WE ARE ETC

A global leader in enrichment technology, innovative engineering and manufacturing services

ETC
enrichment technology company

www.enritec.com

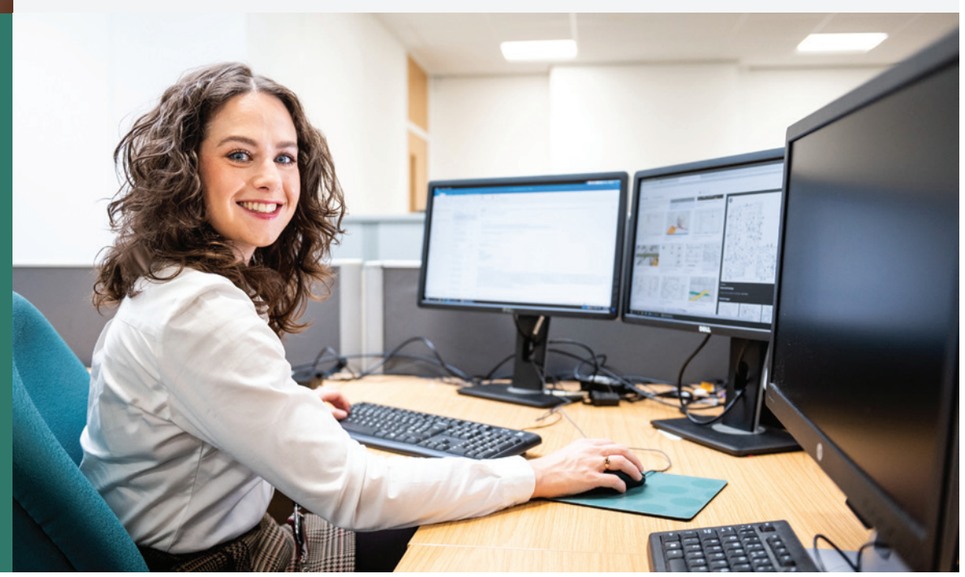
OUR AMBITION

ETC is an innovative technology company committed to the safe, competitive and sustainable delivery of enrichment technology services and advanced high-tech solutions to our customers. Our innovative technologies contribute to a sustainable energy supply to help the world fight climate change.

Our expertise lies in designing and delivering highly-skilled manufacturing, engineering and technology solutions that address the needs of the world's energy markets, now and in the future. With many years' experience in the nuclear industry, ETC's business activities today lie in two key areas:

- We produce the world's leading gas centrifuge uranium **enrichment technology**, the most efficient for producing enriched uranium fuel that is needed to produce nuclear power.
- We specialise in supplying **innovative technological solutions** and expertise to various industrial markets, such as: flywheel energy storage, hydrogen storage, high-quality carbon fibre products, welding, heat treatment & related services, and other advanced technologies which meet critical needs. These services are represented by our three subsidiaries Pronexos, STORNETIC and NPROXX.

"ETC is an innovative technology company dedicated to developing advanced solutions that contribute to a sustainable energy mix. We invest heavily in Research and Development to protect and grow the advanced technologies that we have developed."



WHAT WE DO

ETC has a range of technical capabilities

Enrichment Technology Services

GAS CENTRIFUGE TECHNOLOGY

ETC has developed the world's leading technology for uranium enrichment, gas centrifuge technology. The process uses centrifugal forces to enrich the concentration of one isotope of uranium. Our technology is by far the most efficient method of achieving this.

Advanced Hi-tech Solutions

PRESSURE VESSELS

Expertise in the design and manufacture of very-high-strength carbon fibre pressure vessels, which have a number of potential applications in modern technology, especially in applications for hydrogen-powered vehicles.

ENERGY STORAGE SYSTEM

A revolutionary energy storage system, DuraStor®, which uses flywheel technology to safely deliver high power within seconds. This provides a viable alternative to battery solutions for local and national grid applications.

FLOW FORMING

We operate a range of state of the art flow forming machines, and ancillary facilities along with highly experienced operators with decades of experience creating precision tubes for applications in the nuclear industry and other industrial applications. Our design and materials expertise is backed by a dedicated materials laboratory and a considerable in-house research & development team.

AEROSPACE TECHNOLOGY

We utilise our cutting-edge pressure vessel technology for application in space launch systems. Over the next 20 years, we will contribute to essential rocket control technology going into orbit with a series of innovative type IV carbon fibre helium tanks.

