

B PLASTIC INDUSTRY, BARRIERS AND OPPORTUNITIES: CHILE

B.1 THE PLASTICS INDUSTRY AT THE NATIONAL LEVEL

B.1.1 Description of the national plastics industry

The plastics industry in Chile is a key sector in the local economy, with a significant presence in various production areas. Because the country does not produce virgin plastic resins, industrial activity focuses primarily on the processing of imported raw materials for the manufacture of final plastic products for sectors such as packaging, construction, agriculture, and mining.

In structural terms, the Chilean plastics sector is made up of approximately 520 companies, ranging from producers and marketers of raw materials to plastic transformers, recyclers, waste managers and suppliers of specialized machinery and services (Alomar, 2021; ASIPLA, 2024). However, there is a marked trend in the sector: 28% of companies (147 large companies) generate 82% of the associated direct jobs, reflecting a predominance of large industrial players (ASIPLA, 2024).

Among the most important products manufactured by the plastics industry in Chile are:

- Packaging: These represent almost half of the country's plastic consumption and include bags, bottles, protective films, and rigid and flexible packaging.
- Construction Materials: Pipes, coatings, insulation, and structural components that take advantage of the durability and strength of plastics.
- Products for Agriculture and Mining: Irrigation systems, greenhouses, netting, coverings, and material transport systems.
- Everyday and Retail Items: Reusable bags, household items, and food packaging.

In 2023, apparent plastic consumption in Chile reached 1,245,000 tons (ASIPLA, 2023), while per capita consumption stood at approximately 50 kilograms per person per year, placing Chile above countries like Colombia, although still below the standards of European Union nations (Gallardo, M., 2022).

The plastics production chain in Chile includes diverse actors with fundamental roles in the transition to a circular economy model. Key players include:

1. Plastic Transformers:

They constitute the largest group, with around 340 companies dedicated to the production of final goods for various sectors such as packaging, construction, agriculture and mining (Gaete, R., 2021).

2. **Grassroots recyclers:**

They are individuals who, independently or in associations, collect, separate, and market waste for recycling. They generate their income by selling recyclable materials to recovery companies, intermediaries, and recycling centers.

3. **Waste managers and recyclers:**

Organizations responsible for the comprehensive management of plastic waste, including its collection, transportation, and final disposal. They act as intermediaries to close the life cycle of plastic products, facilitating their collection, sorting, transportation, and treatment. In 2022, recycled plastic production reached 106,870 tons, with an installed capacity of 155,000 tons nationwide (Pacto Chileno de los Plásticos, 2024).

4. **Distributors and Marketers:**

Actors responsible for the distribution and sale of plastic products to various markets, ensuring that the products reach the final consumer.

5. **Consumers:**

Both companies and individuals use plastic products in their daily operations or personal consumption. Their behavior and preferences influence demand and recycling and reuse practices.

B.1.2 Main applications of plastic at the local level

In 2023, the main plastic-consuming sectors in Chile reflect the importance of this material in various key industries of the national economy. The packaging sector leads the way, accounting for 48% of the total. Plastics are widely used in the manufacture of packaging for food, beverages, cleaning products, and cosmetics, thanks to their versatility and ability to preserve product quality.

The construction industry ranks second, accounting for 21% of plastic consumption. This material is used in pipes, coatings, insulation, and structural components, and is noted for its durability and corrosion resistance, essential characteristics in infrastructure projects.

In the case of mining, this sector consumes approximately 8% of the plastics used in Chile. Plastics are used in material transport systems, pipes, and coatings, where their chemical and mechanical resistance is essential for mining operations.

The agriculture and fishing sectors also account for 8% of plastic consumption. This material is used in irrigation systems, greenhouses, netting, and packaging, contributing significantly to the efficiency and protection of crops and fishery products.

The retail and other sectors consume approximately another 8%, primarily bags, packaging, and disposable products. Finally, the remaining 7% is distributed across

sectors such as home, leisure, and sports, reflecting the diversity of plastic applications in everyday life.

This distribution highlights the relevance of plastic in key sectors of the Chilean economy, and indicates that nearly half of the plastics are destined for long-term applications (≥ 5 years) (Caballero, 2024).

