

*Tratos, the global link
in maritime innovation*



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Tratos Technology "TT" Magazine is the brainchild of Tratos' international sales department. The goal is simple, to share knowledge and promote awareness of new and emerging technology in the cable industry. Literally to inform, educate and maybe even entertain.

Our contributors are a cross-section of Tratos staff from across the world from England, Germany, China, Italy, Spain; combining their expertise and wealth of experience from a company with over 50 years of outstanding research, development and investment in cable making technology. TT Magazine is where Tratos will announce our latest developments in order to share our research with the world and offer the benefits of our cutting edge technology. We feel that the sharing of knowledge is vital to the ethical and responsible development of society. For over forty years Tratos have been developing the latest generations of hi-tech cables whilst never compromising on either our responsibility to the environment or our respect for the ethics and ideals of humanity.

It is with this in mind that TT Magazine is setting out to acknowledge the creation and development of new technology and how it can benefit people worldwide, to be one of the guiding lights en route to a brighter future.

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THE QUEEN'S AWARDS
FOR ENTERPRISE:
INNOVATION
2019

It is Tratos' strategic investment that has driven the company's international growth. The 2024 acquisition of three additional European companies marks the latest step-enhancing capabilities and expanding production. This long-term commitment to innovation, infrastructure, and people continues to strengthen Tratos' position as one of Europe's leading independent cable manufacturers. These investments are helping to accelerate operations and increase capacity across the group.



Knowsley's factory

Strategic Growth in **Fibre Optic Technology** for Tratos

In 2024, TELNET fibre Optic S.L.U. was acquired by Tratos Cavi S.p.A., marking a significant milestone in both companies' histories. This acquisition brought together two innovative players in the telecommunications and cable manufacturing industries, combining TELNET's expertise in fibre optic technology with Tratos' legacy of advanced cable manufacturing. The acquisition allowed Tratos to expand its footprint in the Spain fibre optic sector, leveraging TELNET's production facilities and technological advancements.

TELNET, founded in Zaragoza in 1994, has long been recognized for its pioneering work in fibre optic cables and passive optical components. With its strong foundation in the Spanish market and notable partnerships with key telecommunications companies like Telefónica, MasOrange, Vodafone, DIGI Spain, ADIF, and I-DE, TELNET positioned itself as a leader in fibre-to-the-home (FTTH) technology and broadband solutions. Over the years, TELNET's resilience and focus on R & D led to innovations that supported both outdoor and indoor fibre optic applications, making it a valuable set for Tratos' broader strategic goals.

Why Tratos' Acquisition of TELNET Drives Strategic Growth in Fibre Optic Technology

With the acquisition, Tratos Cavi S.p.A. gains TELNET's state-of-the-art production facilities, which include over 12,000 m² of manufacturing space and an annual output of 1.5 million kilometres of fibre optic cables. Tratos, a long-established leader in the global cable manufacturing industry, has a deep commitment to quality, sustainability, and innovation. By integrating TELNET into its operations, Tratos not only strengthens its position in the fibre optics market but also broadens its product portfolio, catering to the growing demand for high-speed connectivity and advanced telecommunications infrastructure across Europe and beyond.

This merger represents a powerful synergy between two companies that share a dedication to technological advancement, quality production, and customer satisfaction. Together, TELNET and Tratos are well-positioned to drive forward the future of global telecommunications, providing cutting-edge solutions for the evolving digital landscape.

TELNET's projects

TELNET's history is marked by a broad range of significant contributions to the telecommunications industry, solidifying its reputation as a key player in fibre optic technology and infrastructure. Some of the noteworthy projects and achievements of TELNET include:

1. Collaboration with Telefónica I+D: In the mid-1990s,

TELNET worked closely with Telefónica to develop and industrialize the first Broadband Network Terminator (TR1-BA) for the Gigacom network. This product was critical in advancing broadband access across Spain, providing high-speed optical access at 155Mbps—well ahead of its time. TELNET continued to innovate, developing a full range of termination and access monitoring equipment that supported transmission speeds up to 40Gbps.

2. FTTH (fibre-to-the-Home) Deployment: TELNET became a leading provider of fibre optic cables for FTTH networks, which deliver high-speed internet directly to homes. Their expertise in fibre optic technology allowed them to supply various types of cables that supported this modern infrastructure, which has become essential for homes and businesses alike in an increasingly connected world.
3. Passive Optical Components: In addition to fibre optic cables, TELNET manufactured a wide range of passive optical components for networking. These components play a crucial role in the performance of fibre optic networks, ensuring reliable data transmission over long distances. TELNET's ability to design and produce these components allowed them to offer comprehensive solutions for telecommunications providers.
4. Mobile Telephony Antennas: Following the acquisition of assets from SIEMENS-ELASA in 2008, TELNET began designing and manufacturing compact mobile telephony antennas for base stations. These antennas are utilized fractal technology, which allowed them to be smaller, more efficient, and visually unobtrusive—ideal for urban areas where telecommunications infrastructure must be integrated seamlessly into the environment. TELNET provided these antennas for site-sharing between telecommunications operators, contributing to the development of Spain's mobile network.
5. Major fibre Optic Cable Projects: TELNET supplied fibre optic cables for several high-profile clients in Spain and across Europe, including Telefónica de España S.A.U., Vodafone Spain, MasOrange, DIGI Spain Telecom, ADIF, and international operators like IP Telecom Portugal, Vodafone UK, Portugal Telecom, Cabo Verde Telecom, Digi Belgium, Telecom Argentina, Telefónica Argentina, Telefónica Uruguay, Colombia Telecomunicaciones and Unisere Grüne Glasfaser (UGG) in Germany. Their fibre optic cables have been approved and used for various large-scale telecommunications and infrastructure projects, such as fibre-to-the-home installations and telecommunication network expansions.
6. Renewable Energy and Utility Sector Projects: TELNET's

fibre optic cables have been used in utility projects with companies like EDP in Portugal, I-DE Redes Eléctricas Inteligentes, Endesa, Enagás, Red Eléctrica Española (REE). Their products, specifically designed for rugged environments, have been applied in substation networks, renewable energy facilities, and intelligent grid systems, providing the necessary communication infrastructure for modern energy management.

- International Expansion: TELNET's client base extended beyond Spain, with homologations and approvals in countries like Germany, the United Kingdom, Belgium, Portugal, Morocco, Tunisia, Colombia, Peru, Argentina, Uruguay and Canada. They supplied Fibre optic cables to major telecom operators and integrators in these regions, contributing to the expansion of high-speed internet and telecommunications services.

With its acquisition by Tratos in 2024, TELNET's legacy of innovative projects and technical excellence will continue to be a cornerstone of the combined company efforts to deliver cutting-edge solutions for the global telecommunications industry. The combined expertise of TELNET and Tratos will enable the expansion of fibre optic networks, improving connectivity for millions around the world.

TELNET's Legacy of Innovation and Expertise

Founded in 1994 in Zaragoza, TELNET quickly rose to prominence in Spain's telecommunications industry through its deep expertise in fibre optic technology. The company



founder, who had over 20 years of experience in the sector, helped position TELNET as a leader in both the research and development of advanced telecommunications solutions. Early in its history, TELNET's collaboration with Telefónica I+D was a key milestone. The development of the first Broadband Network Terminator (TR1-BA) for Telefónica's Gigacom network in 1996 revolutionized broadband access in Spain. This pioneering technology offered speeds of 155Mbps, far ahead of its time, and established TELNET as a driving force in optical access innovation.

Over the years, TELNET expanded its product offerings, developing a complete range of termination and access monitoring equipment capable of supporting speeds up to 40Gbps. Their expertise in passive optical components and fibre optic cables made them a valuable partner for telecommunications operators and infrastructure providers across Spain and Europe.

TELNET's Projects and Contributions

TELNET's contributions extend beyond product innovation. The company played a pivotal role in several high-profile telecommunications projects, both in Spain and internationally. Among its most significant clients were Telefónica de España S.A.U., MasOrange, Vodafone Spain, DIGI Spain Telecom, ADIF, and I-DE, Redes Eléctricas Inteligentes, for whom TELNET supplied fibre optic cables and components critical to the expansion of high-speed networks.

TELNET was instrumental in deploying FTTH (fibre-to-the-Home) infrastructure, which provides high-speed internet directly to homes and businesses. The company's ability to produce both indoor and outdoor fibre optic cables that meet stringent European standards positioned TELNET as a go-to supplier for modern telecommunications networks.

The company's involvement extended beyond telecommunications into other sectors, such as utilities and renewable energy. TELNET provided fibre optic cables for energy companies like EDP in Portugal, Iberdrola, Enagás, Endesa, and Red Eléctrica Española (REE), enabling modern communication systems for substation networks and intelligent grid management. Their cables, designed to withstand rugged environments, were used in critical energy infrastructure, showcasing the versatility and reliability of TELNET's products. Internationally, TELNET gained homologations and approvals in many countries, such as Germany, United Kingdom, Belgium, Portugal, Morocco, Tunisia, Colombia, Perú, Argentina, Uruguay and Canada, further expanding its influence in the global market. Its partnerships with operators like IP Telecom Portugal, Vodafone UK, Portugal Telecom, Cabo Verde Telecom, Telefónica Argentina, Telefónica Uruguay, Colombia Telecomunicaciones and Unsere Grüne Glasfaser (UGG) in Germany allowed the company to play a key role in advancing telecommunications infrastructure in these regions.

TELNET's Technological Capacity and Manufacturing Excellence

TELNET's production capabilities were equally impressive, with state-of-the-art facilities in Zaragoza. The company's fibre optic cable plant, which began production in 2004, initially spanned

6,000 square meters with a capacity of 800,000 kilometres of cabled fibre per year. By 2008, the plant expanded to 12,000 square meters, increasing its output to 1.5 million kilometres of fibre optic cable annually. TELNET's manufacturing prowess was underpinned by an array of advanced production lines, including ultraviolet lines for micromodule manufacturing, loose tube lines, jacketing lines, and rewinding machines.

Moreover, TELNET ventured into the production of mobile telephony antennas following its acquisition of assets from SIEMENS-ELASA in 2008. The company's fractal technology antennas, designed to blend seamlessly into urban environments, contributed to the development of Spain's mobile networks. These compact, low-visual-impact antennas were particularly valuable in site-sharing between telecommunications operators, improving network infrastructure while minimizing environmental disruption.

The Synergy Between TELNET and Tratos

The acquisition of TELNET by Tratos Cavi S.p.A. in 2024 marks the union of two forward-thinking companies with a shared commitment to quality, innovation, and sustainability. For decades, Tratos has been a leader in cable manufacturing, with a focus on producing cables for energy, telecommunications, and other industrial applications. By integrating TELNET's expertise in fibre optic cables and passive optical components, Tratos has expanded its product portfolio and strengthened its position in the fibre optic sector.

Tratos, with its rich history dating back to the 1960s, has always been known for its steady, strategic growth and commitment to technological advancement. The Bragagni family, who founded and continue to lead Tratos, have built the company with a strong foundation of resilience, foresight, and leadership. The acquisition of TELNET is a testament to Trato's ongoing ambition to remain at the forefront of global telecommunications, leveraging TELNET's resources and expertise to meet the growing demand for high-speed connectivity.

Looking Forward

The merger of TELNET and Tratos sets the stage for an exciting future in the global telecommunications industry. Together, they are well-equipped to drive forward the expansion of fibre optic networks, helping to shape the digital landscape in Europe and beyond. This partnership will allow both companies to continue delivering innovative solutions for high-speed internet, smart grids, and other critical infrastructure projects. As TELNET's legacy is absorbed into Tratos's broader mission, the combined company is poised to remain a leader in the production of high-quality cables and components that meet the demands of an increasingly connected world. With a shared vision for innovation and a commitment to excellence, TELNET and Tratos together will continue to push the boundaries of telecommunications technology, ensuring reliable, future-proof solutions for their clients and partners worldwide. 



Tratos Cavi acquires AFL Telecommunications GmbH's German Plant

On September 24th 2024 TRATOS CAVI S.p.a. (TRATOS), a company with headquarters in Pieve Santo Stefano, Tuscany, Italy, and wholly owned subsidiary of TRATOS S.r.l. has acquired all shares of AFL Telecommunications GmbH, a subsidiary of AFL Telecommunications LLC (AFL). The future name for the company will be TRATOS Cavi Germany GmbH.

The purchase includes all fibre optic cable products for the power utility, rail, and specialty markets comprising OPGW, OPPC, related joint boxes as well as a broad variety of fibre optic steel tube designs.

The company will continue to operate from its well-positioned facility in Mönchengladbach, Germany to provide an even more comprehensive products set. Alongside with its existing facilities in Italy, Spain and UK, this acquisition enhances TRATOS's ability to support customers across and beyond Europe.

"TRATOS and AFL's Mönchengladbach plant share a strong commitment to quality products and services to core customers in the power utility, rail and specialty markets", commented Ennio Bragagni Capaccini, Vice President of TRATOS CAVI S.p.a. "Adding their unique product capabilities, staff technical expertise and EMEA sales team to our company will strengthen TRATOS' position in these markets enabling us to offer a combined portfolio of market-leading electrical and optical cables to our customers."

"TRATOS, as a European electrical and optical cable manufacturer with a long history in the market, is a synergistic match for the AFL Mönchengladbach facility. This is exciting news for the European utility, renewables, and rail industries", commented Jeff Schmerbeck, Vice President of Cable Solutions at AFL.

The company remains dedicated to supporting its customers with its proven experience in the optical fibre industry. The diverse product portfolio, now under European ownership, provides an even better position to serve those needs. Additional details will be shared in the upcoming weeks.

About Tratos Cavi Spa

TRATOS CAVI S.p.a., the acronym of TRAFilerie TOScane, was founded in 1966 by Mr. Egidio Capaccini, an Engineer in Pieve Santo Stefano in the province of Arezzo. Initially dedicated to drawing copper, the company now has an extended product portfolio of electrical cables (up to 170KV), OHL conductors, telecommunications cables, special cables with operations in Italy (3 locations), in Spain and the UK, with sales worldwide.

About AFL

Founded in 1984, AFL is an international manufacturer providing end-to-end solutions to the energy, service provider, enterprise, hyperscale and industrial markets. The company's products are in use in over 130 countries and include fibre optic cable and hardware, transmission, and substation accessories, outside plant equipment, connectivity, test and inspection equipment, fusion splicers, and training. AFL also offers a wide variety of services supporting data centre, enterprise, wireless and outside plant applications.

Headquartered in Spartanburg, SC, AFL has operations in the U.S., Mexico, Canada, Europe, Asia, and Australia and is a wholly-owned subsidiary of Fujikura Ltd. of Japan. [f](#)



Tratos Cavi, Italian Multinational Leader in the Sector, Acquires Endurance Telnet, Dedicated to Fibre Optic Cable Production



Telnet, based in Zaragoza, Spain, is a pioneering and leading company in the production of fibre optic cables with over 30 years of experience, serving major operators and utilities in Europe.

Tratos Cavi, founded in 1966, is a leading multinational company that produces cables for various sectors, including energy, submarines, and telecommunications, among others. Tratos has invested in Telnet as part of a growth plan in the European market, consolidating its international organic growth with acquisitions planned in multiple regions.

Telnet was founded in 1996 and experienced sustained growth in multiple business divisions – fibre optic cables, antennas,

passive components, and GPON equipment – and regions – mainly Europe, South America, and Asia. The COVID crisis and the slowdown of certain markets and business lines in which it operated led to operational deterioration, making the debt incurred in the growth process unsustainable.

Endurance acquired the production unit in a judicial process, preventing the company's closure and saving more than 100 direct jobs, unlocking the potential of its fiber optic cable and passive optical component division. With this operation, Telnet completely cleaned up its balance sheet and reversed the trend of operational deterioration, significantly improving profitability, with a turnover of approximately €20 million.



The transformation process was based on the following pillars: (i) injection of financial resources to restore the working capital cycle, (ii) re-establishment of relationships with key customers and suppliers, (iii) focus on product development by enhancing the R&D department, (iv) internationalization, especially in the UK and Germany – with the aim of exceeding 60% international sales, and (v) implementation of agile organization and processes, essential in an increasingly unstable market context. Tratos Cavi, founded in 1966 in Pieve Santo Stefano, in the Italian Tuscany, is one of the world's leading multinationals in the design and production of cables for various sectors, including highly complex solutions such as superconducting cables for nuclear fusion, submarine cables, and offshore platform cables, cables that withstand extreme temperatures – both high and low (including freezing), high voltage power transmission cables, renewable energy cables, railway application cables, OPGW or ASNZS-MTO, among others.

Tratos bases its technological leadership on constant innovation thanks to its continuous investment in R&D+i, with more than 11,000 references, and solutions to challenges posed in complex situations, resolved in close collaboration with its clients. Tratos has consolidated years of technological leadership with constant business growth, expected to exceed €250 million in 2024. The investment in Telnet illustrates the ongoing ambition to consolidate a European project of global leadership in the cable industry, with organic and inorganic growth in the key regions where it operates.

About Tratos Cavi

Tratos Cavi is one of the leading multinationals in cable production with a broad product portfolio – over 11,000 references – covering the entire range of markets. Through its integrated process, it offers efficient solutions to the highly complex needs of its clients. By 2024, Tratos Cavi will have over 500 employees in its plants and offices in Italy, Spain, the UK, Germany, and China.

More information at Tratos Group

About Endurance

Endurance Partners is a private equity fund regulated by the CNMV. It invests in small and medium-sized enterprises facing challenges, unlocking special situations by providing financial resources and extensive operational support. It develops projects facing operational and financial challenges, focusing on operational transformations, refinancing, insolvency proceedings, divestment of non-strategic business units, and family businesses without generational succession. [\[i\]](#)

Tratos Cavi Spa has acquired AFL Telecommunications Europe Ltd in the UK



TRATOS CAVI S.p.a. (TRATOS), effective immediately, a company with headquarters in Pieve Santo Stefano, Tuscany, Italy, and wholly owned subsidiary of TRATOS S.r.l. has acquired all shares of AFL Telecommunications Europe Ltd, a subsidiary of AFL Telecommunications LLC (AFL).

The purchase includes all fibre optic cable product lines for the power utility, rail, and oil and gas markets, including the SkyWrap® attached fibre optic solution for overhead power lines, ruggedized trackside fibre optic cables and subsea umbilical optic cable components.

The company will continue to operate in its recently expanded facility in Swindon, UK. The acquisition will increase the footprint of TRATOS in the UK, alongside its existing electrical cable facility in Knowsley, strengthening the breadth and depth of products TRATOS designs and manufactures.

“TRATOS and AFL’s Swindon plant share a strong commitment to quality products and services to core customers in the power utility, rail and oil and gas markets”, commented Elisabetta Bragagni Capaccini, CEO of TRATOS CAVI S.p.a. “Adding their unique product capabilities, staff technical expertise and EMEA sales team to our company will strengthen TRATOS’ position in these markets enabling us to offer a combined portfolio of market-leading electrical and optical cables to our customers.” “TRATOS, as a European electrical and optic cable manufacturer with a long history in the market, is a synergistic match for the

AFL Swindon facility. This is exciting news for the European utility, renewables, and rail industries”, commented Jeff Schmerbeck, Vice-President of Cable Solutions at AFL. Terms of the acquisition were not announced.

About Tratos Cavi Spa

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ENVIRONMENT

Working to help deliver the UN's 17 Sustainable Development Goals

Tratos does more than simply 'support' the UN's 17 Sustainable Development Goals, it is working to deliver them every day.

It has adopted the UN's goals as its own values within a framework for the company's growth across product development, working practices, CSR and corporate focus. Tratos aims to be greener and cleaner, stay people-focused and innovate across every element of its business to deliver the promise. It aims to offer better choices for its customers, to make it easier for them to deliver them too.

Here are the United Nation's 17 Sustainable Development Goals – and Tratos' response:



Since 1966 Tratos' mission has been 'to create jobs in deprived areas' to reduce poverty, and bring hope and prosperity. Tratos puts people and health first.

Tratos operates The Tratos Academy and supports Esharelife Foundation which exists to fund education and vocational learning for children and young people in some of the most disadvantaged communities.



Half of Tratos' Holding Board are women, half Tratos' shareholders are women. In common with most family businesses, Tratos has gender equality. The majority of Tratos' shareholders are women. The company actively promotes women to senior management roles and operates a pro-gender bias.



Since 1966, Tratos makes innovative, advanced cables that connect people worldwide. The company works to bring

greener, cleaner and accessible solutions to every industry sector it manufactures for, from ports and marine to mass transit and communications. It also recycles.

It is also active in reducing its own carbon footprint and operates a large-scale tree-planting programme to off-set impacts. It has partnered Aenor The Spanish Association for Standardization and Certification to develop technology to help companies measure – and so manage – their carbon footprint.



Tratos supplies superconducting wire for the world ITER reactor. It is a partner within an international Fusion4Power team recreating the power of the sun to generate green energy and is active within the wind energy sector. It is the only cable maker to power its production lines (in Italy) using its own Hydro Power Station. Tratos has developed a range of environmentally-friendly products and operates a series of measures to promote affordable and clean energy.

Tratos is a member of the ICAS Consortium. ICAS' involvement in global sustainability networks and forums ensure that it and its members are as effective and influential as possible, and connected with the right stakeholder organisations. The Committee works with, or exchanges view with these organisations to share ideas, information, research and other resources in order to develop the area of environmental sustainability in business.

Tratos: Cables for a Moving World 



A Great Company should also be a Good Company



Committing to be a good company has a lot of benefits across a lot of areas, but real commitment to wholesale environmental goals comes at a cost.

Some mega-companies may claim spotless environmental credentials, but scratch a little under the surface and you may find them putting price before principle – even if it is one-removed down the supply chain. The truth is, if every company truly committed to deliver environmental change for good – it would simply start to happen. But like any relationship – it's complicated.

Tratos is one of the truly committed. Every one of its systems and processes is answerable to regular, independent inspection to ensure it stays on the side of good. And it's a regimen that is welcomed. Because the cable innovator is BASEC IS4001 accredited it stepped into the environmental spotlight and has no intention of moving. Its independently audited commitment runs from waste management and factory practices to substances disposal, recycling and more.