CARBON FIBRE EXPERTISE

Our manufacturing capability and design of high-quality, high-strength Carbon Fibre Reinforced Polymer (CFRP) products such as rollers, driveshafts, sleeves and flywheels, which have the critical combination of strength and lightness to make them suitable for many industrial applications.

ELECTRON BEAM WELDING

EBW lets us weld oxygen-greedy materials and materials with high thermal conductivity. We can weld a range of materials, including – but not limited to – reinforced steel, stainless steel, aluminium, copper, titanium, zirconium and niobium.

UNIQUE TECHNOLOGY

ETC is a high-tech innovative company providing a range of services in the energy and industrial sectors that we believe will contribute to a decarbonized world in future. We are world leaders in seeking out new and innovative technologies that can help the world develop a sustainable and renewable energy supply.

In designing and delivering operating uranium enrichment plants, ETC manufactures, supplies and installs gas centrifuges, pipework, and all supporting technologies and services. We are also able to provide project management for the construction of these facilities.

During the lifecycle of these plants, ETC supports its customers with a range of services such as performance monitoring and improvement, refurbishment, decommissioning and training.

ETC is a joint venture between Urenco and Orano.

ETC enrichment technology company

urenco The Energy to Succeed

orano

HOW URANIUM ENRICHMENT BY GAS CENTRIFUGE WORKS

ETC's unique and globally-leading gas centrifuge technology works by using highly-efficient, frictionless centrifuges to gradually separate the two most common isotopes of naturally-occurring uranium.

Uranium hexafluoride (UF_6) gas is introduced into a centrifuge, which rotates at an extremely high speed in a vacuum. The centrifuge motor produces heat at the bottom of the centrifuge. This creates a temperature gradient which intensifies the separation process.

The heavier U-238 molecules are pushed towards the wall of the centrifuge, while the lighter U-235 molecules congregate in the middle. This allows the enriched and depleted uranium gases to be separated. In order to achieve the enrichment required, centrifuges are used in series. To increase the throughput of a system, centrifuges are also set up in parallel. These serial and parallel systems of centrifuges are known as cascades. Enriched uranium travels from one centrifuge to the next, for as long as is needed until it is sufficiently enriched to be used as pellets in nuclear fuel rods, the fuel for nuclear power stations.

19.6%
INVESTMENT INTO R&D

ETC invests almost 20% of its annual revenues into research and development, developing low- and no-carbon energy solutions to power the future.

ETC – SIX DECADES AT THE HEART OF THE NUCLEAR FUEL CYCLE

ETC was founded in 2003, and in 2006 it became a joint venture between Urenco and Orano. But the technology that we develop has been around for much longer. We look back at decades of technology excellence on the timeline below.

The history of ETC's technology stems back to the 1960s when gas centrifuge technology was first used.

In 1970, the British, German and Dutch governments signed the Treaty of Almelo, agreeing to develop centrifuge technology for power generation together and manage the risk of proliferation. ETC was formed as a stand-alone company in 2003, and in 2006 it became a joint venture owned equally by Urenco and AREVA (now Orano). Since then ETC has successfully delivered major enrichment projects in the UK, The Netherlands, Germany, France and the USA.

1964

Jülich site established as state-owned company GKT.

1967

First cascade is operated with 14 centrifuges.

1969

Dutch UCN company starts work at Almelo. Uranit company is formed at Jülich.

1970

The Treaty of Almelo paves the way for international cooperation in the field of centrifuge technology between Germany, the United Kingdom and the Netherlands.

1972

First UK centrifuge plant commences operations at Capenhurst.

1985

Production starts at plant in Gronau in Germany.

1992

Treaty of Washington permits Urenco to establish an enrichment plant in the USA.

1993

Companies from the UK, The Netherlands and Germany merge to form Urenco group.

2003

Cooperation between Urenco and Areva in the field of centrifuge technology. ETC is launched as a subsidiary of Urenco.

2006

ETC confirmed as joint venture by Orano (then called Areva) becoming an equal shareholder. Treaty of Cardiff adds France to the signatories of the earlier treaty of Almelo.

2007

As work begins on the two new enrichment plant projects at Tricastin, France and Eunice, New Mexico, USA, ETC's production targets expand significantly to meet project demand.

2012

Business Transformation planning begins, to manage sudden drop in global demand for enrichment capacity.

