

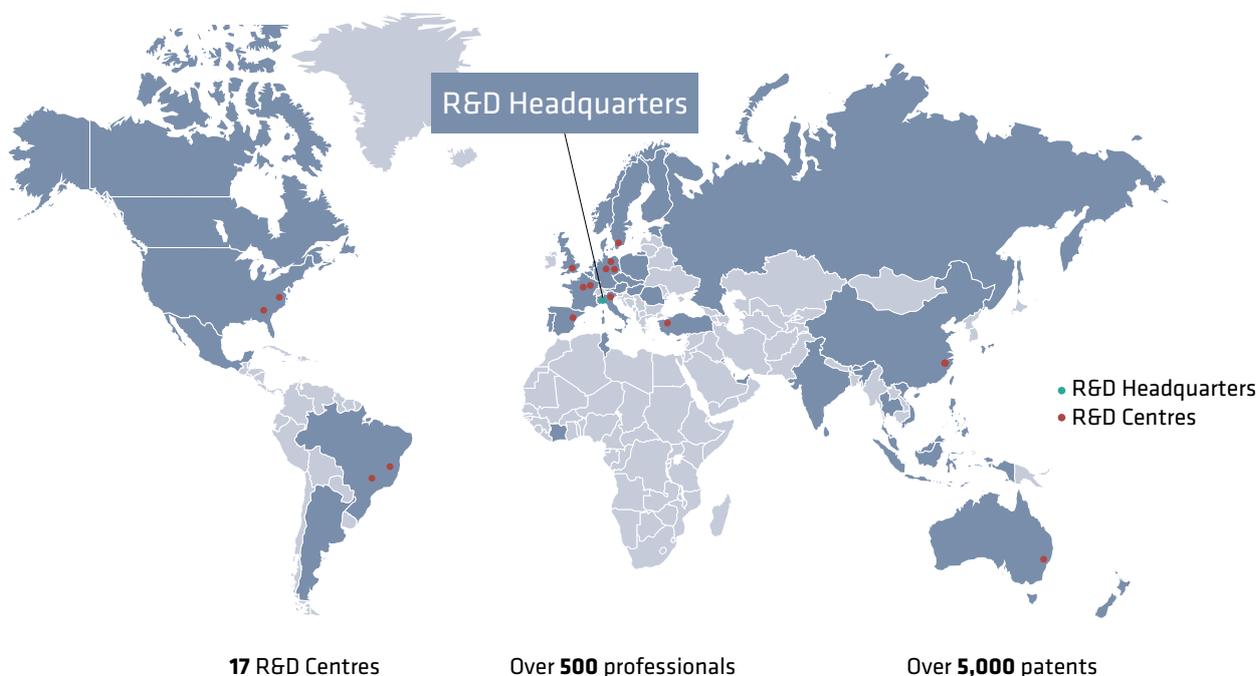
RESEARCH AND DEVELOPMENT

With 17 Centres of Excellence, over 500 professionals, about 5,800 patents and partnerships with universities and research centres in many countries, the Prysmian Group intends to be an innovation leader in the cable industry.

Prysmian Group has always given key strategic importance to Research & Development to maintain its market leadership, with the aim of differentiating itself and of providing its customers with technologically innovative solutions at increasingly competitive costs. The Group currently has 17 Centres of Excellence, with headquarters in Milan, and over 500 skilled professionals. With around 5,800 patents

granted or filed and partnerships with major universities and research centres in many countries where it is present, the Prysmian Group intends to be industry leader in R&D. The Group's spending on Research, Development and Innovation amounted to approximately Euro 70 million in 2014, broadly in line with the previous year and confirming its steadfast commitment to and focus on long-term sustainable growth.