B.1.3 Geographical and economic distribution

The plastics industry in Chile is a complex ecosystem that integrates multiple actors and activities. Geographically, the industry shows a high concentration in the central macro-zone of the country (from the Valparaíso region to the Maule region), where 88% of the companies in the sector are located. Meanwhile, the southern/austral macro-zone (from the Ñuble region to the Magallanes and Chilean Antarctica region) and the northern macro-zone (from the Arica and Parinacota region to the Coquimbo region) account for 9% and 3%, respectively ([ASIPLA, 2024](#)). This concentration in the Central Macrozone, which includes the Valparaíso, Metropolitan, and O'Higgins regions, is due to its proximity to major urban and consumer centers, as well as the available logistics infrastructure.

In 2023, according to statistics, the main plastics consuming sectors in Chile are ([Circular Country, 2024](#)):

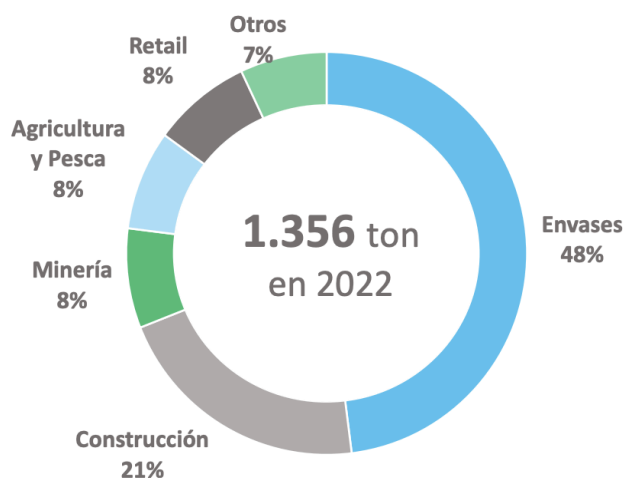


Figure B.1 Distribution of plastic consumption in Chile.

Source: ASIPLA, 2023.

The geographic concentration and sectoral distribution of plastics consumption in Chile reflect the economic priorities and opportunities to implement circular economy practices in the country's different regions and productive sectors.

B.2 KEY FACTORS AND ACTORS IN THE TRANSITION TO THE CIRCULAR ECONOMY

B.2.1 Opportunities to promote the circular economy in the plastics sector

National context

In Chile, environmental awareness has grown significantly in recent decades, becoming a driving force for changes in consumer habits and business dynamics. There is broad consensus on the need to move toward a development model that decouples economic growth from the consumption of finite resources, which has led more and more consumers to prioritize products and services that minimize their environmental impact (Scapini & Berríos, 2021).

Recycling, which began as an informal practice in the 1990s, is now considered a key pillar of the country's sustainability. The consolidation of a truly circular economy requires moving toward what some call a "trash culture" (Tendencias y Cultura, 2020), where both the productive sector and the general public take active roles in reducing, reusing, and recovering waste.

Educational institutions play an essential role in this process, not only by educating future, conscious citizens, but also as spaces for research, technology transfer, and collaboration with industry. Strengthening environmental education and incorporating sustainability practices at different educational levels fosters the development of a more informed and active citizenry that demands innovative and sustainable solutions (Scapini & Berríos, 2021).

In terms of policy, Chile has implemented key instruments to promote the circular economy, particularly the Extended Producer Responsibility Law (EPR) and the Single-Use Plastics Law. The EPR Law requires companies to manage the life cycle of their products, establishing specific collection and recycling targets for containers and packaging (Scapini & Berríos, 2021). The Single-Use Plastics Law seeks to progressively reduce the use of disposable plastic products, promoting reusable, recyclable, or compostable alternatives, as well as reuse systems such as returnable cups or refillable containers.

These regulatory frameworks have encouraged companies to redesign products, incorporate sustainable materials, and innovate processes, generating not only regulatory compliance but also opportunities to access new markets and respond to increasingly conscious consumers (Scapini & Berríos, 2021). Furthermore, the Roadmap for a Circular Chile by 2040 acts as a strategic framework that establishes goals such as increasing the recycling rate from the current 4% (2021) to 65% in 2040, reducing waste per person by 25%, and promoting the use of recycled materials in new products (Scapini & Berríos, 2021). This long-term vision creates a favorable environment for investment in circularity, incentivizing innovation throughout the entire plastics chain.

