

## Sustainable Development Goals (9/17)

9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

# 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



### In this number...

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The "Indicators of the 2030 Agenda for Sustainable Development" is an operation within the National Statistical Plan, which is produced by INE in collaboration with the statistical services of the ministries. Its results can be viewed at: <https://www.ine.es/dynngs/ODS/es/index.htm>.

Goal 9 commits countries to promote the building of resilient infrastructure, promote inclusive industrialisation and foster innovation. To this end, the global framework sets the following targets: 1) Develop reliable, sustainable, resilient and quality infrastructure, including regional and cross-border infrastructure, to support economic development and human well-being; 2) Promote inclusive and sustainable industrialisation and significantly increase the contribution of industry to employment and GDP; 3) Increase the access of small industries and other businesses, particularly in developing countries, to financial services, including affordable credit, and their integration into value chains and markets; 4) Modernise infrastructure and convert industries to make them sustainable, using resources more efficiently and promoting the adoption of clean technologies and industrial processes; 5) Increase scientific research and improve technological capabilities in industrial industries, in

particular in developing countries, among other things through promoting innovation and significantly increasing the number of people working in research and development and public and private sector spending on research and development; 6) Facilitate the development of sustainable and resilient infrastructure in developing countries through increased financial, technological and technical support; 7) Support domestic technology development, research and innovation in developing countries, including by ensuring an enabling policy environment for, among other things, industrial diversification and value addition to commodities; and 8) Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in the least developed countries by 2020.

The global framework contains 12 indicators for the monitoring of Goal 9. Eighteen sub-indicators for 9 global indicators have been published on the national indicator platform. Thus, the coverage rate of the SDG 9 indicators is 75%.

## R&D expenditure in Spain and the EU



The indicator *Gross domestic expenditure on R&D* measures the gross domestic expenditure in innovation and development as a percentage of the gross domestic product. The EU has set itself the target of investing 3% of GDP in R&D. R&D is defined as all creative work undertaken in a systematic way in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.

In 2021, the three European countries that spent the highest percentage of their GDP on R&D were Sweden (3.35%), Belgium (3.22%) and Austria (3.19%). On the other hand, the three European countries with the lowest percentages were Romania (0.47%), Malta (0.64%) and Latvia (0.69%).

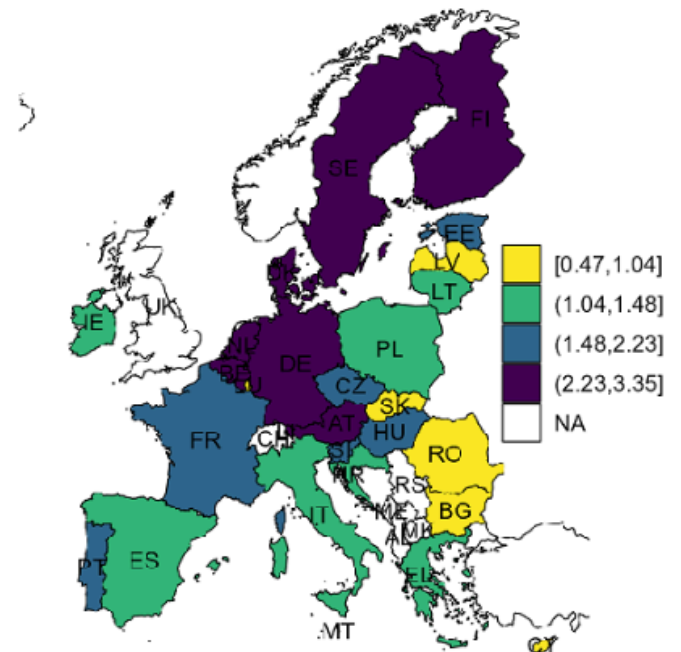
In the same year, Spain's percentage was 1.43%, which is 0.83 percentage points less than the EU-27 average (2.26%) but a growth for the country of 0.21 percentage points compared to 2015.

