UPCAST

REVIEW | ISSUE NO. 8

UPCAST OY is the leading supplier of upward continuous casting technology for a wide range of non-ferrous applications.

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Co-Founder and Partner
Cu2 Consulting

Steady growth ahead

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UPCAST REVIEW, CUSTOMER MAGAZINE | PUBLISHER: UPCAST OY, P.O. BOX 60, FI-28101 PORI, FINLAND. WWW.UPCAST.COM | EDITING AND LAYOUT: HANSDOTTER PRINTED BY: NEWPRINT OY

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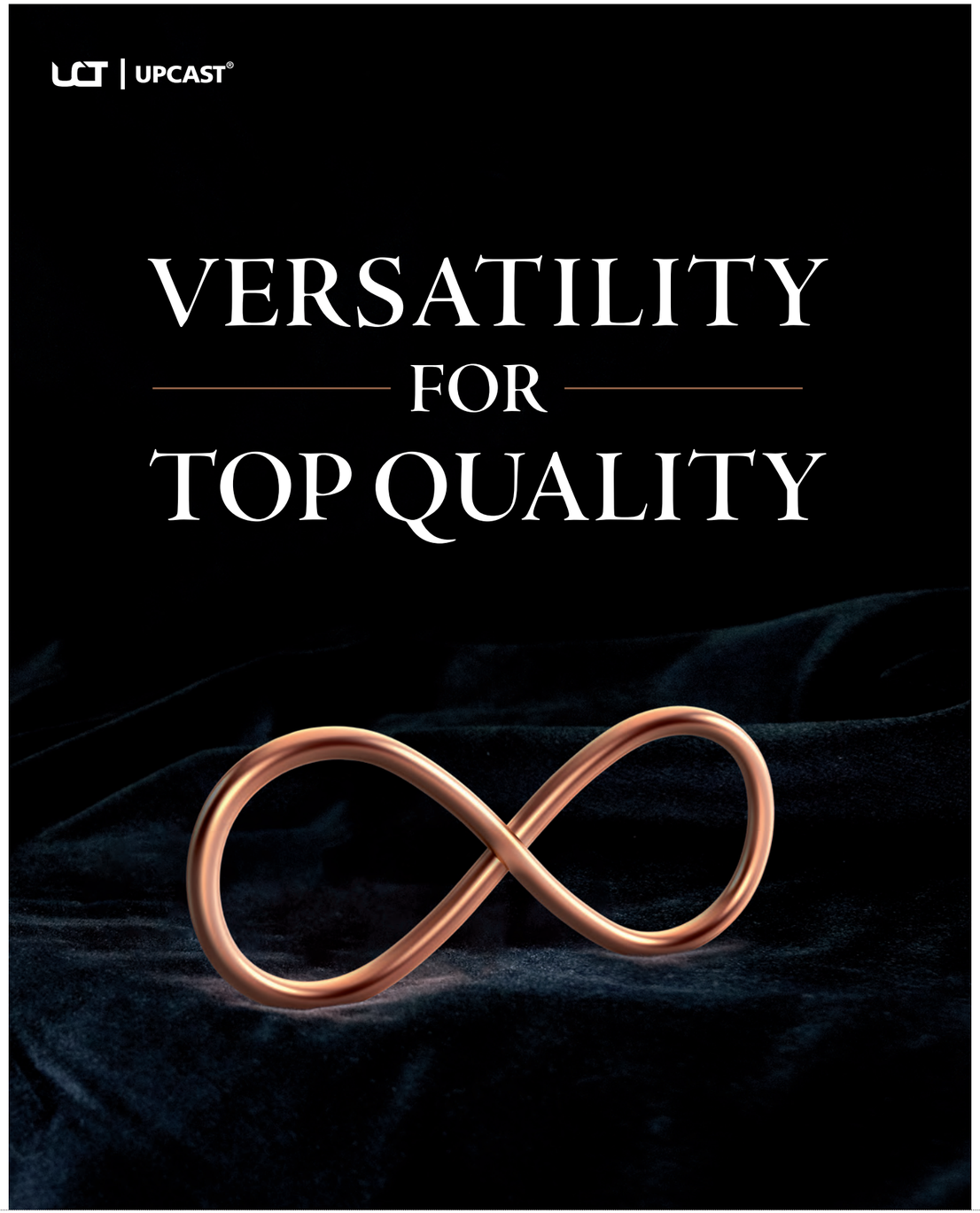

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Electric revolution builds **green transition**

Plenty has happened since the previous issue of UPCAST Review was published. The previous editorial was written during a more hopeful period after the darkest days of COVID-19. But the pandemic is still with us, and the world is being rattled by other crises as well, with all their compounding effects.