2013

ETC establishes subsidiaries, to develop commercial opportunities outside core nuclear expertise.

2017

ETC commissions the final cascade at the George Besse II (GBII) project, Orano's enrichment facility in Tricastin, France.

2018

ETC enrichment project at Eunice, USA is completed.

TODAY

As global interest in nuclear energy grows, ETC continues to develop and safely deliver the world's leading uranium enrichment technology. From contributing through our subsidiaries, Pronexos, Stornetic and NPROXX, to the application of advanced technology and skilled manufacturing, we are committed to making a unique contribution to the affordable, sustainable, low-carbon energy supply for the future.

OUR ROLE IN THE NUCLEAR FUEL CYCLE

Our technology provides a critical link in the nuclear fuel cycle - the process by which naturally occurring uranium is enriched for use in nuclear power plants to create low-carbon energy.

Mining: Uranium is mined as uranium ore, then milled, purified and concentrated. This produces uranium oxide (U_3O_8) commonly known in the industry as 'yellow cake' which is then transported to a conversion facility.

Conversion: Milled uranium oxide is combined with hydrogen fluoride to form uranium hexafluoride (UF_6). At room temperature, UF_6 is a solid, and when heated it turns into a gas without going through a liquid state. Once converted, the UF_6 is put into thick steel cylinders and moved to enrichment facilities.

Enrichment process: ETC's gas centrifuge enrichment process uses a large number of rotating cylinders which are interconnected. UF_6 is pumped into these cylinders, which use strong centrifugal force that draws more of the heavier gas molecules (containing the U-238) toward the wall of the cylinder, while the lighter gas molecules (containing the U-235) tend to collect closer to the centre. This enables ETC to increase the concentration of U-235 to the desired level.

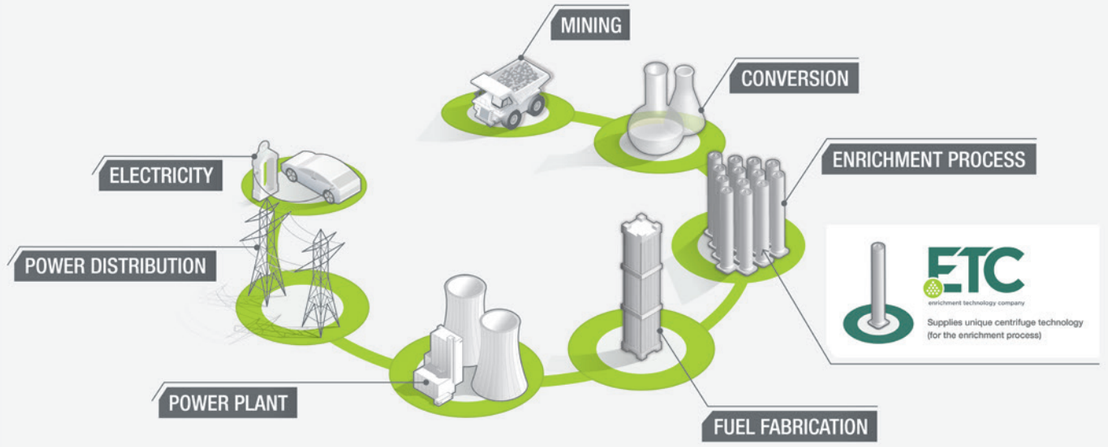
Fuel fabrication: The enriched UF6 is then chemically processed into uranium dioxide (UO_2) powder. This powder is then pressed into pellets and loaded into tubes. The tubes are bundled together to form fuel rods and shipped to nuclear power stations.

Power Plant: The fuel rods are delivered to nuclear power plants where they are inserted into the core of the reactor. Heat generated by nuclear fission within the core is used to heat water to produce high pressure steam. This steam drives turbines, which in turn generate electricity.

Power distribution: The electricity produced is fed into a grid and distributed at high voltage. After the voltage is reduced, it is supplied to homes and businesses. The ever-increasing global demand for energy, coupled with the urgent need to address climate change by reducing and eliminating the use of fossil fuels, mean that nuclear energy is a key part of the mix of energy sources we need to provide a sustainable, low-emission future energy supply.

Electricity: Electricity is essential for our society, and our demand for it keeps on growing every year. Electricity which is produced using nuclear fuel has a considerably lower carbon footprint than that used by burning fossil fuels such as coal, oil or gas. That's why ETC believes that nuclear energy forms a vital part of the energy mix we need to create a sustainable low-carbon electricity supply for the future.