So serious is Tratos about keeping its environmental credentials green and clean, it chases down the same values and practices through its supply chain. While it costs money to always act responsibly, there are clients who are aligned with the thinking and the delivery – but imagine how much faster the end goal

would be reached if everyone was pulling in the same direction. Tratos Director Neil Ancell has had his hand on the company's environment rudder for some years. He says Tratos is one of those striving to meet and exceed standards every single day. As Brexit makes ready to land, Mr Ancell considered the environmental consequences of a new and separate identity for the UK.

"The UK is heavily regulated. That has underpinned UK plc and with it the knowledge that the United Kingdom's products are high quality, safe and reliable. The problem is, not all of the rest of the world operates in the same way – or has the same values. And in some ways, given cost is king for some companies, it's easy to see why developing countries proceed as they do. Staying environmentally compliant costs in both money and manpower. "As far as Europe is concerned, British products had to comply with the market's domestic environmental standards, and of course UK businesses have done."

"But those opportunities for the big companies to continue to source the cheapest labour or imported materials with poor environmental practices will continue to be a concern. Clearly, a lot of the big players are waiting to find out how a deal or no deal will go – and the impact of tariffs – before awarding tenders to contractors. Some British companies buy huge levels of component parts for their business from countries

with the least protected and policed practices. I call these Deep Sea Imports, long haul items that are brought in with huge environmental costs that could be avoided and some with human costs – from child labour to employees sleeping under machines at night – that should never even be considered.

"Bigger European companies are going to want a deal. It's in their interests to stay competitive in the UK and import tariffs would finish their ambitions for a very lucrative market.

"That we don't compromise is something to be proud of. While cost is king, children will be working in factories and workforces sleeping in hazardous environments. How do we make a level playing field? We dethrone cost as king. Instead, we agree that there is a cost to us looking after people, the planet and business. Once everyone changes their mindset to see quality, performance and safety as the over-riding goal, then there is a level playing field for great companies to become good and for hard-pressed businesses to re-think their operations – because they're not having to scratch for wafer-thin margins."

"Tratos recognises we have to keep pushing. We want other businesses to do the same. This matters. We take clean water and sanitation for granted. We work and then we leave at the end of our shift. This will remain an uphill battle, we have to play by the rules but we also have to lead by example."

"Tratos has a massive social conscience. It wants to build the right legacy for the environment, for employees, for the communities they call home and help the businesses it supplies to get closer to shared goals."

Tratos' EMS (Environmental Management System) procedures determine the company's manufacturing sites at Knowsley in the UK and Pieve Santo Stefano and Catania in Italy.

Environmental aspects were identified and evaluated as part of the SCEEMAS' funded EMS development as early as 1997 and 1998. Tratos' environmental management system is

audited, approved and regularly inspected by independent, international authorities: BASEC (UK) and AENOR-IQNET (E), in accordance with ISO 14001 across production, raw materials purchasing, design and final test.

The company's Environmental Policy, based on its Environmental Review, commits to legislative compliance and continuous improvement in environmental performance fulfilled through an Environmental Programme. Tratos aims to work closely with customers to find better, more environmentally friendly solutions to their challenges.

Tratos believes ethical business conduct is a condition of a company's success. With a strong environmental policy in place it continues to move toward greener cable solutions, such as its cables without halogens and Tratos-Green – made using purely hydroelectric energy. Tratos Cavi has been using clean renewable energy from its own hydroelectric plant since 1980. All Tratos' manufacturing facilities have been awarded ISO 14001 certification for their Environmental Management Systems. Tratos is fully committed to provide protection both for people working with its cables, – and for the environment.

TRATOS is accredited to BS EN ISO 9001. [f](#)





Tratos partners AENOR to develop carbon footprint detector

Tratos this week announced it is to play a pivotal part in the development of new technology to measure, and help companies manage, their carbon footprint. A ground-breaker in the development of new and greener cable solutions for a range of industries from ports and marine to rail and mass transit, Tratos will partner Spanish Association for Standardisation and Certification, Aenor.

Aenor is an independent not-for-profit organisation dedicated to improving technology production and, together with Tratos, it will work to develop a cable to facilitate the detection elements needed to measure companies' carbon footprint. A member of the International Organization for Standardization (ISO); the International Electrotechnical Commission (IEC), the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC), Aenor, together with Tratos, aims to launch its first detection product to coincide with the 26th session of the Conference of the Parties (COP26) to the UNFCCC which is expected to take place from 9-19 November 2020, in Glasgow, UK. Tratos CEO, Dr Maurizio Bragagni, a member of the International Electrotechnical Commission's Market Strategy Board,

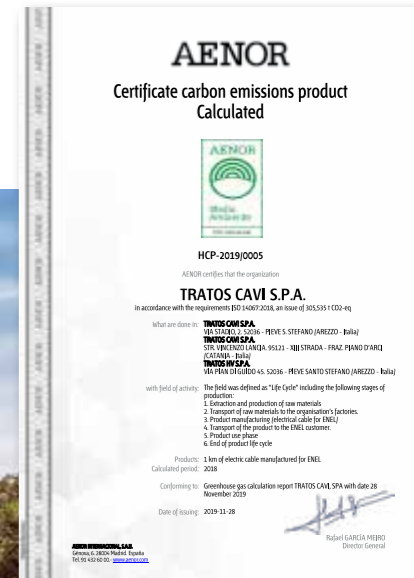
will be personally involved in the development of the new carbon calibrating technology. He described the partnership with Aenor as 'a huge step forward' in identifying levels of carbon impact and determining the right steps to allow companies to tread more lightly. He added that he fully supported the United Nations' 17 Sustainable Development Goals (SDGs), and that the Tratos-Aenor collaboration was a significant advance in delivering them. Tratos is an independent global cable innovator. It won a Queen's Award for Enterprise: Innovation last year (2019). The United Nations' SDGs are at the core of its blueprint for building a better world by 2030. The SDGs serve as a universal plan for all countries to end poverty, stimulate economic growth, preserve the environment and ensure prosperity for all. These goals set the global development agenda until 2030 with clear objectives and measurable targets to determine progress for each goal. In setting out the goals the UN was pragmatic about the link between economic development, social inclusion and environmental sustainability – and acknowledged that delivery of the right outcomes would require global cooperation.



Tratos wins ISO-14067 carbon neutral accreditation

Independent advanced cable technology manufacturer Tratos has secured ISO – 14067 accreditation for reducing its carbon footprint, the company's president announced this week. Albano Bragagni said he was delighted to report formal recognition for the company's latest sustainability gains from the International Standards Organisation and revealed that the company had plenty more to offer in terms of other measures to make its own and customers' businesses greener and cleaner. President Bragagni went on to stress the importance with which securing sustainability is now held, adding that he was gladdened to see customers, consumers, shareholders, business, nations and communities starting to pull together as never before. He said that increasing concerns around environmental impacts had to be welcomed wholesale – and solutions delivered – and he was proud that Tratos was one of the technology companies leading the fight to switch to cleaner energy and more sustainable practices. Tratos now holds the standard for products' carbon footprint, ISO 14067, but ahead of the announcement the company had already partnered with Spanish standards agency AENOR

to develop and build technology to measure, and so manage, companies' own individual carbon footprints. President Bragagni said the world was presented with a unique opportunity and companies such as his own, with advanced engineering skills, were well placed to help turn the tide on environment-damaging emissions. Tratos' carbon footprint verification allows the company to demonstrate its environmental responsibility, stand out from the competition and show existing and potential customers proof of its commitment to sustainability. Tratos CEO Dr Maurizio Bragagni added his welcome for the new accreditation which follows the company's decision to fully adopt – and help deliver – the UN's 17 sustainable development goals. The new standard builds on the existing ISO standards for life cycle assessments (ISO 14040/44) and environmental labels and declarations (ISO 14025).



Tratos Leadership in Sustainability and Innovation is recognised at the Made in Britain Impact Awards

On 6th November 2024, the 2024 Made in Britain Impact Awards celebrated achievements in British manufacturing. Made in Britain, a not-for-profit founded in 2013, promotes responsible business and sustainable growth across the UK. Through collaboration with UK trade bodies and government departments, it supports high-quality employment and champions Environmental and Social Value (ESV) practices, offering its members an ESV assessment.

The Impact Awards highlight standout contributions from Made in Britain's members, recognising excellence in innovation and sustainability. Key speakers this year included technology journalist Guy Clapperton and MAP UK's George Middleton, both of whom advocate for growth and sustainability in British industries.

Professor Maurizio Bragagni OBE, the esteemed CEO of Tratos Ltd, was honoured to serve as a member of the Judges' Panel as he was awarded the 2023 Inspiring Leader Award, underscoring his profound impact on both his company and the broader manufacturing sector.

As a visionary in sustainable industrial practices, Prof. Bragagni has long championed environmental responsibility, spearheading initiatives at Tratos Ltd that emphasise eco-friendly manufacturing processes, technological innovation, and corporate social responsibility. His leadership has not only transformed

Tratos Ltd into a model of sustainable industrial practices but has also positioned it as a frontrunner in the cable manufacturing industry, committed to reducing environmental impact while fostering high-quality production standards.

Though Prof. Bragagni was unable to attend the award ceremony in person, he conveyed his gratitude to Made in Britain and reaffirmed his dedication to advancing British industry through a heartfelt video message. In his address, he spoke to the enduring values of the British manufacturing sector, expressing optimism about its future and a commitment to continued innovation and sustainable growth. His recognition as an inspiring leader reflects not only his professional achievements but also his deep-rooted commitment to values that resonate with the goals of Made in Britain—supporting homegrown businesses, prioritizing sustainable practices, and fostering a socially responsible business environment.

This year's winners included Tamsin Lishman (Inspiring Leader of the Year), Byworth Boilers Ltd (Social Impact), Ahmarra Door Solutions (Sustainability Initiative of the Year), and Sunswap (Innovation of the Year).

Tratos congratulates the winners and celebrates Made in Britain's dedication to fostering sustainability and excellence in UK manufacturing. [🔗](#)



Powering a Sustainable Future with Cables

Tratos Group, a leading manufacturer of electrical and fibre optic cables, has established itself as a frontrunner in sustainable business practices. Since its inception in 1966, the company has embraced environmental and social responsibility, striving to minimize its footprint while providing high-quality cable solutions.

At Tratos we take a multifaceted approach to sustainability, with a strong focus on environmental stewardship. Here are some key aspects of our sustainable development strategy:

- **Recyclable Products:** We prioritise the development and production of fully recyclable cables. This reduces waste and promotes a circular economy within the cable industry.

- **Environmental Compliance:** Tratos continuously improves and implements measures to minimise our environmental footprint throughout the production lifecycle. This includes initiatives for energy efficiency, waste reduction, and responsible water management. We ensure our products comply with the strictest environmental regulations, minimising the use of hazardous materials and promoting eco-friendly manufacturing processes.
- **Sustainable Materials:** Tratos actively seeks sustainable materials for cable production, reducing their reliance on virgin resources.

Tratos' dedication to sustainability has translated into notable achievements:

- **EcoVadis Silver Medal:** EcoVadis is the world's largest and most trusted provider of business sustainability ratings. Tratos has been awarded a Silver Medal for two consecutive years, placing it among the 25% of highest-placed companies scrutinised by the eco-ratings platform. Notably, Tratos' sustainability score has increased by 4 points in 2023.
- **Top scores by Achilles** – Achilles Audits, which serve to independently verify that an organisation's management systems comply with the standards, has given the maximum scores to Tratos UK Ltd for 2023/24 as a registered supplier on UVDB Verify Category D Audit:

Tratos UK Ltd for – Registered supplier on UVDB Verify Category D Audit	Score
MSE – HEALTH & SAFETY	99
MSE – ENVIRONMENTAL MANAGEMENT	100
MSE – QUALITY	97
MSE – SUSTAINABILITY	100

As demonstrated in our Sustainability Report 2022, Tratos' commitment to sustainability is not just a trend; it's a core value. As the company grows, we will remain committed to investing in research and development to create even more environmentally friendly cable solutions.

By prioritising sustainability, Tratos is not only safeguarding the environment but also ensuring its long-term success in a world increasingly focused on responsible business practices. The company will continue to forge partnerships with other companies and organisations to promote sustainable practices throughout the cable industry value chain. [\[A\]](#)

SUSTAINABILITY REPORT

AENOR

SUSTAINABILITY REPORT VERIFIED



Certificate of Audit

TRATOS (UK) LIMITED

has achieved the following standards through audit for Safety, Health, Environmental and Quality standards and procedures as a registered supplier on UVDB Verify Category D Audit - Category D.

UVDB Verify Category D Audit	Score
MSE - HEALTH & SAFETY AUDIT SCORE	99
MSE - ENVIRONMENTAL MANAGEMENT AUDIT SCORE	100
MSE - QUALITY AUDIT SCORE	97
MSE - SUSTAINABILITY AUDIT SCORE	100



Dr. Paul Stearns
Chief Executive Officer
Achilles



VERIFIED

AchillesID: 20222268
Expiration Date: 18 June 2024

Tratos received the SSE Sustainability Supplier Awards in the Individual/Team category

On 23 July 2024 at Malmaison Reading Hotel, the SSE (Scottish and Southern Electricity Networks) organised the Dinner/Award ceremony for the distribution of the Sustainability Supplier Awards 2024. Tratos won in the Individual/Team category, in recognition of Prof. Bragagni's efforts that have gone above and beyond to achieve sustainability in Tratos' business.

In accepting the Award on behalf of Tratos, Prof. Maurizio Bragagni Esq OBE said: "I am honoured and proud to accept the SSEN Sustainability Award on behalf of the wonderful Tratos team. The team works tirelessly with passion to uphold Tratos' sustainability performance across a wide range of issues. This award will further motivate the team to accelerate the use of cutting-edge technology in providing solutions to Tratos' clients to help enhance their 'green credentials'".

Tratos Group, a world-renowned independent cable manufacturer, has made notable strides in sustainability. Recognising the increasing importance of environmental responsibility in industrial operations, Tratos has committed itself to integrating sustainable practices into its business strategy.

Tratos has developed a comprehensive sustainability strategy that aligns with global environmental goals and standards. The company's commitment is evident through its active pursuit of sustainability awards and implementation of environmentally friendly practices across its manufacturing processes.

A CDP discloser and member of the Made in Britain Green Growth Initiative, Tratos has received accolades for our commitment to innovation and sustainability, including the Queen's Enterprise Award for Innovation, Silver medals for multiple years by EcoVadis- the world's most trusted business sustainability ratings and ESG compliance solution. And a perfect Sustainability score of 100 by Achilles- a leader in sustainability supply management platforms, and many local prizes. These accolades recognise Tratos' exceptional efforts to minimise its environmental footprint while maintaining high production quality and efficiency standards.

Such awards, including the SSE Sustainability Award, are critical as they validate the company's efforts and encourage the adoption of similar practices within the industry.

Tratos has enacted several operational changes to reduce its environmental impact. These include modifications in our manufacturing processes to decrease waste, improve energy efficiency, and utilise eco-friendly materials. By integrating these practices, Tratos not only mitigates its ecological footprint but also sets a benchmark for sustainable manufacturing within the cable industry.

Beyond internal changes, Tratos engages in strategic partnerships to promote sustainability on a broader scale. These collaborations allow Tratos to leverage shared knowledge and resources, thereby enhancing the effectiveness of our sustainable initiatives. Working alongside industry partners and sustainability experts, Tratos ensures our strategies align with cutting-edge environmental practices and technological advancements.

Understanding that sustainability extends beyond corporate practices, Tratos invests in community engagement and education. We actively participate in programs designed to raise awareness about environmental issues and encourage sustainable practices among consumers and the broader community. This holistic approach ensures a more significant impact, fostering a culture of sustainability that transcends organisational boundaries. [\[Link\]](#)



Tratos Pioneers Sustainable Innovation in the Energy Industry with Bornevables at “The Wire” Trade Fair

Tratos, as a leading innovator in electrical, electronic, and fibre optic cable technology, showcased its groundbreaking collaboration with Borealis, the foremost provider of advanced polyolefin solutions, at “The Wire,” the premier trade fair for the wire and cable industry. The partnership heralds a significant milestone in sustainability efforts within the energy sector, marking the debut of Bornevables™, a revolutionary polyolefin solution derived from renewable feedstocks in medium voltage (MV) cables.

The collaboration between Tratos and Borealis has demonstrated technological prowess and a commitment to environmental stewardship. By incorporating Bornevables™ into their cable manufacturing process, Tratos has paved the way for a greener future in the energy industry. This innovative solution addresses the pressing need to reduce carbon emissions and promote sustainability across the entire supply chain.

The genesis of this groundbreaking initiative lies in Tratos’ participation in a tender where sustainability and energy efficiency were paramount criteria. Recognising the potential of Bornevables™ to meet these requirements, Tratos collaborated closely with Borealis to develop a cable solution that excelled in performance and significantly reduced carbon footprint. This proactive approach distinguished Tratos from its competitors and positioned it as a trailblazer in sustainable cable manufacturing. Ennio Bragagni, Vice President of Tratos, expressed his pride in winning the tender and emphasised the significance of the collaboration with Borealis. He underscored the importance of

innovation and sustainability in driving positive change within the industry. He stated, *“With Borealis, we have created a truly innovative and sustainable solution that we hope will become the standard across all energy cable networks. Moreover, our partnership ensures reliability, performance, and excellent customer support.”*

The adoption of Bornevables™ represents a paradigm shift in cable manufacturing, offering a viable alternative to traditional fossil fuel-based materials. Tratos’ commitment to sustainability is further evidenced by its collaboration with leading integrated operators to deliver energy with a reduced carbon footprint. By choosing Tratos’ cables with Bornevables™, these operators contribute to significant CO2 emissions reductions while ensuring the highest standards of quality and reliability. At “The Wire” trade fair, Tratos showcased its pioneering MV cables with Bornevables™, highlighting the tangible environmental benefits of this innovative solution. Compared to traditional cables, Tratos’ MV cables with Bornevables™ offer a substantial reduction in CO2 emissions, underscoring the efficacy of sustainable practices in mitigating climate change.

In conclusion, Tratos’ participation at “The Wire” trade fair signifies a milestone in sustainable innovation within the wire and cable industry. By leveraging the transformative power of Bornevables™, Tratos has demonstrated technological leadership and a steadfast commitment to environmental sustainability. As the industry embraces more sustainable practices, Tratos remains at the forefront, driving positive change and shaping a greener future for future generations. [WR](#)



Tratos participates in the round table on Fusion Energy

On February 19, 2024, scientists from Italy and the UK gathered at Villa Wolkonsky, which is the residence of the UK Ambassador to Italy, to discuss scientific collaborations in the field of Fusion Energy. Italy and the UK share a strong scientific partnership, making Italy one of the UK’s closest collaborators.

The meeting was a testament to the power of collaboration and innovation in shaping a sustainable energy future. The symposium provided a platform for experts and stakeholders to engage in stimulating discussions and strategic collaborations, exploring the potential of fusion energy.

At the forefront of this dialogue were Eng. Albano Bragagni, President of Tratos Group and Prof Maurizio Bragagni Esq OBE, CEO of Tratos UK Ltd. Their participation in this meeting testified to Tratos’s commitment to advancing sustainable energy solutions. Their visionary leadership and dedication to driving progress in fusion technology have been evident through Tratos’ extensive involvement in groundbreaking projects within the field.

Tratos’ collaboration with institutions like ENEA and Criotec has been instrumental in pushing the boundaries of fusion research. From supplying critical components for superconducting magnetic systems to manufacturing cable assemblies for large-scale collider projects, Tratos has consistently demonstrated its expertise and commitment to advancing fusion energy.

The symposium sessions, spanning from promoting a unified approach to addressing misconceptions surrounding fusion energy, highlighted the multifaceted challenges and opportunities in the field. Experts like Alexander Taylor, Chris Russo, and Dr. Paola Batistoni led engaging discussions, exploring crucial questions surrounding fusion technology’s applications, scalability, sustainability, and more.

In addition to Tratos’ contributions, other distinguished participants, including representatives from the UK Atomic Energy Authority and ENEA, played pivotal roles in shaping the dialogue. Their expertise and insights enriched the discussions, underscoring the importance of collaboration in driving progress in fusion energy research and development.

The importance of effective communication and outreach efforts in dispelling misconceptions and garnering support for fusion energy initiatives was a recurring theme throughout the symposium. Strategies for enhancing public understanding and fostering acceptance were discussed in depth, emphasizing the need for collaborative efforts to drive positive change. As we reflect on the insights shared and collaborations forged at the symposium, it’s evident that a unified, global effort is essential to realize the full potential of fusion energy. With visionary leaders like Albano Bragagni and Maurizio Bragagni championing innovation through Tratos’ contributions, and with the collective expertise of all participants, we can be optimistic about the prospects of achieving a sustainable energy future powered by fusion technology.



Tratos thanks The Rt Hon Edward Llewellyn OBE, British Ambassador to Italy and San Marino, Ms Catriona Graham, HM Consul General Milan and Director of Department for Business and Trade, Italy, and all the organisers and participants for this unique opportunity to showcase Tratos’ involvement and engage in scientific and constructive discussions on the Fusion for Energy project.

Let’s continue to harness the spirit of collaboration and innovation to propel fusion energy forward. Together, we can pave the way towards a cleaner, greener future for generations to come.

[TR](#)

Tratos hosted the first OPG showroom

We are delighted to announce that Tratos hosted the first OPG showroom in Tratos Cavi in Pieve Santo Stefano, introducing sustainability solutions on cables and overhead lines. The event took place in the Faraday Cage, which is the largest in Europe.

Inaugurated in 2013, the Faraday Cage enables Tratos to certify the quality of HV cables and to effectively administer AC resonant tests on-site, allowing testing of up to 220 kV of nominal voltage cables, of up to 20 km in length.