However, despite the uncertain times, UPCAST OY is gazing into the future with confidence. After all, a few glimpses of light are needed amid all the gloominess of the news.

UPCAST OY's positive outlook is based on a green transition, which is providing uplift to our business. An electrifying world needs solutions that are cleaner and higher in quality, and UPCAST® technology is able to provide a bespoke solution to this challenge.

We at UPCAST OY have an extremely important role in helping the world become electrified. The scope of our market and expertise are genuinely global, and it is wonderful to be able to introduce our technology to the world from this distant northern corner.

The green transition is more powerful than any pandemic or geopolitical crisis. That is why I feel that the work carried out by UPCAST OY is far more important than its business operations, and these days it is not difficult to see what the meaning of this work truly is. Quite the opposite. Right now, our work feels particularly meaningful.

I warmly welcome you to read our latest news and join in the green transition.

Kalle Härkki
Chair of the Board, UPCAST OY

> The green transition is more powerful than any pandemic or geopolitical crisis.

Kalle Härkki has been serving as the Chair of UPCAST's Board since March 29, 2022. This role has taken him back to his roots: UPCAST's premises are located at the same address where Härkki began his career and wrote his dissertation on UPCAST® technology in 1997, one of the first scientific studies on the topic.

Visions of the near future

Steady growth ahead

Monica di Cosimo, the Co-Founder and Partner of a research consultancy specialising in the copper industry, talks about how we can prepare for tomorrow in times of rapid change.

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The electric car industry needs copper wire that is as high in quality as possible, and we can provide it, says Tuomas Rajaviita, Senior Sales Manager at UPCAST OY.

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 | **TEXT:** ANNA-KAISA KIVIKOSKI | **PHOTOS:** CU2 CONSULTIN G, ISTOCKPHOTO AND UNSPLASH

What does the market situation in the copper industry look like today, and how can we prepare for tomorrow in times of rapid change? We sat down with **Monica Di Cosimo**, the Co-Founder and Partner of Cu2 Consulting, an independent research consultancy specialising in the copper industry.

STEADY GROWTH AHEAD

Over the last few years we've experienced various surprises in the global situation – and not all of them have been pleasant. What does the market situation in the copper industry look like today, and what is to be expected in the near future?

Let's turn to **Cu2 Consulting**, an independent research consultancy specialising in the copper industry, markets, and products. Cu2 Consulting produces reports on the market situation, news, and other hot topics in the industry.

– We offer our clients multi-client regular reports and studies, as well as specialist support through client projects tailored to the specific needs of individual companies, Co-Founder and Partner **Monica Di Cosimo** elaborates.

> This hands-on experience has allowed us not only to know the market from the industry perspective, but also to "speak the language of the industry".

The consultancy focuses primarily on copper fabrication

– The objective of our tailor-made projects is to support our customers in their business and strategic development, whether they wish to enlarge their presence in a given market, enter a new geographic market or a new segment, start offering new products, make investments to expand or find suitable M&A targets.

These are comprehensive and complex projects that often involve market sub-segments with no existing data. That is why field research is greatly needed.

– We help our clients to understand and interpret the market supply and demand, including development trends, assess their own positioning, and choose the development options that are best suited to their situation, profile, and objectives, Di Cosimo explains.

Speaking the language of the industry

Monica Di Cosimo says that Cu2 Consulting provides at least two types of value for their clients. The first one is related to the specific situation in the industry.

– In the copper industry, there is no objective sector-specific data, as there may be in other sectors. For example, cars are being registered by brand in the automotive industry. Some organisations provide estimates or collect data from certain copper companies and use them to produce aggregate figures. Still, in many cases, the data collection and coverage are quite partial, and the aggregate release of figures occurs with a considerable time lag. Also, some double-counting may occur for large cross-national groups.

– Instead, having up-to-date and specific sector data is crucial for decision-making. We address this need and fill the data gap, Di Cosimo explains.

The second value is based on Cu2 Consulting's background, experience, and knowledge of the industry.

– The two co-founding partners, **Roberta Novello** and myself, have been involved in the copper fabricating industry, working for one of the major copper fabricators for several decades. This hands-on experience has allowed us not only to know the market from the industry perspective, but also to "speak the language of the industry" and understand its needs. Since the establishment of Cu2 Consulting in 2014, the company has worked side by side with several major copper fabricators in Europe, North America, Latin America, and Asia, supporting them in their strategies and developments.

