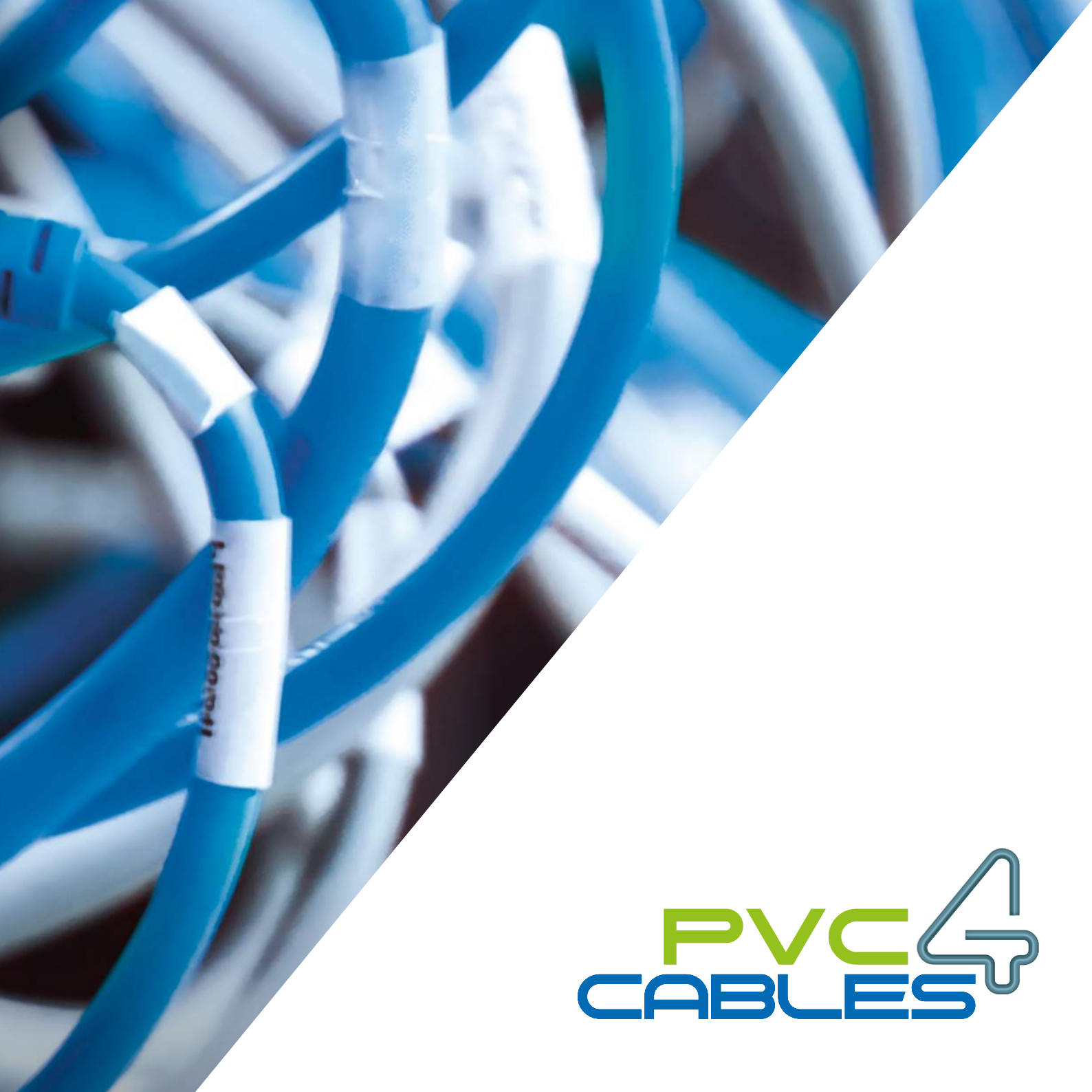


PVC 4 CABLES

PVC CABLES IN A CIRCULAR ECONOMY

In a circular economy, the value of the products, materials and resources is kept as long as possible, the production of waste is minimised and innovation is at the centre of the entire value chain.

With the VinylPlus® sustainability programme (www.vinylplus.eu), the European PVC industry is well positioned to steadily moving towards a true model of circular economy.

"You (VinylPlus) have created an excellent pre-competitive space for industry on circularity, which we usually point to when we talk with other stakeholders. The voluntary R&D supported by the value-chain actors and your Commitment for 2030 are very valuable, as are your efforts to exchange experiences and information globally."

