early site works underway, technology demonstrations being delivered, and benefits being delivered, including in the region around West Burton.



## STEP high-level schedule





## Concept Design

The STEP Prototype will be a fully integrated energy plant that demonstrates what will be needed for future commercial scale plants. It will demonstrate:

- Net power to the grid
- Self-sufficiency of tritium fuel
- Confidence in plant availability (on time vs maintenance time)
- Safety and environmental compliance of fusion energy scale plant

As a first-of-a-kind the STEP plant will also set the baseline for understanding schedule and cost of commercial fusion plant, and as a government backed major programme must deliver at best value for money for the taxpayer, managing schedule and cost effectively.

## Site and Skills

The UK Government has selected the current West Burton A coal fired power station site in Nottinghamshire for the build of the STEP prototype plant. This will mark a historic transition from “fossil to fusion”, building on the legacy of power generation in “megawatt valley” along the river Trent. The site is large, over 330Ha, and provides the opportunity for significant development alongside the STEP plant, creating a new fusion ecosystem in the region, with enormous benefits in terms of regeneration for the region.

The Culham site, UKAEA’s home in Oxfordshire, has been very successful in attracting spin-off and start-up companies to co-locate on the campus. It’s envisaged that the community around the West Burton site, where the STEP prototype plant will be built will do likewise.

However, the opportunities for the supply chain are not only within high-tech, adjacent industries. Once site development is underway, the programme will need all kinds of services, from catering to security. This will provide many additional opportunities for local companies to get involved and benefit from the development.



The West Burton site, and Gainsborough (North Facing)

# Delivering STEP: Transition to an Integrated Delivery Team with industry

STEP will become one of the largest major programmes anywhere in the UK and is undoubtedly already the most technically challenging. Already on the UK's Government Major Projects Portfolio (GMPP), the STEP Prototype Plant will also become a nationally significant infrastructure project. This can only be delivered with the right mix and scale of capabilities.

STEP is transitioning from concept to delivery. Key to this transition is pivoting from the bulk of the work being done by UKAEA with some industry support, to the majority of the work being done by industry within a collaborative model under a new client organisation, UKIFS. The capacity and capability of industry is essential to deliver a programme of this scale, but it is

also only through delivering a real plant that industry will become fusion capable and ready to support a new global sector with the UK at the forefront.

Work is underway to get the right organisation and capability ready for the next phase in our programme. This includes the STEP delivery organisation, UKIFS, which, is a company limited by shares. UKIFS will then enter long-term partnering agreements with major industrial organisations in engineering and construction to form an Integrated Delivery Team. The collaborative approach is at the heart of STEP delivery and will be formed to include people employed by UKIFS as well as people from our Whole Plant Partners, Systems Partners and other companies and organisations as required.





# UKIFS and the Integrated Delivery Team

UKIFS will partner with critical organisations to obtain the capability we need to deliver the STEP programme. We will have three Whole Plant Partner organisations that we will work with; the Fusion Partner, which is UKAEA (bringing deep fusion expertise); the Engineering and Construction Partners (industrial entities bringing capacity and experience in complex

engineering integration and delivery and in construction management). Industry partners will be selected through a tender process during 2024 and early 2025. The intention is that by mid-2025, we will have the full capability of all partners onboard and operating in an Integrated Delivery Team.

## Tranche 2A +Beyond

The STEP organisation will transform into a new delivery model, known as an Integrated Delivery Team.

This model will allow the programme to boost capabilities and opportunities across the team to support successful delivery of our mission.

### Integrated Delivery 'Team'

People delivering the STEP Programme

**STEP DELIVERY ORG (SDO)**  
 A company limited by shares, established to deliver the programme, manage the partners and provide oversight and governance.

**WHOLE PLANT PARTNERS**

Engineering

Construction

Fusion (UKAEA)