– This has helped broaden our expertise and strengthened the reliability of our service, Di Cosimo adds.

The importance of Asia is growing

The copper industry interacts with countless fields. The Europe-based copper consultancy has a wide clientele.

– Our target audience spans the entire copper value chain from copper miners to refiners, raw material traders, producers of semi-finished copper products, and distributors of copper products to OEMs that use copper semis in their products. We also serve the very downstream part of the value chain, such as some car makers.

Monica Di Cosimo also mentions equipment suppliers, copper-related associations, investors, and stakeholders interested in the copper industry and its players.

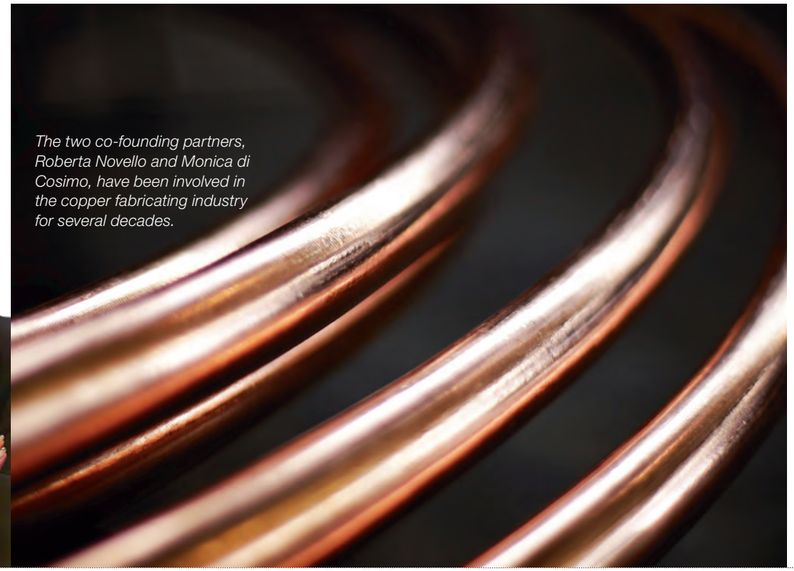
– To give you a few numbers, our customer base includes almost 100 companies in the copper industry. In the upstream and intermediate part of the value chain, our customers account for more than 22% of the world's copper mining output and nearly 40% of the world's production of so-called brass mill products. That means all semi-finished copper products except copper wire rod.

The company has global content coverage and customers worldwide in North, Central and South America, Europe, and Asia. The largest number of customers, more than 20% of the total amount, are located in the USA.

– We can say that all of the major copper fabricators operating in the Americas and Europe are our customers today, with only a few minor players still to be reached.

> For the long term, we are extremely optimistic.

> If we look at the last three years, they were worth at least 10 in terms of changes in the industry.



The two co-founding partners, Roberta Novello and Monica di Cosimo, have been involved in the copper fabricating industry for several decades.

Asia is a different story. Cu2 Consulting does indeed have customers among the biggest copper companies in China, Japan, South Korea, and Singapore, but according to Di Cosimo, there is still room for growth.

– The main barrier in Asia, particularly in China, is language. Having a Chinese-language version of our reports would be complicated, but we do not rule out doing so one day. However, we are actively trying to expand our business in the region through direct contacts, taking advantage of the global content of our services. To give an example, approximately 40% of CFCM content refers to Asian companies.

Conquering Asia may not be such a distant thought. Di Cosimo says that the company is getting stronger in Asia. Last year, a custom project was closed with an Asian fabricator. Recently, the company was contacted by a large Asian manufacturer with whom another custom project was contracted for the beginning of 2023.

– Over the past nine years, Cu2 Consulting has established itself internationally and consolidated its presence, becoming a point of reference in the industry. A challenge partially met, but with milestones still to be reached, Di Cosimo reflects.

Recovering from unprecedented roller-coaster years

What does the market situation in the copper industry look like today?

– I'm not particularly eager to overuse superlatives, but there is no doubt that we are living in very special times, with few precedents in recent history.

Of course, this also applies to the copper industry. We are not talking about a normal succession of more or less favourable economic cycles, albeit linked to external drives, as was the case up to 2019, Di Cosimo says.

– If we look at the last three years, they were roller-coaster years worth at least 10 in terms of changes in the industry. We first went through a pandemic in 2020 that had major impacts on global and regional supply, demand, and supply chains. This was followed by a year of unprecedented boom in the sector, with exceptional levels of demand.