In economic terms, the circular economy opens up significant opportunities for both the public and private sectors. At the municipal level, an estimated US\$500 million annually (approximately 20% of local budgets) is allocated to the collection and disposal of household waste, highlighting the high cost of traditional management and the potential savings that greater recovery and recycling would bring (Núñez, 2021). For companies, the opportunities are linked to cost savings through the efficient use of resources, the opening of new sustainable markets, and an improved corporate reputation (Scapini & Berríos, 2021). The growing demand for recycled, reusable, and biodegradable products, as well as the appreciation of indicators such as the carbon footprint, is driving companies to innovate in products and processes.

There are initiatives such as the Ministry of the Environment's Recycling Fund and some private green financing programs that offer financial support to circular projects (Celis, 2024; Agencia de Sustentabilidad y Cambio Climático, w.d.). However, these instruments still need to be strengthened to expand their reach, especially for small and medium-sized businesses, allowing them to scale circular solutions nationwide.

In the technological sphere, Chile presents significant opportunities to strengthen the circular economy in the plastics sector. These include designing products based on recyclability and reusability criteria, which facilitates their reintegration into the production chain and reduces the demand for virgin raw materials (Scapini & Berríos, 2021). The adoption of advanced technologies, such as chemical recycling, automated sorting systems, and the valorization of post-industrial waste, allows not only to increase material recovery rates but also to improve their quality and expand their applications in sectors such as construction, agriculture, mining, and retail (Scapini & Berríos, 2021).

Likewise, packaging return systems offer opportunities to implement reverse logistics models, involving distributors, retailers, and consumers in material recovery and thus strengthening circularity throughout the entire value chain (Celis, 2024). Another relevant area is multisector collaboration. Alliances between companies, universities, technology centers, and startups allow for the development of new, more circular materials and production processes, accelerate knowledge transfer, and promote business models that combine sustainability, efficiency, and added value.

Company perception

The companies surveyed in this study agree that Chile is experiencing a key moment for moving toward a circular economy in the plastics sector, where regulatory changes, market pressures, and social expectations are creating a favorable environment for innovation and transformation.

One cross-cutting opportunity identified is the development of new high-value products from plastic waste, enabling diversified applications in sectors such as mining, energy, construction, retail, and the food industry. Companies such as Revaloriza and Recupac emphasize that, in addition to reducing waste, this allows them to strategically position themselves in markets that value traceability, circularity, and sustainability.

Another aspect mentioned is the opening of new market niches thanks to the growing demand for recycled, compostable, and reusable products. Natural Plas points out that industrial sectors are beginning to prioritize certified circular solutions, generating commercial opportunities that didn't exist before. From the trade union perspective, ASIPLA and AB Chile emphasize that the EPR Law has been a positive catalyst for motivating companies to redesign products, integrate recycled materials, and seek packaging alternatives compatible with recycling systems.

Collaboration appears to be a key opportunity. Several companies see partnerships with universities, technology centers, and startups as a way to accelerate innovation, develop more sustainable materials, and share applied knowledge. Examples such as the agreements between Natural Plas and the University of Concepción or the open innovation spaces promoted by ASIPLA demonstrate the sector's interest in strengthening these networks.

Companies also see value in the opportunity to strengthen their environmental performance through indicators such as carbon footprint, the circular economy, and environmental reporting. According to Ecopolymers and AB Chile, these indicators are increasingly relevant not only to meet regulatory requirements but also to attract investors, industrial clients, and conscious consumers.

Finally, organizations like ASCC emphasize that promoting the circular economy generates economic, social, and environmental benefits nationwide, opening up opportunities for more sustainable business models, creating green jobs, and positioning Chile internationally as a regional benchmark in circularity.

B.2.2 Barriers faced by companies in the transition to the circular economy

Despite the opportunities offered by the circular economy in Chile, there are significant barriers that limit its widespread and sustained adoption by companies. These barriers exist at various levels, affecting everything from public policy design to the daily operations of small, medium-sized, and large businesses.