NUCLEAR FUEL CYCLE



ETC GROUP

As well as owning and developing the world's pre-eminent technology for enriching uranium for nuclear energy, ETC owns and operates three subsidiary companies that are actively involved in producing and supplying innovative high-tech solutions to various markets.

ETC
enrichment technology company

pronexos

STORNETIC

NPROXX
50-50% joint venture
with Cummins

pronexos

Pronexos offers a complex and varied range of industrial competencies, experience and capability, and works as a trusted supplier a range of blue-chip companies, international organisations and OEMs in Europe.

Pronexos specialises in advanced carbon fibre products.
It is active in a range of high-tech markets including: aerospace; semiconductors; aviation; pressure vessels and complex carbon fibre products like rollers, tubes and driveshafts.

Pronexos specialises in successfully delivering complex products and challenging projects that require any combination of advanced engineering, planning and design, materials testing, clean room services, manufacturing and a range of specialist processes such as electron beam welding.

Pronexos is a German-Dutch company based at two sites in Almelo (The Netherlands) and Jülich (Germany).

pronexos.com @Pronexos Pronexos

STORNETIC

Innovative Power Storage Systems

Stornetic's flywheel-based technology offers an alternative power storage solution to typical industrial, grid-focused and hybrid power storage systems. With its manufacturing and marketing activities based at Jülich, Germany, Stornetic is a 100% owned subsidiary of ETC.

Pioneering a sustainable future

Stornetic's sophisticated products, DuraStor® and EnWheel® are based on reliable, durable flywheel solutions for power load balancing, grid stabilisation and hybrid power supply management applications. Requiring minimal maintenance and producing zero waste, Stornetic systems provide a safe, stable alternative that businesses can rely on as a sustainable investment.