The downside was that the demand was accompanied by various supply bottlenecks related to a lack of capacity or a disruption of supply chains, transport, or logistics.

– Finally, in 2022, after the steep V-shaped curve of the previous two years, we saw a multi-faceted year, with demand still buoyant in the first part, then hit by the outbreak of a war, which had significant impacts on the energy front, particularly in Europe.
Some supply bottlenecks – especially in chips – continued alongside significant changes in raw material prices and availability, inflation pressures, rising interest rates, and energy costs.

– All of this was not only exacerbated by geopolitical tensions, but also by the consequences of the lockdowns in China, which particularly affected the Asian business. A perfect storm, that although grafted onto a still sustained demand, caused a slowdown in growth in the second half of the year and a deterioration in business confidence, Di Cosimo summarizes.

The world needs copper for the green transition

Let's take a glance at things to come. What is a specialist's vision of the near future of the copper industry?

– We are now seeing signs that the pessimism that dominated the second and third quarters of last year, when a recession in 2023 seemed inevitable, is easing, although uncertainties remain, Di Cosimo predicts.
– For the long term, we are extremely optimistic.

Do you want to know what Di Cosimo has to say about the upcoming years in the copper industry, long-term visions, and how to navigate through the current global situation?

Will eMobility double the demand for copper, and what kind of development prospects do we have for oxygen-free copper?

Read the complete article online!
www.upcast.com

Monica Di Cosimo

Co-Founder and Partner
Cu2 Consulting

Monica Di Cosimo has more than 25 years of experience in marketing semi-finished copper products. The Florence-based specialist has extensive experience in people and project management, especially in the copper fabrication industry and market.

We are now seeing signs that the pessimism that dominated the second and third quarters of last year is easing.

Market-leading production powered by solar energy

Solar panels have had a significant impact on Alfa Trafili's green transition path. We interviewed **Canio Codella**, the Production Manager of Alfa Trafili, a leader in copper and aluminum conductor production. UPCAST OY plays a central role in the company's pursuit of excellence.

Please tell us about your company's background and your product offering?

Alfa Trafili is a leader in the production of copper and aluminum conductors. The processing departments of copper and aluminum create the entire production cycle: casting, drawing, stranding and twisting.

How do you position yourself in the European and global market?

Alfa Trafili is qualified in the most important public organizations in the electrical and railway sectors, such as Terna and RFI, both in Italy and abroad.

What role does UPCAST® technology and oxygen-free rods play in your process and product portfolio?

UPCAST OY's role is fundamental for our production. We are a leader in the production of oxygen-free wire rods, and our first goal is the pursuit of excellence. We have to thank UPCAST OY for their fundamental assistance and cutting-edge technology.
What criteria impacted your decision to purchase your existing UPCAST® line?
The principal aim was to produce the raw material internally for our range of products.

How does the market look right now, and what are your expectations for the future? Any changes in the demand of different products?

The last two years have been very important in terms of green energy. The raw material market has been a leader in this transition. Alfa Trafili has followed this trend, especially regarding renewable energies. We try to follow all of the changes in the market and always be ready for any type of change.

How do you see your business developing in the future? Are you considering upgrading and expanding the UPCAST® line?

Today, Alfa Trafili has demand for different diameters of wire rod against its actual diameter of production. As a result, we would like to increase its range of diameters to enlarge the capability.

You use green energy in your production. How important do you consider green and sustainable energy to be?

Alfa Trafili is a green company. Day by day, we try to make more upgrades to this process by controlling gas emissions, efficient use of energy, raw materials and water resources, and recycling waste products and packaging. We are certified to ISO 14000 standards in Environmental Management.

What aspects directed you to use solar panels?

Green energy as solar panels is an important part of the green transition and important in becoming a sustainable company.

Have the solar panels proven to be an effective solution for producing energy for your needs?

Yes. The energy crisis and high prices have compromised many companies in the last year. At Alfa Trafili, we can say that our solar panels have made a difference. With our solar panels, we can produce all the necessary energy to keep the machinery going and produce our products.

What should one consider when thinking about using solar energy in the industrial sector?

Solar panels are not just the future but also the present. I believe that every company should have this type of energy system in order to be sustainable and autonomous. ●

We have to thank UPCAST OY for their fundamental assistance and cutting-edge technology.