We thank the Enel Group and Tratos Cavi people – President Albano Bragagni, Elisabetta Bragagni Capaccini, Ennio Bragagni Capaccini, Massimo Seri Rachele Bigiarini Marco Camaiti Dario Gabelli Posati Alfonso Paola Gravina Mirko Gori, who gave their contribution and guaranteed the successful outcome of this event.

Tratos' new Overhead Conductor has wide-ranging cost benefits as not only does it come at a lower price point, but in line with operational and end-of-life dismantling costs are reduced. Even with this cost-benefit, the new Overhead Conductor retains high-performance levels, with the ability to meet increased power demands, seasonal power peaks and backup of faulty feeders, thus improving network flexibility.

OPG showroom highlights the importance that Tratos Group is giving to the issues of sustainable development and protecting the environment. It remains dedicated to delivering on its

people-focused mission and has invested in economically deprived regions of Italy and the UK to create jobs and support local communities. Tratos' commitment to corporate social responsibility, including paying salaries and local taxes, has proven to be a sustainable source of income and a catalyst for regional economic and social development.

In 2019, Tratos launched its first integrated sustainability strategy. In implementing this strategy, Tratos has committed itself to adopting high standards, often going beyond legal requirements, on the sustainability issues that matter to our business, employees, the communities that host us and the customers that buy and use our products.

Throughout the years, Tratos has been consistent in achieving its goals, by excelling in showing high-quality social and environmental performance across all of its operations and in increasing its stakeholders' knowledge of its working practices.

Tratos UK became a part of the Green Growth Programme, a group of businesses that are committed to becoming more sustainable, resilient, and competitive. Through this program, Tratos aims to advocate for increased corporate responsibility and explore opportunities to measure, reduce, and offset CO2 emissions, as well as increase recycling and material reusability. Most recently, in November 2022, Tratos formed a partnership with Borealis to successfully introduce Borneables™ in the energy industry. This new technology offers innovative solutions for businesses to reduce their carbon footprint. [\[T\]](#)



Round table “Using innovation and standardization toward the decarbonisation of the transport sector”



On the 18th of April 2023, Tratos hosted a round table on “Using innovation and standardization toward the decarbonisation of the transport sector”. The event was held in the frame of the General Meeting of the Market Strategy Board (MSB) of the International Electrotechnical Commission (IEC).

The International Electrotechnical Commission (IEC) is an international standards organisation headquartered in Geneva, Switzerland, that prepares and publishes international standards for all electrical, electronic and related technologies. Prof Maurizio Bragagni Esq OBE, CEO of Tratos Ltd and a longstanding member of MSB, has lobbied for this meeting to take place in London in order to put the United Kingdom and its challenges/opportunities in decarbonising the transport sector at the centre of the future work of this very important international body.

The round table was organised as an interactive session with the participation of representatives from the relevant UK government departments, from BCA, RIA, PEMA, Cavotec and key players in the port/manufacturing/utility sectors.

Mr John Pearce, CEO of Made in Britain, made a presentation on the key metrics in addressing the environmental, social and economic challenges we face. The systemic implications of digitalising the physical reality were elaborated by Prof Gianvito Lanzolla, Professor of Strategy, Bayes Business School, Faculty of Management.

Tratos offered participants a 3D virtual tour of its manufacturing site in the UK and its products and an overview of what the company is doing to achieve sustainable development and net zero emissions targets.

IEC MSB members had the opportunity to hear the views of the UK government, as well as the industry representatives on the important role of standardisation, which has its origin in the UK, and what the UK government is doing in terms of achieving net zero emissions.

Overall, the round table achieved its objectives and contributed to providing an enhanced panorama of future work of the IEC in terms of boosting cooperation among key players in the standardisation process for achieving net zero emissions targets. [\[T\]](#)

Together with AENOR in protecting the environment

Tratos is delighted to share a piece of good news at the start of the new year. As a company with strong corporate social responsibility, Tratos continues to collaborate with AENOR in the expression of its long-term commitment to enhance its sustainable model of business further and protect the environment.

In addition to ISO14067, Tratos is proud to achieve ISO 14064 certification by AENOR making it possible to calculate the CO2 emissions for every single product. This is a milestone achievement in Tratos' commitment towards reducing carbon emissions, as only when you know the numbers of such emissions you do start to realise the full spectrum of the related issues and get prompted to act.

Reduced carbon emissions

During the last three years, Tratos has significantly reduced its carbon emissions by using as much as possible local resources provided around its factories, embracing innovation, strengthening its R&D activities, updating technology, installing greener machinery, etc. A long time ago, Tratos started the journey of increasing energy efficiency in all its sites and offices and reducing carbon emissions. In addition to using its own water plant for energy generation since 1980 and being proud of the fact that in all its processes, the water has always been reused inside the factory constantly (thanks to a closed circuit), Tratos has recently significantly improved its independent power generation capacity by installing solar panels. At present, solar panels contribute to the supply of about 30% of the total energy used by Tratos Group.

Tratos believes in the great potential of the circular economy in lowering carbon emissions. Extracting and using raw materials has a significant impact on the environment and increases energy consumption and CO2 emissions. By keeping resources in the loop for longer, we'll avoid emitting greenhouse gases caused by the energy needed to make products. It will also lead to a reduction of habitat loss, which will improve biodiversity. Less waste will mean less pollution.

Another successful mitigation action in offsetting carbon emissions is planting trees in manufacturing sites owned by Tratos itself. Our carbon footprint calculations show that planting trees leads to a CO2 absorption of approximately 4.6 tons CO2 per year.

Most recently, thanks to a successful cooperation between Tratos and Borealis, it was made possible the first use of Borenewables™ in the energy industry. The Borenewables™ are made of renewably-sourced feedstocks derived solely from waste and residue streams: from vegetable oil production as well as oil waste and residues; the timber industry; the food industry – for instance, used cooking oil.

With Borealis, Tratos created a truly innovative and sustainable solution, which we hope will be the norm across all energy cable networks one day. With the Borenewables™ solution, for a 185 mm2 MV cable, Tratos reduced by 320 kg/km the CO2 emissions when compared to the traditional solution based on fossil feedstock. [f](#)





More than 10 years on: ITER Fusion4energy progress

The shipment of the first completed components for the ITER Fusion4Energy project began in 2014 and will continue into the 2020s.

Machine assembly will begin as soon as the giant Tokamak Complex is ready for occupation. First Plasma is planned for December 2025. ITER is one of the most complex scientific and engineering projects in the world today.

Tratos has been involved in the ITER (International Thermonuclear Experimental Reactor) fusion for energy project since its inception.

Together with other members of the 26-strong international industrial partner community the company was specifically identified and qualified by ENEA for joint participation in a contract and world-stage controlled thermonuclear fusion experiment. The project, at Cadarache in France, was set up to demonstrate the scientific and technological feasibility of energy production by controlled **thermonuclear fusion** with leading global manufacturer of electric cables and optical fibre, with Tratos, supplying key components of the ITER experiment.

Tratos is responsible for the production of Cable-In-Conduit (CIC) superconducting wire. The wire was destined for the worldwide construction of magnets for the ITER reactor and also the Japanese JT60SA. F4E (Fusion4Energy) awarded Tratos the contract for cabling and jacketing of approximately 20 km of ITER Toroidal Field (TF) conductors and in the region of 28 km of JT-60SA TF conductors, plus the jacketing of around 22 km of Poloidal Field (PF) conductors.

ICAS (Italian Consortium for Applied Superconductivity) performs all cabling activities at the TRATOS Cavi S.p.A. factory at Pieve Santo Stefano (AR – Italy).

Two production lines were set up. One dedicated to the manufacturing of **Low Temperature superconducting cables** (based on Nb3Sn and NbTi strands): it is currently involved in the ITER and JT-60SA productions.

The second is dedicated to the production of High Temperature superconducting cables, based mainly on YBCO tapes twisted into Aluminium slotted core: these cables are currently used for the development of power distribution/transmission lines.

ICAS (Innovation and Consulting on Applied Superconductivity) was founded in September 2010, with the original scope of supplying the European portion of the superconducting conductors for the ITER and the JT-60SA nuclear reactors, in France and Japan. It provides services and products serving Superconductivity and High Tech power applications.

In the last three – four years the project has seen landmark progress:

- March 2016 The first Toroidal Field coil for the JT-60SA tokamak reactor, wound with conductors produced by ICAS, has been successfully tested at **CEA-Saclay, France**.
- 19 April, 2016 The first huge Toroidal Field coil for the ITER tokamak reactor has been successfully wound at **ASG-La Spezia**, using conductors produced by ICAS
- 5 May, 2016 A large-size rectangular Nb3Sn Cable-in-Conduit Conductor for the European DEMO Toroidal Field Coil, designed by ENEA and manufactured by ICAS partners, has been successfully tested at the EDIPO facility of the SPC (Switzerland), establishing new record performance
- 19 July, 2016 The last European Poloidal Field conductor has been successfully produced at ICAS.
- 5 July, 2016 The first Toroidal Field coil for the JT-60SA tokamak reactor, manufactured with conductors produced by ICAS, has arrived from Europe to the JT-60SA site in Naka, Japan, where its assembly will soon begin.
- 6 October, 2016 ICAS has been assigned by CERN of the MgB2 sub-cables production for the **HL-LHC Superconducting Link Project**.
- 12 January, 2017 JT-60SA TF coils with conductor produced by ICAS, begin to be assembled at NAKA.
- 6 March, 2017 ICAS has been selected for the award of

a contract for the qualification and development of the ITER In-Vessel Coils Conductors.

- 10 March, 2017 ICAS is now a member of the **Consortium of European Companies** determined To Use Superconductivity (CONNECTUS).
- 16 March, 2017 ICAS is one of the Italian industrial excellences participating to the “Italy at CERN” event (Geneva, 4 – 7 April, 2017), organized by the **CERN ILO for Italy**, in collaboration with the **Italian Chamber of Commerce in Switzerland**, and under the patronage of the **Italian Permanent Representative in Geneva**.
- 8 November, 2017 After six years of intense work, the production of 100 km of superconducting cables for the magnets of the experimental ITER and JT-60SA fusion reactors has been successfully completed. The ICAS Consortium has celebrated this milestone with the event held on November 8th, at **Criotec Impianti**.
- 20 December, 2017 Chinese company **ASIPP** has successfully wound the first Double Pancake of the ITER PF6 coil using superconducting cable produced by ICAS.
- 18 September, 2018 ICAS exhibits at 30th Symposium on Fusion Technology (September 16-21, Giardini Naxos, Sicily – Italy).
- 23 November, 2018 ICAS has been honored by F4E with an appreciation plaque for having successfully supplied superconducting cables for 20 Toroidal Field coils of the JT-60SA fusion experimental reactor. The toroidal system assembly has been completed at **Naka**

site (Japan) and this event has been celebrated at ENEA’s headquarters on the 15th of November, 2018.

- 16 December, 2018 ICAS has been selected by ITER for the award of the Phase 2 of “Conductor manufacturing of ITER In-Vessel Coils (IVC)”.
- 18 December, 2018 ICAS has been selected by CERN for the supply of MgB2 Cable Assemblies for the HL-LHC Superconducting Links.
- 6 February, 2019 ICAS set up a production line to process copper conductors in order to prepare, apply and cure a cyanate ester based primer, aimed to improve the adhesion of epoxy resin insulation to copper. With this semi-automatic line, a total of about 1.5 km of conductors for nuclear fusion application have been already treated successfully in a complete temperature and moisture controlled clean environment.

Tratos is one of three charter members of ICAS (ENEA, TRATOS and CRIOTEC) behind the design and manufacture of a rectangular **Nb3Sn Cable-in-Conduit Conductor (CICC)** with distributed pressure relief channels, that have reached the record performances of 81.7 kA in a magnetic field of 13 T up to about 7 K.

- ENEA is Italy’s national agency for new technologies, energy and sustainable economic development.
- CRIOTEC is an Italian technology company which specialises in cryogenic and high vacuum technologies.

Tratos has manufacturing bases in Italy and the UK and offices in more than 50 countries. [f](#)





Powerful innovation in action at **Tratos**



The rapidly growing demand for electrical energy, due to massive population growth, has led those responsible for electrical transmission systems to search for new technical innovations. But the criteria is tough. Such innovations need to work hard; not only increasing the amount of power transmitted, with improved efficiency, but also work within tight budgetary constraints.

Simply increasing the current carrying capacity of a traditional conductor will lead to an increase in the operational temperature - damaging the conductor and increasing sag. While two obvious solutions exist - the construction of completely new lines, along existing routes or the replacement of existing conductors with new, more efficient ones - they bring with them their own set of problems.

As a responsible future-focused company Tratos has placed a considerable amount of research and effort into finding a reliable, green solution, which saves time and money. The result is a hybrid conductor that reduces costs, eases installation and its increased power is set to advance the overhead cable sector.

Yet it was in considering replacing only the conductors in an

existing line that Tratos arrived at the development of this completely new, more efficient, hybrid load carrying conductor for overhead lines and, further, to explore new routes to enhanced performance systems.

Hybrid conductors

The new hybrid conductors feature a high load carrying carbon fibre core and two compact, space-saving segmental thermal resistant aluminium alloy (AT1) wire layers, in accordance with IEC 62004, which are applied helically around.

Tratos' prototype used a hybrid high strength composite material core, based on a special carbon fibre and extruded aluminium sheath. The company wanted to develop the best hybrid metallic material possible as a constituent part of a conductor operating at high temperatures.

This advanced overhead conductor features a central core of pure carbon fibres, an outer layer of high modulus glass yarn and a seamless aluminium sheath - extruded over the nucleus as a plastic material (high pressure, low temperature). Impregnation is achieved using a specially developed non-migrating, high temperature resistant compound.

Perfect Elastic Material

A study to evaluate the elastic behaviour of this hybrid core proved that the new cabling is completely free of hysteresis, behaving as a perfect elastic material.

Aluminium Zirconium (Al-Zr) has been used for high strength and conductivity. The alloy has a maximum tensile strength comparable to pure aluminium and retains the integrity of this strength, even at high temperatures. Using this alloy Tratos was able to build a conductor with high thermal limits, working at temperatures beyond those of traditional conductors.

Four kinds of Al-Zr alloys have been developed, with the percentage of zirconium determining their thermal resistance. Of these four, the two most widely used are AT1, called TAL (Thermal resistant Aluminium alloy) and AT3, ZTAL (Zirconium ultra-Thermal resistant Aluminium alloy). With a continuous operation life of more than 40 years at 150°C (TAL) and 210°C (ZTAL) these materials are included in BS EN 62004.

New Conductor design

Tratos' new conductors were designed using a spatial distribution optimisation technique.


This technique - making maximum use of the conductive section - is achieved by removing the free space between the wires. To do this Tratos used sector-shaped wires.

This new breed of conductors are characterised by an electric resistance lower than that of conventional compacted conductors of the same overall diameter. When compared with traditional conductors, Tratos' higher-performance alternative increases the current-carrying capacity by up to twice that of an equivalent-sized traditional design.

Importantly existing pylons and installation techniques can be used, thanks to reduced weight and strain. The new conductors' greater tensile strength will withstand snow, ice and wind loadings, reduce sag and increase ground clearance at maximum current rating. It is fully compatible with existing ACSR and AAAC networks.

Testing

Tratos' prototypes for high load-carrying and low sag conductors were designed, built and rigorously tested at its laboratories and at the institute of RSE. This was followed by a trial installation, in the Alps, which resulted in positive results which were fully in line with expectations. The conductor was installed in the Alps, on a 132 KV overhead line - the installation being comparable with those of a traditional conductor of a similar size.

A report prepared by an engineer for the project states: "The installation of the line at high altitude (2000 meters above sea level) is a severe test for the conductor: in fact, at low temperatures the mechanical load is transferred from the carbon core to aluminum alloy coats, determining a state of high stress for the latter." 





Tratos cables contribute to the performance improvement of the LHC accelerator at **CERN**

The Large Hadron Collider (LHC) is the largest particle accelerator worldwide, developed and operational at the laboratories of the research organization **CERN** (*Conseil Européen pour la Recherche Nucléaire* – European Council for Nuclear Research), in Geneva.

The LHC, the most powerful microscope for the investigation of the matter and elementary particle physics, is hosted inside a tunnel of 27 km circumference, at about 100 m underground, across the territories of France and Switzerland. Beams of high-energy protons circulate in the accelerator ring and collide at an energy of 13 TeV (in high-energy physics, the electronvolt (eV) is used as the measurement unit of energy. 1 eV corresponds to the energy of an electron accelerated in vacuum by a 1 Volt potential difference; 1 TeV corresponds to 1000 billions of eV). The observation of the reactions caused by the collision of two particle beams, allows to explore the deep constituents of sub-atomic matter and to reveal the important blocks of the

elementary particle physics puzzle.

As a matter of fact, the researches carried out at CERN's LHC, allowed for the first time to confirm experimentally the existence of what has been colorfully defined "God's particle" (the Higgs boson, for the physicists!). The Higgs boson, considered the responsible for building the mass of any particle, was the missing link for the completion of the very important theory that describes the interaction between all elementary particles, named "Standard Model".

Thanks to this experimental observation, in 2013 the Nobel prize in Physics was awarded to **Peter Higgs** and **François Englert**, who had proposed this mechanism about 50 years before.

This result has been the outcome of an immense work of thousands of researchers and engineers from every part of the world, who have designed, built, and brought to success an unprecedented scientific and technological endeavor. Beside the great steps ahead allowed by LHC toward the



Tratos team collaborating with CERN



comprehension of the universe and the physics of elementary particles, its development has also produced numerous industrial and technological spin-offs. The most remarkable and renowned example is the invention of the World Wide Web, born in response to the necessity to exchange large amounts of information and data among scientists spread over many countries around the globe.

In the effort to push further the advancement of science and technology, CERN researchers have now planned the new **High Luminosity LHC** (HL-LHC) project, that aims to increase the power of the LHC accelerator starting from 2027, thus allowing to carry out more accurate measurements of particle physics interactions, or to observe completely new phenomena.

Also concerning this last aspect, CERN is pursuing its mission, to push beyond the limits of existing technologies, and proposed the use of the magnesium di-boride (MgB2) material, never used before in such large scale and power applications. Each of the 10 Superconducting Links cables, about 100 m long, is made of an assembly of different electrically insulated sub-cables, supplying different electrical power circuits, and operates inside a flexible cryostat for the circulation of the cooling helium. Such cable should be able to carry an overall current of about 100.000 Ampere, operating at a temperature of up to 25 K, thus appreciably higher than the 1.9 K (about -270 °C) of the superfluid helium bath cooling the magnet system.

To achieve this challenging target, CERN has been working since some time to the development of new technologies, among which new superconducting magnets for particle beams

bending, new optical devices and radio-frequency cavities for their focusing, and innovative superconducting cables for power transmission to the accelerator magnets from their power supplies.

TRATOS Cavi has taken up the big challenge of developing these innovative superconducting power transmission lines and has invested in the design and manufacture of cabling lines dedicated to the specific and particularly delicate handling of MgB2 wires, produced by another Italian company, **Columbus Superconductors**.

In fact, the high sensitivity of the performance of this material to mechanical tensile and bending stresses prevented from the use of any standard cabling machine.

After more than 2 and half years of development in **collaboration with CERN**, prototyping, design optimization and verification test on each of the numerous cable sub-components, TRATOS Cavi and the **ICAS Consortium** have successfully completed the manufacture of the first entirely superconducting *Links* cable length.

The full functional test of the cable recently carried out at CERN, confirmed the expected performance and validated the **MgB2 superconducting cable design**. This fundamental milestone toward the success of the entire project will provide a certain push toward the application of this technology for power transmission. [TR](#)



Tratos Cable at heart of ITER Fusion4Energy

Tratos has been part of the International Thermonuclear Experimental Reactor's (ITER) Fusion4Energy project for more than a decade.

The company purpose-built cable creates some of the biggest and most challenging superconducting electromagnets ever produced in the history of mankind.

These gigantic magnets are 60m long, 9m wide and weigh 300 tonnes; the equivalent of a Boeing 747.

The magnets require 750m of conductor bound in a double spiral trajectory to form a series of seven precision-engineered D-shaped double 'pancakes' which are then stacked, bonded, wrapped, bound, laser-welded by robots and cured at high temperatures.

The Toroidal Field (TF) coils will be operated with an electrical current of 68 000 amps in order to produce the magnetic field which confines and holds the plasma in place in the ITER tokamak.

The conductor cable is composed of about 1000 superconducting and copper wires inside a 2 mm-thick round stainless steel jacket, 43.7 mm in diameter.

Tratos' cable was delivered on-spool in a single 760m length, weighing seven tonnes. It was initially unspooled and straightened, after which the cable was cleaned and sandblasted, before being used and shaped into a 12m (l) x 9m (w) double pancake.

The shipment of the first completed components for the ITER Fusion4Energy project began in 2014 and will continue through the 2020s.

The first Plasma is planned for December 2025. ITER is one of the most complex scientific and engineering projects in the world today.

Tratos has been involved in the International Thermonuclear

Experimental Reactor (ITER) fusion for energy project since its inception.

Together with other members of the 26-strong international industrial partner community the company was specifically identified and qualified by ENEA for joint participation in a contract and world-stage controlled thermonuclear fusion experiment.

At Cadarache in France, the project was set up to demonstrate the scientific and technological feasibility of energy production by controlled thermonuclear fusion with a leading global manufacturer of electric cables and optical fibre, with Tratos, supplying key components of the ITER experiment.

Tratos is responsible for the production of Cable-In-Conduit (CIC) superconducting wire. The wire was destined for the worldwide construction of magnets for the ITER reactor and also the Japanese JT60SA. F4E (Fusion4Energy) awarded Tratos the contract for cabling and jacketing of approximately 20 km of ITER Toroidal Field (TF) conductors and in the region of 28 km of JT-60SA TF conductors, plus the jacketing of around 22 km of Poloidal Field (PF) conductors.

ICAS (Italian Consortium for Applied Superconductivity) performs all cabling activities at the TRATOS Cavi S.p.A. factory at Pieve Santo Stefano (AR – Italy).