By execution industries in Spain, the industry that contributed the most to R&D in 2021 was the Business industry, with 0.80%, followed by Higher Education, with 0.38%, and Public Administration, with 0.24%. In last place, Private Non-Profit Institutions contributed 0.01%.

Since 2015, the contribution of the Public Administration industry has grown by 0.01 percentage points, that of the Business industry by 0.16 percentage points, Higher Education by 0.04 percentage points and Private Non-Profit Institutions by 0 percentage points.



Gross domestic expenditure on R&D, as a proportion of GDP. 2021 (%)



Source: Eurostat

## CO<sub>2</sub> emissions in the manufacturing industry

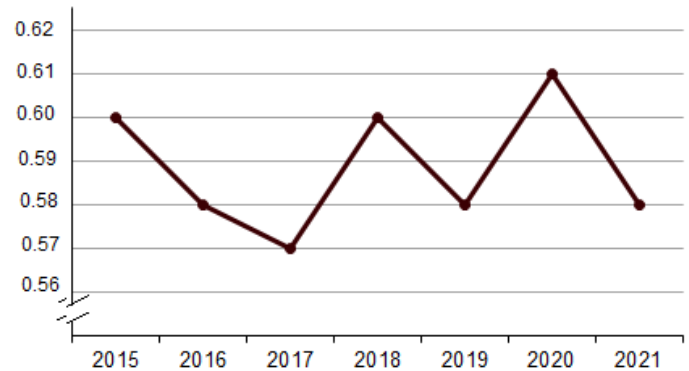


Sub-indicator 9.4.1.2. *CO<sub>2</sub> emissions by resident units per unit of value added. Manufacturing sector* measures the total carbon dioxide equivalent emissions (CO<sub>2</sub>-eq) of resident economic units per unit of real GDP, irrespective of the geographical location where they actually occur. The indicator uses as data for total carbon dioxide emissions (CO<sub>2</sub>-eq) into the atmosphere those published by the Atmospheric Emissions Account prepared by the INE based on the National Inventories of Atmospheric Emissions of the Ministry for Ecological Transition and the Demographic Challenge.

In the year 2021 the total CO<sub>2</sub>-eq emissions of the resident units per unit of value added for the manufacturing industry was 0.58 (kg CO<sub>2</sub>-eq/euro). This represents a decrease of 0.02 percentage units compared to 2015 and 0.03 percentage units compared to 2020.

**Did you know that... greenhouse gas emissions have been reduced in recent years to reach a level similar to 1990 in 2021?**

**CO<sub>2</sub> eq emissions per unit of GVA of manufacturing industry (%)**



## Employment in the manufacturing industry



Sub-indicator 9.2.2.1. *Percentage of persons employed in manufacturing* measures the number of persons employed in manufacturing industry in proportion to the total number of employed persons. The data source is the Labour Force Survey.

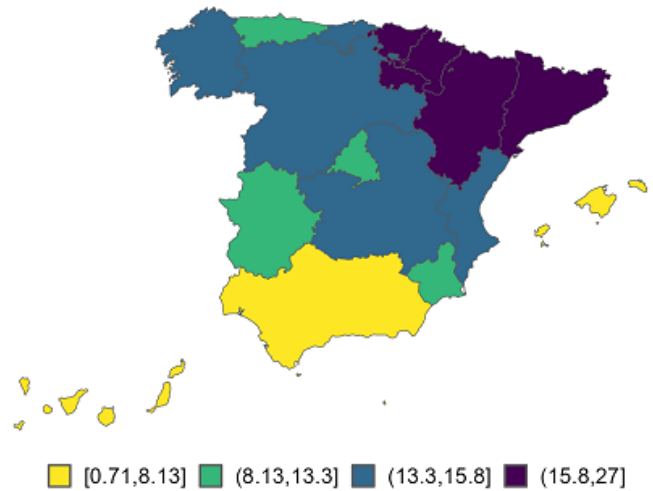
In 2022, the percentage of employed persons in the manufacturing industry in Spain was 12.3%, which represents a decrease of 0.2 percentage points compared to 2015 (12.5%).