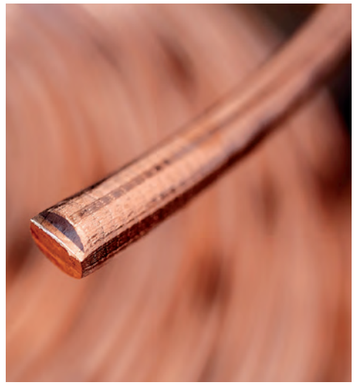
The last two years have been very important in terms of green energy.

 | **TEXT:** TOPI JOKINEN | **PHOTOS:** MARIUS TIKKANEN/FIRST PRODUCTION

A smaller furnace is easy and quick to use, and it makes our operations more agile.

Continuous development to benefit clients

UPCAST OY's product development does not rest on its laurels. New development needs are emerging constantly, inspired by the market, the clients and the brainstorming within the company itself.



UPCAST OY's R&D Manager, **Juho Kalliokoski**, says that development work can involve processes, equipment or materials. However, all forms aim to improve the clients' business operations..

–The needs originating from our clients vary vastly and concern the casting machinery and the UPCAST® process. The aim may be to create a new cast product or improve the security of deliveries or supply, for example, Kalliokoski explains.

UPCAST OY's pilot test facility recently received a new vertical furnace with the capacity of approximately 500 kg. It is capable of making smaller test batches for a client's approval before signing a contract on casting production lines and optimizing the casting parameters of various cast products, to name a few things.

–The older furnaces were three and six metric tons in capacity. A smaller furnace is easy and quick to use, and it makes our operations more agile as it shortens our response time to our clients. ●

UPCAST OY's innovations include a cooler washer

Another new product developed by UPCAST OY is one of its own innovations: a cooler washer. Cooling down the molten mass into a solid cast product is an integral part of the casting process. However, cleaning the cooler is a challenge, which UPCAST OY is aiming to resolve.

'Impurities usually accumulate in the hottest part of the cooler, and that is why the cooler must be regularly opened up and cleaned with citric acid and water. Opening the cooler involves certain difficult steps, but when using a washer the cooler does not need to be opened up at all,' Kalliokoski says.

No longer having to dismantle the cooler will save time and effort. In addition to that, avoiding the repeated dismantling and assembling is also a safety feature, according to Kalliokoski.

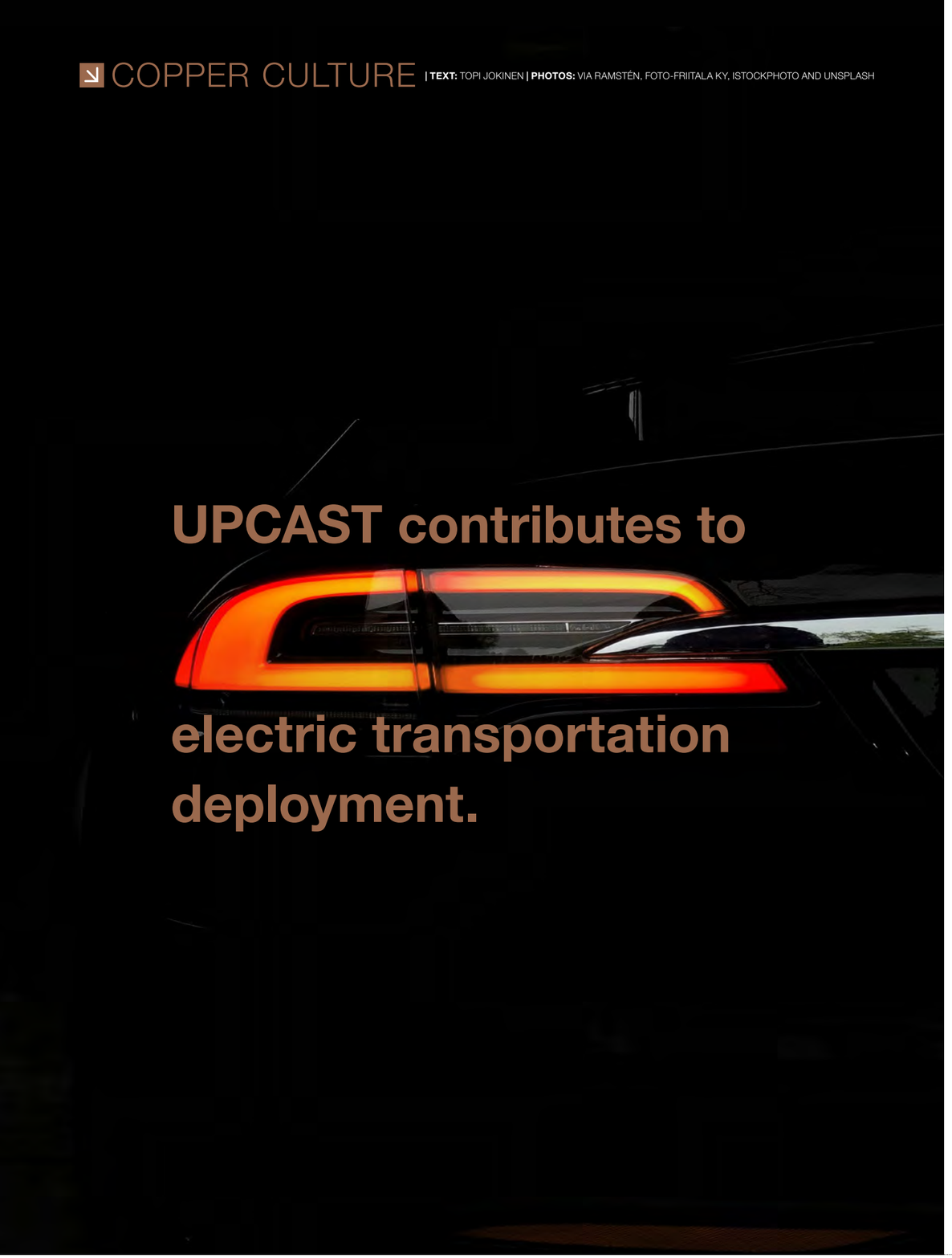
'If a cooler is put together carelessly and the sealants fail, there is a risk that water will mix in with the hot metal during the cooling phase, leading to a hazardous situation.'

