

INDUSTRIAL INNOVATION

EJECUTADO POR:



COLOMBIA'S LOCATION ADVANTAGES

Five key enablers of investments in Industrial Innovation



Government Support

Colombia has instituted several long-term industrialization strategies to support high-value, knowledge-intensive manufacturing activities



Growing Ecosystem

The manufacturing sector in Colombia is a \$36.2 billion industry, spanning diverse sectors including aeronautics, automotives, packaging, building materials, cosmetics and personal care



Labor Force

Colombia offers access to an experienced labor force of 2.2 million manufacturing employees at some of the lowest labor costs in Latin America



Industrial Infrastructure

A large network of Free Trade Zones across the country offers investors significant tax and customs benefits and access to world-class export infrastructure



Market Access

Colombia has 19 Free Trade Agreements and 8 Bilateral Investment Treaties with key partner countries in North America, Asia and Europe



Colombia's reindustrialization policy

Objective: **Transition** from an extractivist economy **to a knowledge-based, productive and sustainable economy**

Aims to develop high-value and diverse manufacturing industries in Colombia with interventions such as public procurement opportunities and promoting investments through public and joint ventures.

Colombia has implemented several long-term strategies to accelerate industrialization, productivity and innovation:



Colombia's **National Development Plan 2022 - 2026** includes several initiatives and programs aimed at promoting innovation, competitiveness and productivity in various sectors of the economy. A key component of this is the **productive transformation, internationalization and climate action pillar**, which aims to diversify productive activities that are intensive in knowledge and innovation.



The **Vallejo Plan** is an export promotion instrument through which organizations may temporarily import raw materials, capital goods and spare parts to be used in the production of export goods or in the provision of export services, with **customs and tax benefits** and subject to an export commitment.

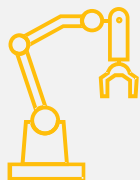
Manufacturing in Colombia is a dynamic economic growth engine in sectors including automotive, packaging, petrochemicals, construction materials and cosmetics



US\$ 36.2 billion of manufacturing value added*, the 5th largest sector in Latin America and the Caribbean, contributing 13% to GDP