By sex, 16.4% of men and 7.5% of women were employed in the manufacturing industry.

In 2022, the three Autonomous Communities with the highest percentage were La Rioja (27.0%), Navarra (24.6%) and País Vasco (19.5%). On the other hand, the three with the lowest percentages were Canarias (3.6%), Illes Balears (5.7%) and Andalucía (7.5%).

**Did you know that... in 2021 the value added by the manufacturing industry was 2,859 euros per capita and 10.9% in proportion to GDP?**

**Manufacturing employment as a proportion of total employment. 2022**  
Percentage



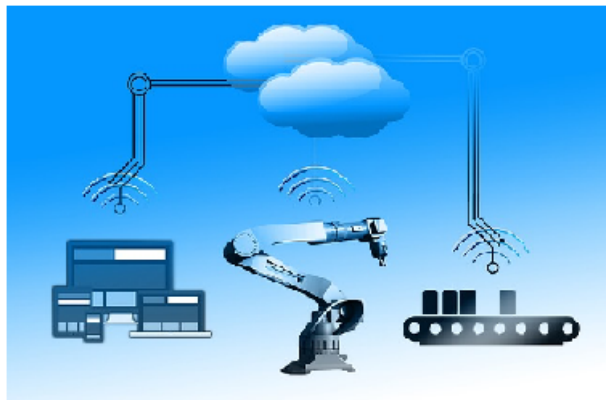
## High-tech industries and small-scale industries



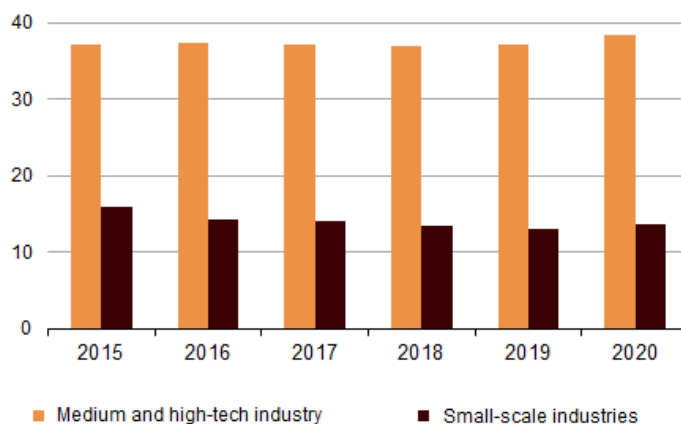
The sub-indicator "Proportion of medium and high-tech industry value added in total value added of industry" is sourced from the statistic called "High Technology Indicators", for which the INE is responsible. Data for the sub-indicator "Proportion of small-scale industries in the value added by the industry" are from the INE's Annual National Accounts.

In 2020 in Spain, the proportion of value added by the medium and high-tech industry contributed to the total industry was 38.51%, this represents an increase of 1.38 percentage points compared to the 2015 contribution of 37.13%.

On the other hand, the proportion corresponding to small-scale industries in the value added by the total industry decreased by 2.22 percentage points between 2020 (13.70%) and 2015 (15.92%).



**Proportion of medium and high-tech industry value added in total value added of industry (%)**



## Measuring progress on Goal 9



Progress in Spain on the SDG 9 subindicators is presented, distinguishing between short-term progress (latest year available compared to the previous year) and medium-term progress (since 2015, i.e. the baseline year). In both cases the compound annual growth rate has been used.

For indicators with positive normative direction (increases are desirable) we have: growth rates greater than or equal to 0.5% are considered progress (↑), rates in the range [0% - 0.5%) slight progress (↗), rates in the range [-0.5% - 0) slight decline (↘) and for rates less than -0.5%, a decline (↓). For indicators that do not evolve, ↔ is used.