The washer is a plug-and-play design: all that is required is to connect it to the cooler. The washing program takes an hour and a half. Once finished, the cooler will be in optimal condition once again.

The new product is still a prototype, but a few orders have already been received. The goal is to improve the quality of the clients' end products. ●

 | **TEXT:** TOPI JOKINEN | **PHOTOS:** VIA RAMSTÉN, FOTO-FRIITALA KY, ISTOCKPHOTO AND UNSPLASH

UPCAST contributes to electric transportation deployment.



The electric car industry needs copper wire that is as high in quality as possible.

The exponential increase in electric vehicles has also increased the demand for high-quality copper wire. A single fully electric car can contain up to 80 kilos of copper, in addition to which copper is used in the charging points. UPCAST OY has a solution for the global demand.

According to Senior Sales Manager **Tuomas Rajaviita** from UPCAST OY, electric vehicles and chargers require highly conductive copper wire that has no impurities.

–The electric car industry needs copper wire that is as high in quality as possible, and we can provide it, says Rajaviita.

He continues by explaining that the oxygen-free copper manufactured through the company's UPCAST® technology has the exact features that the car industry is looking for, including the most needed hydrogen embrittlement resistance.

Numerous applications

Electric cars include several parts that use copper, in particular their batteries. Furthermore, copper is used in the vehicles' power electronics and the electric motors' coils.

– These cars feature high-torque motors of the same kind commonly used in industrial robots. Oxygen-free copper boasts outstanding welding properties, and the wire produced from it is highly suitable for the copper foils utilized in batteries, Rajaviita says.

However, the need for copper is not limited to the vehicle. Electric cars will not run without a charge, and high-conductivity copper is required for both the vehicles and the charging points.

Efficient and environmentally friendly process

The UPCAST® lines supplied by UPCAST OY are providing increasing amounts of copper wire for the car manufacturing industry.
The production line capacity ranges typically from 6,000 to 30,000 metric tons per annum, and the majority of the recently supplied production lines have either medium or large-scale capacities of over 15,000 metric tons per year.

The environmental effects of electric cars have been debated at length, but at least the ecological burden from the manufacturing of copper components is minimal. Furthermore, the UPCAST® process itself produces very low amount of emissions, and copper is a superbly recyclable material.

–UPCAST® lines run on electricity, and at the same time they are highly energy efficient. When calculating the environmental effects of these lines, the method in which their power is generated must also be taken into account, Rajaviita concludes. ●

According to Tuomas Rajaviita, the oxygen-free copper manufactured through UPCAST OY's technology has a high demand in the car industry.

What does the future hold for electric cars?

How great will the electric car's role be in the road transport of the future? We contacted Senior Scientist **Marko Paakkinen** from VTT Technical Research Centre of Finland and asked him this question.

Marko Paakkinen has an extensive background and current range of duties in research, but in short he is an electric transport specialist. He also has clear views about the electrification of transport – at least when it comes to private cars.

–Electrification will be the winning technology, in particular with cars, even though hydrogen technology is being developed too. However, this can all change through government policies, if hydrogen becomes subsidized, Paakkinen says.

