

Sustainable innovation and intellectual property

In the Open Innovability® ecosystem, Intellectual Property (IP) plays a key role in protecting and enhancing the value of the innovative solutions created and developed in-house or in collaboration with third parties.

IP is a key component to regulate and foster the sharing of ideas, technologies and knowledge between Enel peo-

ple, startups, universities, research centers, suppliers, and consultants.

As at December 31, 2022, the IP portfolio, which ensures protection from a geographical point of view on all the markets in which the Group is present, contains:

883

patents for industrial invention, belonging to 163 technology families; of these, 711 have been granted and 172 are pending

23

utility models

194

designs registered

Trade secrets

of a technical and commercial nature that are constantly coded and kept in line with the requirements of the internal Trade Secrets Management organizational procedure

2,027

trademarks, of which 1,642 have already been registered, and 385 are pending

As part of the activities aimed at protecting and developing the portfolio of trademarks owned by the Group, notably, in the year of Enel's 60th anniversary, in addition to the registration of the "**Enel 60 years**" mark, the procedure for registering the Enel brand in the Special Register of Historic Trademarks of National Interest was initiated. This important recognition is awarded, following the submission of a special application, to trademarks that have been registered for at least fifty years, or for which there is proof of their continuous use for at least fifty years, and that are used to market products or services made in a national production company of excellence with long-term links to Italy.

Other notable achievements include the registration of trademarks that identify models operating in the field of sustainability, such as:

- i. **Valuability**® of the model, copyrighted by Enel SpA, aimed at fostering the inclusion at work and active participation of colleagues with disabilities;
- ii. **CirculAbility**® of the model – also copyrighted by Enel SpA – for measuring circularity.

Enel has consolidated its processes for managing the generation and use of intellectual property rights in the **Intellectual Property Management and Trade Secrets Management organizational procedures**. Both of these view human capital as an essential element in the creation of IP and aim to incentivize employee participation in the inventive process, empowering them on the strategic importance of all findings.

Through the **IP Reward Program**, prizes and awards, including monetary ones, are paid to Enel inventors of solutions protected (or in the process of being protected) by patent, design, copyright or trade secret. As part of the IP Reward program, the first edition of the **Enel Intellectual Property Awards** were held on November 29, 2022, where the inventions protected by intellectual property and deemed most strategically relevant to the Group were honored. These initiatives, together with regular internal communication and awareness-raising activities, have also contributed to an increase in the number of inventions proposed by employees through the company IP portal.

During 2022, intellectual property codification and protection activities continued in all the Global Business Lines. In particular:

- **Enel X Global Retail** focused its activity on strategic platforms, codifying copyrights on the Big Data Platform, the strategic data container for all Enel X business units, and X Customer, the global Enel X customer management system.

With regard to the circular economy, the circularity schemes in Enel X, together with their scores and operating mechanisms, have been protected under copyright law.

In the field of telemedicine, a multiple design mark was registered in the European Union on the graphical user interfaces of the "Smart Assistance eWell" app, which offers users a complete wellness package.

- In **Enel Green Power and Thermal Generation**, the following notable developments were achieved during the year:

- in the photovoltaic sector, (i) a patent application for an industrial invention and a design patent on a solution that automates the process of installing photovoltaic panels in the field, reducing installation time and costs and increasing operator safety; (ii) a patent application in co-ownership with the Commissariat à l'Énergie Atomique et aux Énergies Alternatives (CEA) on a system to optimize the automatic removal and insertion of the wafer bar holder of the storage tray used to process wafers in chemical hoods. In addition, the generation and protection, mainly in the form of trade secrets, of the technological know-how required for the Gigafactory project continues at the 3SUN factory.

CEA-INES is one of Europe's leading photovoltaic research institutes. A collaborative research agreement was negotiated and signed with the institute for the development of the two-terminal Perovskite-silicon tandem technology, with the aim of producing high-efficiency devices that can be industrialized on the lines of the Gigafactory in Catania. The management of the IP rights arising from the collaboration was a crucial factor in the negotiation of this agreement, which is based on the strong technological background of the two partners;

- in the field of hydroelectric generation, a utility model patent application for a robotic solution that facilitates plant inspections by enabling access to all places that are difficult for personnel to reach, such as hydroelectric coils or small-diameter hydroelectric pipelines.