PRYSMIAN GROUP R&D CENTRES



In the Energy Projects and Energy Products operating segments, the main achievements of the year included:

- In the submarine cables area, work continued to optimise 220 kV AC three-core cables; in particular, a prototype with 1600 mm² aluminium conductors was made, to achieve IEC prequalification for the Arco Felice and Pikkala plants, and a prototype with 1200 mm² copper conductors, for qualification testing as part of the "50 Hertz" project, one of the largest ever performed in terms of volume and value. Internal qualification testing was completed for the flexible 400 kV AC joint. Still in the submarine cables area, particular resources were devoted to the recovery plan for the Western Link project and its 600 kV DC cables insulated with PPL (Paper Polypropylene Laminate).
- In the field of EHV underground cables, development was completed of the prototype 400 kV cable with a Milliken 3500 mm² copper conductor, the largest copper conductor ever developed by the Group. In addition, the Gron plant in France produced prototype Milliken aluminium conductors measuring 4000 mm², while the Delft plant in the Netherlands produced similar prototypes measuring 3500 mm², which will be used for the TenneT contract for the 380 kV Randstaadt connection. Additional work was performed to develop the prototype 500 kV XLPE cable with a Milliken 2500 mm² copper

conductor, featuring a weight-optimised conductor and a copper-wire screen with copper laminated foil, specially designed for the American market. EHV product development also saw the start of a major project to develop the HVDC 525 kV system with extruded XLPE insulated cables and related accessories. This project, also intended for the production of submarine cables, includes several alternative solutions in terms of both cables and accessories, in order to meet every possible customer requirement. The high voltage underground cables area reported the development of an aluminium wire screen with protective aluminium laminated foil, allowing a cost saving of up to 15% compared with the corresponding copper wire screen solution with aluminium laminated foil. Lastly, work continued on starting up and qualifying the Rybinsk plant in Russia: in fact, 110 kV qualification was achieved and the 330 kV prototype with a Milliken 2500 mm² aluminium conductor was produced for the subsequent phases of testing.

- With reference to developments in P-Laser technology, the 150 kV class passed its qualification test; the test, conducted on a system complete with accessories (joints and terminations), was completed with a series of additional high-temperature high-voltage tests. In view of the promising results obtained during internal prequalification testing conducted in 2013, qualification testing started for a P-Laser HVDC 320 kV cable and related accessories. The P-Laser system is particularly suitable for high voltage direct current (HVDC) applications because of the greater chemical stability of its insulating material for which no kind of treatment (degassing) before commissioning is required.
- The Oil & Gas cables business reported continued product development and related technology transfer between Group factories. In particular, to meet the needs of our customers in the global change of the business (increased production from new offshore platforms in China and Brazil), technology and know-how for offshore NEK606 compliant cables were transferred to the Chinese plant in Tianjin, with related training of its technical staff and preparation of appropriate manuals in English and Chinese; during the year similar activities were also carried out at the Suzhou plant. In terms of products, new solutions were developed for harsh environmental conditions and to allow vital communication by emergency systems even in extreme conditions. The

Drilling Package, a complete cabling solution for Oil & Gas drilling applications both onshore and offshore, was also launched globally.

- With regard to the development of Prycam technology, two important new innovations were developed in 2014. These included the Prycam DLoG, a digital data logger with 4 analogue inputs and 4 totally configurable digital inputs to accept temperature, pressure, current, voltage sensors, and so on; this device is designed to monitor electrical parameters in fixed installations and, like other members of the Prycam family, it allows users to see data acquired wirelessly and to send that data to the common Pry-Mon monitoring platform. The Pry-Mon platform was enhanced to accept data from Prycam Portable, from Prycam Grids and from DTS systems. The second innovation in the family was the new Prycam Wings sensor. Developed using the experience of the Prycam Portable sensor to measure partial discharges, Prycam Wings also includes temperature and current sensing.

Achievements in the Telecom operating segment included:

- In the optical fibre field, several of the Group's factories were got ready for full production of bend-resistant BendBrightxs fibres, which have much better micro and macro-bending performances than competitor products. A number of improvements were also made at several factories to secure a significant reduction in fibre production costs. In the area of multimode fibre, WideCAP OM4 was launched, a new fibre capable of 40Gb bidirectional transmission with two channels at 850 and 900nm, and potential upgrade to 4 * 25Gb to meet the future needs of the 100Gb superfast network.
- In the optical cables field, the Flextube family of cables was enlarged with the addition of a record density product containing 4.2 fibres per mm² in a 1728 fibre 23 mm diameter cable, made using fibres measuring 200 micrometres in diameter. These products represent an excellent solution for use in conduits congested with other cables. Dry/dry technology was also developed for Flextube cables in order to reduce cable installation time even further and so reduce overall installation costs. At the Slatina plant in Romania, now one of the major European centres of optical cable production, investments continued for a significant increase in production capacity of the Flextube and Drop cables. In

the connectivity field, Prysmian continued to develop several new accessories for use in FTTH (Fibre to the Home) applications.