Specialist Capabilities

**SUPPORTED BY**

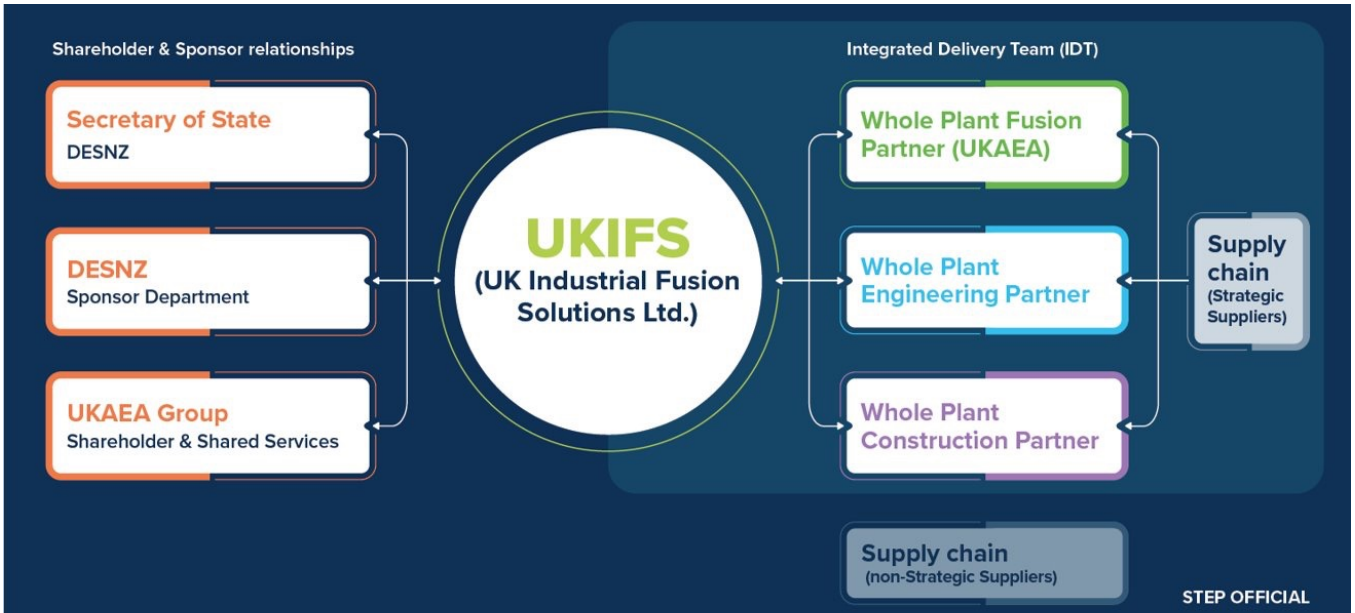
Client friend contracts  
i.e Agency

Broader Industry  
Academie, ITER,  
international collaborators

Supply Packages

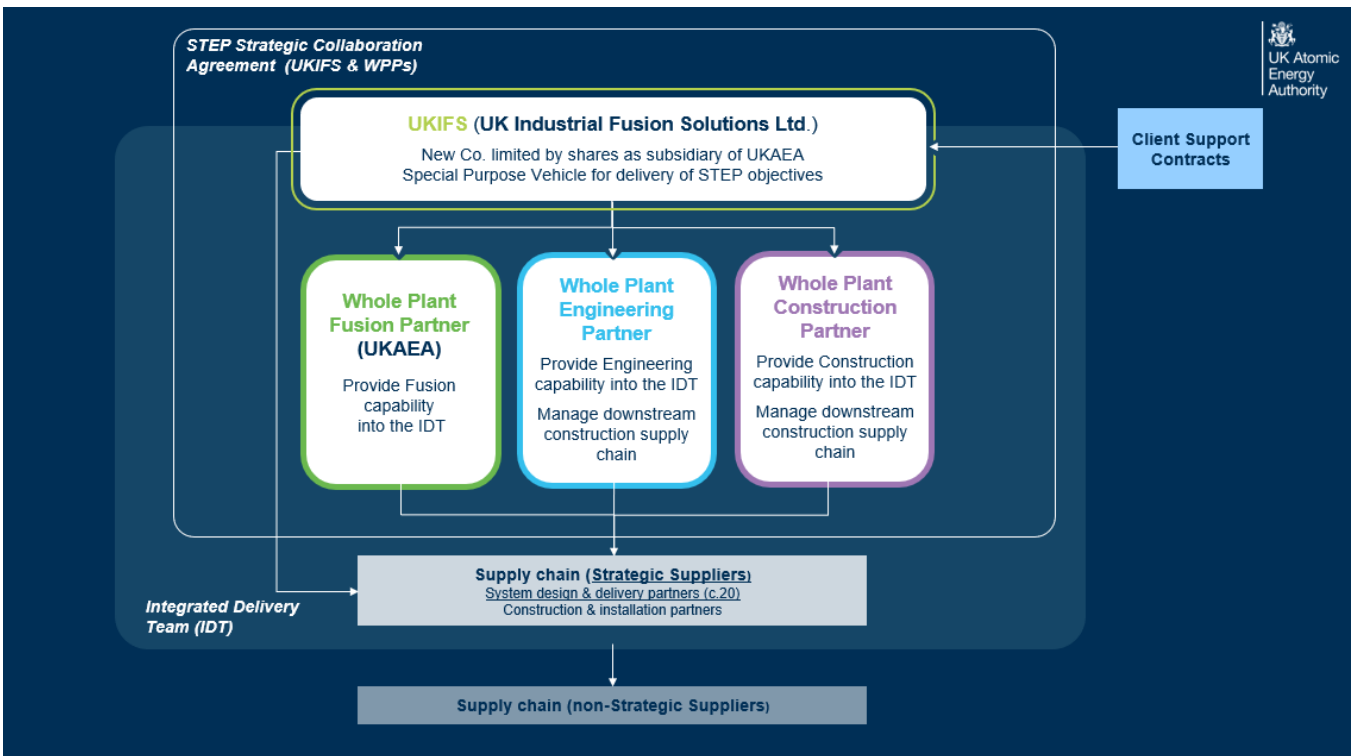
Community  
Social licence  
to operate

UKIFS CANDIDATE RECRUITMENT PACK 11



The below image illustrates the Commercial relationships as mentioned above between UKIFS and the three Whole Plant Partner organisations and their supply chain. These four parties will enter into a strategic collaboration agreement and together with their strategic supply chain will form the Integrated Delivery Team (IDT). The four parties will operate as an alliance to deliver the programme.

We are currently in the process of transitioning to this Target Operating Model for the programme that will be led by UKIFS. To drive the design of and transition to the new operating model, and to drive the move from the concept phase into the new delivery phase working with industry in a collaborative long-term partnering arrangement, we have appointed a number of senior executives including the UKIFS CEO.