The infrastructure available for waste collection, sorting, and recycling remains insufficient, mostly concentrated in the Metropolitan Region, while in remote regions, recycling is practically nonexistent due to high transportation and logistics costs (Ladera Sur, 2021). Currently, nearly 82% of household solid waste is deposited in authorized locations, but only 7% of the plastic generated is recycled, reflecting existing limitations (InvestChile & Circula El Plástico, 2021).

In economic terms, municipalities allocate approximately US\$500 million annually to the collection and disposal of household waste, representing around 20% of their budgets, leaving little room for investment in infrastructure (Ladera Sur, 2021). At the private level, companies face high costs associated with process adaptation, technology purchases, and

regulatory compliance, in a context where access to green credit remains limited and at high rates (Celis, 2024; Agencia de Sustentabilidad y Cambio Climático, w.d.).

On a cultural level, myths such as "everything gets mixed up in the trucks" or "recycling is useless" persist, discouraging citizen participation (Ladera Sur, 2021). Furthermore, the perception that recycled products should be cheaper creates pressure on the market, despite the fact that their production is often more expensive due to specialized processes.

Company perception

The information gathered identified specific regulatory and operational barriers affecting the business sector. Each of the barriers identified is detailed below.

Table B.1 Barriers identified from the perspective of companies and organizations

Barrier identified	Detail
Bureaucracy, slowness, and complexity in administrative procedures and permits. (With 7 mentions)	Most companies report that the processes for obtaining permits, health and environmental resolutions, and certifications are excessively long and bureaucratic, generating delays of several years in circular projects and infrastructure investments. This situation discourages innovation and hinders progress towards circularity.
Lack of harmonization and compatibility between regulations (With 2 mentions)	<p>Trade associations such as AB Chile and ASIPLA highlight the coexistence of regulations such as the EPR Law and the Single-Use Plastics Law (PUSU) as a barrier, which generate conflicts in the management of materials such as PET bottles. According to AB Chile, "the coexistence of these two regulations, which were not designed to be compatible and which stress plastic availability, is one of the greatest challenges in waste management." This creates uncertainty about which materials are a priority, how to meet regulatory goals, and what adjustments companies must make to align.</p> <p>Both associations also agree that "the laws are very technical and not everyone understands them (in the case of the EPR or PUSU)," which makes their interpretation and application difficult, especially for SMEs without legal departments or specialists. This reinforces the need to work on harmonizing regulations, clarifying criteria, and strengthening the dissemination of technical content in a manner accessible to all companies in the sector.</p>

Barrier identified	Detail
Lack of infrastructure, plans and institutional support (With 6 mentions)	<p>Companies and associations emphasize that recycling infrastructure in Chile is limited and concentrated in specific regions, leaving much of the country without adequate access. They also point out that the system is not yet prepared to facilitate all circular processes and that a national waste management plan to support businesses is lacking.</p> <p>At the industrial level, there is a lack of space within companies to collect and separate waste and a lack of plants with the technological capacity to process various types of plastics. Added to this are the high logistics costs for collection and transportation, which limit the possibility of generating economies of scale.</p>
Difficulty of understanding and lack of training on the regulations (With 4 mentions)	<p>Companies point out that regulations related to the circular economy are complex and technical, making them difficult to interpret, especially for SMEs without specialized teams. They also identify a lack of internal training in sustainability and compliance, and a low awareness among customers and suppliers of their responsibilities, which affects the effective implementation of legal obligations throughout the value chain.</p>
High costs and lack of economic incentives (With 5 mentions)	<p>Companies highlight the high costs associated with regulatory compliance, including process adaptation, certifications, and technology purchases. They also perceive a lack of clear tax benefits, while recycled products sometimes face higher tax burdens than virgin products.</p>
Insufficient oversight and control (With 2 mentions)	<p>Another aspect identified by companies is the perception of limited oversight by authorities. Controls are considered scarce and their application uneven across the region, generating uncertainty about actual compliance with regulations. This lack of follow-up and monitoring reduces the incentive to advance circular practices, as it is unclear to what extent they are required or how their implementation is verified.</p>
Difficulty in finding certified suppliers and control (With 2 mentions)	<p>The lack of suppliers and certifiers available to meet regulatory requirements is noted, making it difficult to properly close the cycles.</p>