Two production lines were set up. The first line is dedicated to the manufacturing of Low-Temperature superconducting cables (based on Nb3Sn and NbTi strands) which means that it is currently involved in the ITER and JT-60SA productions.

The second line is dedicated to the production of High-Temperature superconducting cables, based mainly on YBCO tapes twisted into Aluminum slotted core: these cables are currently used for the development of power distribution/transmission lines.



ICAS (Innovation and Consulting on Applied Superconductivity) was founded in September 2010, with the original scope of supplying the European portion of the superconducting conductors for the ITER and the JT-60SA nuclear reactors, in France and Japan. It provides services and products serving Superconductivity and High Tech power applications. In the last three-four years the project has seen landmark progress:

March 2016
The first Toroidal Field coil for the JT-60SA tokamak reactor wound with conductors produced by ICAS has been successfully tested at CEA-Saclay, France.

19 April 2016
The first huge Toroidal Field coil for the ITER tokamak reactor has been successfully wound at ASG-La Spezia, using conductors produced by ICAS

5 May 2016
A large-size rectangular Nb3Sn Cable-in-Conduit Conductor for the European DEMO Toroidal Field Coil, designed by ENEA and manufactured by ICAS partners, has been successfully tested at the EDIPO facility of the SPC (Switzerland), establishing new record performance.

5 July 2016
The first Toroidal Field coil for the JT-60SA tokamak reactor, manufactured with conductors produced by ICAS, has arrived from Europe to the JT-60SA site in Naka, Japan, where its assembly will soon begin.

19 July 2016
The last European Poloidal Field conductor has been successfully produced at ICAS.

6 October 2016
ICAS has been assigned by CERN of the MgB2 sub-cables production for the HL-LHC Superconducting Link Project.

12 January 2017
JT-60SA TF coils with conductors produced by ICAS, begin to be assembled at NAKA.

6 March 2017
ICAS has been selected for the award of a contract for the qualification and development of the ITER In-Vessel Coils Conductors.

10 March 2017
ICAS is now a member of the Consortium of European Companies determined To Use Superconductivity (CONNECTUS).

16 March 2017
ICAS is one of the Italian industrial excellences participating to the "Italy at CERN" event (Geneva, 4 – 7 April 2017), organized by the CERN ILO for Italy, in collaboration with the Italian Chamber of Commerce in Switzerland, and under the patronage of the Italian Permanent Representative in Geneva.

8 November 2017
After six years of intense work, the production of 100 km of superconducting cables for the magnets of the experimental



ITER and JT-60SA fusion reactors has been successfully completed. The ICAS Consortium has celebrated this milestone with the event held on November 8th, at Criotec Impianti.

20 December 2017

Chinese company ASIPP has successfully wound the first Double Pancake of the ITER PF6 coil using superconducting cable produced by ICAS.

18 September 2018

ICAS exhibits at 30th Symposium on Fusion Technology (September 16-21, Giardini Naxos, Sicily – Italy).

23 November 2018

ICAS has been honoured by F4E with an appreciation plaque for having successfully supplied superconducting cables for 20 Toroidal Field coils of the JT-60SA fusion experimental reactor. The toroidal system assembly has been completed at Naka site (Japan) and this event has been celebrated at ENEA's headquarters on the 15th of November, 2018.

16 December 2018

ICAS has been selected by ITER for the award of Phase 2 of "Conductor manufacturing of ITER In-Vessel Coils (IVC)".

18 December 2018

ICAS has been selected by CERN for the supply of MgB2 Cable Assemblies for the HL-LHC Superconducting Links.


6 February 2019

ICAS set up a production line to process copper conductors in order to prepare, apply and cure a cyanate ester-based primer, aimed to improve the adhesion of epoxy resin insulation to copper. With this semi-automatic line, a total of about 1.5 km of conductors for nuclear fusion application have been already treated successfully in a complete temperature and moisture controlled clean environment.

March 2020

Production of the superconducting electromagnets. Tratos is one of three charter members of ICAS (ENEA, TRATOS and CRIOTEC) behind the design and manufacture of a rectangular Nb3Sn Cable-in-Conduit Conductor (CICC) with distributed pressure relief channels, that have reached the record performances of 81.7 kA in a magnetic field of 13 T up to about 7 K.

- ENA is Italy's national agency for new technologies, energy and sustainable economic development.
- CRIOTEC is a Spanish technology company which specialises in cryogenic and high vacuum technologies.

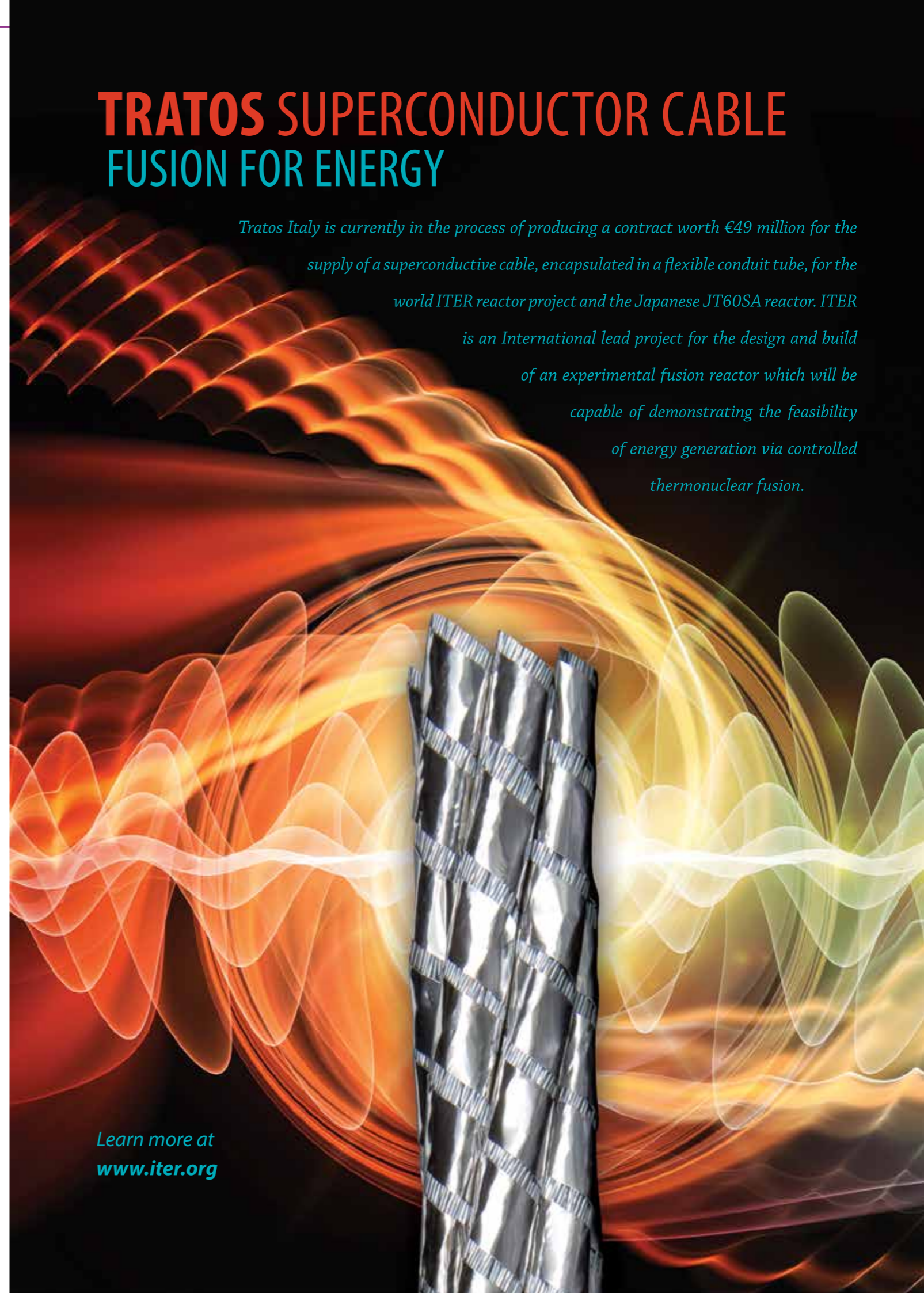
Tratos has manufacturing bases in Italy and the UK and offices in more than 50 countries. 



FUSION FOR ENERGY

TRATOS SUPERCONDUCTOR CABLE FUSION FOR ENERGY

Tratos Italy is currently in the process of producing a contract worth €49 million for the supply of a superconductive cable, encapsulated in a flexible conduit tube, for the world ITER reactor project and the Japanese JT60SA reactor. ITER is an International lead project for the design and build of an experimental fusion reactor which will be capable of demonstrating the feasibility of energy generation via controlled thermonuclear fusion.



Learn more at www.iter.org



Research & Development

Tratos is unlike other cable companies. It specialises in design without compromise to overcome customers' complex challenges. It welcomes challenge. A drive for technical innovation focused on enhanced performance has led Tratos to develop cable that has gone further – moving industries forward. Its bespoke cable design team specialises in creating cable to work in new and more challenging environments and deliver broader and better functionality.

It's this high level of skill, responsiveness and collaborative working with customers that has seen Tratos' research and development team designing for a range of challenging applications. From developing cables for submarine missiles to superconductivity cables for nuclear fusion, Tratos' R&D expertise is sought by some of the most ground-breaking and sensitive projects. Fifty years of building better cable has been achieved by investing in its own rigorous testing methods which ensure the cable it produces is the best it can be.

Tratos R&D has developed innovative products for:

Fusion for energy

Tratos is a world leader in superconducting cables for Controlled Thermonuclear Fusion, developing products for this ground-breaking engineering mega-project. Nuclear fusion is deemed one of the options useful to ensure a large-scale, safe, environmentally-friendly and virtually inexhaustible source of energy. Tratos is one of the international partners of the winning consortium now working on the project at the superconductivity laboratory.

New generation overhead conductors (significant cost gains, an innovative approach to countering sag and power loss and delivering faster, easier installation).

Telecommunication – Fibre Optics cables

Telecoms/data – dual fire barrier fibre optical cables with advanced fire resistant capabilities – designed specifically for underground and metro systems; signalling, power, control and telecommunications cables for the railway sector. Tratos innovation goes further. Tratos' clever theft-prevention measures include reduced copper content to make cable theft less rewarding, improved traceability, identity threads and even alarmed cable. Fire resistant cables – for public buildings, schools, hospitals, underground and



over ground railway stations, department stores, cinemas, hotels, theatres and computer centres as well as offshore vessels and hazardous environments such as Oil & Gas platforms. The company can supply a complete range of fire resistant cables to comply with the latest Standards and Codes of Practice covering fire detection, alarm systems, emergency lighting or other vital power supplies. Tratos is a long established and experienced manufacturer of fire resistant cables for major projects such as Wimbledon's Centre Court, Caerphilly Hospital and London Underground's Kings Cross and St. Pancras Stations.

Innovative compounds

JBA – Cable that has to deliver power, control, signalling and communication; Tratos' composites can handle any or every element. Its submarine and highly specialised umbilical cables are designed to multiple international standards to cope with cross-country installations. In the toughest of environments Tratos' cables resist mud, fire, extreme temperatures, water and impact.

Twickenham International Rugby Ground – Tratos facilitated power for the Rugby World Cup at Twickenham, applying its subsea cabling technology to combat the challenges of the stadium's high water table. Cable had to maintain its integrity despite constant immersion; and time was critical. The Rugby World Cup was imminent and the stadium couldn't afford the risk of a world-stage power outage. Within an eight-week turnaround, and working around restricted access, the company progressed with cable designed for installation and continuous operation in waterlogged underground ducts for a life of 20+ years.

The company is dedicated to producing higher-functioning, long-lasting, quality cable that is lighter, stronger, more compact, easier to install and has cost and environmental benefits.

Tratos' programmes of research & development run across all of its product areas.

Meaningful developments on cables for overhead power lines with high thermal limits and reduced deformations at high loads have the potential to facilitate significant advances for the energy industry. Advances in the field of insulated, self-supporting cables for medium and high voltage; for composite special cables for transport of signalling and for power in difficult conditions (earth moving equipment and mobile port equipment for moving loads) and optical fibre cables (for military use) are all helping change industries and the way we live.

Our Sustainability Strategy



In 2019, Tratos launched its first integrated sustainability strategy following on from years of sustainability and environmental advances. In 2021 the company pledged to strengthen its Sustainability Strategy and drive even more advances. This strategy commits Tratos to adopting and maintaining high standards, often going beyond legal requirements. It champions sustainability issues material to Tratos' business, employees, communities and customers. It's a big goal. It pushes Tratos to achieve consistent, high-quality social and environmental performance across all operations and increase stakeholders' knowledge of how the company works through meaningful disclosures and transparency. Tratos has committed to better understand, engage and partner with key stakeholders to create sustained mutual value. Tratos supports the 2030 development agenda and contributes is signed up to, and working to deliver the UN's Sustainable Development Goals.

Tratos produces cable – cable for connecting and powering the

world. Its products are fully recyclable and made with respect for environmental standards. The company's ability to positively influence the sustainability credentials of projects and help its customers is an important part of this sustainability strategy. Tratos is one of the main and critical pillars for the transition to a low-carbon economy. Tratos is part of the ITER alternative energy project, Fusion4Energy, part of the ICAS consortium. The ICAS (Innovation and Consulting on Applied Superconductivity) company was founded in September 2010, to supply the European portion of the superconducting conductors for the ITER and the JT-60SA nuclear reactors, currently under construction in France and in Japan. Tratos' involvement includes the design and production of Low Tc and HTS conductors and coils, along with the cryogenic testing of superconducting devices and the design and production of SMEs, current leads, high current mineral insulated conductors and much more.



Tratos Cavi Wins BTOB Award for Innovation



Tratos Group is proud to announce its recognition as a leader in innovation, receiving the esteemed BTOB Award at a ceremony held in Tuscany. Elisabetta Bragagni Capacini, CEO of Tratos Group, accepted the award on behalf of the company, a testament to Tratos' continued commitment to excellence and sustainable growth.

About the BTOB Awards

The BTOB Awards, established in 2010 by Hubnet Communication and the magazine Best to Brianza, published by Esse Editore, celebrate outstanding companies across various regions. Over the years, the award has grown into one of the most significant business events, recognizing enterprises that exemplify innovation, sustainability, and excellence in their fields.

A Focus on ESG Principles and Regional Impact

At the ceremony, Giuseppe Pancrazi, Partner at KPMG and Head of the Florence Office, highlighted the essence of the award: "The first edition of the BTOB Awards Tuscany was an extraordinary opportunity to celebrate companies that, with dedication and vision, place ESG principles at the heart of their activities. They integrate these principles in an exemplary way, enhancing our remarkable territory and Tuscan traditions. In a context that increasingly values innovation and sustainability, the awarded companies have

succeeded in combining these values with excellence, demonstrating that responsible growth is not only a necessity but also an opportunity for the future."

A Night to Celebrate Tuscan Excellence

The gala ceremony took place in the stunning Music Hall of Palazzo San Firenze, a historic landmark that provided the perfect backdrop for this celebration of Tuscan entrepreneurship. The event brought together business leaders, top managers, and cultural icons, emphasizing the region's dedication to fostering innovation while preserving its rich heritage.

Tratos: Innovation Rooted in Tradition

Winning the BTOB Award reaffirms Tratos' position as a forward-thinking company that blends innovation with a deep respect for its cultural and environmental roots. The recognition reflects Tratos' unwavering commitment to advancing sustainability and excellence in its operations.

For Tratos, this accolade is not just a celebration of its achievements but also a reminder of the company's responsibility to lead by example, driving sustainable innovation while honouring the traditions and values of Tuscany. [📄](#)

Tratos Receives Aenor Third-Party Certification for Gender Equality

Tratos, a leading global provider of electrical, fibre optic, and subsea cables, is proud to announce that it has received third-party certification for gender equality from Aenor in accordance with the UNI/PdR 125:2022 standard. This prestigious certification underscores Tratos' commitment to fostering an inclusive workplace and promoting gender equality across all levels of the organization.

Importance of the Certification

The UNI/PdR 125:2022 certification is a significant milestone for Tratos. It demonstrates the company's adherence to a structured management system designed to support gender equality and the empowerment of women within the organization. This certification not only highlights Tratos' dedication to fair and inclusive practices but also aligns with broader international standards and goals.

Connection to the United Nations Sustainable Development Goals (SDGs)

The achievement of this certification by Tratos is directly linked to several of the United Nations Sustainable Development Goals (SDGs), particularly:

- **Goal 5: Gender Equality** – This goal aims to achieve gender equality and empower all women and girls. By obtaining the UNI/PdR 125:2022 certification, Tratos shows its commitment to eliminating gender disparities in the workplace, ensuring equal opportunities, and fostering an environment where all employees can thrive regardless of gender.
- **Goal 8: Decent Work and Economic Growth** – Promoting inclusive and sustainable economic growth, employment, and decent work for all is a crucial aspect of this goal. Tratos' certification underscores its efforts to create a safe and equitable work environment, contributing to broader economic development and productivity.

- **Goal 10: Reduced Inequalities** – This goal focuses on reducing inequality within and among countries. By championing gender equality, Tratos contributes to reducing inequalities, promoting social and economic inclusion, and supporting policies and practices that foster equal opportunities.

Why This Certification Matters

1. **Demonstrated Commitment:** The Aenor third-party certification is an independent validation of Tratos' dedication to gender equality, providing confidence to stakeholders, clients, and employees about the company's inclusive practices.
2. **Enhanced Reputation:** Being certified for gender equality positions Tratos as a leader in the industry, setting a benchmark for other companies to follow and enhancing its reputation as a socially responsible organization.
3. **Economic Benefits:** Organizations with a strong commitment to gender equality often see improved financial performance, increased employee satisfaction, and higher retention rates. The certification also opens doors to potential benefits such as reduced social security contributions and better scoring in public tenders, in line with Italy's National Recovery and Resilience Plan (PNRR).
4. **Alignment with Global Standards:** Aligning with international standards and the UN's SDGs, Tratos showcases its role in contributing to global efforts toward a more inclusive and sustainable future.

Tratos' receipt of the Aenor third-party certification for gender equality is a testament to its unwavering commitment to fostering an inclusive and equitable workplace. This achievement not only enhances the company's reputation and operational effectiveness but also aligns it with key global sustainability goals, further cementing its position as a responsible and forward-thinking leader in the industry. [📄](#)



Tratos Announces Strategic Expansions and Technological Innovations



Tratos is set to achieve a significant milestone: projected revenues will surpass €250 million by the end of 2024. Our company is committed to strategic growth and innovation, as evidenced by recent acquisitions and technological advancements.

We recently announced the acquisition of AFL Telecommunications Europe, based in Swindon, UK, and Endurance Telnet, based in Zaragoza, Spain. These acquisitions are crucial steps in our strategy to strengthen Tratos' presence across Europe.

Endurance Telnet has been a pioneer in fibre optic cable production, serving major telecom and utility operators throughout Europe. This acquisition allows Tratos to establish a production foothold in Spain and enhance our commercial operations in the region. Similarly, acquiring AFL Telecommunications Europe enables us to expand our fibre cable production capabilities in the UK, complementing our existing low-voltage cable manufacturing site in Knowsley.

Our President, Albano Bragagni, emphasizes the strategic choice of the UK and Spain for expansion. "These countries offer regulatory environments similar to Italy's, facilitating quicker project implementation. In the UK, we're expanding into the niche market of submarine cable components for telecom applications, while in Spain, our new production site will support a range of initiatives. Additionally, Germany remains a key market for our exports, and we have significant operations beyond Europe, particularly in Brazil and China," said Albano Bragagni. As Europe accelerates its fibre infrastructure development to

bridge connectivity gaps, telecom operators face the challenge of investment amidst scarce resources. Despite these challenges, demand currently outpaces our production capacity, indicating robust market conditions. "The global focus on AI is driving demand for more sophisticated connectivity solutions, and we're preparing to meet these evolving needs with innovations like multicore fibres," added Albano Bragagni.

The integration of AI into various sectors is transforming the data centre market and the connectivity solutions linking these centres. Tratos is at the forefront, testing new multicore fibres designed to meet the heightened performance requirements prompted by AI advancements. These innovations are part of our broader strategy to remain agile and responsive to market shifts.

Submarine cables represent another critical growth area for Tratos, driven by the dual demands of data and energy connectivity. "The submarine cable market is booming, aligning with Europe's Green Deal objectives and the push for sustainable energy solutions. Tratos is committed to advancing data and energy connectivity through our cutting-edge submarine cable technologies," stated Albano Bragagni.

As we navigate this dynamic landscape, our focus remains clear: leveraging strategic investments and technological innovations to lead the evolution of fibre optics and connectivity solutions across Europe and beyond. With a firm commitment to sustainability and market responsiveness, Tratos is well-positioned to play a pivotal role in the future of global connectivity. <#>

Tratos Cavi and Pfisterer's Joint Effort in Railway Innovation

A recent railway infrastructure breakthrough was tested at the Settebagni primary substation near Rome. Tratos Cavi and Pfisterer collaborated to showcase their combined expertise, which has led to a remarkable advancement in the railway sector.

Elisabetta Bragagni Capaccini, the CEO of Tratos Cavi Srl, gave credit to Tratos Cavi's long-standing partnership with RFI, the Italian national railway infrastructure manager, spanning over 50 years. She expressed satisfaction that Tratos Cavi, due to its commitment to tailored solutions, designed and produced pre-assembled 150 kV whips that met the specific requirements of the Settebagni substation. These whips are a testament to engineering excellence.

They feature a 150 kV copper cable with a class 6 conductor (superflexible) comprising over 3,000 wires, rubber insulation, a super flexible sock screen, and a sheath engineered for exceptional durability. Crafted with precision, these whips ensure unmatched performance and reliability in critical railway applications.

Ezio Carriero, CEO of Pfisterer Srl, highlights Pfisterer's pivotal role in the project with its Connex technology. Pfisterer enables railway operators to minimize downtime and streamline interventions during faults by providing a modular and disconnectable cable accessory system. The innovative Connex system facilitates rapid connection and disconnection of modular accessories, setting new benchmarks for efficiency and reliability in railway infrastructure maintenance.

