



R&D&I Policy

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General Direction

Research, Development and Innovation Policy of TECNALIA

Appropriate to the mission.

TECNALIA is a private Foundation recognized by the Spanish Ministry of Economy, Industry and Competitiveness and by the Department of Economy and Competitiveness Development of the Basque Government as a Technological Centre and as a Support to the Technological Innovation.

The Mission of TECNALIA is "We transform technology into GDP", i.e. to transform technology into economic development in order to improve People's quality of life by creating business opportunities for Companies.

TECNALIA promotes and strengthens its own R&D&I and its customers as a differential factor of competitiveness in the target sectors of their business.

Aligned with the strategy and focused on the main challenges of the future.

The 2020 strategy of TECNALIA establishes the 3 key elements on which the R&D&I efforts will be based to overcome technological challenges that contribute to an efficient and sustainable human and social development (see Figure 1).

The R&D&I to achieve the above challenges is performed with a suitable mix of fundamental, industrial research and experimental development activities (10%, 60% and 30% respective and approximately), so that knowledge and technologies can be generated with the collaboration of other open innovation agents. These technologies will rise to higher levels of technological development (Technology Readiness Levels or TRLs) using experimental and semi-industrial prototypes that will reduce the technology and market risk for their transfer to customers.

Aligned with the smart regional specialization strategy

Almost all the R&D&I activity (over 90%) will be held in the strategic areas of intelligent specialization RIS3 related with: advanced manufacturing, energy and bioscience / health and the established objectives will be directly linked with scorecard for multi-focalized technological centers for the Emaitek+ program of Economic Development and Competitiveness Department of the Basque Government.

The mentioned objectives of the R&D&I are related to the knowledge generation and to the new and innovative technologies that are translated into patent applications and generation of resources by its exploitation or transfer, doctoral theses, quality scientific publications in prestigious journals, creation of enterprises and jobs and wealth through them, transference of results of the R&D&I companies, training of researchers and the transference to the productive sector, contracting of international cooperative projects under European Commission programs. All this, in a collaborative mode with other agents of the RVCTI (Basque Network of Science, Technology and Innovation) and the companies.

Based on a systemic model for R&D&I

The guidelines for the identification of opportunities, the selection of innovations to be develop, the development and the methodology, the protection of the results of R&D&I as the exploitation and transference of them, are based on the Tecnalía's ISAMPE model, for the efficient and strategic management of the activities of Research, Development and Innovation (Figure 2). Moreover, this model establishes the elements which TECNALIA has to promote to achieve a culture of innovation.



Figure 1. TECNALIA 2020 strategy sets the 3 STRATEGIC pillars of HUMAN, SUSTAINABLE and EFFICIENTE DEVELOPMENT where the R&D&I will be performed in the big technological challenges associated to the: urban habitat, climate change and the lack of resources, low carbon energy, advanced manufacturing, digital and hyper-connected world and health.



Figure 2. The ISAMPE model for strategic management of technology includes 6 non-linear but very interrelated and perfectly geared processes: opportunity IDENTIFICATION, SELECTION of strategic options, ACQUISITION or development of those options, PROTECTION of industrial property, EXPLOITATION or developed technology transference and IMPROVEMENT, LEARNING and INNOVATIVE CULTURE as elements that will facilitate its implementation.

Organized to maximize the creation and transfer of value

To enable greater efficiency in the creation and transfer of value of the own-funded R&D&I, TECNALIA has a R&D&I management unit for itself and for TECNALIA Ventures. TECNALIA Ventures aims to be an agent of change for the creation of added value for the technology assets developed by TECNALIA to maximize the returns of the transference.

The R&D&I management unit of TECNALIA is setup by a corporate technology direction distributed in technological directions in each of the divisional business of TECNALIA, which will ensure the prioritization of research associated with the challenges of the TECNALIA 2020 strategy. It will also promote relevant

technological excellence, and will help to manage efficiently the own-fund investment for R&D&I and the portfolio of technology assets and technology platforms.

According to UNE 166002

TECNALIA will develop these activities within a R&D&I management system according to standard UNE 166002:2014, on the basis of the R&D&I policy established by the General Director, and here presented, with the commitment of fulfilling the applicable requirements, reviewing the achievement of the objectives, and establishing plans for improvement if necessary.

R&D&I policy based on clear principles

R&D&I policy is based on the following principles:

- **The promotion, practice and consolidation of an innovative culture.**
- **Integrated innovation** in all activities aimed at the development of products, services, processes, models of business (or combination), with the intention of creating value for all stakeholders and an economic return.
- The R&D&I carried out with own funds should be **aligned with the business strategies** and guided from the beginning to the creation and transference of value, such as a differential aspect, according to the TECNALIA's goals in the ISAMPE model.
- **Perform R&D&I under the criteria of effectiveness and efficiency**, achieving a relevant technological excellence, generating and developing technologies and products or processes that fulfill the needs of our customers and the current and future demands of the market.
- **Improvement in efficiency and impact in our activity**
- **Fair competition and compliance with the laws in force and the requirements of the interested parties**
- **The proximity to the market and knowledge of the priority sectors**, strategic customer business models and the behaviour of the users should be channeled as a source of information to create innovations.
- **Strategically positioning of Tecnalia in the environment**, making use of the "Strategic Vigilance and Competitive Intelligence".

Framework for the main processes of the R&D&I policies.

The R&D&I policy is a model and a framework for specific policies that are documented for other R&D&I processes within the process map, such as:

- Technology Vigilance and Competitive Intelligence policy
- Industrial Property policy
- Exploitation policy
- Knowledge Management policy

Communication and Review of the Policy

This R&D&I policy is communicated and understood within TECNALIA and to all interested parties and it will be reviewed annually for its continuous suitability by the General Director of TECNALIA.

Signed:

Mr. D. Joseba Iñaki SAN SEBASTIAN ARRATIBEL

CEO of Tecnalia