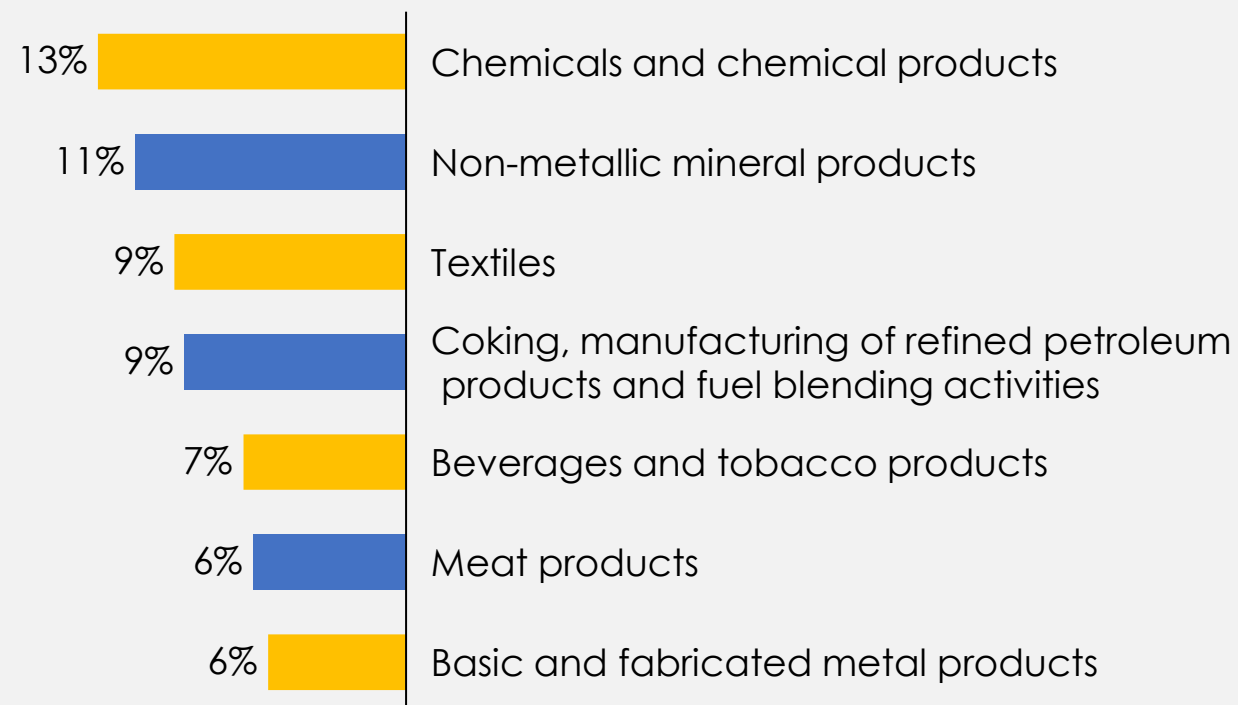


Manufacturing value-add **grew from US\$ 13 billion to US\$ 36 billion** between 2003-2021



Medium and high-tech exports comprise 46% of total manufactured exports:** a 10% rise in the share of manufactured goods since 2012

Share of top segments in Colombia's manufacturing GDP 2022



Source: World Bank, DANE, UN

* Market value of aggregate outputs minus the market value of aggregate inputs, Current US\$

** Goods that incur relatively high expenditure on research and development (R&D) per unit of output

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2023

Holcim (Switzerland) is investing \$10 million in the city of Tocancipá in a manufacturing project, producing mortars, acrylic liquid membranes, waterproofing and additives for construction, as part of the company's '2025 Strategy - Accelerate Ecological growth'.



2021

Chevrolet of General Motors (USA), expanded its manufacturing operations at its Colmotores facility in Bogotá. The company invested \$50m to modernize its light vehicle plant and to increase the size of the workforce. The plant's first vehicle launched in March 2023.



2021

Kia Motors (South Korea) announced an investment of US\$4m (with additional financing from Ecuador-based Corporación el Juri) and the creation of 120 jobs in a new assembly plant in Cota. The new site was to produce about 180 vehicles a month to supply local demand.



2021

Renault (France) invested \$5 million in 2020, and \$80 million in 2021 to modernize its plant in Envigado, introducing new technological advances and automation of 15% of the production process. The plant is rated the group's best industrial facility globally in terms of customer satisfaction, energy efficiency, industrial safety, storage levels, environmental management and productivity.

- **Over 2.2 million** are employed in Colombia's manufacturing sector
- **Colombia's key graduates** (2021 figures) –
 - Industrial engineering: 13,673
 - Systems engineering: 6,748
 - Environmental engineering: 5,012
 - Technology in information systems analysis and development: 4,203
 - Mechanical engineering: 2,842
 - Electronic engineering: 2,589

63% of firms in Colombia offer formal training to employees, the 7th highest proportion globally



38% of the workforce are engaged in knowledge-intensive employment



3 Colombian institutions rank among Latin America's top 15 universities in QS World University Ranking 2023

Universidad of the Andes



Total Enrollment: **15,300**
 Undergraduate: **13,192**
 Graduate: **2,108**

National University of Colombia



Total Enrollment: **52,908**
 Undergraduate: **47,279**
 Graduate: **5,629**

Pontifical Javerian University



Total Enrollment: **23,269**
 Undergraduate: **18,962**
 Graduate: **4,307**


Top universities offering different engineering degrees

National University of Colombia




Systems and industrial engineering
 Electrical and electrics engineering
 Mechanics and mechatronics engineering

Industrial University of Santander




Industrial design
 Industrial engineering
 Mechanical engineering
 Electrical engineering

University of the Andes



Industrial engineering
 Electrical engineering
 Mechanical engineering

Pontifical Javerian University



Industrial design
 Industrial engineering
 Mechatronics engineering

University of Valle



Universidad del Valle

Materials engineering
 Mechanical engineering
 Industrial engineering
 Electrical engineering