At the core of this collaboration is the Tratos SUPERFLEX HV cable, manufactured to meet rigorous international standards. With its triple extruded, dry-cured HEPR/COPPER WIRE SCREEN/Tough abrasion-resistant TPU sheath, this cable ensures optimal stress control in insulation, reducing breakdown and leakage current in high-voltage cable systems.

Designed for versatility, Tratos SUPERFLEX is ideal for installations in confined spaces where flexibility is essential. Additionally, Tratos SUPERFLEX can be supplied with an LSZH sheath for applications requiring enhanced fire performance, further enhancing its suitability for diverse railway infrastructure requirements.

Join us as we examine how Tratos Cavi and Pfisterer's collective expertise is reshaping railway infrastructure and driving innovation, efficiency, and safety to new heights. <#>



Offshore Cable Innovation: ENI project – Mexico Area 1 Development Phase 2

In the realm of offshore energy, the Mexico Area 1 Development project, spearheaded by ENI Mexico, stands as a testament to technological advancement and strategic collaboration. This initiative, particularly in its second phase, has not only exemplified engineering prowess but also underscored the potential of international cooperation in the energy sector.

The core objective of this phase was the provision of composite cables, ancillaries, and technical assistance services. The scope and scale of this undertaking were substantial, involving the supply of 18,000 meters of 33 kV cable composite submarine cable with optical fibres and 14,500 meters of 4.15 kV submarine cable, also equipped with optical fibers. Additionally, the project entailed the supply of accessories for the installation and onshore and offshore termination of these cables, along with technical assistance for their deployment and commissioning.

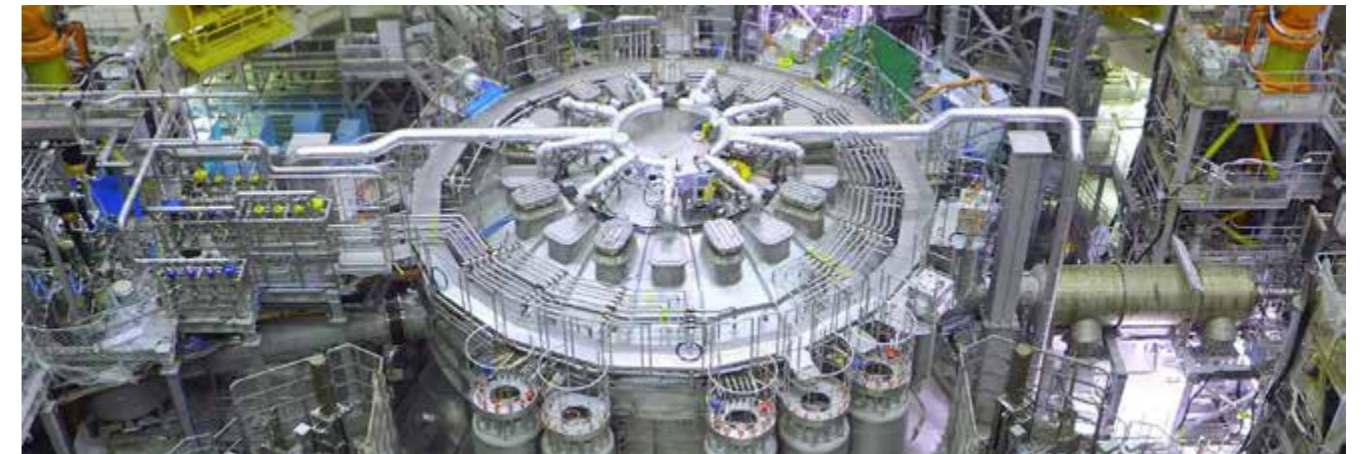
A unique aspect of this project was the delivery method – using three massive cable reels, each carrying different lengths and types of cables, with gross weights ranging from 18,000 kg to 310,000 kg. This logistical feat underscores the complex nature of modern offshore projects.

Assigned in July 2022 and successfully completed by December 2023, the project's execution was seamless. The cables' components were manufactured and tested by Tratos Cavi SPA and then shipped to MFX in Brazil for final assembly, sheathing, armoring, and testing before being delivered to the port of Salvador Baia. The entire project was managed by Tratos Cavi SPA, which also oversaw the engineering phase and collaborated with PCS Italiana for the accessory construction.

This project marks the third major undertaking by ENI in Mexico's Area 1, following the optical cable project in 2017 and the composite medium voltage cable project with optical fibre in 2019. These projects collectively highlight the ongoing commitment to enhancing offshore connectivity and power supply.

With an estimated value of several million USD for supplies alone, excluding assistance and commissioning of accessories, the Mexico Area 1 Development Phase II project is not just a financial investment but a milestone in the evolution of offshore energy projects. It demonstrates the intricate ballet of engineering, logistics, and international collaboration necessary to propel the energy sector into a future of sustainable, efficient, and reliable power generation and distribution. [IT](#)

Tratos Superconductors power the Fusion Reactor JT-60SA **recently** **inaugurated in Japan**



The inauguration of the JT-60SA experimental fusion reactor in Naka, Japan on December 1st, 2023, is a remarkable achievement for the scientific community and industry. This milestone brings us closer to the use of fusion energy, which is safe and environmentally friendly, and has the potential to revolutionize the energy sector. The collaboration between the European Union, and Japan, and the contributions of the Italian government, businesses, ENEA, the RFX consortium, and the National Research Council, demonstrate the power of international cooperation and the pursuit of a common goal. Tratos is delighted to share this fantastic news with the energy-related sectors, and we hope that this achievement inspires further progress and innovation in the field of sustainable energy.

At the inauguration ceremony were present the European Commissioner for Energy, Kadri Simson, the Japanese Minister for Education, Culture, Sports, Science and Technology, Masahito Moriyama, the Japanese Minister for Science and Technology Policy, Sanae Takaichi, high-level politicians level, representatives of the industry and the research community, who witnessed the plasma experimentation from the control room.

Marc Lachaise, director of Fusion for Energy, expressed appreciation for the international collaboration and the strong team spirit of the teams involved: "What happens here today – he said – will be important tomorrow to decide the contribution of fusion in an energy mix devoid of carbon. The JT-60SA facility is critical to the fusion roadmap because it offers our experts a one-of-a-kind opportunity to learn, operate this device and share this valuable knowledge with the International Experimental Reactor (ITER). Furthermore, it has allowed European research laboratories and indus-

try, together with Japan, to work side by side in developing a meaningful partnership."

Construction of the JT-60SA plant began in 2007 and was completed in 2020. Since then, several technical improvements have been made, and the first plasma experiments started at the end of the same year. The overall cost of constructing the plant was approximately 560 million euros, which was split between Europe and Japan. The project is considered an excellent example of science diplomacy and has been praised for its collaborative spirit, efficient management, and exemplary execution.

Tratos supplied the Cable-In-Conduit (CIC) superconducting wire. F4E (Fusion4Energy) awarded Tratos the contract for cabling and jacketing of approximately 20 km of ITER Toroidal Field (TF) conductors and in the region of 28 km of JT-60SA TF conductors, plus the jacketing of around 22 km of Poloidal Field (PF) conductors. The contribution of Tratos was recognised by the Minister of the Environment and Energy Security and program owner of the Italian Fusion Program, Mr Gilberto Pichetto Fratin, who said "I am very proud that Italy has contributed to today's success by providing scientific support and tokamak components as a contribution voluntary within the Broader Approach agreement between the European Union and Japan, thanks to funds of around 70 million euros made available by the Italian Government. With the coordination of ENEA, the Italian industry supplied superconducting cables for the magnets, superconducting toroidal coils, coil containment boxes, and power supply for the magnetic system: components made by ENEA, Tratos Cavi, Criotec, ASG Superconductors, Walter Tosto, Poseico Power Electronics and OCEM Energy Technology". [IT](#)



Tratos has made possible the first use of Borneables™ in the energy industry

Vice President of Tratos, Ennio Bragagni, has announced with great satisfaction that the cooperation between Tratos, a leader in electrical, electronic and fibre optic cable technology, and Borealis, the world's leading providers of advanced and circular polyolefin solutions and European market leader in base chemicals, has created a new viable solution for business to reduce their carbon footprint.



Leading cable innovator, Tratos has partnered with Borealis, and together they made possible the first use of Borneables™ in the energy industry.

In 2021, Tratos received an invitation to join a tender, where a higher technical score was awarded to cable solutions that were built with sustainable materials and/or through a more energy-efficient process. Ultimately, the solution should reduce the carbon footprint when implemented. This requirement has suggested that sustainable polyolefin sheathing compounds of vegetable origin for medium voltage (MV) and low voltage (LV) cables would be a viable solution.

Borealis recognised that the outlined criteria could be met with the Borneables™ solution. Borneables is Borealis' portfolio of

polyolefin products manufactured with renewable feedstocks. According to the International Sustainability & Carbon Certification Plus (ISCC PLUS) classification, these premium polyolefins offer the same material performance as virgin polyolefins but with a reduced CO2 footprint.

With the help of Borealis, Tratos was the first of the tender invitees to offer a solution based on renewable feedstock. This key distinction set them apart from their competitors and helped them to win a considerable part of the bid.

Ennio Bragagni, Vice President of Tratos, highlighted that " We are very proud that we won this tender. With Borealis, we created a truly innovative and sustainable solution, which we hope will be the norm across all energy cable networks one day. Moreover, we know that with Borealis, we are guaranteed great reliability, performance, and excellent customer support."

Actually, Tratos is supplying cables to a leading integrated operator in Italy who is in turn, providing energy across the globe with a reduced CO2 footprint thanks to the Borealis Bornea-

bles™ solution. Along with it being the first cable presented with a jacketing made from renewable feedstock, it delivered a bigger CO2 footprint reduction per ton and with ICCS PLUS accreditation.

With the Borneables™ solution, for a 185 mm² MV cable, Tratos reduced by 320 kg/km the CO2 emissions when compared to the traditional solution based on fossil feedstock. [IT](#)



IN THE WORLD

Tratos Celebrates a Successful Showcase at Middle East Energy 2025

Tratos proudly concluded another successful exhibition at Middle East Energy 2025, held at the Dubai World Trade Centre from 7 to 9 April 2025. The company welcomed a strong turnout at Stand Z2.F36, where it presented its latest innovations in high-performance cable solutions.

This year's participation was marked by the presence of Tratos' President, Engineer Albano Bragagni, and CEO, Dr. Elisabetta Bragagni Capaccini, whose leadership highlighted the company's commitment to growth in the Middle East and global collaboration. Their engagement with visitors, partners, and delegates emphasised Tratos' vision for a more connected and sustainable energy future.

Throughout the three-day event, Tratos showcased cutting-edge cable technologies designed for sectors including energy, infrastructure, renewables, oil & gas, and transportation. The

team of experts was on hand to provide insights into tailored solutions built for performance, safety, and sustainability.

"Middle East Energy 2025 was an invaluable platform for Tratos to reaffirm our role in supporting the energy transition," said President Albano Bragagni. "It was a pleasure to meet with so many industry leaders and share how our innovations are powering critical projects around the world", added Dr. Elisabetta Bragagni Capaccini.

The exhibition further strengthened Tratos' presence in the region, opening new opportunities for collaboration and reinforcing its reputation for delivering bespoke engineering excellence. Tratos looks forward to continuing the conversations sparked during the event and shaping the future of energy—together.



Tratos participates in the UKEF Supplier Fair on Cabinda International Airport



On February 26, 2025, Tratos Ltd's CEO, Prof Maurizio Bragagni Esq OBE, participated in the UKEF Supplier Fair.

UK Export Finance (UKEF) is the UK's export credit agency, a ministerial department of the government. It assists UK exporters by providing guarantees to access working capital and insurance to manage the risk of non-payment. In the 2023-2024 period, UKEF provided £8.8 billion in financial support to UK exporters. UKEF collaborates with private sector finance providers to support businesses of all sizes across various sectors, aiming to enhance UK exports and international trade.

The above-mentioned event offered various UK suppliers insights into export opportunities, the procurement process for the Cabinda International Airport, and trade finance support available from UK Export Finance (UKEF). It also provided a unique opportunity to engage directly with Innovo Projects' procurement team.

Innovo invited Tratos as one of its valuable partners and a company globally renowned for its cutting-edge cable solutions that power critical infrastructure worldwide.

Focus on resilience and performance positions Tratos as a valuable partner for infrastructure projects like the Cabinda Interna-

tional Airport, which is set to become a pivotal hub in Angola, featuring a 3,500-meter runway to accommodate large aircraft like the Boeing 777 and a 12,000 m² passenger terminal. The project aims to bolster regional development by attracting investments in special economic zones and industrial parks.

Given Tratos's expertise in manufacturing durable and high-performance cables, the company is well-positioned to support the Cabinda International Airport project. The airport's modern infrastructure requirements align with Tratos Ltd's capabilities in providing innovative cable solutions that meet stringent safety and performance standards.

Events like the UKEF Supplier Fair play a crucial role in fostering collaboration between UK suppliers and international projects. They provide platforms for businesses to understand procurement processes, explore export opportunities, and engage directly with project stakeholders.

For companies like Tratos, participating in events like the UKEF Supplier Fair aligns with its strategic objectives of international expansion and contributing to significant infrastructure projects globally. Engaging in these opportunities not only drives business growth but also contributes to the development of critical infrastructure that supports economic advancement worldwide.

Egidio Capaccini Award

2024 edition



On November 16, 2024, the town of Pieve Santo Stefano once again hosted the “Egidio Capaccini Award” ceremony, a tradition that has been celebrated for over 25 years. The event took place at the Giovanni Papini Theatre, attended by Mayor Claudio Marcelli and members of the Bragagni-Capaccini family.

This prestigious award recognizes the exceptional academic achievements of young students from Pieve Santo Stefano who achieve the highest grades in the final examinations of Italy’s “middle school” and “high school” cycles. It commemorates the legacy of the late engineer Egidio Capaccini, founder of Tratos

Cavi Spa, whose vision has been carried forward by engineer Albano Bragagni and his wife, Marta Capaccini.

This year, the award celebrated four outstanding young talents: Greta Romolini and Arianna Pari, who achieved perfect scores of 10/10 in their middle school final exams, and Milena Xuanyi and Giulia Cipriani, who graduated with a remarkable 98/100 from the Luca Pacioli Commercial Technical Institute in Sansepolcro.

The Tratos Group extends its heartfelt congratulations to the 2024 awardees and wishes them great success in their academic and professional journeys ahead. [TR](#)

CABLES FOR A MOVING WORLD

TRATOS MTO®

Based on AS/NZS, VDE, BS, UL, CSA, MSHA, OSHA

Specifically customised for the mining market; TRATOS MTO® is designed to **resist sunlight, water, extreme temperature, chemical, oil and abrasion**, while also performing **consistently** in tough mining environments. The voltage range for TRATOS MTO® is between **600V** and **35KV**.



Case study: **TAKRAF** (Kosovo)

Tratos MTO® ES3 - 30 kV cable of flexible and reelable rubber hose cable with a diameter of 70 mm and a length of 2100 m. The reel has an inner diameter of 3 m. Speed: 9m/min

Tratos Visits CEECATL-China

On September 24th, 2024, Prof. Maurizio Bragagni Esq., OBE, CEO of Tratos Ltd, during his recent business trip to China, visited Energy China CATL-Technology, CO (CEECATL) headquarters. Mr. Fred Huang, Secretary of the CPC Committee and Chairman of CEECATL, warmly welcomed him. The meeting marked a significant step towards closer collaboration between the two companies, focusing on the development and expansion of energy storage solutions in Europe.

During the meeting, Prof. Bragagni and Mr Huang held in-depth discussions on the future of energy storage, highlighting the strategic importance of advancing sustainable energy solutions to meet Europe's evolving energy demands. Both parties expressed a shared vision and enthusiasm for forging deeper partnerships, ultimately reaching a consensus on pursuing in-depth cooperation shortly.

Mr. Fred Huang provided an overview of CEECATL's core businesses and strategic focus. As a leading innovator in new energy and integrated smart energy, CEECATL specializes in zero-carbon solutions, energy storage systems, and green hydrogen-ammonia technologies. With a strong commitment to sustainability, the company is positioning itself as a global leader in the green and zero-carbon sector. CEECATL is actively expanding its energy storage business internationally, and Mr. Huang expressed the company's interest in deepening cooperation with Tratos, particularly in new energy fields.

"We are currently negotiating partnerships with major international corporations and government agencies," said Mr. Huang. "Our goal is to collaborate with Tratos on the integration of new energy storage systems and contribute to Europe's transition towards a zero-carbon economy."

Prof. Maurizio Bragagni, in turn, shared insights into Tratos' ongoing projects in Europe's energy infrastructure, emphasizing the growing need for advanced energy storage systems to support power grid reliability and meet peak energy demands. He highlighted Tratos' expertise in supplying high-performance electrical and fibre optic cables and expressed a strong interest in identifying potential areas of collaboration with CEECATL.

"Tratos is committed to playing a key role in Europe's green energy transition," stated Prof. Bragagni. "We see great potential in working with CEECATL to accelerate the development of energy storage systems, as well as in promoting the integration of zero-carbon technologies into Europe's power infrastructure."

Both companies acknowledged the complementary strengths they bring to the table. CEECATL's expertise in smart energy sys-

tems and green hydrogen technology, combined with Tratos' extensive experience in power infrastructure and cable manufacturing, paves the way for a mutually beneficial partnership. The meeting concluded with a commitment to further explore a win-win cooperation model, leveraging each other's capabilities to drive innovation in energy storage and green energy solutions.

This meeting represents an important milestone in the global energy sector, as companies like Tratos and CEECATL unite to address the challenges of sustainable energy and drive forward the zero-carbon future. 🌱



Tratos Group Leaders Participated in ROG.e 2024 in Brazil

We are excited to share the news that Eng. Albano Bragagni, President of Tratos Group, and Mr. Germano Bragagni, Director of Tratos, attended the highly anticipated ROG.e 2024 event in Rio de Janeiro, Brazil. This event, held on 23-26 September 2024 on Olympic Boulevard, in the heart of Rio de Janeiro, was purely dedicated to innovations in the energy sector. It served as an essential platform for thought leadership, industry networking, and exploring new technological advancements.

Tratos Group, a global leader in advanced cable technology, was represented at the event through its partnership with MFX du Brasil, one of its key partners in the region. Eng. Albano Bragagni and Mr. Germano Bragagni honoured the event with their presence at Stand C09 alongside MFX du Brasil, offering insights into Tratos' cutting-edge energy solutions.

ROG.e is one of the world's leading energy events designed to gather global energy leaders, innovators, and stakeholders. This year it was organized by the Brazilian Petroleum & Gas Institute (IBP) and welcomed more than 70,000 visitors from 65 different countries. The event featured a wide range of activities including in-depth discussions on renewable energy, new technologies, and solutions to meet the evolving energy demands of the 21st century.

Tratos has long been a pioneer in energy infrastructure, working to improve cable technologies for electrical grids, renewable energy, and telecommunications. The participation of Tratos' leadership in ROG.e 2024 reflects the company's commitment to innovation and sustainable energy solutions. [📄](#)



Tratos at TOC Europe 2025

The TOC Europe event is widely recognised as one of the largest annual international trade fairs dedicated to showcasing the latest port, shipping, and terminal technology advancements. The event takes place in Rotterdam from June.

Visit our stand H50 inside Hall 1 at the Ahoy in Rotterdam. you can discover our portfolio and engage with our team to learn more about our offerings. From high-visibility reflective cables to TratosFlex – Reeling cables, you have the opportunity to talk live to our engineers and experts.

Tratos has participated in this event for many years. It serves as a valuable platform for networking, knowledge sharing, and showcasing the latest advancements in the industry for port authorities, terminal operators, shipping companies, and shippers. All participants can gain insights into the most recent trends and innovative technologies within the port and terminal systems and the container industry.

TOC Europe offers a unique opportunity to connect with C-level decision-makers, engineers, automation experts, and digitalisation specialists. In addition to the exhibition, the event features an international conference where current industry topics are thoroughly discussed. Attendees have the opportunity to explore a wide range of products and services, including novel and proven robust solutions designed for applications in the field of harbour and crane technology.

TOC Europe has garnered the backing and endorsement of the industry's leading associations, including PEMA, TIC 4.0, ICHCA International, IPCSA, FEPORT, and the IAPH.

We invite you to visit Stand H50, where you can discover our portfolio and engage with our team to learn more about our offerings. From high-visibility reflective cables to TratosFlex Reeling cables, you have the opportunity to talk live to our engineers and experts. [📄](#)



Tratos participates in the 28th Central Asian International Mining Exhibition

Tratos participates in the 28th Central Asian International Mining Exploration & Mining Equipment Exhibition in Almaty, Kazakhstan.



also RoHS compliant, manufactured on sites that hold ISO 14001 Environmental Approval and ISO 9001 Quality Management System Approval.

Tratos Mining Cables can be found in open-pit mining, tunnelling and supplying power in deep mines. The range of mining and tunnelling cables includes fixed and flexible cables up to 35 kV. Tratos has recently developed an innovative cable solution for the mining industry. The Tratos MTO-RF – HighVision is a High Visibility.

Paolo Bragagni, at Tratos stand, said, "The Almaty exhibition provides Tratos with an opportunity to engage with industry professionals, share insights, and establish partnerships. It also aligns with the company's focus on environmental sustainability, as Tratos presented eco-friendly cable solutions designed to reduce the environmental impact of mining activities". As the mining industry evolves, Tratos remains at the forefront, ready to meet the evolving needs of the sector with its innovative solutions. Tratos' active participation in the 28th Central Asian International Mining Exploration & Mining Equipment Exhibition

underscores its dedication to supporting the growth and development of the mining industry in Central Asia. With its unique cable solutions, commitment to safety, and sustainability efforts, Tratos continues to be a vital player in advancing the mining sector and revolutionising the cable-making industry. [Tr](#)

Tratos, a prominent global leader in manufacturing some of the world's most advanced cables, showcased its expertise and innovative solutions at the 28th Central Asian International Mining Exploration & Mining Equipment Exhibition. This event, hosted in Almaty, Kazakhstan, from 20-22 September 2023, is a significant platform for companies operating in the mining industry to present their latest products and technologies.

