

# Cabelte Group selects Borealis Visico FR4451 for photovoltaic cable production



## Background

Renewable energy has never been more important. Emission reduction targets have encouraged governments to undertake ambitious solar projects, with a rise in tenders worldwide including in the US, India and China. This resulted in a 30% global increase in solar power connected to the grid from 2016 to 2017, with solar photovoltaic capacity growing year on year.<sup>1</sup>

One such project was constructed in Mexico by Ortiz. The Solem 1 and 2 solar plants form a key part of the country's clean energy certificate programme, which is targeting an increase of clean energy from 5% to 7.4% in 2020, 10.9% in 2021 and 13.9% in 2022.<sup>2</sup> The Solem plants required over 2800km of the cables necessary for the interconnection of panels and production of energy.

## Challenge

The cables needed to be suitable for permanent outdoor installation, built to withstand demanding climatic conditions for years – with permissible ambient temperatures ranging from -40°C to 90°C. Before the solar boom, these cables were designed to fulfil a certain specification, but faced with higher demand, a transversal agreement was achieved that stipulates cables must now meet the EN and IEC standard.

The Cabelte Group, environmentally conscious and reactive to energy trends, sought to deliver them. To do this, they needed materials that would enable the production of cables to the international standard. They decided to work with the TUV institute for the homologation process, which has worldwide recognition on solar applications. Cabelte opted to cover cables from 1.5 to 240 mm<sup>2</sup> to prove their capability to produce the full range.

<sup>1</sup> Solarpowereurope, <sup>2</sup> Solarpowereurope

# Cabelte Group selects Borealis Visico FR4451 for photovoltaic cable production

## Solution

When the opportunity arose to collaborate with Borealis, Cabelte enthusiastically agreed. Confident in the strength of our portfolio, they knew we would be a reliable partner due to our unparalleled technical expertise and support. We developed a robust material that can be used for the insulation and jacket, Visico FR4451 as base resin and LE4439 as a catalyst. This crosslinked compound was chosen because it ensures cable insulation resistance, protection against environmental factors and humidity, and resistance to high temperatures and ultraviolet radiation.

The joint project was not only successful in certifying the product, but also in developing a solution that was as simple as it was competitive. Due to this success, Borealis is now Cabelte's partner of choice for similar projects in the future.

## Benefits

- The same material was used for insulation and jacketing, unlike competitors who use two different grades. This makes Borealis' product significantly more efficient from a logistical standpoint.
- The cables produced with Borealis Material are created through regular processes. Material can be processed with PE or PVC screws without the need for special equipment like low compression screws. For that reason, high line speeds can be achieved.
- The density of Borealis' product is 30% lower than that of core competitors.

PROJECT	Solem 1 & 2
CUSTOMER	Ortiz Group
CABLE PRODUCER	Cabelte Group
APPLICATION	Photovoltaic cables Voltage: 1.5KV DC Cable length: 2800Km Power: 180MW + 168MW Cable cross section: 1.5-240mm <sup>2</sup>
PE MATERIALS USED	Insulation and Jacketing Visico™ FR4451/LE4439
FUNCTIONAL REQUIREMENTS	Long term integrity to give the assurance of a minimum of 25 years' service life



## Bringing energy all around

date of issue: June 2019

**About Borealis** 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 around 6,600 employees and operates in over 120 countries. Borealis generated EUR 7.5 billion in sales revenue and a net profit of EUR 1,095 million in 2017. 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 around the world in collaboration with Borouge, a joint venture with the Abu Dhabi National Oil Company (ADNOC). Borealis and Borouge aim to proactively benefit society by taking on real societal challenges and offering real solutions. Both companies are committed to the principles of Responsible Care®, an initiative to improve safety performance within the chemical industry, and work to solve the world's water and sanitation challenges through product innovation and their Water for the World programme.

For more information visit: [borealisgroup.com](http://borealisgroup.com) • [borouge.com](http://borouge.com) • [waterfortheworld.net](http://waterfortheworld.net)

**Disclaimer** The information contained herein is to our knowledge accurate and reliable as of the date of publication. Borealis and Borouge extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the consequences of its use or for any errors. It is the customer's responsibility to inspect and test our products in order to satisfy himself as to the suitability of the products for the customer's particular purpose. The customer is also responsible for the appropriate, safe and legal use, processing and handling of our products. Nothing herein shall constitute any warranty (express or implied, of merchantability, fitness for a particular purpose, compliance with performance indicators, conformity to samples or models, non-infringement or otherwise), nor is protection from any law or patent to be inferred. Insofar as products supplied by Borealis and Borouge are used in conjunction with third-party materials, it is the responsibility of the customer to obtain all necessary information relating to the third-party materials and ensure that Borealis and Borouge products, when used together with these materials, are suitable for the customer's particular purpose. No liability can be accepted in respect of the use of Borealis and Borouge products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third-party materials.

Bortlink is a trademark of the Borealis Group.

**Borealis AG** IZD Tower  
Wagramer Strasse 17-19, A-1220 Vienna, Austria  
Tel +43 1 22 400 000 • Fax +43 1 22 400 333  
[borealisgroup.com](http://borealisgroup.com)

**Borouge Pte Ltd** Sales and Marketing Head Office  
1 George Street 18-01, Singapore 049145  
[borouge.com](http://borouge.com)