ECCI University

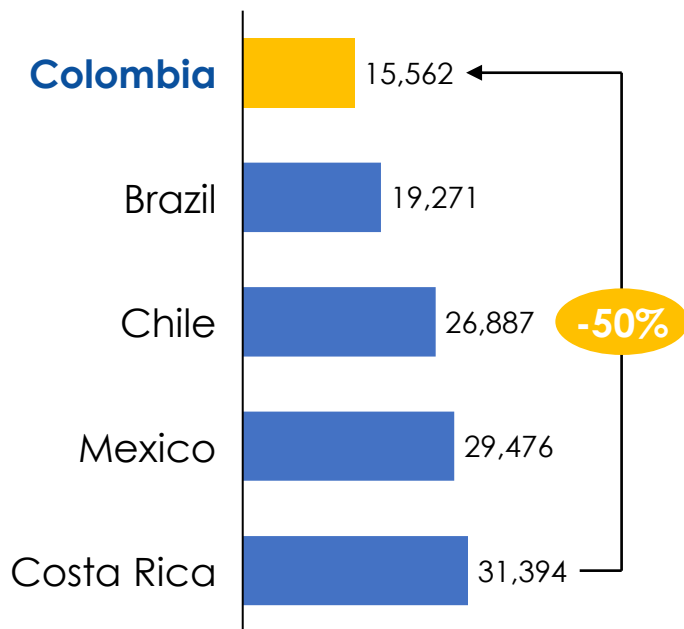


UNIVERSIDAD · ECCI

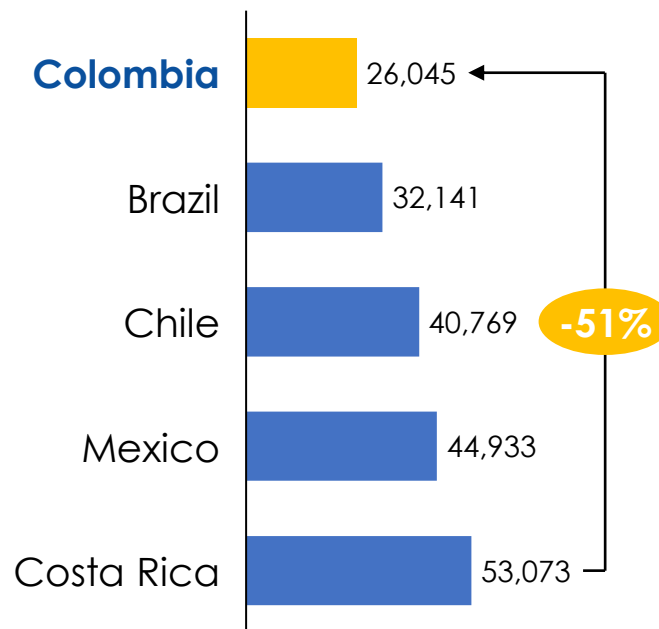
Technology in Automation and Industrial Robotics
 Technology in Automotive Mechanics
 Technology in Industrial Electronics

Colombia has the lowest regional labor costs for key skilled and technical sector professionals, with cost advantages of over 50% in critical positions

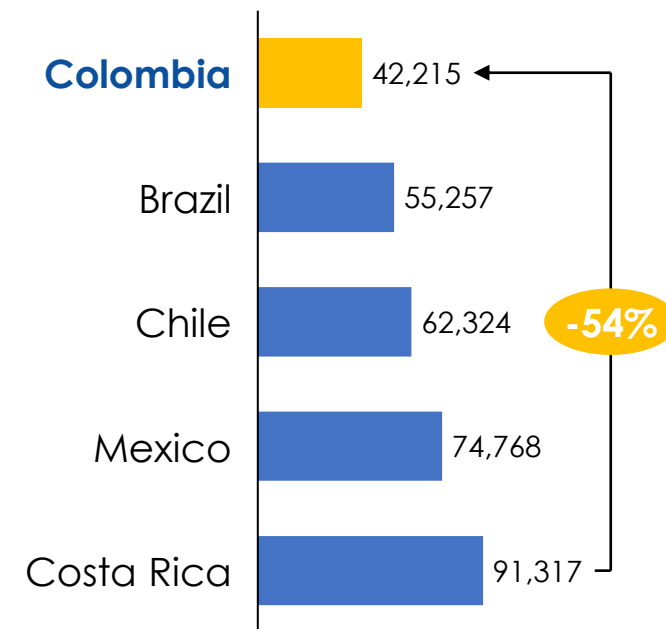
Average annual labor cost for an industrial engineer (US\$/year) 2021