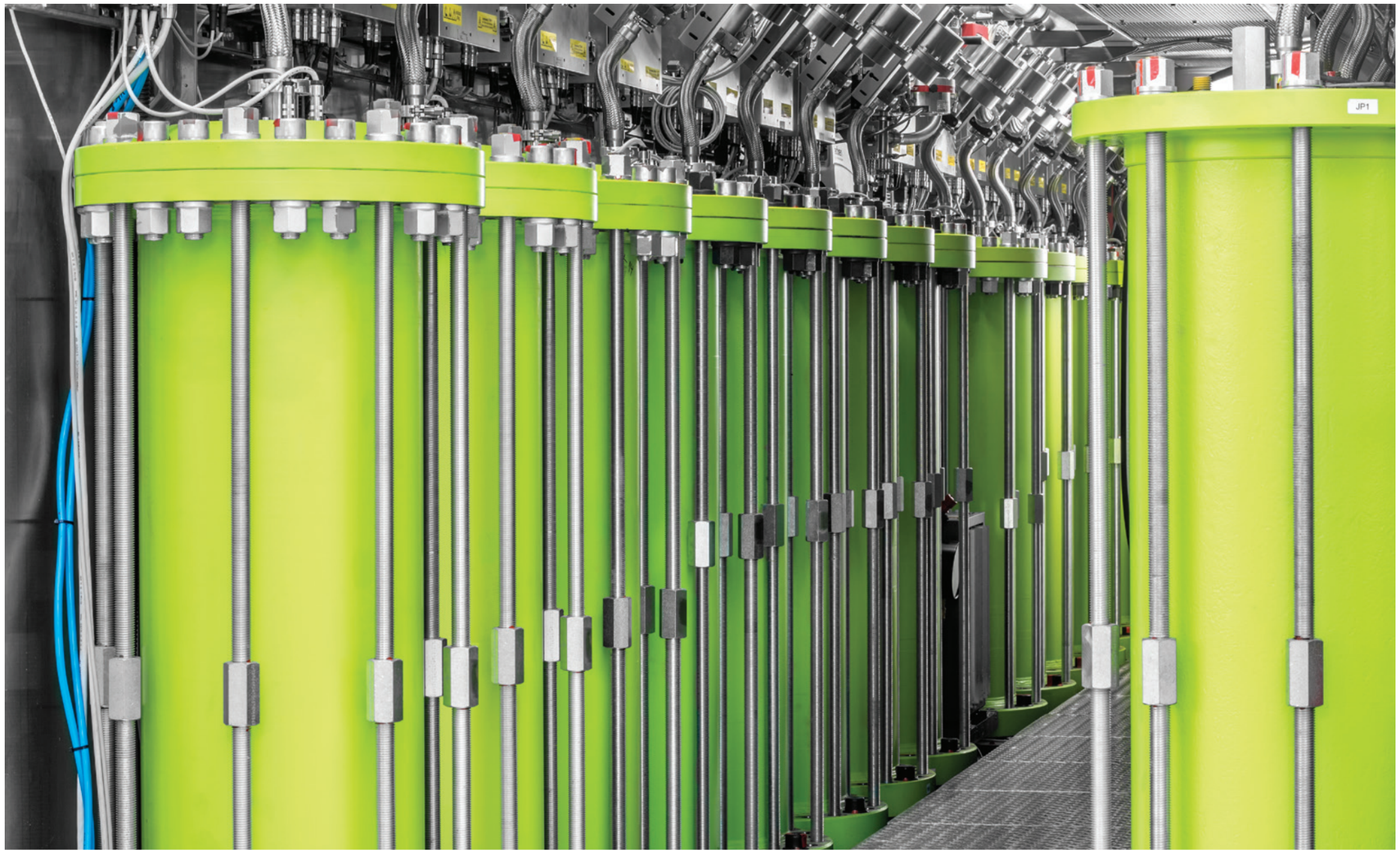
Power storage technology

Stornetic's EnWheel® flywheel system is a particularly useful solution wherever there is a need for large numbers of charging and discharging cycles and high transient power balance. It offers efficient power storage by employing rotational energy. Moving almost frictionlessly at up to 45,000 revolutions per minute, these powerful devices can operate with virtually unlimited charging cycles, and offer outstanding service life.

EnWheel® offers:

- high, specific power rates
- power reaction in milliseconds
- typical charging/discharging times between 30 and 150 seconds
- virtually wear-free and maintenance-free technology
- long-lasting capacity irrespective of charging cycles

stornetic.com @Stornetic Stornetic



Modular solutions for any requirement

DuraStor® is a containerised, modular, and customisable system that allows operators to choose the number of EnWheel® machines they need for a particular application. This could be dictated by total power requirement or speed of response, as well as capacity based on intended usage and budget. DuraStor® allows for advanced power controls and offers longer serviceable life that similar battery based solutions. DuraStor® also offers reduced fire risk and use of heavy metals. Benefits of the DuraStor® solution include:

- a contained, fully integrated system that is largely independent from local and climatic conditions
- fully self-reliant operation that smoothly integrates into any existing low voltage (LV) power grid landscapes without the need for complex control interfaces
- fully compatible with energy management and data acquisition systems

Stornetic's solutions have been in development since 2013 and offer a pioneering solution for intelligent power storage in a world where growing grid volatility and decentralised power generation are creating challenges for industrial power consumers.

We are a world leader in high pressure hydrogen storage

NPROXX

Hydrogen Storage

The future of transportation lies beyond fossil fuels. Hydrogen is a key energy carrier of the future, enabling energy storage and sector coupling.

Based on more than 40 years experience in engineering, design and manufacturing of high quality carbon fibre products and systems in various industries NPROXX today provides on-board tank systems for hydrogen-powered vehicles and solutions for large scale hydrogen transportation and storage:

- Transport and storage - 350, 500, 1000 bar
- Heavy duty vehicles - 350 bar
- Automotive - 700 bar

NPROXX has developed a range of solutions for the safe storage of hydrogen under high pressure. Our storage solutions have been designed as modular applications, enabling large volumes of hydrogen to be stored safely and conveniently, either at the source of production or at refuelling stations and similar facilities.

We develop and produce composite pressure vessels for hydrogen storage infrastructure, refuelling stations and hydrogen-powered busses, trucks, trains, cars, ships and other vehicles.

NPROXX has its office in Heerlen (The Netherlands) and its production facilites in Germany. The company is a 50/50 joint venture between ETC and Cummins.

nproxx.com @_NPROXX NPROXX NPROXX

WORKING AT ETC

ETC is a company where your contribution really matters – no matter what role you undertake, one thing will strike you when you work for ETC: our culture.