Tratos' participation in this exhibition highlights its commitment to meeting the unique demands of the mining sector. The company offers a wide range of specialized cables tailored to withstand the challenging conditions of mining operations. Tratos supplies high-quality cables well known for their durability and resistance to extreme weather and harsh environmental conditions by prioritising safety and using cutting-edge technology.

Tratos' Mining Cables and Tunnelling Cables meet or exceed the requirements of internationally recognised industry standards (e.g. AS/NZS, VDE, BS, UL, CSA, MSHA, and OSHA). Products are



Tratos laboratories win new accreditation



Test laboratories at the Italian headquarters of global cable innovator Tratos have been accredited by the country's Dipartimento Laboratori di Prova.

The accreditation certifies the technical competence of the Tratos Cavi Spa laboratory at Pieve Santo Stefano AR in line with the principles of ISO 9001.

This accreditation is for CPR. Accredia is the equivalent of UKAs.

Vice President of Tratos Group, Ennio Bragagni, said: *"We are proud to have achieved recognition for the quality and consistency of the valuable work undertaken at our laboratories in Italy. Tratos has long campaigned to raise standards and has been an early supporter of initiatives aimed at monitoring cable quality to keep people and buildings safe. Our technicians have done an outstanding job."*

The President of Tratos Group Ing. Albano Bragagni added: *"This is very welcome, something that sits well with our growing reputation for innovation and recent recognition for it with a Queen's Award for Enterprise. Here in the UK, we have pushed for more stringent measures for assessing cable quality and performance through our Safer Structures Campaign and we pledged to ensure that the cable we produce exceeds minimum standards. That work is ongoing and the news that our Italian laboratories have won this accreditation is another big step forward."*



The biggest Faraday Cage in Europe



Tratos is home to the largest Faraday cage test site in Europe at the company's Headquarters in Pieve Santo Stefano, Italy. Measuring 24m x 16m and standing at 14m high, the Faraday cage enables Tratos to effectively carry out AC resonant tests on site, allowing testing of up to 220 kV of nominal voltage cables, of up to 20 km in length. The cage enables vital AC resonant tests to be carried out in a controlled environment. The facility incorporates an innovative locking system to ensure perfect shielding from external interference. Inside the cage there are state-of-the-art instrumentation and equipment for testing along with an adjustable high voltage reactor which, together with the exciter and the regulator, create the heart of the system.

This allows incredibly precise measurements to be recorded, ensuring that the cables meet the exacting test parameters as specified in IEC 60228, 60840 and 60811.

Tratos HV cables are recognised for their advanced technology and construction. Their construction makes them flexible, light, strong and low maintenance and the HV cables range is supported by a range of simple accessories. All Tratos quality systems and procedures are BASEC approved to ISO 9001 and ISO 14001 standards.

Investment in the Faraday Cage, has enabled Tratos to produce cable, tested at its own facilities, that meets the exacting standards demanded by industry. [f](#)



Tratos Faraday Cage



Tratos invests in in-house **CPR testing**



Tratos experts joined representatives from VDE Offenbach for a facility visit at Taurus instruments in Germany and to see a demonstration of a new fire testing machine designed for the upcoming Construction Products Regulation (CPR).

The company's Ennio Bragagni-Capaccini, Vincenzo Bellini and Rainer Pollmann partnered Detlef Stämmeler from VDE Offenbach during the visit to meet Taurus Instruments' CEO, Stephan Heise.

VDE in Offenbach is Germany's only BauPVO test facility. Among a wider-range of testing it tests single-cable to EN60332 and carries out bunched-cable fire testing to EN 50399.

Tratos' strategic aim was to buy the same Taurus Instruments machines used at VDE Offenbach to ensure its products are ready-tested for CPR compliance. VDE Offenbach hosted Tratos and Taurus later the same day where a more detailed explanation of the testing equipment's operation was provided.

Choosing this test machine will allow Tratos to respond faster to CPR requirements. The company's cables can be tested in its own laboratories to give greater customer confidence and quicker response to orders covered by the new requirements [\[1\]](#)



CEO of Tratos Ltd won **Leader of the Year** at the Made in Britain Impact Awards



Tratos' team takes great pride in the recognition of our CEO, Professor Maurizio Bragani Esq OBE, as the Leader of the Year at the Made in Britain Impact Awards 2023. We are also deeply thankful to Made in Britain for their unwavering support in fostering growth.

Made in Britain Impact Awards are an exclusive set of manufacturing awards open exclusively to all Made in Britain members. The awards, now in their second year, have already provided British businesses with the opportunity to tell their story of achievement and be recognised within their manufacturing and industry sector.

There were distinct categories of the Impact Awards 2023 that have focused on the measurable success of manufacturing business in marketing, sales, sustainability, green and good business, team leadership, and innovation.

The Leader of the Year category recognises the achievements of the senior executives who demonstrate exceptional leadership in manufacturing and act as a champion for sustainable business more broadly in their sector.

In presenting the award to Prof Bragagni, the panellist judge Minnie Moll, Chief Executive of Design Council, said *"Professor Bragagni's visionary leadership has been the driving force that has propelled Tratos UK Ltd to unparalleled growth and resounding success, reinvigorating the cable manufacturing sector. The organisation has significantly expanded its presence across Europe and won the 2019 Queen's Award for Innovation."*

Receiving this prestigious award, Prof Bragagni said *"It will serve as a powerful source of motivation for me and the entire Tratos team. This recognition boosts my determination to continue our ongoing mission to revitalise the cable manufacturing sector. This award not only validates the dedication and hard work of Tratos' employees but also strengthens our resolve to be at the forefront of sustainable and innovative practices within the industry. It reinforces our commitment to preserving and promoting the values and quality associated with the Made in Britain label"*.

The award will further inspire the Tratos team, who have consistently pushed the boundaries of innovation and excellence without sparing any efforts, to continue its excellent work and drive positive change in the cable-making industry. [\[1\]](#)

What is **Tratos premium price?**

And why quality always pays you back.

As the global economy started recovering from the recession caused by the Covid-19 pandemic, there has been an increased demand for products – especially consumer goods – and materials.

The ongoing war in Ukraine is a significant factor contributing to higher commodity prices, pushing up inflation worldwide. The cost of raw materials had been on the rise since the onset of COVID-19 about two years back. With strict sanctions against Russia and damaged infrastructure in Ukraine, the prices are expected to remain high and volatile.

Every industry in the world, including cable making, is being heavily impacted by escalating and unpredictable input expenses, such as raw material input cost inflation and price fluctuations.

Hard market conditions force traders and manufacturers to use premium prices. The LME explains that premium prices exist in

metals markets because the global reference price, discovered on the LME, is based on a standardised metal grade and shape. Deviations from this metal standard need to be reflected in the final price paid in the physical market. When negotiating the price of a contract to take delivery of physical metal, buyers and sellers will usually start by referencing the LME price for the underlying material and then negotiate discounts and premiums based on the various factors affecting delivery as well as the type (brand, shape or quality) of metal being bought or sold.

According to Reuters, European copper buyers are going to be paying a lot more to get their copper next year. A combination of high freight and power costs and low visible copper stocks has driven the price of copper high.

German producer Aurubis will charge \$228 per tonne over the London Metal Exchange (LME) cash price for term deliveries in 2023, a record high and an 85% increase on this year's premium of \$123. Chilean giant Codelco has come in higher still with a premium of \$235 per tonne, while Austria's Montanwerke

Brixlegg has thrown down the green gauntlet with a 295 euro (US\$289) premium for low-carbon copper.

Unfortunately, it's true even for Tratos, which is currently forced to apply a premium price for its products on top of the LME price.

However, Tratos cable is worth its price as Tratos distinguish itself from the others by putting quality first and protecting the environment! Tratos design and manufacture the cables it produces in such a way as to reduce to the bare minimum in relation to environmental impact in the use of raw materials, without affecting the cable safety, reliability and cost.


Tratos' cables are designed with clever theft-prevention technology, such as identifying threads alarming cables that make cable theft less rewarding. Tratos cables are made with copper and aluminium cladding, which makes them unique and prevents cable theft. The aluminium cladding makes the copper inside the cable lose its value for selling as scrap by metal thieves.

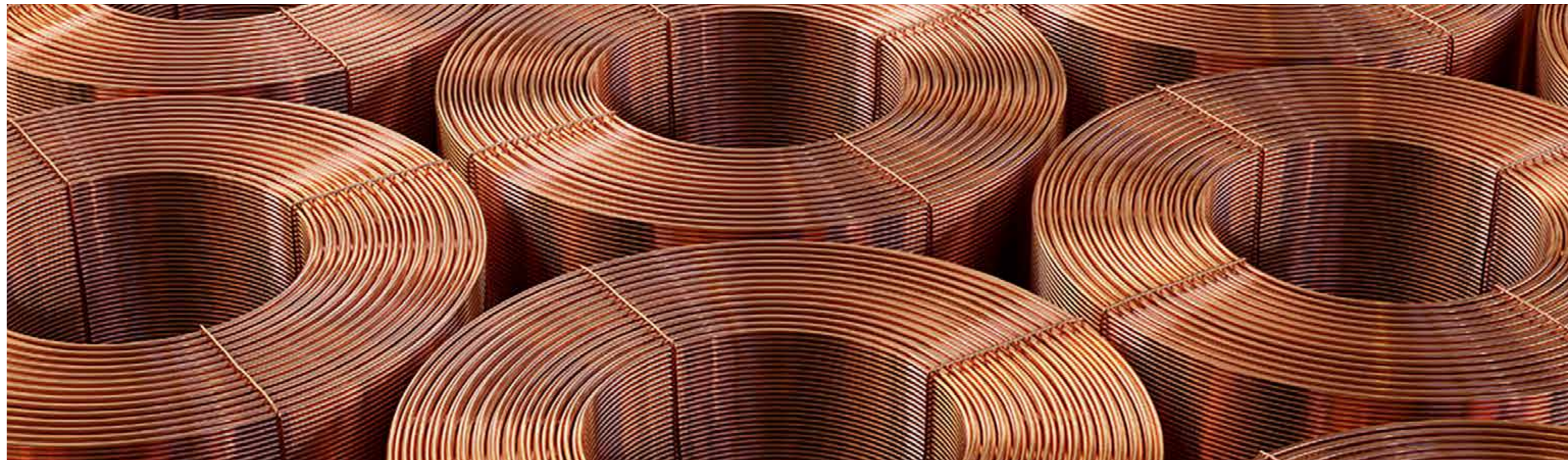
Our clients have witnessed up to a 90% reduction in the need to conduct tests on their transmission lines and avoid delays in running their services. This has resulted in savings of 40% of maintenance costs in the long run.

Tratos is proud of its culture of innovation, which is driven by more than just need; it is driven by "better".

In 2019 Tratos won a Queen's Award for Enterprise: Innovation for a problem-solving cable compound developed originally for use on mobile and fixed Offshore Oil and Gas installations.

Tratos has been a partner of ITER (International Thermonuclear Experimental Reactor) fusion for energy cable project since its inception. Tratos purpose-built cable is a critical component of some of the biggest and most challenging superconducting electromagnets ever produced in the history of mankind.

Buy Tratos cable! Buy once! Save money and time! 



Moving to **fully recognised certification body BSI** to be global

Established in 1966 as a family-owned business, Tratos Group has grown into a global cable manufacturer dedicated to delivering global solutions and bespoke engineering expertise. Aiming to achieve soon a certification of a carbon-neutral business and with strong social corporate responsibility, Tratos strives to achieve exceptionally high standards with a focus on driving cable innovation and sustainable growth.

Today it has confirmed its status as a world-renowned cable manufacturer, selling an extensive range of cables to 52 countries, with manufacturing facilities in Italy and the UK and offices worldwide. From cabling for transport networks to a fusion for energy project of world significance, Tratos' technology is at the forefront of the world's most significant power, growth, environmental and connectivity projects. Tratos has produced the superconductor for the ITER project, part of Fusion4Energy, via the consortium with ICAS.

Tratos not only develops innovative products for new markets such as the robust flexible cables used in Alternative Power Marine systems known as "cold ironing" and a high visibility reflective and fluorescent cable to increase safety in such diverse applications as Mining and EV charging cables. This level of commitment was recognised in 2019 when Tratos won the Queen's Enterprise Award for Innovation.

It is also a leader in a number of campaigns such as the Approved Cables Initiative and the Safer Structures Campaign. Tratos has also vociferously campaigned for a real super-fast fibre to the home (FTTH) broadband network for the UK, one with the power and speed to rescue the UK economy and put it back on the winner's podium.

Tratos not only attempts to make a valuable contribution to the world by minimising the environmental impact of its products, but it also attempts to spread its vision of a sustainable business model among its clients, partners, and followers to embrace a more environmentally friendly approach.

Today Tratos represents a company that changed from a commodities manufacturer to a global brand defined by innovation, commitment to sustainability and quality.

A global company needs a global independent and fully recognised certification body and Tratos has found one in BSI.

Why BSI?

The British Standards Institution (BSI, a company incorporated by the Royal Charter), performs the National Standards Body (NSB) activity in the UK. It was established in 1901 as the Engineering Standards Committee. The BSI Kitemark was first registered by BSI on 12 June 1903. BSI has grown into one of the most important and most recognized consumer quality marks.

BSI also offers a broad portfolio of business solutions in addition to the NSB activity that helps businesses worldwide to improve results through Standards-based best practices (such as certification, supplier audit tools, software enhanced reporting, product testing and certification, information products, training, qualifications and educational services).

BSI has shaped best practices for over 100 years, helping organizations around the world embed excellence, and build competence and capability for sustainable growth. In a world of geopolitical challenges, standards and conformity assessment are a common currency for any successful forward-looking enterprise.

Tratos Group regards BSI as its business improvement partner, which fulfils its demands for future growth and transformation to a more sustainable business model.

Both Tratos and BSI are committed to advancing all the UN Sustainable Development Goals; making a positive impact both through our own actions and by helping clients to make sustainable choices.

Like Tratos, BSI is at the core of several initiatives centred around positive climate action, examples being PAS 2060, a standard which supports organizational claims of carbon neutrality, and the Faraday Battery Challenge standardization programme, supported by the UK Government, which centres on innovation in energy storage for electric vehicles.

BSI shares knowledge fosters innovation and instils best practices as the UK's national standards body. In September 2021, BSI played a key role in drafting the London Declaration, signed at the 75th anniversary of ISO Week in London, which commits ISO to consider the climate impacts in all its standards and facilitates the involvement in standardization of those most vulnerable to climate change. The London Dec-

laration has also been endorsed by the IEC and CEN/CENELEC, two other international bodies that Tratos Group cooperates with regularly.

BSI is the global leader in Assurance Services and among the most respected and reputable management systems certification bodies in the world and is accredited by national and international accreditation bodies including:


- The United Kingdom Accreditation Service (UKAS)
- American National Standards Institute – American Society for Quality National Accreditation Board LLC (ANAB)
- China National Accreditation Service for Conformity Assessment (CNAS)
- Raad voor Accreditatie (RvA) in the Netherlands
- Accredia

BSI has played a leading role in developing a new generation of standards to help organizations become better governed and more responsible such as anti-bribery, organizational

governance and asset management. BSI has also increased collaboration with experts in new fields such as smart cities, nanotechnologies, cell therapy and Building Information Modelling (BIM).

BSI continue to inspire international standardization: BS 8901 for sustainability management systems for events that were inspired by ISO 20121, which was used in 2012 by the London Organising Committee of the Olympic and Paralympic Games (LOCOG) and by the Glasgow 2014 Commonwealth Games for truly sustainable events. BSI was also selected to certify the latest G7 and COP 26 for sustainability management systems as those prestigious events adopted ISO 20121.

As a result of these strategic moves, and through more than a century of growth, BSI now delivers a comprehensive business services portfolio to clients, helping them raise their performance and enhance their competitiveness worldwide.

That's exactly what Tratos Group aspires to achieve through BSI cooperation and continuous innovation! 





The **Tratos Academy** in action

“Skilled, motivated and engaged people are essential to achieving our growth ambition”

The Tratos Academy is driven by commitment to people development. Investment in people is the foremost way to deliver success for business in a rapidly changing market. Tratos has made a significant investment in establishing the Academy.

The Academy provides clear direction, training and support to Tratos people and opens its doors to next-generation engineers (undergraduates). Its approach to learning supports the company’s broader sustainability strategy.

Visiting experts and senior executive team members play a key part in the Academy’s course development and delivery.


What is it aiming to achieve?

The Academy works to:
Educate new employees – and inspire them to go on to learn more.

Further develop existing staff.
Enhance performance in key areas.
Provide access to learning materials for self-study as a contributor to continuing education/professional development.
Inspire engagement and new thinking around innovation and sustainability.

The Academy brings people together – from experienced technical experts to apprentices – to provide theoretical and ‘taught from experience’ mentoring and learning. Working in peer groups offers opportunities to share experiences.

Professional Development Programme

Tratos works with a range of highly respected UK and international universities alongside its own experts to develop its Academy’s coursework. 



Construction Products Regulation is now law.

Tratos is compliant

Find out more visiting our website:
www.tratosgroup.com/quality/cpr



Tratos Powers Up the 380kV Rondissone-Turbigo Overhead Line

As the world shifts towards sustainable energy solutions, the critical role of modern infrastructure in supporting this transition cannot be overstated. One notable project that epitomises this commitment to a greener future is the recent upgrade of the 380kV overhead power line between Rondissone and Turbigo, Italy. Spearheaded by Terna Rete Italia, this project involved the deployment of advanced Tratos conductor cables, a testament to the innovative strides in power transmission technology.

Project Overview

In November and December 2023, the fertile rice fields between Turin and Milan witnessed a significant infrastructural transformation. Terna Rete Italia, entrusted with enhancing Italy's high-voltage electricity transmission grid, undertook the

reconductoring and reinforcing of the Rondissone-Turbigo line. The project was not just about laying new cables but about integrating cutting-edge technology to ensure a more efficient and resilient power transmission system.

Technological Innovations

The backbone of this project was the Tratos HTLS (High-Temperature Low Sag) low sag carbon core conductor cables. These cables, designed with a polymeric composite core, represent the forefront of modern engineering, offering superior performance under high temperatures and minimal sagging under load. The specific configuration used for this project was a triple bundle with a diameter of 30.45 mm, spanning a total length of 12 kilometres.

The project utilised a Puller/Tensioner PT4800 quad bundle

with an 1800 mm diameter bull wheel to ensure the precise and secure installation of these advanced cables. This equipment, installed on a special self-propelled vehicle, facilitated the smooth handling and placement of the cables, demonstrating the synergy between advanced materials and state-of-the-art machinery.

Addressing Mid-Span Tension

A crucial aspect of the project involved realising mid-span tension joints, executed with a 160-ton press. This process is vital for maintaining the structural integrity and electrical continuity of the overhead power lines, ensuring they can withstand mechanical and electrical stresses over their operational life.

Sustainability and Future-Proofing

Terna Rete Italia's project is more than an infrastructure upgrade; it is a step towards a sustainable and resilient energy future. As Europe's largest independent electricity transmission system operator, Terna is at the forefront of driving the ecological transition. This project is a part of their broader strategy to develop a modern, efficient, and environmentally friendly power grid.

The Rondissone-Turbigo line upgrade underscores Terna's commitment to sustainability. Due to their high efficiency and long lifespan, Tratos' HTLS low sag carbon core conductor cables ensure minimal environmental impact. Furthermore, the project aligns with Terna's goal of integrating renewable energy sources into the national grid, facilitating the transition to a cleaner, emission-free future.

Strategic Significance

Strategically, the Rondissone-Turbigo upgrade is pivotal. It addresses critical needs in the Italian national electrical system, including increasing transport capacity between market zones, resolving congestion, and enhancing the security and resilience of the electricity grid. By improving the quality and reliability of power supply, this project supports the broader economic growth and technological advancement objectives in Italy.

The project's successful completion is a milestone in Terna's ongoing efforts to modernise Italy's electricity transmission infrastructure. It also highlights innovative companies like Tratos, whose advanced conductor technology is essential for building a sustainable energy future.

The 380kV overhead power line upgrade between Rondissone and Turbigo is a shining example of how technological innovation and strategic planning can drive the transition to a sustainable energy future. With projects like this, Terna Rete Italia not only enhances the efficiency and reliability of the national grid but also paves the way for a greener, more resilient energy landscape. As we move towards a future powered by renewable energy, the importance of such infrastructure projects will only continue to grow, underscoring the need for continued innovation and investment in the energy sector. [\[1\]](#)



Queensland Government Delegation Visits Tratos Manufacturing Facility in Knowsley

Tratos' team, composed of Prof Maurizio Bragagni Esq OBE, CEO and Chairman, Mr Neil Ancell, Company Director, Mr Kevin Martin, Finance Director, Eng. Peter Waterworth, Technical Director and Mr Gianfranco Lutri, SHEQ Manager, was deeply honoured to receive a high-level delegation from the Queensland Government of Australia in its manufacturing plant in Knowsley.

The visit of the Australian delegation, led by the Honourable Mick de Brenni MP, Minister for Energy, Renewables and Hydrogen, and Minister for Public Works and Procurement, marks a significant step in recognising the strong position of Tratos in the Australian Ports & Mines cables market, as well strengthening trade and investment relations between Queensland and the United Kingdom, with a specific focus on the renewable energy sector.

Minister de Brenni and his team of Queensland Government officials are conducting a trade mission aimed at deepening ties between the two regions in alignment with the \$62 billion Queensland Energy and Jobs Plan. This ambitious plan seeks to revolutionize the energy landscape of Queensland by deploying over 1500 kilometres of high-voltage transmission lines, setting the stage for robust growth in the renewable energy sector.



The Tratos manufacturing facility, renowned for its expertise in producing high-voltage transmission lines, was chosen as the prime destination for the Queensland delegation due to its critical role in the Queensland Energy and Jobs Plan's implementation.