# The UKIFS Board

UKIFS is in the process of forming its Board. The role of the Board is to provide strategic oversight of UKIFS ensuring delivery of the company’s strategic objectives, compliance with regulatory and common law duties, and their responsibilities under the UKIFS Corporate Structure document.

The Board will have a balance of skills and experience appropriate to directing the Company’s business and a majority of independent non-executive members to ensure that executive members are supported and constructively challenged in their role.

Membership of the Board is as illustrated in the image below and includes the following roles:

## NON-EXECUTIVE MEMBERS

- Non-Executive Chair
- Non-Executive Director (NED) of Parent (CEO UKAEA)
- Non-Executive Director of Parent Board (UKAEA)
- Non-Executive Director of Sponsor Department’s policy team (DESNZ)
- 3 independent NEDs with experience in complex programmes and technology development

## EXECUTIVE MEMBERS

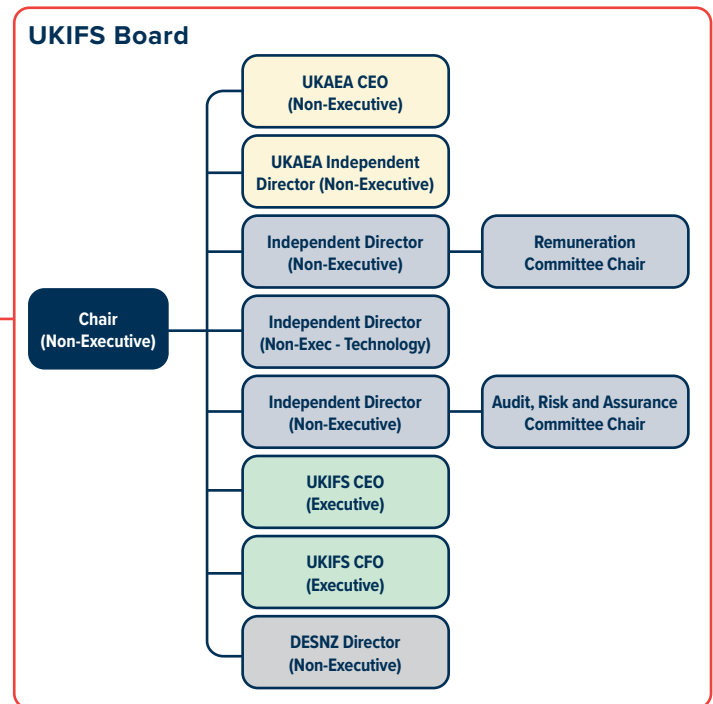
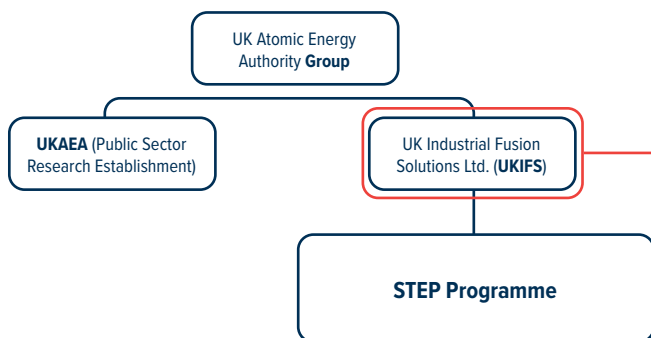
- Executive Director UKIFS Chief Executive (UKIFS CEO)
- Executive Director UKIFS Chief Financial Officer (UKIFS CFO)