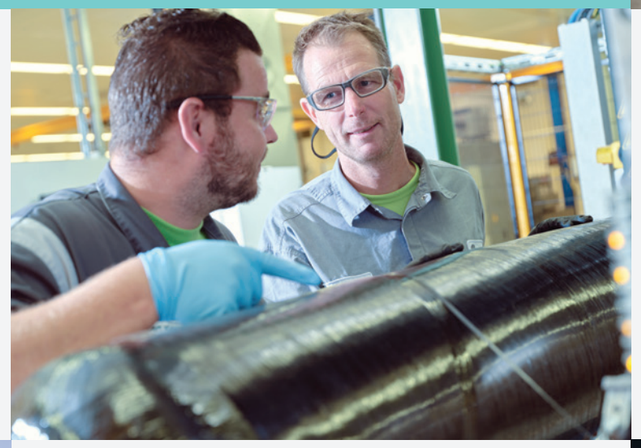
Our Culture: what you can expect from working at ETC

A STABLE, NURTURING ENVIRONMENT

ETC offers exceptional benefits to its employees, including excellent working conditions, bonuses and salaries that always benchmark very favourably against peer companies and competitors. We believe that a long-term career at ETC will see both you and the company get the best from our work together!

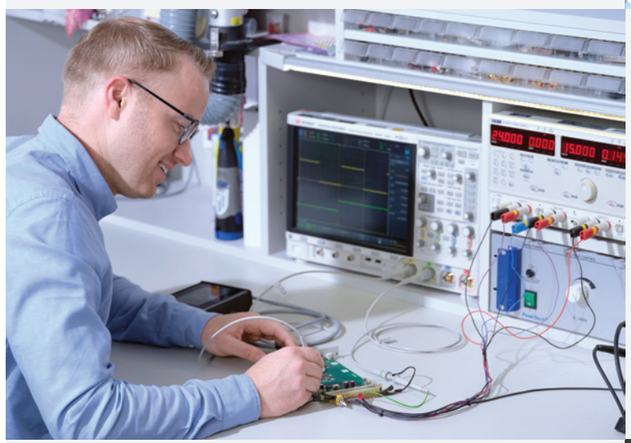
REWARDING AND CHALLENGING WORK

ETC is an international company with multiple sites, and we work across a wide range of industrial sectors. We believe in pushing our people to achieve their potential, so you can expect a diverse workload with interesting and challenging tasks.



A COMPANY THAT CARES

Our strength is our people. That's why, at ETC, we look after our people. We rely on the strength of our teamwork and collaboration to drive our business forward – and we do it with happy, engaged colleagues working effectively in teams.



BUILD THE CAREER YOU DESERVE

ETC is a company full of opportunity – whatever your role, you will be encouraged to develop your skills and drive your career forward. Knowledge and experience will be handed down by your colleagues. What you do with it is your opportunity.

A SAFE AND HEALTHY PLACE TO WORK

The wellbeing of our colleagues is vitally important at ETC. With safety as our number one priority, you can be sure that every other ETC colleague has got your back. And you'll be expected to have theirs. We are working to develop an interdependent safety culture and your contribution is needed!

A CHANCE TO CONTRIBUTE

At ETC we strongly believe that our work is making a vital contribution to creating a sustainable energy supply for the future. You will help us to accelerate the decarbonization of the world's energy supply by developing our unique technologies and services.

CAREERS

If you are interested in a career at ETC look at our current career opportunities:

CAREER OPPORTUNITIES
enritec.com/careers

Almelo


St. Paul-Trois-Châteaux (Tricastin area)

CORPORATE RESPONSIBILITY

ETC is committed to being a good neighbour in the regions we operate.

At all our sites, we have well-developed programmes for community engagement, sponsorship and interaction that have been running for decades. We support a diverse range of local programmes from education, to healthy lifestyles to community improvement programmes. Each ETC site takes charge of local charity donations and commitments.

Environmental protection and enhancement are of particular interest to ETC – we strongly believe that the world must reduce its reliance on fossil fuels rapidly, to counteract the reality of climate change. This can only be achieved through a mix of sustainable energy sources. We are particularly interested in supporting causes or projects which have environmental improvement or enhancement as their main driver.

Our corporate responsibility activities can be grouped into two main areas:

LOCAL CHARITABLE SUPPORT

Each ETC site makes charitable donations to local good causes, usually for social, cultural and educational purposes in the region around our sites.

SPONSORSHIP

ETC also invests in sponsoring a range of initiatives in the local areas near our sites. These initiatives are often related to sports and other activities with healthy participation for young people.