In terms of industrial innovation, the strategic role played by materials in cable and accessories technology is leading Prysmian Group to step up its exploratory studies in this area. The main achievements in the year included:

- Successful completion of the study of semi-conducting compounds for P-Laser cables up to 500kV HVDC. These compounds were successfully extruded on prototype cables.
- Completion of the development of a proprietary formulation of high temperature acrylic for use in fibres for sensors.
- In the petrochemicals sector, completion of testing of aluminium clad armouring for flexible pipes: this material showed an excellent performance in extreme environments and at great depths.
- Continued study of composite materials for use, instead of steel armouring, in submarine cables and umbilicals; this work was conducted in partnership with several suppliers for the realisation of the desired materials.

Lastly, work on cost optimisation continued throughout the year. The package of DTC (Design to Cost) projects was

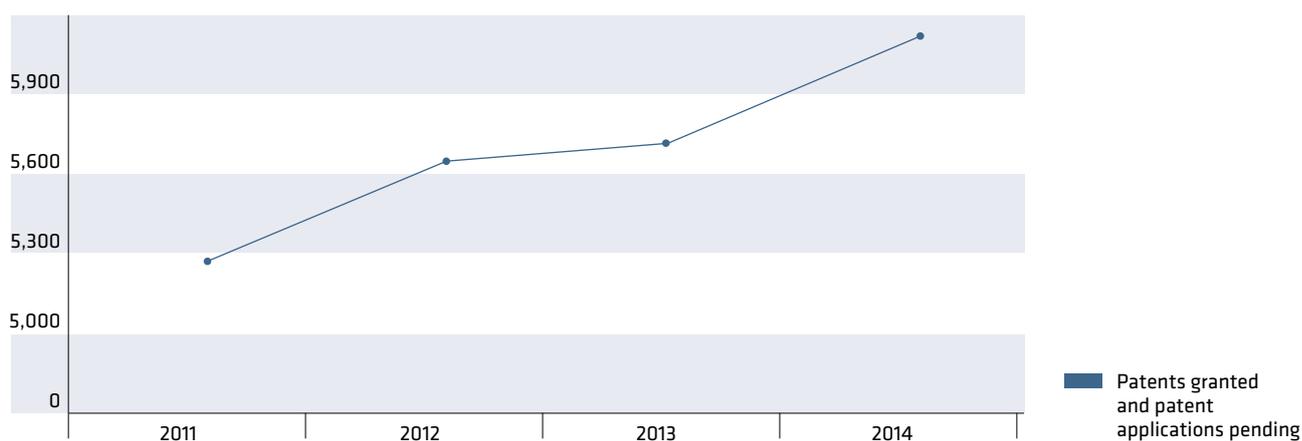
further extended to cover more than 1,700 projects, which, combined with compound rationalisation and better use of materials, allowed the Group to achieve major cost savings in support of greater competitiveness.

Intellectual property rights

Protecting its portfolio of patents and trademarks is a key part of the Group's business, particularly in view of its strategy of growth in high-tech market segments. In particular, the Group's intense R&D activities, in the Energy Projects, Energy Products and Telecom operating segments, have allowed it to continue to add to its patent portfolio, especially in high-tech and higher value-added areas, in order to support its major investments in these areas in recent years and to protect the related businesses, both now and in the future.

As at 31 December 2014, the Prysmian Group had 5,836 patents and pending patent applications throughout the world, covering 932 inventions (of which 278 in the Energy Projects and Energy Products segments and 654 in the Telecom segment). During 2014, 45 new patent applications were filed (+21% compared with 2013), of which 32 in the Telecom area and 13 in the Energy area, and 187 patents were granted after examination, of which 33 by the European Patent Office (EPO) and 61 in the United States.

PATENTS GRANTED AND PATENT APPLICATIONS PENDING



The most important products, typically distinguished by particular characteristics or a specific production process, are protected by trademarks that allow them to be identified and guarantee their uniqueness. As at 31 December 2014, the

Prysmian Group owned 605 trademarks, corresponding to 2,920 trademark registrations in its countries of operation, covering the names and identifying symbols of its companies, activities, products and product lines.