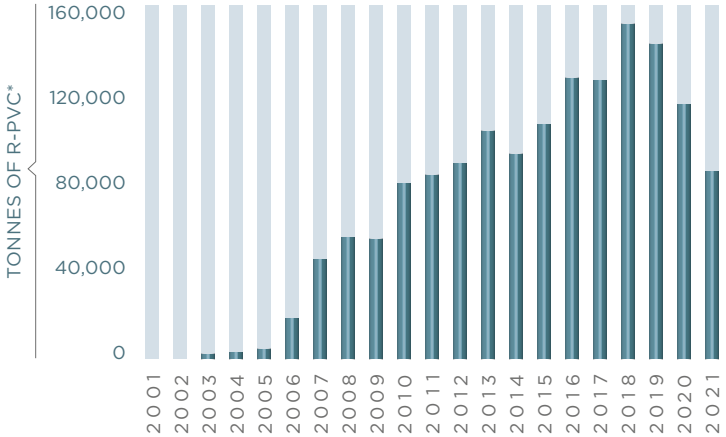
Nilgün Tas, UNIDO

PVC CABLES RECYCLING

PVC cables are recyclable and successfully recycled.

To be recycled, the sheathing and the insulation of electrical cables, or the single sheathing of telephone cables, is subjected to a mechanical process of micronisation, after having been separated from the conductor. The micronised PVC is sold on the market to be used in suitable applications for the production of new products.

PVC CABLES RECYCLED WITHIN THE VINYLPLUS® FRAMEWORK



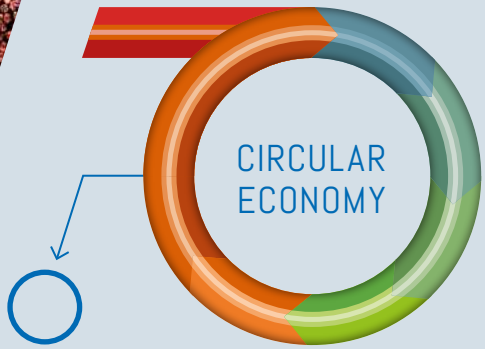
** Verified by KPMG (www.vinylplus.eu/our-achievements/transparency-accountability)*

PVC cables recycling might follow two different streams:

- cables subject to one of both the European regulations WEEE (Waste from Electrical and Electronic Equipment) or ELV (End of Life Vehicles). In these cases, there are general recycling and recovery targets for end-of-life electrical and electronic equipment and vehicles sent to demolition, although without a direct, explicit obligation for cables;
- cables not subject to the above directives, such as electric cables for power transmission and data transmission cables, are recycled within the framework of VinylPlus®.

Thanks to the collection and recycling schemes set up in the framework of VinylPlus®, 1.5 million tonnes of PVC from cables were recycled since 2000, saving close to 3 million tonnes of CO_2 emissions.

Nevertheless, PVC cable recycling registered a significant decrease in recent years. This was partially due to the COVID-19 pandemic and to Brexit, which caused a diminishing in PVC cables export for recycling to the UK. In addition, even if PVC cables produced in Europe today do not contain SVHC, regulatory uncertainties and constraints at the EU level in relation to the potential presence of legacy additives in old PVC cables represented a strong disincentive for recyclers.



- RAW MATERIALS
- DESIGN
- PRODUCTION, REMANUFACTURING
- DISTRIBUTION
- CONSUMPTION, USE, REUSE, REPAIR
- COLLECTION
- RECYCLING
- RESIDUAL WASTE

The circular economy encompasses the concept of 'doing more with less': in other words, create more value with less environmental impact and higher economic efficiency.

PVC CABLES ARE RECYCLABLE AND RECYCLED

PVC recycled from cables is used for a wide range of applications such as: garden and air hoses, geo-membranes, foils (roofing, flooring, waterproofing membranes, pool and pond foils), mats, speed bump and other road safety products, shoe soles and boots.

INNOVATION IN PVC CABLES IS POSSIBLE AND PURSUED

DOING MORE WITH LESS

PVC is intrinsically a 'low carbon' plastic (57% of its molecular weight is chlorine derived from common salt, 5% is hydrogen and 38% is carbon), and the consumption of primary energy in the manufacturing phase is low.