- **Enel Grids** filed two patent applications for inventions in 2022: one in the field of asset recognition and anomaly detection of grids and grid events (ODIN project) and the other in the field of safety devices for workers working at height. Other noteworthy events included: (i) the registration of the design of the new sustainable road cabin, which will be developed using recycled materials to reduce environmental impact, and (ii) the filing of a utility model patent application in the field of safety, consisting of a method for delimiting road construction sites.

Also during the year, Gridspertise consolidated its IP portfolio by filing a patent application for the Quantum Edge – QEd® device, which, by exploiting edge computing to digitize the physical components of secondary substations, reduces installation, training, operation and maintenance costs and increases network reliability.

Enel Grids concluded two major licensing agreements with Gridspertise in 2022 for the commercialization of some of its key digital assets, including the Grid Blue Sky solutions. These agreements constitute a milestone

in the valorization of Enel Grids' intellectual property through an out-licensing strategy. Gridspertise will participate within the framework of these agreements as a commercial and technical partner, offering customized versions of licensed digital solutions to meet the specific needs of third-party DSOs.

In May 2022, Enel Grids founded the "Open Power Grids" association, for the first time making its historical wealth of expertise and experience on distribution networks accessible free of charge to member operators outside the Enel Group. The objective of Open Power Grids is to create a collaborative ecosystem to foster innovation, aggregating experiences, ideas, technologies and resources to make electricity grids more resilient, sustainable and participative, also based on a market-driven standardization process. In this way, the initiative can help improve the effectiveness and measurability of the concrete actions taken by Enel to achieve the Net-Zero ambition. The proposed approach is to provide open access, within the association, to the existing functional specifications (of electricity grid components and devices and network design solutions) on which Enel Grids holds copyright and, based on these, to develop new ones, in a logic of co-design, maximizing the aspects of sustainability, standardization and innovation.

- **Enel X Way** protected the JuiceBox DC and JuiceBox 4.0 smart home charging devices respectively through: (i) an international design registered in the European Union, the United Kingdom and the United States and (ii) an international design registered in Canada, Mexico and the United States. Intellectual property protection work on electric vehicle charging stations also extended to the registration of the JuiceMedia 2.0 and JuiceMod product designs in the European Union and the United States.

In the field of electric car charging points, Enel X Way pursued the goal of inclusiveness by designing infrastructures that take into account the needs of motorists with reduced mobility. In fact, in collaboration with ANGLAT, the national trade association that protects the rights to mobility of people with disabilities, and following the criteria of Universal Design, Enel X Way has created an additional maneuvering area marked on the ground by zebra stripes and featuring bollards to protect the infrastructure from possible impacts. With the intention of promoting the project and facilitating its usability by as many users as possible, Enel X Way enhanced the intellectual property of the designs through the open property model with author protection through Creative Commons. Specifically, Creative Commons Attribution-Non Commercial licenses were applied, which allow third parties to download and use the designs free of charge.

- **Enel Global Services** filed a patent application in Italy for an industrial invention on the innovation management method, also protected as the word mark Enel OOPS...! Innovation®. This method is based on perfecting industrial processes using the tools of Open Innovability®.

Enel SpA also filed a patent application in Italy for a **method of evaluating managerial positions**, based on a model capable of acquiring and processing personnel management parameters using a proprietary algorithm, thus providing a meaningful index that meets the needs of the People and Organization Function.

More generally, the Group continues to invest resources in the development of IP-intensive solutions, mainly in the forms of authorship protection and trade secrecy on databases and algorithms for forecasting the electricity and gas markets, advanced quantitative models that use,

among other things, scenario data to assess the impact of climate change on specific assets/production activities. The most notable investments in this area include development models that aim to: (i) characterize an asset's ability to "withstand" the possible effects of climate change; (ii) quantify the likelihood of an event or combination of climate events damaging the asset; and (iii) provide an index of the asset's "weakness" with a specific technical approach to prioritize actions/fields for improvement.

Finally, during the year, the Group consolidated its **internal non-financial intellectual property reporting process based on an internal proprietary methodology capable of codifying, protecting and valuing corporate intangibles**.

This methodology aims to provide a qualitative assessment of the intellectual property and an indication of the investment that would be required to replicate the set of intangibles subject to codification.