He feels that the use of hydrogen should focus on aviation and maritime transport, where the use of electricity is more difficult. However, he sees few obstacles in utilizing electricity in heavy transport vehicles, although it does pose certain challenges.

–If a driver must take a 45-minute break every 4.5 hours, a 600–700 kilowatt battery can be recharged during these breaks by using a megawatt-level charging point. Currently, it seems likely that this will be possible by around 2025.

Electrification will be the winning technology, in particular with cars, even though hydrogen technology is being developed too.

Should we follow Norway?

On a global scale, Norway has the largest proportion of electric vehicles of all cars. A fifth of the cars in the entire country run on electricity, and as many as 90 per cent of new cars are electric.

–Electric cars are not subject to vehicle tax or VAT in Norway, which makes them cheaper to buy. In addition to that, there are other, smaller incentives, such as lower parking fees and road tolls. However, this shift has been achieved through the government's support, which makes it difficult for this model to be copied elsewhere, Paakkinen says.

Now, the government has begun to revoke some of the incentives, and there has also been talk of reapplying the vehicle tax. But despite this, the change has had an effect, for example on the air quality in Oslo, which has been improving, particularly from 2013 onward. (Source: Oslo Kommune)

Balancing cars and chargers

Paakkinen has been driving a fully electric car for eight years and uses an e-bike to commute. He sees no reason why the transport system could not be electrified.

–Reasonably priced family cars are sorely needed. Estimates indicate that the prices of electric motor and fuel engine cars will meet in 2027. However, the changing of people's mental images and habits remains the greatest challenge.

According to Paakkinen, the key aspect of the electrification of transport is having an adequate number of charging points.

–Surprisingly, Finland is one of the countries that has twice the number of high charging points when compared to Norway. In fact, the best way to promote the use of electric cars is to invest in the infrastructure.
colleagues is also working smoothly and seamlessly remotely, we have always used a lot of e-mails in our communication. We do not meet our customers, but we show our faces to them by handling and sending all the goods with the highest possible quality measures to be able to keep this final loop as strong as possible. ●

We have our own pilot test plant in Finland where we try to see what is possible, and later apply what we have learned at our clients' sites Commissioning engineer Miika Liljeroos

Learning, near and far

In addition to setting up new production lines, the work of a commissioning engineer involves continuous product development, training and customer service. What else is included in the job and what makes it so attractive? UPCAST OY's new commissioning engineers, **Miika Liljeroos** and **Teemu Rajaviita**, explain.

A team of specialists with multiple backgrounds gives us a wide perspective into solving problems.

Long work trips form a large part of a commissioning engineer's job, in addition to which the individual must have the right circumstances and attitude. A single trip can take dozens of days, and the work at the location is intensive.

Miika Liljeroos is getting ready to travel to Indonesia, and Teemu Rajaviita will soon return to Türkiye. In their work, they encounter clients from various cultures, so life experience and an open mind are important assets.

– Of course, you develop a routine, and in the end even the longer trips no longer faze you. If you cannot carry on working over the weekends, you tend to start feeling a little bored, Rajaviita says, laughing.

Trips that last for multiple weeks are mainly about commissioning new production lines, but shorter trips also take place.

– The duration depends on the difficulty level, and the shortest gigs vary from one to two weeks, Rajaviita explains.

The role of UPCAST OY's customer services becomes increasingly important when commissioning engineers are sent to inspect production lines that are already in operation. As part of the development work, the production lines are analyzed, and clients are instructed on how to achieve better casts and make the lines more productive.

–But product development does not just take place at a client's site. We also have our own pilot test plant in Finland where we try to see what is possible, and later apply what we have learned at our clients' sites,' Liljeroos says.

Learning in good company

The paths to becoming a commissioning engineer may vary, but a diverse career background provides a clear edge. The two new commissioning engineers have experience from the copper sector, and their wide range of skills is a benefit in their current roles. Applying for a position at UPCAST OY was a natural step on both men's career paths.

Suitable circumstances in life allow them to travel, and both were already familiar with the UPCAST® lines thanks to previous roles.

–I have more experience in casting, while Teemu is experienced in further processing, so our combined understanding of processing copper is pretty solid, Liljeroos says.

Commissioning engineer Teemu Rajaviita has long experience from the copper sector.

Both men are fascinated by the work because of its versatility, but also find it attractive that they are able to test out their own ideas and learn by doing. Furthermore, the workplace culture at UPCAST OY has been a positive experience – the close-knit work community provides encouragement and serves as a resource.