Chester (Capenhurst area)


Jülich

62
LOCAL ORGANISATIONS

Communities near ETC sites have benefitted from ETC's support and involvement in 2020, including charities, sponsorships, events and many other community involvements.

“We at ETC believe it is critical for the environment that CO_2 emissions be reduced. Using our technical expertise in enrichment technology gained through decades of R&D, engineering and manufacturing, we will support our customers’ efforts to provide a cleaner environment for the future.”

AT ETC OUR KEY COMPANY VALUES ARE SAFETY AND SECURITY

SAFETY

We work safely or we do not work. We operate to the highest standards of safety, health and environmental requirements and maintain safety as the top priority.

SECURITY

We protect ETC’s and our customers’ technology and information in compliance with treaties, rules and regulations.

PEOPLE FOCUS

We ensure our solutions are driven by customer needs and we deliver to our promises.

CUSTOMER FOCUS

We provide cost effective technology solutions in compliance with agreed customer standards.

COMPETITIVE TECHNOLOGY

We extend our know how by developing our people’s talent, initiative and leadership. We conduct our business with integrity, building relationships through trust, respect and open, effective communication.

SUSTAINABILITY

We create and develop a wide range of innovative high-tech solutions that are making a significant contribution to the decarbonization of the world’s energy supply.

OUR HUGE CONTRIBUTION TO DECARBONISATION

The annual saving through fuel produced by ETC's technology against the equivalent energy produced using fossil fuels is the equivalent of 400 megatons of carbon every year – that is more than the carbon footprint of the entire UK (314 megatons in 2020).

= 400 MEGATONS

Annual CO_2 emissions saved globally thanks to use of ETC's technology.

This is an enormous number. It shows how much carbon would have been emitted into the atmosphere if this energy had been produced using fossil fuels, instead of ETC's technology. It really shows the size of the contribution that nuclear energy can make. Currently just over 10% of the world's energy is produced using nuclear. If more nuclear electricity is used to produce energy instead of coal and gas it will inevitably help massively in the fight to control climate change by removing harmful emissions.

GLOBAL EMISSIONS DATABASE
edgar.jrc.ec.europa.eu

WATCH OUR SUSTAINABILITY VIDEO
enritec.com/2022-the-year-of-sustainability-at-etc/

SUSTAINABILITY

Sustainability is one of our corporate values and plays an important role in our activities. Our innovative technologies help the world fight climate change. ETC is fully committed to contributing to a decarbonised energy supply for a sustainable future.

AT ETC, SUSTAINABILITY MATTERS

Colleagues across all sites and departments inspire action to contribute to a sustainable life and workspace.

The business makes continuous efforts to improve our environmental footprint by re-using materials, limiting waste and saving on resources such as water, electricity and heating. Additionally, from a business sustainability perspective, we are dedicated to enhancing diversity, health and wellbeing across ETC's operations.

A COMMITTED TEAM TO POWER THE DREAM

ETC's officially appointed Sustainability Team are a group of dedicated individuals with a wide variety of professional expertise, allowing them to confidently influence what sustainability looks like here. Ranging from the company's Chief Financial Officer to members of the Safety, Marketing and Communications teams to specialist engineers, the Team are responsible for facilitating change for the better by driving the business' sustainability effort forward.

FSC
www.fsc.org
MIX
Paper from responsible sources
FSC® C125329

SHAPING SUSTAINABILITY FOR THE BUSINESS

ETC has included sustainability as a factor in the company's annual targets. This means that we are looking at the business' concrete actions, taking several metrics into consideration in order to measure our progress with factors such as diversity, waste and resources saved.

All ETC staff are actively encouraged to contribute to the company's plan for sustainability aims. The business' communications and directives plan around sustainability is designed to continually evolve over the course of events and initiatives, as suggestions and ideas come in from all over the business.

