

Unlocking the value of recycled XLPE

Working towards a more economical and sustainable future.

For organisations seeking profitable ways to achieve their sustainable targets, recycling Crosslinked Polyethylene (XLPE) presents a real opportunity.

100% recyclable, scrap XLPE is now being utilised in emerging circular economies – generating new revenue streams and reducing environmental burdens.

At Borealis, the development of XLPE as a sustainable solution is driven by the EverMinds™ mindset and ambition. With the circularity of plastics at its core, this aims to inspire partners by designing sustainable solutions for a better future. What's been achieved with XLPE to date is accelerating the path to a circular economy of polyolefins.



A recyclable material with significant potential

As the material most widely used for energy distribution and transmission cable insulation, XLPE's potential for recycling is significant. However, until now, it has not been recycled in any major quantity. This is a situation that looks set to change. With developments in technology, recycling XLPE is becoming evermore feasible economically. It means for businesses across the value chain, there are huge gains to be made.

How NKT, Axjo and Borealis are working together to contribute to a sustainable market

In the cable making process, scrap XLPE is generated via bleed out, start waste and scrapped cables. Traditionally, this scrap material would go to landfill or incineration. But this both contravenes the principles of the circular economy and can be expensive as well. With landfill costing up to 150€/tonne and incineration up to 100€/tonne, the figure can soon add up – and why pay to dispose of XLPE, when you can extract value from it instead?

In addition to the implications of cost, the demand for alternative solutions increases, when you consider landfill is set to be banned in EU legislation and that incineration impacts heavily on an organisation's carbon footprint. Together these factors make the recycling of scrap XLPE more and more attractive all the time.

Today, scrap XLPE, obtained during the cable production process at NKT, is being used by Axjo to create cable drums and reels, made from 100% recycled material, including a property enhancing fraction of recycled scrap XLPE from cable production. For organisations putting sustainability at the top of their priority lists, it creates an advantageous relationship from both an environmental and economic viewpoint.

NKT's XLPE supplier and reliable partner Borealis, also has an ambitious target to be climate neutral by 2030. Aiming for

20% energy efficiency improvements (compared to 2015) and the creation of partnerships for carbon capture, utilisation and storage, we're working together towards that goal. The growing potential for the recycling of XLPE is one way we plan to achieve it.

Why Borealis XLPE is a proven recyclable material and the environmental benefits of using XLPE

Offering good mechanical performance, which can be reprocessed many times, Borealis XLPE provides reliable durability and thermal stability. XLPE used in cable applications is one of the cleanest materials to recycle and can be blended with various types of recyclates and virgin materials, including Polyethylene (PE) and Polypropylene (PP).

Borealis XLPE is the best proofed insulation material for power transmission and distribution*. In addition to its technical benefits, XLPE represents an important development in building a more circular economy. In the entire cable lifetime, in comparison to alternative materials, XLPE has:

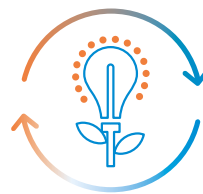
- Better CO₂ impact for the same conductor size
- Considerably lower power CO₂ losses during the use phase of the cable thanks to lower thermal resistivity
- The ability to facilitate a reduction in the volume of plastic required. Using a downsized conductor, utilities are able to transmit a similar current, which can allow for a lower CO₂ impact
- Improved energy efficiency, supporting network operators trying to better their sustainability performance.

If you would like to join us in bringing sustainability all around, please get in touch with your contact at Borealis.

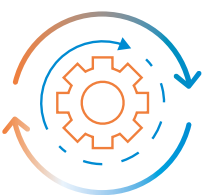
Four key reasons to choose Borealis XLPE to enable a transition to a lower carbon energy future



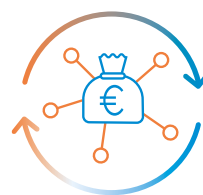
1. Compared to the alternatives, Borealis XLPE has a significantly lower CO₂ impact and allows for a reduction in the volume of material required for cable manufacture.



3. Borealis XLPE offers improved energy efficiency and reduced costs to operators.



2. It's the cleanest material to recycle and it's thermal performance means it can be reprocessed many times.



4. Plus, as a core component of emerging circular economies, Borealis XLPE has the potential to generate new revenue streams for your organisation.



Photo: courtesy of NKT



Photo: courtesy of NKT



Photo: courtesy of Axjo



“The importance of re-using plastics as a valuable resource is increasing globally and, as part of its sustainability roadmap, Borealis has been active in this field with various initiatives. Being a lead supplier of solutions to the global wire and cable industry, Borealis participated in industry initiatives for cable recycling where it was proven that XLPE can be used again as valuable raw material and shows a significantly lower carbon footprint over the entire cable lifecycle versus alternatives. Techniques of producing recyclates out of XLPE are already available in the market: What we do with it is up to all of us! Recycling XLPE from cable scrap can be seen as example of creating a circular economy, bringing value back to the Energy industry from cable waste.”

[Bart Verheule](#), Head of Marketing Energy, Borealis.

“Our increased focus on the recycling of XLPE has been made for both environmental and financial reasons. As a company we have a long history of sustainability and recycling, and we continue to focus on reducing the environmental impact of our power cables. We are naturally driving sustainability through our supply chain and with XLPE being a key material in our power cables we will continue to work with Borealis to improve the performance and sustainability of XLPE.”

[Anders Jensen](#), Executive Vice President and Head of Technology in NKT

“At Axjo, we want to be as sustainable and green as a company as we can. The use of recycled XLPE enables us to do this. It also helps us to solve sustainability issues for our customers. With the material advantages recycled XLPE offers, and the price advantages too, we’re now finding companies are ready to make it their material of choice.”

[Jacob Nilsson](#), CEO, Axjo



Borealis solutions bring energy all around

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Borealis is a leading provider of innovative solutions in the fields of polyolefins, base chemicals and fertilizers. With its head office in Vienna, Austria, the company currently has more than 6,900 employees and operates in over 120 countries. Borealis generated EUR 8.1 billion in sales revenue and a net profit of EUR 872 million in 2019. Mubadala, through its holding company, owns 64% of the company, with the remaining 36% belonging to Austria-based OMV, an integrated, international oil and gas company. Borealis provides services and products to customers globally, in collaboration with Borouge, a joint venture with the Abu Dhabi National Oil Company (ADNOC) and with Baystar™, a joint venture with Total in Texas, USA.

For more information visit: borealisgroup.com • borouge.com

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