Average annual labor cost for a robotics engineer (US\$/year) 2021

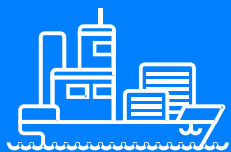


Average annual labor cost for a machine-learning engineer (US\$/year) 2021



Source: fDi Benchmark

12 Marine terminals  **14** International airports 

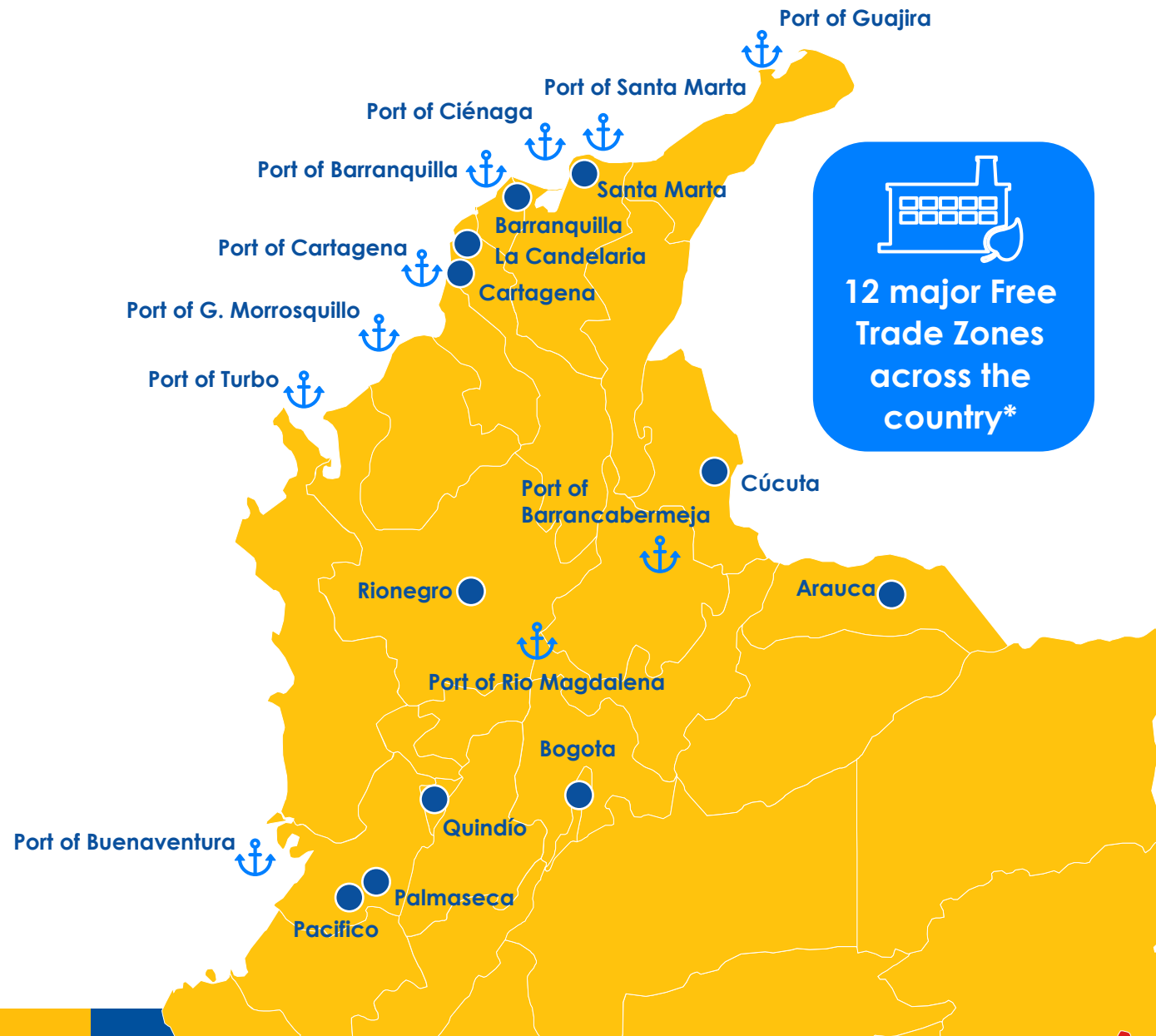
4,592 TEU (millions) of Container port throughput 

Industrial free trade zone regime

- **Single income tax rate of 20%** until 1st January 2024 (after that, 20% on the proportion of income from exports of goods and services)
- **No customs duties** (VAT or tariffs) levied or paid on goods introduced into the free trade zone
- Advantage of **re-exporting to third-party countries**
- **Goods** of foreign origin introduced into the free trade zone may remain there indefinitely
- **VAT exemption for raw materials, parts, inputs, and finished goods** that are sold from the national customs territory to industrial users of free trade zone goods or services