–We discuss problems a lot together, regardless of their nature, Rajaviita emphasizes.

–A team of specialists with multiple backgrounds gives us a wide perspective into solving problems, which ensures a good outcome, Liljeroos adds.

Both Liljeroos and Rajaviita feel that the work's challenging nature, foreign cultures and new people are what make it so interesting. There is never a dull moment, and the best thing is that the profession involves constant development work for achieving ever-better casting lines.

–Continuous learning is the most important aspect, Liljeroos and Rajaviita both conclude. ●

There is never a dull moment, and the best thing is that the profession involves constant development work for achieving ever-better casting lines.

| **TEXT:** MIIKKA RUSI | **PHOTOS:** SHUTTERSTOCK AND ROOFTECH OY

Greener copper with solar panels?

This winter has been causing a headache to consumers and industry alike when it comes to energy. **Jarmo Salonen** from Harju Elekter believes that this will further drive home the need for renewable energy and a smart power grid.

If the world around us never changed, people would not have to change their behavior either. That means that even crises tends to have some sort of a silver lining – we can learn from them.

– Over the past year, the war in Ukraine and the subsequent energy crisis have finally taught us to look at our electric grid in a new way, says Sales Manager Jarmo Salonen from Harju Elekter.

– This winter has shown what the unpredictable fluctuation of the market price of electricity means in practice. We must make our grid more balanced, and various automation solutions will play a huge role in that.

Harju Elekter Oy is one of the leading electricity and automation operators in Finland and the rest of the Nordic countries. It's long-term collaboration with UPCAST OY has been ongoing ever since the early 1990s.

The company has its headquarters in the western Finnish town of Ulvila, and it manufactures and installs electricity and automation switchgear, street cabinets, charging points for electric vehicles and solar power systems.

The price of energy has been high lately, which makes the time that it takes for a solar energy system to pay itself off really reasonable.

Investment profitability depends on many things

Could a solar energy system be utilized together with UPCAST® lines? Salonen believes that the answer is a resounding yes.

– These cast lines are typically inside industrial buildings, the roofs of which could be used for solar panels. These panels form their own independent production plant that will run with little maintenance alongside other operations.

According to Salonen, UPCAST® lines are known for their quality, and their level of automation is very high, which further supports the use of renewable energy in their manufacturing.

– Solar systems are incredibly adaptable to high-tech environments such as this. In addition, many of UPCAST OY's clients operate in areas that enjoy far more sunshine than we do here in Finland.

On top of the prevailing conditions, the general price levels of energy have a considerable impact on investments in solar power. They determine the time that it takes for the systems to pay themselves off.

–The price of energy has been high lately, which makes the time that it takes for a solar energy system to pay itself off really reasonable. Currently, we are talking about roughly eight years, for example.

–In addition to that, these investments also have an effect on a company's image and business responsibility; solar power produces greener copper, Salonen says.

Will companies become electricity generators?

In the 2020s, transport, industry and the rest of society have been electrifying rapidly. This plays an important role in the management of climate change, but at the same time the rising consumption levels are challenging the grid.

New smart grids facilitate the elasticity of demand, the transmission of renewable energy generated in a decentralized manner, and undisrupted access to power.

Going forward, more businesses may also have a role in energy generation: solar panels can generate electricity for a company's own use, and the rest can be sold to the grid.

Jarmo Salonen believes that once the current energy crisis has been resolved, companies and society will be readier for energy-intelligent solutions and the power grid will become more stable.

–After this winter, the situation will be completely different. I do not believe that we will be panicking over energy any more. ●

Solar panels can generate electricity for a company's own use, and the rest can be sold to the grid.

– Renewable energy has become more attractive to companies, and the technology has evolved quickly. Solar power is no longer considered to be a niche thing, but a valid form of energy production, Jarmo Salonen says.

Get together in Krakow in September

After a break of years, we can finally organize the UPCAST® User Meeting again. The meeting will take place in Krakow, Poland, 04–07 September, 2023. There will be UPCAST OY "family members" from around the world. The program includes, among other things, seminars on current topics and a visit to our customer's factory and a tour on with their UPCAST® line, as well as, of course, news from UPCAST OY and networking.

These events have always been very successful and very much liked by the participants, not only because of the seminars and the presentations given by the good speakers, but mainly because of our customers themselves, who, with their presence, enthusiasm, questions and feedback, make the events worth arranging time after time.

UPCAST®

UPCAST OY PORI FINLAND
www.upcast.com

Upward casting since 1968