UKIFS’ Executive Office will act as secretariat for the Board.

**UKIFS STRATEGIC OBJECTIVE**

To lead and integrate the capability and know-how to deliver commercial fusion energy plans of the future, through leading the design, build and operation of a cost-effective UK prototype and to develop capability in the supply chain to support and service such activities.

UK Atomic Energy Authority Group created, under which UKAEA and UKIFS operate, with their independent boards.



# Our STEP Programme Charter

Our STEP Programme Charter, established in January 2021, outlined the expected behaviours and values for all people involved in the delivery of the programme. The Charter establishes the cultural tone crucial for the successful delivery of our mission and is critical to our success.

It has served us well in the early stages of our mission but as the programme nears the end of the first phase (2019 – 2024) there is a requirement for it to evolve in readiness for the inclusion of new industrial partners for engineering and construction. As the programme scales up with a site selected at West Burton in October 2021, and the creation of UK Industrial Fusion Solutions Ltd responsible for delivery of STEP in the next phase (2024 – 2032) there is a responsibility to call out safety specifically as a value to embed an early safety mindset in the programme culture.

Therefore, we now have six values that all individuals working for STEP must embody and champion, irrespective of their 'employer badge'. These changes resulted from team consultation, and these values and behaviours are designed to enhance our programme delivery. Our charter will consistently evolve with each iteration of the programme, and we should actively embrace this change in alignment with our values.

The infographic displays six values arranged in a 2x3 grid. Each value is represented by a circular icon, a main heading, and a list of associated behaviours. The background is light blue with a decorative pattern of blue circles and lines on the right side.

- SAFETY** (Icon: Shield with star)
  - Lead by example
  - Prevent harm
- MATTER** (Icon: Heart in hands)
  - Compassion
  - Embrace differences
- ONE** (Icon: Hands holding a star)
  - Collaborate
  - Share
  - Communicate
- CHANGE** (Icon: Two arrows forming a circle)
  - Adaptable
  - Learn from others
- PIONEERING** (Icon: Mountain peak)
  - Courageous
  - Innovative
- DELIVER** (Icon: Arrow pointing right)
  - Aligned
  - Efficient
  - Integrated

It is our vision that all people working on the STEP programme, regardless of their 'employer badge' will embody and champion these behaviours. We recognise that our charter will continue to evolve as we onboard our Whole Plant Partners and as the programme evolves over time.



We champion  
**SAFETY**  
Lead by example  
Prevent harm

Recognising the responsibility of a future construction site, we need to embed an early safety mindset.

**Safety is at the heart** of our design, build and implementation activity.

I **lead by example**, demonstrating my commitment to safety in all my actions. I inspire a safe working culture and empower others to prioritise safety through my words, behaviours, and decisions.

I always work in a **safe manner**; preventing harm to myself, my colleagues and anybody affected by my actions. I only work if I am fit and safe to work.



We embrace  
**CHANGE**  
Adaptable  
Learn from others

We are evolving now to the next phase and will continue to evolve. It's essential to our success.

I **adapt** to design and delivery challenges, embracing new ways of working and being responsive to change.

I demonstrate openness to **learning from others** and actively seek partnerships with subject matter experts both internally and externally to navigate the unknown and complexity of the program.



We all  
**MATTER**  
Compassion  
Embrace differences

We have a fast-paced environment, so it's important we continue to care for each other. We are all unique and have differences, which adds value to our programme and team spirit.

I demonstrate **empathy and compassion** by taking accountability and responsibility for the well-being of myself, others and the communities in which we operate.

I **embrace our differences**, champion diverse perspectives and actively promote inclusivity.