Source: ProColombia, World Bank, Ministry of Transport

* 12 major free trade zones in Colombia, 30+ in total



Colombia has ratified **19 Free Trade Agreements** and **8 Bilateral Investment Treaties** with important partner countries

Manufactured Product Exports* (2022)

#1 USA

US\$ 1.3 billion



#4 Peru

US\$ 277 million



#2 Ecuador

US\$ 709 million



#5 China

US\$ 217 million



#3 Mexico

US\$ 307 million



#6 Brazil

US\$ 171 million



US-Colombia Trade promotion Agreement (CTPA)

- Average tariff of 0% from Colombia to the U.S.
- 2,157 (96%) of the subheadings that Colombia exports to the United States enter the market with a 0% tariff
- Convenient regional content value rules, with no specific certifications required for imports or exports to and from the US

Canada-Colombia Free Trade Agreement

- Colombian producers and exporters benefit from reduced or eliminated tariffs on nearly all of Canada's current imports from Colombia

EU-Colombia/Peru Free Trade Agreement

- Better conditions for trade through rules on non-tariff barriers, competition, transparency and intellectual property rights
- Bilateral dispute settlement mechanism and a mediation system for non-tariff barriers
- Comprehensive Trade and Sustainable Development chapter with commitments aimed to ensure high levels of labor and environmental protection

Colombia-MERCOSUR Trade agreement

- Colombian exporters receive tariff reductions when trading with the MERCOSUR members Argentina, Brazil, Paraguay and Uruguay

Connection times



Santiago	5h 55m
Lima	3h 5m
Sao Paulo	6h 10m
Mexico	4h 55m
New York	5h 35m
Toronto	6h 10m



Callao	2d
Valparaíso	8d
Port Everglades y Miami	5d
Puerto Manzanillo	8d
New York	6d
Vancouver	18d
Shanghai	25d



3,500 maritime export routes to **750 ports** in **140 countries** in the world



The Port of Cartagena is considered the **best connected in maritime trade** in Latin America and the Caribbean



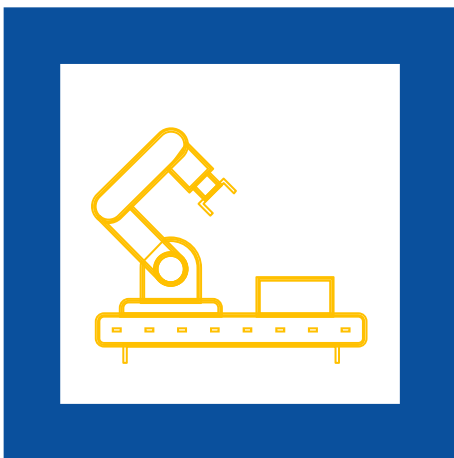
More than 2,400 export routes through 30 **airlines**, with access to more than **500 cities**



EL Dorado Airport in Bogota is the **top Latin American airport in volume of air cargo** and the 3rd busiest by passengers



Colombia is **ideal for nearshoring services** thanks to sharing the same time zone with most main cities in the Americas



Process Automation

Attractive opportunities exist in Colombia to capitalize on existing industrial sectors which increasingly adopt modern production technologies to automate various production stages, from raw material handling to finished product assembly with the use of robots, AI, Industrial IoT, additive manufacturing, warehouse management systems, digital twins and more.



Colombia experienced a **3.6% annual labor productivity growth rate between 2016-2021, the 8th highest growth rate globally** largely due to greater levels of capital expenditure and adoption of digital processes



24% of manufacturing output in Colombia is represented by **high-tech and medium-high-tech manufacturing**, an increase from 20.7% in 2014



High-tech imports represent 16% of total trade, the 21st highest proportion globally, with high demand from Colombian manufacturers to modernize production processes



Resource-efficient technologies

Opportunities to utilize energy-efficient machinery, water-saving technologies, and waste reduction technologies in manufacturing operations

4 ISO 14001 environmental certificates/bn PPP\$ GDP have been issued in the country, **the 23rd highest ratio globally**, representing a significant commitment by companies to introduce resource-efficient technologies

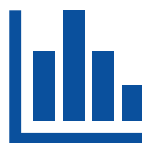


Investment opportunities are supported by VAT exclusions guaranteed by the Tax Statute decree 1564 of 2017, Resolution 2000 of 2017 for companies adopting resource-efficient technologies in manufacturing operations

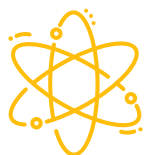
This includes:



Environmental control systems: Development of projects that have the purpose of decreasing the demand for renewable natural resources or reduce the generation and improve the quality of liquid waste, atmospheric emissions or solid waste

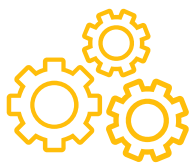


Environmental monitoring systems: Adoption of equipment or machinery destined to obtain, verify or process information on the state, quality or behavior of renewable natural resources, environmental variables or parameters, discharges, waste and emissions



Incentives for investments in research, technological development or innovation:

30% of the investments made in research, technological development or innovation may be deducted annually from income tax



Decree 272/2018, Imports exemptions: 0% tariff on the import of products classified in the Standard Classification by Economic Use or Destination as raw materials or capital goods that are not domestically produced

Sales tax on equipment and machinery for production and use of non-conventional energy sources (FNCE):



VAT exemption on equipment, elements, machinery and services for production and use of FNCE, as well as the measurement of potential resources and efficient energy management (EEM) will be excluded from VAT (after the project is evaluated and certified by UPME)



Support for investing in resource-efficient technologies

Investments made in efficient energy management projects:

- Income tax deduction equal to 50% of the value of the investment
- Deduction of the income tax payable, equal to 25% of the value of the investment certified by the National Environmental Licensing Authority – ANLA

Environmental monitoring and control system

- VAT exclusion for the acquisition of national or imported equipment and elements for the construction, installation, assembly and operation of environmental control and monitoring systems



Accelirate, a leading niche **robotic process automation (RPA) and AI services** firm in Florida/USA, announced the opening of its new Colombia office in Bogota in 2021 as its Latin American hub.

This marks Accelirate's continued expansion and increasing the level of automation support for the Latin American market. Colombia was singled out as having a **thriving industrial base with one of the largest markets for RPA services in Latin America**.

By investing in a Colombian location, Accelirate has positioned itself to help companies throughout the region adopt and **advance automation initiatives** using the power of the UiPath end-to-end automation platform.



US-based producer of health and personal hygiene products, Kimberly-Clark, initiated an investment plan in 2020 to **innovate its production processes** in Colombia, **investing \$110 million** by the end of 2022 towards **updating machinery and automation technologies**.

The company has implemented a series of strategies that contemplate the **acceleration of production and the reallocation of inventories** in three local plants at Tocancipá, Barbosa and Cauca.

This has included improving the local infrastructure and optimizing the technological conditions oriented towards domestic and international markets.



Milwaukee/USA-based Rockwell Automation, a world leader in **industrial automation solutions**, established a research and testing facility in Medellín in 2020, creating over 50 jobs and focusing on software development to support key programs within their business line in **Control and Visualization**.

Roles at Rockwell Automation's Medellín campus include software engineers, automation tests, scrum masters responsible for product management, technical leaders and engineering managers, among others.

This team engages in the Design Hub with file type conversion tools, Logix controller update, project analysis and digital engineering, emulation tools, digital twins and many other emerging technologies.



Smurfit Kappa (Ireland), a world leader in paper-based packaging, announced in 2022 an **investment of almost USD100 million in a sustainable biomass boiler at its paper mill in Yumbo** to contribute to reducing its global CO₂ emissions by around 6%.

The organic waste will be comprised of pine and eucalyptus bark from the company's own forestry plantations, waste from its wood treatment plant, and ashes and sludge generated during the paper-manufacturing process.

This investment will contribute to **replacing the fossil fuels** currently used for production with organic materials.



US-based container glass manufacturer O-I Glass will **invest USD75 million** in its Zipaquirá facility in order to expand production to 500 million bottles a year and add to the capacity of its Americas segment by almost 2%.

O-I's Zipaquirá plant has been awarded the **Gold Category for energy efficiency management** carried out within the framework of its Nationally Appropriate Mitigation Action for Climate Change (NAMA) industry project.

This has included **reducing its carbon footprint** by implementing energy savings in furnaces and compressed air systems, investing in high efficiency motors, and investing in energy-efficient compressors.

Industry Associations



Research Institutions



Foreign Investors



Government Bodies



PROCOLOMBIA is the entity in charge of promoting Colombian exports, international tourism, foreign direct investment, and Colombia's country brand in the world. Through its network of both national and international offices, ProColombia offers comprehensive support and guidance for investors to have access to the right information and meet their objectives.

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COLOMBIA 

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