For indicators with a negative normative direction, the categories are reversed.

Among the 18 sub-indicators shown in the table, in the medium term, eight of them are progressing favourably, one shows slight progress and seven are regressing.

| Subindicator  | Unit                                     | Last year | Last year's value | Medium-term progress | Short term progress |
|---|--|-----------|-------------------|----------------------|---------------------|
| 9.2.1.1. Manufacturing value added per capita   | 2015 constant dollars                    | 2021      | 2,859             | -0.3% ↘              | 5.9% ↑              |
| 9.2.1.2. Manufacturing value added as a proportion of GDP   | Percentage                               | 2021      | 10.90             | -0.6% ↓              | 0.7% ↑              |
| 9.2.2.1. Percentage of persons employed in manufacturing  | Percentage                               | 2022      | 12.3              | -0.2% ↘              | 0.0% ↔              |
| 9.2.2.2. Manufacturing employment as a proportion of total employment   | Percentage                               | 2021      | 9.47              | -0.8% ↓              | -2.8% ↓             |
| 9.3.1.1. Proportion of small-scale industries in total industry value added   | Percentage                               | 2020      | 13.70             | -3.0% ↓              | 4.7% ↑              |
| 9.4.1.1. CO <sub>2</sub> emissions by resident units per unit of GDP  | Kg CO <sub>2</sub> equivalent/Euros      | 2021      | 0.21              | -3.5% ↑              | 0.0% ↔              |
| 9.4.1.2. CO <sub>2</sub> emissions by resident units per unit of value added. Manufacturing sector  | Kg CO <sub>2</sub> equivalent/Euros      | 2021      | 0.58              | -0.6% ↑              | -4.9% ↑             |
| 9.4.1.3. Green House Gas emissions relative to 1990 (index 1990=100) (*)  | Percentage                               | 2021      | 0.40              |                      |                     |
| 9.4.1.4. Green House Gas emissions relative to 2005 (index 2005=100) (*)  | Percentage                               | 2021      | -34.17            |                      |                     |
| 9.4.1.5. PM 2.5 emissions from resident units per unit of value added. Manufacturing sector   | Grams/euros                              | 2020      | 0.12              | 5.9% ↓               | 9.1% ↓              |
| 9.4.1.6. PM 10 emissions from resident units per unit of value added. Manufacturing sector  | Grams/euros                              | 2020      | 0.14              | 3.1% ↓               | 7.7% ↓              |
| 9.5.1.1. Research and development expenditure as a proportion of GDP  | Percentage                               | 2021      | 1.43              | 2.7% ↑               | 1.4% ↑              |
| 9.5.2.1. Researchers (in full-time equivalent) per million inhabitants  | Researchers (FTE) per million population | 2021      | 3,252.61          | 3.6% ↑               | 6.2% ↑              |
| 9.a.1.1. Gross official development assistance for infrastructure   | Millions of Euros                        | 2020      | 78.68             | 5.9% ↑               | 19.4% ↑             |
| 9.a.1.2. Net official development assistance for infrastructure   | Millions of Euros                        | 2020      | 45.07             | ↑                    | 7.1% ↑              |
| 9.b.1.1. Proportion of medium and high-tech industry value added in total value added of industry   | Percentage                               | 2020      | 38.51             | 0.7% ↑               | 3.4% ↑              |
| 9.c.1.1. Proportion of the population covered with mobile networks of the Universal Mobile Telecommunications System (UMTS) with High-Speed Packet Access (HSPA) (3.5G) | Percentage                               | 2018      | 99.90             | 0.1% ↗               | n.d.                |
| 9.c.1.2. Proportion of the population covered with Long-Term Evolution (LTE) mobile networks (4G)   | Percentage                               | 2018      | 99.50             | 9.3% ↑               | n.d.                |

(\*) For sub-indicators 9.4.1.3 and 9.4.1.4, progress has not been calculated, as they already directly show progress since 1990 and 2005, respectively.