We are  
**PIONEERING**  
Courageous  
Innovative

We are delivering a first of a kind programme, to benefit humankind. It's what excites and empowers us.

I display **courage and empowering others** by making informed decisions, speaking up, fostering innovation, and seeking diverse perspectives while managing risks and seizing new opportunities.

I am **creative and innovative** as we continue to identify ways in which we could be even greater at what we do, considering alternative solutions.



We act as  
**ONE**  
Collaborate  
Share  
Communicate

Our make-up and our future structure means we will have many people wearing different 'badges', but collectively we are one team, team STEP.

I actively participate in **collaborating, sharing knowledge** and **embracing new learning** as part of a cohesive team, working across program boundaries, disciplines, and partners.

I **communicate** honestly, transparently, realistically and clearly, ensuring that messages are concise, understood, and acted upon promptly.



We  
**DELIVER**  
Aligned  
Efficient  
Integrated

We possess a fantastic team spirit and we recognise delivery is down to the success of every individual, working together.

I ensure we are **aligned** and maintain focus on the unified direction of the program, aligning activities with a program strategy while adapting to changes in direction.

I operate **efficiently and promptly** to maintain momentum and ensure effective delivery of key milestones and program deliverables.

I apply **integrated thinking** to consider and balance programmatic, financial, commercial, and technical factors.

# Our Benefits

At UKAEA and UKIFS, our staff work on interesting and challenging projects with a real impact on bringing fusion energy to the grid. Fusion energy is a global quest and, as one of the leading players, UKAEA has partnerships with organisations around the world.

We offer many benefits to our employees when they join our company. We aim to go above and beyond the standard benefits package that you may expect. We support a work/ life balance, and this is reflected in the benefits that we offer.

We are proud of the many learning and development opportunities available to our staff members. These range from professional development schemes and mentoring programmes to training courses and funding for educational qualifications.

We also ensure that diversity and inclusion is a priority in everything that we do, and we strive for an equitable culture. This desire to create a supportive and inclusive environment is championed by our leaders, employee resource groups and the broader employee population.

We are actively taking steps to ensure that the next generation of graduates and apprentices, in addition to our more experienced employees, have every opportunity to gain an exciting and rewarding career.

We have a number of staff-led groups in our organisation that play a pivotal role in fostering a culture of inclusion and diversity. These groups, formed by employees with shared characteristics or interests, provide a platform for individuals to connect, share experiences, and contribute to a more inclusive workplace. They are valued for enabling a richer understanding of diverse perspectives within the organisation and are always welcoming to new members.

LEADING THE WORLD IN  
SUSTAINABLE ENERGY

YOU'LL JOIN AN ORGANISATION  
THAT'S CARRYING OUT CUTTING-  
EDGE RESEARCH FOR THE FUTURE  
OF THE WORLD'S ENERGY.



Hybrid working



Emergency family leave



Maternity, paternity and adoption leave



A wide range of programmes for learning and development



Health and wellbeing initiatives, including a gym membership and an on-site Occupational Health Service



Outstanding defined benefits pension scheme



Social clubs and events



Generous Annual Leave entitlements



Annual bonus schemes

For further information about our wide range of **Employee benefits** | **UKAEA Careers** please visit our careers website.



# Your Application and the Next Steps

If you believe in solving the climate change challenge and would like to get involved, then this is the right place for you. Simply **submit your application** for the role of interest and we will be in contact with you. Our friendly Talent Acquisition team will be in contact with some pre-screening questions after which a further shortlist will be created and if you are on this list, you will be invited for an interview. The interview usually includes a business challenge/question that we would like your view on through delivering a brief presentation to the interview panel, but don't worry, we will share all the information you need to know closer to the time.

We would like to keep the process as simple and stress free for you, so if you have any concerns, or do need any accommodations, please do not hesitate to let the Talent Acquisition team know.

To know more about our recruitment process, please view the details on our careers **website**.

Please note, as we prepare to officially operate UKIFS as a limited company in 2024, we are recruiting into UKAEA with the agreement that the successful candidate will sign another contract at the commencement of UKIFS and this will enable the new organisation to assume the employer-employee relationship. Should you wish to understand more about this arrangement, please don't hesitate to ask us your questions during the interview process.



The UK Atomic Energy Authority's mission is to lead the delivery of sustainable fusion energy and maximise scientific and economic benefit



Find out more  
[gov.uk/ukaea](https://www.gov.uk/ukaea)  
[step.ukaea.uk](https://step.ukaea.uk)

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