With over 55 years of experience in the cable-making industry, Tratos' engineering expertise is behind the development of highly specialised products for various sectors. Today, Tratos represents the world-renowned superior quality cable manufacturer, selling an extensive range of cables to 52 countries, manufacturing facilities in Italy and the UK and offices worldwide.

Tratosflex-ESDB® cable is already being used in the Ports of Sydney and Brisbane, while Tratos' robust Mining and Tunneling Cables are powering, controlling and monitoring equipment in many mines across Australia.

Minister de Brenni expressed his enthusiasm for the visit, stating, "This visit to Tratos is an essential component of our mission to better position Queensland in the global renewable energy market. The United Kingdom has made significant strides in this sector, and we look forward to learning from Tratos' expertise and exploring opportunities for collaboration that will benefit businesses of both Queensland and the UK."

"We were honoured to receive at Tratos- Knowsley manufacturing site the Queensland Government delegation, led by Minister de Brenni," commented Prof Bragagni. "This visit serves as a testament to our shared commitment to the renewable energy sector and our mutual desire to foster stronger ties between Queensland and the United Kingdom. At Tratos, we are excited to offer the delegation an in-depth tour of our facility, providing them with firsthand exposure to our cutting-edge manufacturing processes and technology."

The delegation's visit to Tratos provided a valuable platform for collaboration, knowledge sharing, and the exploration of opportunities to bolster trade and investment relations between Tratos, Queensland and the UK within the renewable energy sector. Tratos remains committed to driving the global transition to sustainable energy solutions and looks forward to assisting businesses worldwide to boost their "green credentials", bringing us closer to a more sustainable and greener future. 

CABLES FOR A MOVING WORLD

TRATOS HV®

based on IEC 60228, 60840 and 60811

Tratos is an international manufacturer and supplier of **High & Extra High Voltage** cables up to **245 kV**. Tratos HV® cables are distinguished by an **advanced technology** and construction, which provides **flexibility, lightness** and **strength**, low maintenance and simpler accessories to the request of high voltage cables.



Case study: Emirates Steel Industries

Tratos signed a contract with Italy's Danieli Corporation for the expansion of the Emirates Steel Industries (ESI) steel manufacturing factory located at Abu Dhabi's prestigious industrial city ICAD. Several kilometers of HV 72 kV cable have been supplied for this project.



www.tratos.eu

Tratos Cavi S.p.A - via Stadio, 2 - 52036 - Pieve Santo Stefano - Italy - tel. 0039 0575 794 329 - fax 0039 0575 794 246 - e-mail export@tratos.it

Tratos is fully compliant with the Restriction of Hazardous Substances (RoHS) regulations, WEEE Directive and REACH. Product Certification includes requirements for Environmental issues directly relating (Iso 14001) to the Product and Manufacturing processes (Iso 9001) as well as limited Health & Safety issues directly (BS OHSAS 18001) relating to the Product and Manufacturing processes.

Railways & Mass Transit

Working with some of the largest rail sector companies in Europe, Tratos specialises in the production of digital-ready signalling, power, control and telecommunications cables - bringing technological innovation and innovative cable design to all its products.



Tratos awarded five year framework contract by Network Rail

Network Rail has awarded independent Merseyside based cable manufacturer Tratos UK Ltd a five-year cable supply framework contract.

The global technology company, which has been innovating in the rail sector for more than 50 years, was awarded the contract after meeting the stringent quality, technical and commercial requirements of one of the UK's largest blue-chip organisations.

Welcoming the news, Tratos CEO Dr Maurizio Bragagni said: we are looking forward to working closely with Network Rail. We are unusual in the cable industry – in what we do, in the way we do it and in the way our company operates. We are in the business of solving problems, creating solutions that contribute to a cleaner and environmentally friendly way of keeping the world's mass transit industries moving. I would like, once again, to commend the particularly enlightened thinking of Network

NetworkRail



Rail in providing this opportunity to an innovation-led manufacturing engineering company like Tratos.

The products to be supplied to Network Rail will be manufactured and stocked at Tratos' Knowsley facility in Liverpool, a site that we have recently invested upward of £25 million, an investment including a technologically advanced cable testing facility which will be used in servicing the Network Rail contract over the next five years. [fr](#)



Tratos UK Ltd wins Network Rail cables approval



Advanced technology cable maker Tratos has gained Network Rail cables approval for its family of enhanced unarmoured signalling power products.

The independent British manufacturer won a Network Rail Certificate of Acceptance (Network Rail product approval no: PA05/07165) for cable designed for signalling power distribution systems in accordance with NR/L2/SIGELP/27408. The cables feature glass fibre weave (FGT) and water blocking (WB). The range comprises both Copper and Aluminium conductors with either PVC or LSOH sheathing. Copper conductors are stranded and can be either circular or sectoral shape dependant on CSA. The formal acceptance by Network Rail Acceptance Panel (NRAP) authorises Tratos' Railways' product to be used on projects for which Network Rail is Infrastructure Manager under the ROGS (Railways & Others Guided Transport Systems) regulations.

Chris Harris, UK Sales Manager, Mass Transit, for Tratos said: "This is a significant milestone for Tratos. Rail is a core sector for us. The Tratos sales & technical team is delighted to offer Network Rail PADS approved Enhanced Signalling Power Cable. We are focused on innovation and quality and have a particular strength, as well as a proven track record, in the rail sector, so this latest ac-

ceptance is very welcome." The Network Rail product acceptance process applies to products intended for use on or about rail infrastructure and ensures they are safe, reliable, fit for purpose, compatible and do not export unacceptable risks to the infrastructure.

Tratos was one of a small number of British companies to win a **Queen's Award for Enterprise: Innovation** last year, taking the award for its enhanced-performance JBA® cable compound. The new cable technology brings big advances for Railways, Mass Transit and other industries.

Tratos CEO Dr Maurizio Bragagni said: "The complete range of cables will be manufactured at the Tratos Knowsley Merseyside, factory. We are unusual in this industry – in what we do and in the way our company is 'built'. We are an independent British SME. I would like to commend the particularly enlightened thinking by Network Rail in opening the door to a smaller and more agile innovation-led company like ours."

Construction or maintenance work on the UK rail infrastructure is safety-critical. Network Rail is dedicated to ensuring that only products that have passed its own very thorough performance and safety tests are approved for use on its sites. Network Rail and its appointed contractors can now purchase and install Tratos' enhanced signalling power cable product range (below) across all Network Rail regions.

Product Range: NR/L2/SIGELP/27408

- 2, 3 and 4 Core CU/XLPE/WB/FGT/LSOH
- 2, 3 and 4 Core CU/XLPE/WB/FGT/PVC
- 2, 3 and 4 Core FAC /XLPE/WB/FGT/LSOH
- 2, 3 and 4 Core FAC /XLPE/WB/FGT/PVC
- 2, 3 and 4 Core SAC /XLPE/WB/FGT/LSOH
- 2, 3 and 4 Core SAC /XLPE/WB/FGT/PVC

On top of Network Rail cables approval, Tratos develops and manufactures advanced technology cable for applications including defence; aviation; ports and maritime; highways; rail and mass transit; construction; oil and gas; green energy, wind power and nuclear fusion; power transmission and communications. [f](#)



Cable theft rail delays could be avoided

January saw UK railway cable thieves in action again, costing time and money and causing chaos, this time in Wales. Following the **theft of signalling cables** between Cardiff Central and Llantwit Major train services were cancelled and others delayed by up to an hour, with disruption throughout the day.

One of the most high-impact and all-reaching economy disruptors is railway cable theft. It leaves commuters angry, frustrated and in the wrong place – and trains displaced which lengthens delays.

But the chaos goes further than just being late for work or missing meetings. Last year, according to the latest figures, Great Britain rail delay times because of cable thefts has reached a five-year high.

A BBC investigation earlier in 2019 found there were nearly 950 hours of delays across more than 7,000 journeys in England, Wales and Scotland last year. Other figures, from British Transport Police, revealed an 85% increase in live cable thefts last year while **Network Rail** said thefts cost the taxpayer millions of pounds each year. But the cost the country's businesses is considerably higher as freight – as well as human resources – fail to reach their destinations.

Britain's rail network is designed to fail safely. If a cable is cut trains stop while the issue is located and resolved. Thieves, however, risk injury and death.

Independent UK cable innovator Tratos, part of the Tratos Group, asks why Britain is continuing to put up with these disruptions when there is a full-proof and cost-effective solution already in place which, adopted wholesale, would thwart thieves. CEO and Chairman of Tratos, Dr Maurizio Bragagni, said: "My company brought its technical solution to the market in 2010. I believe the reason it hasn't been taken on board wholesale is that the technology was just too far ahead of its time.

"Tratos developed a range of options to make cable theft less profitable for thieves and traceability easier for the police almost a decade ago. Its cable has the added bonus of deterring metal merchants from receiving stolen goods and, because copper either doesn't feature or its levels are negligible, it is commercially unviable for thieves.

"We use aluminium rather than copper as a conductor. Aluminium has a lower scrap value (stealing 1000 metres of cable is about 75% less profitable than copper). Alternatively, aluminium clad steel conductors – very difficult to separate for scrap and hence very low value – can be used."

To doubly secure cable, the company's cable improves traceability through marking with cable owners' ID.

Dr Bragagni added: "For even greater security we can incorporate an identity thread or strand registered to a specific manufacturer. We place the thread amongst the strands. The strand option allows for a 2mm or larger strand to be placed in smaller

sized cables and make the rest up to the required resistance/conductor size with smaller wires. Even if the cable was burned or stripped down to the metal, identification is still possible. "And we can alarm it too. Tratos can manufacture cable with



a single fibre running through it which will activate an alarm when cut and even identify the location of the cut. This would help the police with response time to the location and help to make a repair also to the affected length to lessen the downtime."

Theft and damage to railway cables cost UK rail infrastructure organisations £millions in compensation to train operators too. He went on: "We have what rail operators need and encourage them to look to cable manufacturers – we have the right solution and this cable is less expensive too.

"Tratos also works closely with contractors to ensure cable drums arrive at set times to coincide with installation so it is not

left lying around."

Delays doubled from 2016-17, when 400 hours were recorded across 3,000 train journeys, according to Network Rail, and most of the trains affected were in or around London – an economic bullseye.

Global copper price rises are a compelling incentive for thieves who operate in organised gangs, stripping cable for its copper and making lucrative scrap sales.

As the thefts are driven by the price of the metal, and the ease of harvesting it, perhaps it is time rail operators looked to technology and clever-thinking to outsmart the rail cable raiders. [FT](#)



Network Rail acceptance for **Tratos** aluminium stranded conductors for electrified lines

Independent cable manufacturer Tratos UK Ltd has won Network Rail Certificate of Acceptance PA05/07385 for its Aluminium Stranded Conductors for electrified lines as an earthing and bonding conductor.

The cable is accepted for use as an earthing and bonding conductor on 25kV a.c. OLE Electrified Lines for use within more than two thirds of Great Britain's Network Rail controlled 20,000 miles of railway infrastructure.

Tratos' accepted cable includes PVC insulation containing an ultraviolet inhibitor and will be used in tunnels and areas subject to Section 12 Fire Regulations, namely the Fire Precautions (Sub-surface Railway Stations) regulations 2009, (Low Smoke Zero Halogen materials).

The acceptance for the Merseyside-based (Knowsley) manufacturer's conductor comes just weeks after the company secured supplier status within a £multi-million 5-year framework contract. Tratos supplies rail networks globally including Italy's Alta Velocita (High Speed Train) project which included its fire-resistant fibre optic cable, the Piccadilly Line extension to London Heathrow Terminal, London Underground, King's Cross St. Pancras Station, Madrid Metro and part of Manchester's £350m 5.5km Trafford Park Line Metrolink Extension, part of the UK's largest light rail network.

Network Rail owns, operates, and develops Britain's railway infrastructure across 20,000 miles of track, 30,000 bridges, tunnels and viaducts and thousands of signals, level crossings and stations.

It manages 20 of the UK's largest stations while the others, more than 2,500, are run by the country's train operating companies.

*The rail network is divided into five regions across GB; Eastern, North West & Central, Scotland's Railway, Southern and Wales & Western. The regions support 14 routes responsible for day to day delivery of train performance, maintenance and renewals. This new structure was introduced from June 2019 to bring our people closer to our passengers and the communities we serve, with a focus on operations to help us improve train performance.

Our five regions are supported by network-wide functions and services. Our new Network Services directorate coordinates national initiatives that impact the operational railway such as freight, incident management, security and performance. Route Services provides business services delivered with a strong customer services culture.

System Operator, Technical Authority, and our network-wide functional teams – Human Resources (HR), Chief Financial Officer's Directorate (CFO), Communications and Property - also support our new regions. The System Operator provides a whole-system, long term view informed by detailed knowledge gained from planning and timetabling the network, and from the industry-wide interfaces it has with customers, funders, regions and routes. [f](#)



By your side... every step of the way

Engineering, Procurement & Construction

Tratos can carry out the detailed engineering design of a project, procure all the equipment and materials necessary, and then construct the installation to finally deliver a functioning asset to clients. We also supply a full after-sales support service following completion.



Ports & Maritime

Tratos is an international manufacturer and supplier of Special Cables for mobile applications. Its Tratosflex range includes cables for mono-spiral and multi-spiral reeling; coiling in baskets, festoon systems and spreaders. Our cables can be used to supply power, control and signalling functions including fibre-optic cables and cranes operating on high speed applications up to 300 mt/min.

With many years of experience, the company has several case studies in the industry.

TRATOS AT DUSS TERMINALS GERMANY

DUSS Terminals Germany is one of the biggest Inter-modal terminal organizations in Germany. TRATOS, as a main supplier of reeling cables for almost ten years, has just renewed the long-term frame agreement. Tratos- Duss Terminals long-term relationship is strengthened by supplying individual reeling cables products for new and existing intermodal cranes including several related services. From Hamburg to Basel DUSS terminals provide their services in strong cooperation with Deutsche Bahn. [↗](#)

LONG BEACH AUTOMATIC TERMINAL LBCT USA

Long Beach Container Terminal (LBCT) is the first fully-automated container terminal in the US and the cleanest and most environmentally-friendly terminal in the world.

The terminal features a model zero-emission yard, replacing gear run by diesel with gear powered by electricity and low-emission fuels.

LBCT is completely remotely operated with electric gantry cranes and also features adjacent rail lines that will eliminate thousands of truck trips from the ports on through the warehouse network of the metropolitan area and region of Southern California and beyond.

Navis N4 serves as the brains of the automated operations at LBCT, controlling when the container is supposed to move, which piece of equipment is going to move it and where it's going to be moved. [↗](#)

GENOA PORT PSA VOLTRI ITALY

PSA Voltri in Genoa, Italy, is a state-of-the-art facility located in the heart of the Mediterranean sea, flagship of the PSA group in the region since 1998. Operating more than 2.000.000 TEU annually, in 2015 the terminal started a process to renew and upgrade its Port Machinery in the search of the most technologically advanced and environmentally friendly solutions, and the capacity to operate Ultra Large Container Vessels (ULCV) of 20.000 TEU plus.

PSA Genova Pra', located in the Port area of Pra', is the largest terminal reality in the Port of Genoa and in the upper Tyrrhenian Sea, alone it handles 60% of the containerised traffic of the entire Port of Genoa.

Like the Venice VECON terminal, the Genova Pra' terminal has the PSA International group, based in Singapore and Antwerp, as its largest shareholder, which in a process of continuous evolution and expansion, consists of over 30 container terminals in 19 countries around the world.

PSA International group is a leading Global Port Operator whose portfolio comprises 60 rail and inland terminals, many of them equipped with the most advanced port machinery. TRATOS proudly supplies various of these facilities delivering and servicing cables for this port operator across the globe, in their most demanding and advanced applications.

The port of Pra' is a point of reference in the context of international maritime routes and, thanks to an extensive rail and motorway network, it is a hub of primary importance for Italian as well as central and southern European markets. [↗](#)



Qingdao Qianwan Terminal, China



Case studies Reeling

QINGDAO QIANWAN CONTAINER TERMINAL

Operating 24 Hours a day, 7 days a week, 356 days a year, the Qingdao Qianwan Container Terminal (QQCT) is located in the Qingdao Economic & Technology Development Zone next to the customs bonded area and only 68 km away from Qingdao city, connected by the Jiaozhou Bay Expressway. This is a natural silt-free, deep-water terminal that doesn't freeze. QQCT is connected globally by more than 170 container marine lines.

QQCT has outstanding road access with the Jinan-Qingdao Highway, Yantai-Qingdao Highway and 308 National Highway providing access to the burgeoning industrial and agricultural regions of the Shandong Province.

The Tongshan Highway running North-South along the coast, the Qinglan Highway running east to the west and Jiaozhou-Huangdao Railway inside the terminal altogether, QQCT has excellent connections with the hinterland. Furthermore, Jiaozhou Bay Cross-sea Bridge and Jiaozhou Bay Subsea Tunnel have greatly shortened the distance between QQCT and Qingdao downtown.

HPH BEST TERMINAL BARCELONA

Officially inaugurated in Sept. 2012 and named after BEST (Barcelona Europe South Terminal), this project was one of the most relevant ports ever built by the referential HPH (Hutchinson Port Holding) group. Currently, it has 11 STS and 54 ASC, in 27 automated blocks. Handling more than 2.300.000 TEU per year, this state-of-the-art terminal performs some of the best productivity rates in Europe and across the Mediterranean.

In December 2005 the Port Authority of Barcelona launched a public tender for the construction and operation of the new Muelle Prat container terminal, located in the new phase of the Port de Barcelona, being the culmination of a stage of development that the Port de Barcelona initiated with its Director Plan in 1990. Hutchison Port Holdings Group and Grupo Mestre submitted a joint bid, combining the Group's experience and Grupo Mestre's local tradition in port operations at the Port de Barcelona.

In May 2006, the Port Authority of Barcelona awarded the concession contract to the bid submitted jointly by Hutchison Port Holdings and Grupo Mestre. In November 2006, the Muelle Prat concession was granted and the developing phase of the terminal was initiated by Hutchison Port Holdings, since 2011 the only remaining investor.

The construction and development of the terminal is a combination of experience and implementation of modern technol-

ogy resulting in a great qualitative and quantitative leap in the design of container terminals.

In mid-2012 the new semi-automated terminal was named Barcelona Europe South Terminal (BEST) and entered a new phase of testing. BEST was officially inaugurated on September 27th, 2012.

Since the launch of the terminal operations have far exceeded expectations and standards on which its design was based, making BEST a worldwide reference terminal. Hence, Hutchison Port Holdings decided to implement the semi-automated system to other terminals among the group.

With BEST's effective and successful operations and the recognition received among its customers and users, Hutchison Port Holdings decided to continue developing BEST with a new phase of expansion to the terminal.

PEEL PORTS LIVERPOOL2 CONTAINER TERMINAL

Peel Ports Group is a unique network of strategically situated ports, hubs, terminals, shipping lines and state of the art services. They operate 7 ports in the UK.

They understand the unique needs of the supply chain, providing tailored, end to end logistics solutions designed to help individual businesses engage and optimise their own performance.

Infrastructure is at the heart of everything they do, they listen, adapt, build and create solutions with their partners in mind.

JEBEL ALI FREE ZONE

Jebel Ali Port operated by DP World, UAE Region, is the largest in the Middle East and the flagship facility of DP World's portfolio of over 80 marine and inland terminals across six continents. It is a deep port located in Jebel Ali Dubai, United Arab Emirates. Jebel Ali Port, the world's largest man-made harbour, is a gateway hub that enables trade across the region and beyond. It is a vital link in the global trade network, connecting eastern and western markets with North Africa, the Middle East, and South Asia. As DP World's flagship, it is the largest seaport in the Middle East and ranks among the top 10 container ports of the world.

The port's container handling capacity has grown from 18 million TEU (twenty-foot equivalent units) to 22.4 million TEU. Jebel Ali Port has been voted "Best Seaport - Middle East" for 24 consecutive years. As an integrated multi-modal offering sea, air and land connectivity, complemented by extensive logistics facilities, the Port plays a vital role in the UAE economy. It is a premier gateway for over 80 weekly shipping services, connecting more than 150 ports worldwide.

Let's take another turn

Our cables have been continually working for many years with high speed applications all around the world.

Virginia (USA)

Throughput: 1.745.228 teu

Speed 300 m/m

Tratos cables have been working since 9th March 2010

Rotterdam (Holland)

Throughput: 9.743.290 teu

Speed 270 m/m

Tratos cables have been working since 3rd March 2008

TratosFlex ESDB

Tratos books major orders for state-of-the-art greenfield automated crane terminals

Tratos, with more than 50 years of experience in the cable-making industry, has secured a prominent place among the global manufacturers of electrical, electronic, and fibre optic cables. Our reputation for producing high-quality products has earned us recognition as a leading supplier to some of the world's most advanced technology industries, in particular in the port automated crane business.

The company has a wealth of knowledge and expertise and recently secured multiple major orders related to Port Machinery projects for the years 2023-2024. With a global reach and a reputation for producing high-quality bespoke solutions, Tratos has been a key player in the port & terminal market for decades, particularly in manufacturing flexible crane cables for automated cranes specially designed for high-speed and high-pulling tension applications.

Meeting Modern Automated Crane Industry Standards

In the current year, the ports and terminals sector is making significant strides towards modernization by initiating various new greenfield projects incorporating advanced technology. Among these projects, several leading global Port Operators and OEMs have once again placed their trust in Tratos as their preferred supplier of reeling cables – a crucial component for the successful operation of these projects. With Tratos's high-quality reeling cables, these projects will meet the modern industry's standards and requirements while minimising their environmental impact.

Tratos is delighted to announce that we have successfully secured a substantial high-profile number of orders for our innovative reeling cable solutions for automated greenfield terminals. These state-of-the-art facilities are designed to optimize efficiency and productivity, increase safety, and minimise environmental impact.