BETTER PRACTICES FOR A BETTER FUTURE

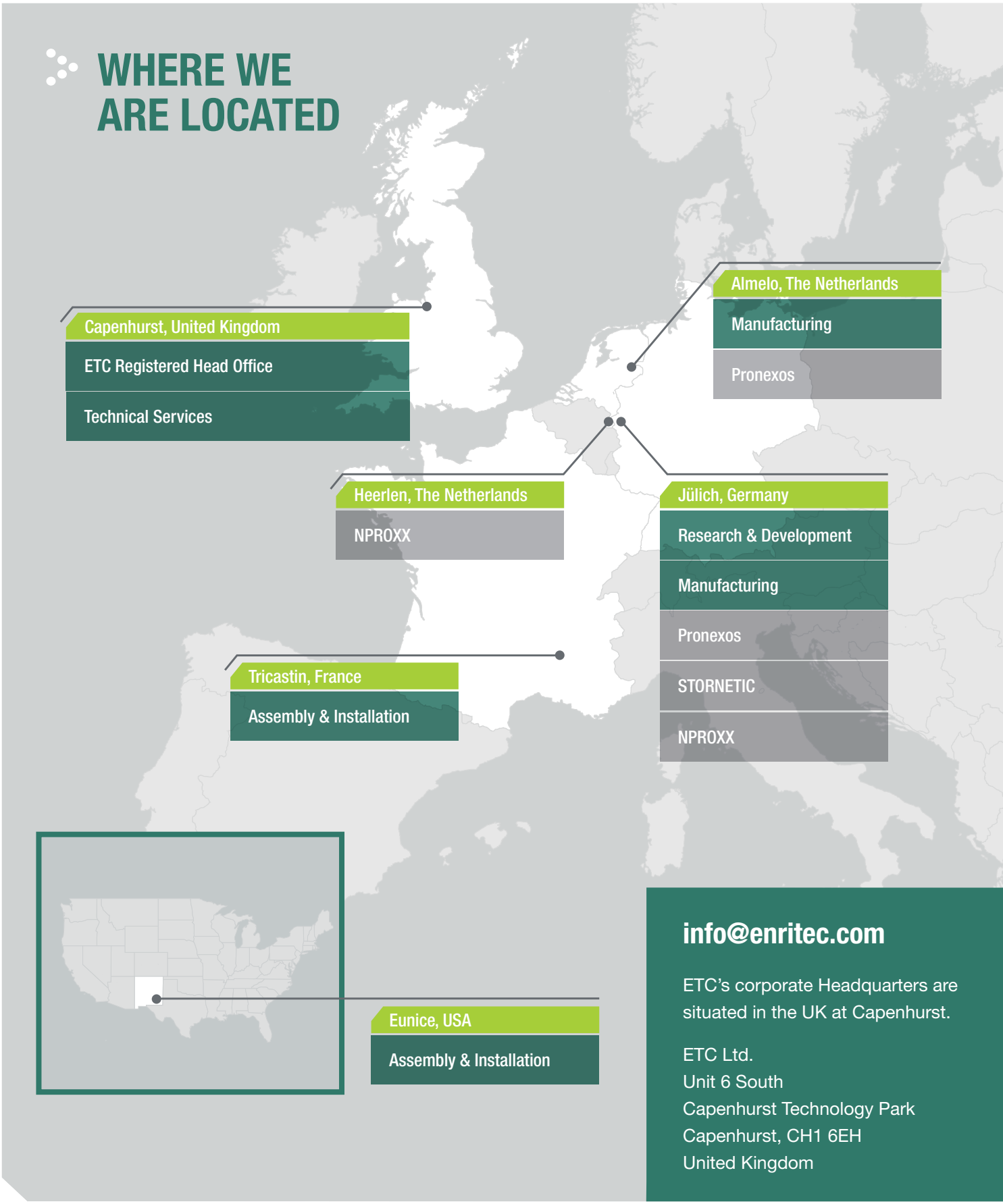
Following the heightened focus on sustainability in 2022, the business has made several updates to working environments as well as business practices. Each employee has the opportunity to have a desk plant as part of the business' effort to "get back to nature", and there have been improvements made around offices and workspaces to ensure staff are motivated to save resources such as paper and water.

Approaches to waste management have also been reimagined across ETC's operations. On all sites, waste product is being efficiently disposed of with the help of professional waste partners. Additionally, the business is committed to contributing to the circular economy by reusing machines and repurposing technology throughout the product portfolio.

ETC has reviewed its sustainability performance alongside UN's 17 Sustainable Development Goals – this has allowed the business to focus its aims on specific areas that will make a real difference.

THE 17 UN GOALS
www.un.org/sustainabledevelopment/sustainable-development-goals/

WHERE WE ARE LOCATED



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ETC's corporate Headquarters are situated in the UK at Capenhurst.

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