

CASE STUDY

Borealis and Amokabel boost network reliability and help manage the risk of Australian bush fires

Hybrid covered conductors are being implemented
with insulating layers of XLPE and Borstar® HDPE
to greatly reduce bush fire risk

In partnership with



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Borouge





In 2009, bushfires destroyed more than 450,000 hectares across the Australian state of Victoria, resulting in 173 fatalities. The Victorian Bushfires Royal Commission found that most of the fires had been started by power lines and recommended action to reduce the risk of such devastating fires happening again. Approximately 3,600 km of SWER (single-wire earth return) power lines and 22 kV distribution feeders in Victoria were in extremely high bushfire risk areas.

Solution

In 2017, a research grant was made available to Groundline Engineering who decided to partner with Amokabel, a Swedish special cable designer and producer with a proven track record in Nordic countries. The grant was given to support the development of covered conductors suitable for Australian conditions.

All conductors have high tensile strength and are covered with three layers of insulation. Borealis are implementing an insulating layer of XLPE to cover the inner semi-conductive layer, which is in turn covered by Borstar® HDPE - a layer that is highly resistant to abrasion and sunlight. These requirements were identified as key for the specific conditions of Australia. Supplying vital materials to the wire and cable industry is another example of how Borealis and Borouge are bringing energy all around.

Why were Borealis materials used?

The previously used conductors lacked the robustness that the Amokabel and Borealis solution provides. Borealis materials were already familiar to Amokabel and therefore familiar to Groundline Engineering, through Amokabel's solutions, which are produced in Alstermo, Sweden. Local testing in Australia also confirmed the quality of Borealis materials and their ability to deliver high resistance to abrasion and sunlight in combination with the cable design of Amokabel.



“The use of covered overhead line conductors has helped United Energy to manage the bushfire risk by providing a cost-effective retrofit solution for overhead line upgrades plus the potential to boost network reliability.”

Michael Meraklis & Dimitrios Tsirikis
United Energy, Australia

“Together, Borealis and Amokabel are preventing bushfires and protecting lives. It is impressive that Amokabel adapted their long track record and experience in Nordic conditions to opposing extreme conditions. Our long-lasting materials are proven to work not only locally but globally, and we are pleased that our proprietary Borstar® technology is involved in such an important project. Borealis’ ambition and drive to contribute for People and Planet has been made a reality.”

Bart Verheule

Borealis Global Commercial Director Energy Solutions

Key results

This project is the first time anyone has created a covered conductor solution that can address the specific challenges of the Australian networks. The first installation was made in 2017 and the products are now installed in 15 different locations in Victoria. The product of Amokabel is very popular with line workers and distribution companies due to its ease of installation which is key when transferring from bare wire to covered conductor.

United Energy, an Australian energy company and a customer of Amokabel, are now able to supply electricity to their customer through much safer means and with minimal risk of bushfire thanks to the Amokabel product.



“As a leading manufacturer of cable and overhead conductors, Amokabel has a focus on high quality and the innovative design of new products with minimal environmental impact. The collaboration with Borealis and United Energy helps us reach our societal and environmental targets and supports a constant fight against bushfires and power outages in Australia.”

Peter Eriksson
Amokabel

Borealis and Borouge polyolefin solutions are bringing energy all around

date of issue: June 2022

Borealis is one of the world's leading providers of advanced and circular polyolefin solutions and a European market leader in base chemicals, fertilizers and the mechanical recycling of plastics. We leverage our polymers expertise and decades of experience to offer value adding, innovative and circular material solutions for key industries. In re-inventing for more sustainable living, we build on our commitment to safety, our people and excellence as we accelerate the transformation to a circular economy and expand our geographical footprint.

With head offices in Vienna, Austria, Borealis employs 6,900 employees and operates in over 120 countries. In 2021, Borealis generated total sales and other income of EUR 10,153 million and a net profit of EUR 1,396 million. OMV, the Austria-based international oil and gas company, owns 75% of Borealis, while the remaining 25% is owned by a holding company of the Abu-Dhabi based Mubadala. We supply services and products to customers around the globe through Borealis and two important joint ventures: Borouge (with the Abu Dhabi National Oil Company, or ADNOC, based in UAE); and Baystar™ (with TotalEnergies, based in the US).

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Cover photo courtesy of Amokabel

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