Different port terminals worldwide are set to receive new electrically driven high-speed yard cranes, and they will be equipped with top-of-the-line TRATOSFLEX ESDB reeling cables from a well-known British-Italian independent cable manufacturer. The ports in question are located in Barcelona (Spain), Virginia (USA), Sines (Portugal), London (UK), Gdansk (Poland), and Dong Yin (China).

The above-mentioned portfolio of TRATOSFLEX-ESDB cables is designed to support over 125 new, high-speed, automated

cranes from four different OEMs in Finland, Austria, and China.

Extensive Presence in the Port and Maritime Sector

With over 20 years of experience in the port and maritime sector, Tratos is a recognized leader in designing, manufacturing, and supplying reeling cables for modern, last-generation, high-speed automated cranes, including ASC, E-RTG, A-RTG, or A-RMGs.

Tratos is proud to have a presence in more than 300 terminals, including continuous presence on high profile, high-speed challenging applications in Rotterdam (Netherlands), Balboa (Panama), Qingdao (China), Algeciras (Spain), Hamburg (Germany), Surabaya (Indonesia) or Long Beach (USA). Our success in the reeling cables market for ports and terminals is due to continuous approval and support from top global port operators and selection by crane OEMs. Our long-standing customers in mining and service spare parts and other orders from

bulk ports contribute to a large volume of cables spread across different continents.

TRATOSFLEX-ESDB cables are known for their success in some of the most high-profile global projects. The unique construction of TRATOSFLEX-ESDB cables has been recognized by leading crane companies, who appreciate the extended life that can be achieved with this cable. We take great pride in providing our clients with cutting-edge solutions that align with their business objectives. [\[i\]](#)



Fibre Optics

Tratos believes Britain's broadband is in danger of developing into a block on the country's economy as alternative routes to high speed connectivity and huge gains in download pace – available now – are ignored.

As a global player in fibre optic cable, Tratos wants to be part of the UK's solution. It is one of a number of smaller, more agile and innovation-focused companies that could be instrumental in making the change. With more than 20 years' experience in the UK and Europe, Tratos has the 'smart' fibre cables that shoot down some of BT's arguments on installation expense/disruption as copper gives way to fibre.



Tratos wins 20m euro fibre optic cable order for Tim

Tratos has announced a new 20 million€ fibre cable order from Italian telecoms company TIM. The company has supplied Telecom Italia since 1984 and provides 26% of the Italian market with fibre cable.

Tratos' latest contract for the telecoms giant will see it supplying the order for TIM's FiberCorp. The order is the continuation of a relationship that has remained strong for more than 30 years. It has been a significant contributor to Tratos' rapidly increasing share in the global telecoms market and is recognition of the independent manufacturer as an innovative producer of the highest quality advanced technology cable for the sector.

Tratos President Albano Bragagni said: "Tratos continues to win favour with telecoms companies thanks to the quality of the technology and the levels of service we offer. What the telecoms industry needs, as the appetite for quick and reliable connectivity increases, is high-quality fibre optics that offer consistent high performance. In other words, the quality cable is the smart investment – because choosing the best allows networks to stay competitive."

TIM's own statement confirmed its commitment to supporting Italy and the country's economic growth by contributing to the development of a strategic infrastructure for digitisation – a vision that demands top performance and efficiency.

FiberCorp by TIM, owned by American investment fund KKR and telecoms company Fastweb Italy, is moving towards the creation of an ultra-broadband network with fibre optic cable at its heart. FiberCorp is TIM's fixed access business which includes its own FTTx (where FTTx stands for "FTTCab or FTTE") operations and its FlashFiber joint venture with rival Fastweb. This summer TIM agreed to sell a 37.5% stake in the unit to private equity firm KKR for €1.8 billion and has also signed a deal with Tiscali, where Tiscali will invest in and use the network too. The partnerships and deals proceed to the creation of a single access network for Italy. Core stakeholders are FiberCorp, merging with Open Fiber, the state-owned infrastructure company created by utility Enel and investment bank and TIM shareholder, Cassa Depositi e Prestiti (CDP). TIM will control more than 50% of the new body "AccessCo", but will share governance.

FiberCorp is TIM's new company and sees its secondary network (from the street cabinet to the customers' homes) and the fibre network developed by FlashFiber (a TIM and Fastweb company) converge. FiberCorp has already taken the first steps to build its own network, closing and assigning the first of the two tenders for the supply of fibre optic cables to support FiberCorp's FTTH (Fibre to the Home) cabling plan. [\[1\]](#)



SUBMARINE

What are submarine cables used for?

What began in the English Channel in 1850, with the first submarine cable in the world laid by the steam tug Goliath, sparked the birth of a global market like no other.

According to Grand View Research, in 2019 the submarine-cables market was worth \$21.3 billion and was expected to grow at around 7.1% from 2020 to 2027. As late as August of 2020 Technavio's subsea cable market report (fibre) predicted a \$4.34 billion growth (2020-2024), despite the impact of Covid. Even with the changes that hit the world economy, as late as November 2020 industry analysts were still predicting a 48% growth for the Europe-based submarine fibre cable market.

A voracious appetite for broadband speed is the main reason the ocean-floor market has remained so buoyant. So too is the spiralling volume of internet users. They are driving new submarine fibre cable products and infrastructure upgrades.

When the steam tug Goliath set out to sea, just short of 200 years ago, it was a revolutionary communications event, but no one imagined how the vessel's voyage would change the way the world worked. Now oceans were no barrier to something approaching real-time communication. Then the exciting new

method of communication was the telegraph. Just 16 years later the first commercially successful transatlantic submarine cable was laid between Valentia, Ireland, and Heart's Content, Newfoundland. Submarine cable networks had made their mark on the world and the momentum would only increase.

Tratos has been manufacturing subsea cables since 1966 and is at the forefront of innovation-led subsea fibre cable technology in a market that remains dynamic and challenging. By supplying its high-quality subsea cables to the ports around the world, Tratos continuously is supporting the global endeavors of port authorities in any part of the world in upgrading and improving their operational capabilities, which further contributes to the sustainable development of ports and achieving the 17 UN Global Goals.

Tratos is following in the footsteps of some of history's giants of innovation. It is ensuring the capacity to extend world-connectedness continues. It is advancing fibre technology – for the benefit of international trade relations – and faster ways to tackle world problems together.

From very early on this new and exciting industry was lively and vibrant, with companies merging and acquisitions abounding



as stakeholders fought for the biggest share of the market. The telephone was invented in 1876, driving a seismic communication change. Just over a decade later and the world's first telephone submarine cable traversed the English Channel. Transatlantic radio followed.

The scale of the opportunities presented by this new and smaller world were immense. So were the challenges. Mechanical and performance challenges as well as logistics' challenges. For cable it was challenges of pressure, one of the harshest and most corrosive of environments and, of course, the challenges of installing the cable itself.

TRATOS' FIBRE SUBMARINE CABLES TODAY

In the time that has elapsed since the sea-bed was first explored as a conduit for global communication cable networks, the world's most agile innovators, like Tratos, have adapted and developed submarine cable solutions for a range of other important jobs.

Carrying power for offshore wind fields for example. Submarine cables carry the highest voltages as well as the greatest number of secure telecommunication links between islands, countries and continents. Tratos manufactures power cables as well as communication cables for submarine applications, including combined power and communication cables, and of course it uses fibre-optic cables and components.

Submarine cables now carry power and links to the outside world for isolated or widely spread communities.

The manufacture, installation and operation of Submarine Cables are very different to those of land cables.

Tratos' submarine cables are the result of the skill and expertise of seasoned engineers, most of whom have more than twenty years' experience. The company invests constantly in the latest technology, materials and human resources needed to meet the highest performance requirements in the field. The latest generation of cables combines tried and tested manufacturing techniques with state-of-the-art technology to create cables of phenomenal strength, resilience, and flexibility.

Tratos Submarine cables are tested extensively in in-house and independent laboratory trials as well as in real-life installations. They have proven themselves exceptionally reliable.

Working with customers, Tratos can tailor-make cables to meet the demands of any application. The innovation work goes on.

Tratos' subsea cables offer:

- **HYBRID** – Energy & communication, power & fibre – in one cable. Two services, one installation means cost savings and reduced operative exposure to harsh environments.
- **STRENGTH** – Integrity to rely on. Strength, reliability and consistency, Tratos' cables are built to withstand the tension and torsional forces applied to them during installation and operation..
- **FLEXIBILITY** – When installation environments are at their harshest, a flexible, high quality, reliable, 'right first time' cable is the answer.

The newest hot spot for submarine cable networks

is Latin America.

New projects have bloomed as data consumption, cloud, streaming, connectivity demands and digital media consumption has ramped up. In part this can be attributed to the Covid effect, as businesses have scrambled to reinvent how they do business and where they do it from.

The digital economy is not shackled by its relationship with the traditional economy. Consequently, it is well positioned to grow as its traditional forefather cools down. Good digital health is considered essential for business growth and that, in turn, has pushed demand for bandwidth expansion.

Latin America is expected to be the world's fastest-growing region in interconnection bandwidth capacity in the next few years according to an equinix report.

Content and digital media rely heavily on international cabling, and Latin America is pushing at boundaries. So much so it is tipped to become a world capital for the highest growth rates in this, the first true digital era.

WHERE NEXT?

Since the 1990s, the submarine fibre market has been seen rapid development in optical technology, bringing efficiencies and bigger capacities. It is a sector that has had to create its own language. It is unlikely that those behind the early subsea cable-laying voyages would be able to process capacity in Megabits, let alone Terabits if they were to take a look at where what they started is now.

Cable systems can send multiple optical wavelengths over a single fibre pair. That means using less cable, and reductions in cost.

Increasing investments in offshore wind farms, more data traffic, and a rising tide of other demands are keeping submarine power cables to the fore. Today they are used for power transmission to oil rigs, carry power generated from offshore wind farms to power stations, and create inter-country and island connections.

Submarine communication cables carry around 90% of the world's cross-continent data traffic. They are the most valued cables for some of the world's mega companies, from Amazon to Google.

And innovation goes on. Japan's floating wind farm, 12 miles out to sea, is likely to see 140 floating wind turbines. Manufacturers have to not only respond to needs but anticipate them and design and produce accordingly. The Europe India Gateway (EIG) submarine cable system was upgraded in early 2020 to assure connectivity for Europe, Middle East, and India's business communities.

Tratos is honoured to be able to join the global forces toward achieving Envision2030 Goal 14: Life Below Water's targets:

- By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.
- Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels. [\[T\]](#)



Tratos Secures ENI's Approval for Submarine Umbilical Cables, Strengthening Leadership in the Subsea Sector




In a significant milestone for the subsea cable industry, Tratos has received official approval from ENI for its Umbilical Cable for Subsea Wells with or without Laying Electrical (BB06AF05) and Signalling Subsea Cables (BB09AB07). This approval not only reaffirms Tratos' technical excellence and reliability but also paves the way for deeper cooperation between the two companies in the highly specialised and demanding subsea sector.

With decades of experience in pioneering cable technology, Tratos has consistently set new benchmarks for performance, durability, and innovation. Its umbilical cables for subsea wells are designed to operate in extreme underwater environments, ensuring efficient power transmission, control, and communication between surface facilities and subsea equipment. ENI's approval of these cutting-edge cables is a testament to Tratos'

unwavering commitment to quality, safety, and sustainability in critical offshore operations.

This achievement strengthens Tratos' dominance in the subsea cable sector, reinforcing its position as a trusted partner for global energy giants. By securing this approval, Tratos enhances its collaboration with ENI and expands its influence in the offshore oil and gas industry, where reliability and cutting-edge engineering are paramount.

As the demand for high-performance subsea cable solutions grows, Tratos continues to lead the charge, demonstrating its capability to meet the most rigorous industry standards. This latest recognition from ENI underscores Tratos' role as an industry leader, setting the stage for future partnerships and further solidifying its reputation as a premier provider of submarine umbilical technology. 

Let's take another turn

Our cables have been continually working for many years with high speed applications all around the world.

Virginia (USA)
Throughput: 1.745.228 teu
Speed 300 m/m
Tratos cables have been working since 9th March 2010

Rotterdam (Holland)
Throughput: 9.743.290 teu
Speed 270 m/m
Tratos cables have been working since 3rd March 2008

TratosFlex ESDB

SINCE 1966



The **future** coming from **the past**

By Dr Maurizio Bragagni

Tratos is a traditional family-owned company that is very successful in exporting its products to 36 countries, (more than 80% of the production is export-dedicated). The company has a strong executive team, mostly family members, who make it their business to listen to senior team members so that decision-making is well informed and better-placed to drive implementation.

Tratos had to break with traditional marketplaces and products to grow - by building unique business modules, forging direct stakeholder relationships (customers, suppliers) and refusing

to deal with distributors or agents. In short it has survived and flourished for 50 years thanks to a focus on innovation.

As CEO, I lead a business that is part of one of the fastest-moving commercial environments; a sector that is driven by innovation and repeatedly defined by the art of the possible. The business is cable manufacturing, but at Tratos, we do it differently. Innovation is one of the pillars around which the business has grown. There's still much to do - to find out more about innovation in business, and how a culture of innovation can be nurtured. The best way to do this was to look at best practice and

apply the thinking to Tratos to establish how deep innovation was ingrained and what more could be done to encourage it. In addition, we talk to our customers: we deal with them directly.

That means we can establish, first-hand, their technical needs. This direct line to customers' technical people creates the opportunity to produce radical technological solutions alongside our clients. As a result, Tratos stopped selling a cable product and began selling innovation-led solutions (TratosInnovation).

By identifying the hot spots for innovation within Tratos earlier, and facilitating an easier route to possible change, how might that accelerate the business? The company survey results "How Innovative Is Your Company's Culture?" carried out earlier this year, provided a clear path to better innovation. The employees, who took the survey, gave the company high marks on external success.

They recognised that customers perceived Tratos as an innovative organisation and, as a consequence, Tratos' performance is much better than other firms in the industry, and in particular positive financial results are driven by the Tratos innovation efforts.

Tratos treats change as a long-term strategy, steering a comprehensive and disciplined approach to innovation, developing new capabilities.

Employees ranked the company's individual component of success poorly. Individuals felt a lack of participation in the innovation initiatives. We are working on the solutions.

To survive and flourish, in the most challenging of environments, Tratos has focused on niche markets and on that all-important innovation. In the 1900s it developed optical fibre products (TratosOpticalFibres), in the 2000s, it produced cables for mobile applications, such as reeling cables for port cranes, and specialised in high-speed products (TratosFlex). In the 2010s, Tratos won an innovation award for supplying the Superconductor cables for the world-stage Energy Fusion project (TratosFusion).

Innovation around the way we choose to run our business as well as the cable technology we deliver has been pivotal to the company's success.

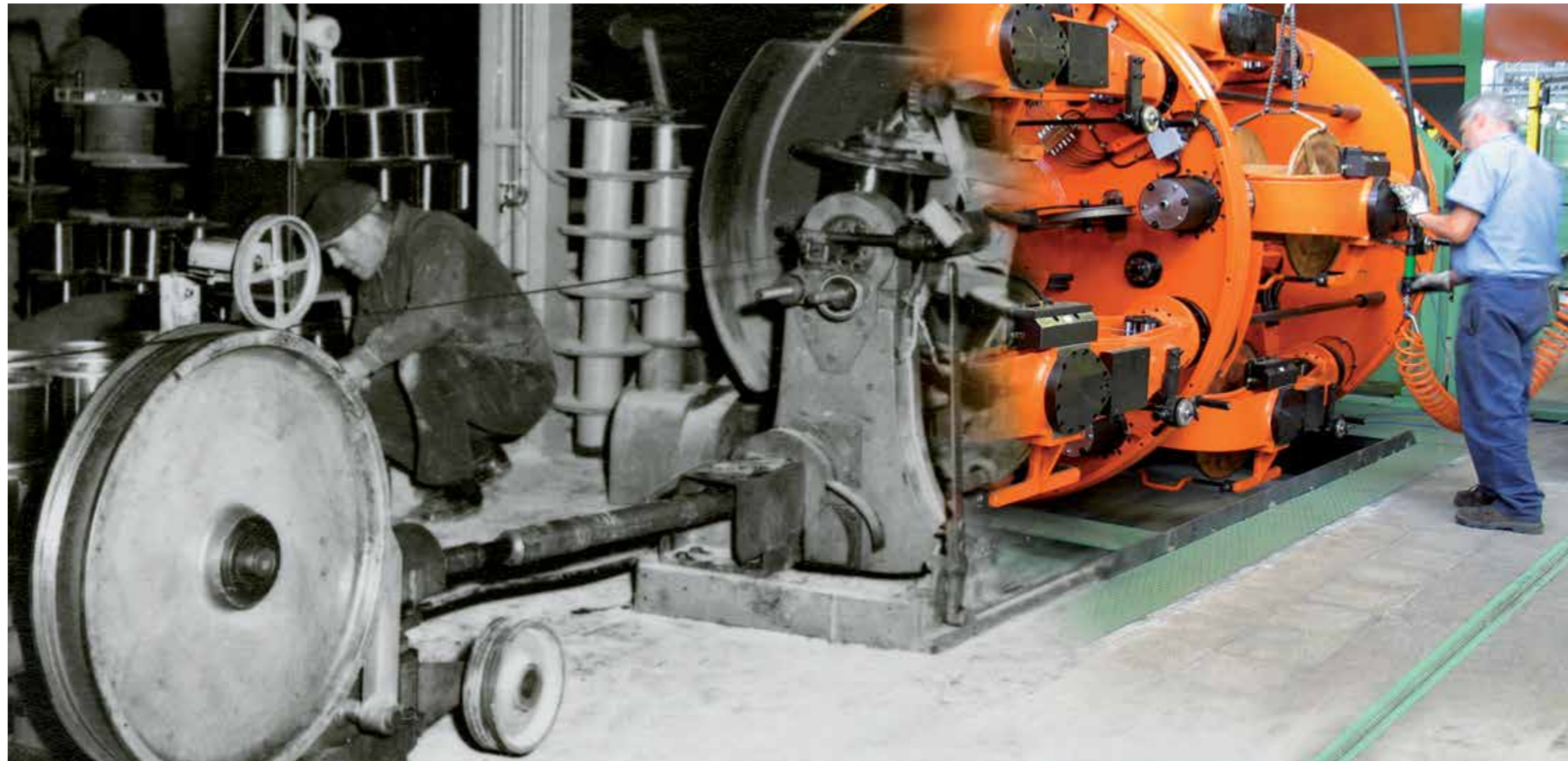
Cables are made from raw materials and compounds managed and controlled by large organisations, so the bargaining power of the suppliers is significant.

To control its own raw materials' supplies Tratos invested in its own compounds to achieve additional competitiveness. This fuelled diversification and dominance in niches by investing heavily in alternative products.

Tratos' decision to engage on a differentiation platform included introducing radical technology to previously uneconomical markets. Due to years of competition on price, several markets had become innovation wastelands. Companies were losing money, and the markets were in decline. Tratos turned this to advantage, revitalising the most depressed markets with carbon fibre innovation for overhead conductors (TratosOHC), overtaking existing players.

Based on the previous analysis and my experience of the industry, I can identify two principal ways to achieve success in the cable manufacturing industry: large economies of scale or innovation.

Add to this, access to a highly-skilled workforce and real insight into your business and you have something powerful to bring change and step up to even greater innovation. [\[1\]](#)





Where does the Tratos story start?

A family tradition & a great history

So where does the Tratos story start? Who better to tell us than Dr Ennio Bragagni Capaccini, Vice President, who remembers the story of his late Grandfather, Egidio Capaccini, and how he came to be the founder of Tratos Cavi spa.

"It is said that every end marks a new beginning. For my Grandfather, Egidio Capaccini, that time came at the culmination of the Second World War. His home town in Southern Tuscany had been almost completely destroyed by the Germans and, with little or no work available, he packed his bags and travelled to Argentina to find employment. After taking work in a new company as a

General Worker for a year, fate stepped in and Egidio was offered a job in a factory making cables. With his passion and natural aptitude for business, he swiftly rose up the ranks to become the General Manager, as well as a shareholder in the company.

In 1961, Egidio returned to Italy to recuperate after suffering a heart attack. However, rest was not the only thing on his mind. Egidio had bigger dreams - dreams of setting up his own company. When he was back to full strength, he began working as a consultant, which gave him the chance to earn money and travel the world, meeting many different people and learning

more about the cable industry. Five years later, with enough funds and a great deal more experience under his belt, he returned to Italy and finally fulfilled his dream by establishing Tratos Cavi Spa. He found employees from the remnants of the textile industry that had once flourished in Southern Tuscany, whose experience proved useful when it came to covering the cables with textile, as was the practice at that time. The business expanded over the years and Tratos cables quickly gained a reputation for being exceptionally well-made and at the forefront of innovation.

"Egidio enjoyed running the business for more than 13 years until his health began to decline and, sadly, he passed away in 1974 after suffering another heart attack. His daughter, Marta Capaccini and her husband, Albano Bragagni, subsequently took on the business and Tratos has continued to expand whilst remaining a family-owned business."

The company is now an international cable manufacturer of repute, selling an extensive range of cables to 52 countries worldwide with manufacturing facilities in Italy and the UK. Strong ties also remain with IMSA, the factory in Argentina where it all started.

Much of the company's success since 1974 can be attributed to the master plan of Albano Bragagni, the current President. With his commitment to developing innovative new products and responding intelligently to opportunities in growing markets, Albano has expanded the business exponentially.

Thanks to his passion in driving the business forward, Tratos now has a worldwide reputation as a leading specialist cable manufacturer within a large number of industries and, as renowned experts in the development of bespoke cables to suit exact specifications, have formed a strong reputation as a reliable consultative source, offering unrivalled expertise.

Ennio is proud to be a part of the Tratos story. He adds, "My Grandfather was a man of vision, dedication and commitment and these are qualities that have become synonymous with the Tratos name.

Along with Albano Bragagni and my sister Elisabetta, I am pleased and excited to carry on building Egidio Capaccini's dream of making Tratos a world renowned, expert cable manufacturer, a dream which began over fifty years ago in a small village in Tuscany." [📍](#)







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