Through the VinylPlus® initiative, the European PVC industry seeks to further reduce progressively GHG (greenhouse gases) emissions along the entire production chain.
This includes identifying and measuring the GHG footprint of all components and production processes; endeavouring to increase use of renewable energy and of technologies to enhance the efficiency of materials used.

INNOVATION

The PVC value chain is engaged in the research and development of new formulations to ensure maximum safety and protection of the environment and the health of users and consumers.

PVC cables manufactured in Europe with compounds produced by VinylPlus® and PVC4Cables partners do not contain substances of very high concern (SVHC).

New formulations recently developed for PVC cables show that PVC compounds for cables can obtain the highest fire reaction results compared with any other thermoplastic material, reaching $B2_{Ca}$ class, and d0 and S1a subclasses under the EU CPR Regulation.

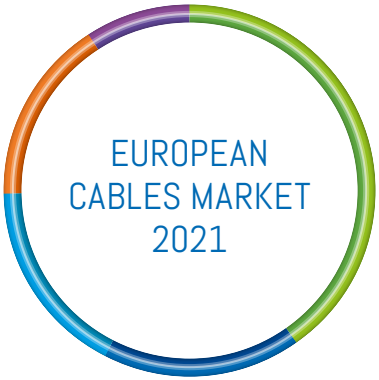
PVC CABLES APPLICATIONS AND MARKET

An LCA study carried out by the University of Catalonia, Spain, in 2019, confirms that cables with PVC insulation are those that have the lowest energy consumption and the lowest CO_2 emissions.

Electrical cables containing 25% recycled PVC showed the best performance.

PVC IS AN ATTRACTIVE MATERIAL FOR THE MARKET

PVC is used for the production of any type of electric and data transmission cables and as insulation or sheathing in various fields: classic electric cables for power transmission at low and medium voltage for homes and offices; telephone cables; coaxial cable TV/computer/hi-fi; cables for cars; battery cables and robotics; data transmission cables, LAN and IT. PVC cables are compliant with the CE mark.



In 2021, PVC accounted for 40% of the European cable market, maintaining its historical dominance in the low-voltage cable sector.

FIRE AND SMOKE BEHAVIOUR

Studies and tests show that, due to its intrinsically self-extinguishing characteristics, PVC would produce very little smoke in a real fire situation, it is difficult to ignite and does not sustain combustion. PVC does not contribute to flame propagation and does not generate flaming droplets.

Unlike odourless toxic gases, such as carbon monoxide that is by far the most hazardous element in a fire, the presence of hydrogen chloride generated by PVC combustion can be detected at totally harmless trace levels, due to its distinctive smell. As such, the emission of HCl gas at an early stage of fire acts as a ‘warning’ signal to people to evacuate the area immediately.

10 REASONS TO CHOOSE PVC CABLES

PVC CABLES HAVE UNIQUE TECHNICAL ADVANTAGES

1. **VERSATILITY OF FORMULATIONS**
   excellent flexibility, transparency, lightness; easy to colour
2. **PROCESSABILITY**
   easy to extrude; excellent productivity
3. **CO-EXTRUSION**
   PVC can be co-extruded in multi-layer cables with excellent cost/performance ratio
4. **RESISTANCE TO TEMPERATURE**
   very wide range, from -40° to 125°
5. **RESISTANCE TO ATMOSPHERIC AGENTS**
   including UV rays
6. **RESISTANCE TO HYDROCARBONS**
   for example, oil and gasoline
7. **INSULATION**
   PVC presents an inherently high value of the insulation coefficient
8. **SELF-EXTINGUISHING**
   PVC is by nature a flame retardant and does not generate flaming droplets
9. **FIRE RESISTANCE**
   PVC is difficult to ignite, has a moderate heat release and produces very little smoke
10. **RECYCLABILITY OR REUSE**
    most of the PVC cables are recycled

ecvm

ECVM (The European Council of Vinyl Manufacturers – www.pvc.org) is the organisation representing six leading European PVC resin manufacturers, accounting for about 70% of the PVC resins produced in the EU.

A founding member of VinylPlus®, **ECVM** is committed to sustainable development, and to address and promote health, safety and environmental best practices over the PVC life cycle.

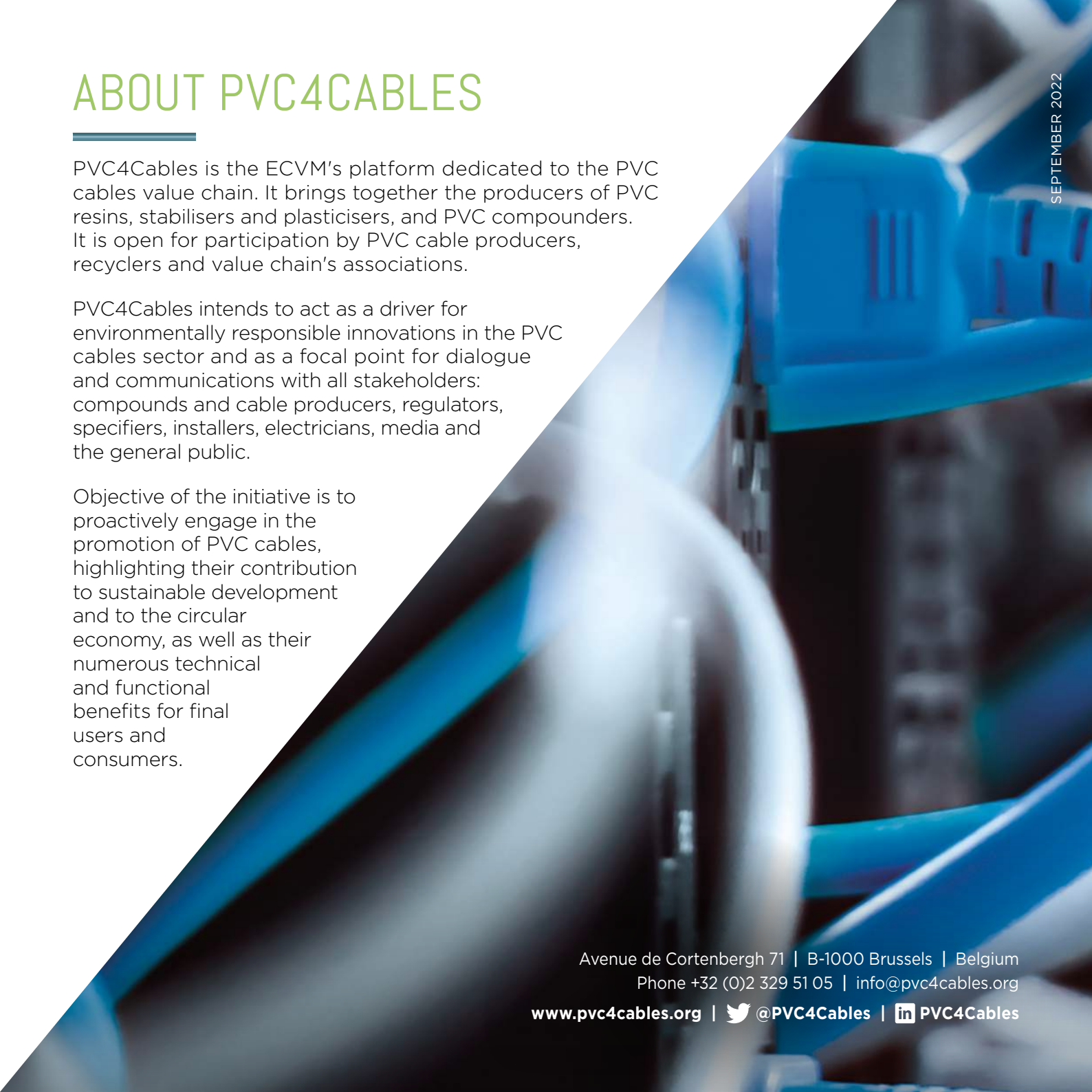
vinyl plus® COMMITTED TO SUSTAINABLE DEVELOPMENT

ABOUT PVC4CABLES

PVC4Cables is the ECVM's platform dedicated to the PVC cables value chain. It brings together the producers of PVC resins, stabilisers and plasticisers, and PVC compounders. It is open for participation by PVC cable producers, recyclers and value chain's associations.

PVC4Cables intends to act as a driver for environmentally responsible innovations in the PVC cables sector and as a focal point for dialogue and communications with all stakeholders: compounds and cable producers, regulators, specifiers, installers, electricians, media and the general public.

Objective of the initiative is to proactively engage in the promotion of PVC cables, highlighting their contribution to sustainable development and to the circular economy, as well as their numerous technical and functional benefits for final users and consumers.



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