Barrier identified	Detail
Lack of incentives for the use of recycled materials (With 2 mentions)	<p>Another aspect highlighted by companies is the lack of mechanisms that adjust waste management costs based on the recyclability of the materials used. They emphasize the need to establish clear incentives that promote the use of recycled raw materials in plastic products while discouraging the use of virgin raw materials.</p> <p>Companies consider updating regulations a priority to strengthen the recycled plastic market and facilitate compliance with goals such as those established by the EPR Law. They also emphasize the importance of streamlining administrative procedures, such as permits and patents, to unblock processes and allow for the development of new circular solutions and initiatives in the country.</p>

B.2.3 Key players in the transition to the circular economy

Within the framework of the transition toward a circular economy in the plastics sector, various actors play fundamental roles that, in a coordinated manner, enable progress toward sustainable resource management.

a. Industrial sector and trade associations

Private companies and trade associations play an essential role in the transition to a circular economy, leading the production, processing, recycling, and recovery of plastic materials in Chile. The companies surveyed agree that moving toward circular models requires collaborative work between producers, recovery companies, recyclers, waste managers, recycled material suppliers, and customers, highlighting the importance of building strategic alliances throughout the entire value chain.

Among the trade associations interviewed, the Plastics Industries Trade Association (ASIPLA) and the Chilean Food and Beverage Association (AB Chile) play a prominent role in representing their sectors, promoting best practices, fostering training, and actively participating in the implementation of regulations such as the EPR Law.

For their part, companies such as Revaloriza (dedicated to the recovery of industrial waste), Ecopropilenos (specializing in innovative products made from recycled plastics), Reciclapp (focused on digital waste management), Artplas (a producer of plastic materials), and Qactus (a manufacturer of sustainable packaging) highlight the need to strengthen the business ecosystem. In particular, they emphasize the value of collaborating with recycling companies, collectors, and managers of different sizes to comply with regulations, innovate in processes, and scale circular solutions that effectively transform the market.

b. Public sector

The public sector plays a central role in the transition to a circular economy, being responsible for establishing the regulatory framework, defining goals, designing public policies, and ensuring their implementation. The Ministry of the Environment (MMA) is the main player in this area, spearheading key regulations such as the Extended Producer Responsibility Law (REP), the Single-Use Plastics Law, and the Circular Economy Roadmap to 2040. Municipalities, for their part, play a crucial role in local waste management, especially in collection, sorting, and disposal, and are responsible for creating the conditions for national policies to materialize in their territories.

In addition, organizations such as the Sustainability and Climate Change Agency (ASCC) play a key role in developing clean production agreements, promoting waste recovery, generating business support programs, and facilitating opportunities for public-private collaboration.

Based on the perceptions gathered in the surveys, companies agree that the State plays an indispensable role not only as a regulator but also as a facilitator. They emphasize the need for greater institutional support, especially to unblock administrative processes, streamline permits and patents, and support the creation of new companies and innovative solutions. Furthermore, they point out that the State must assume a more active leadership role in expanding infrastructure, strengthening the national waste management system, and creating economic incentives to support the private sector's efforts in circularity.

c. Higher Education Entities

Universities and technology centers play a fundamental role in the transition toward a circular economy, providing scientific knowledge, developing technological solutions, and training professionals in sustainability, waste management, and innovation. The companies surveyed view partnerships between academia and industry as a key opportunity to accelerate innovation processes, improve the efficiency of production systems, and generate applied solutions that address the specific challenges of the sector.

Furthermore, from the perspective of companies, the role of universities is valued not only as research centers, but also as spaces that enable training and awareness among various actors in the value chain, including customers, suppliers, and communities. These partnerships are especially relevant for small and medium-sized businesses that require technical support to interpret regulations, improve processes, and advance the implementation of circular models.

d. Civil society and consumers

Civil society and consumers play an essential role in the transition to a circular economy, as their decisions, behaviors, and awareness levels directly influence the demand for sustainable products and the proper separation and disposal of waste. Consumers are not only end users but also stakeholders who, by changing their consumption habits and

adopting responsible practices, contribute to closing material cycles and driving market change.

According to the surveyed companies, there is still a significant challenge in terms of environmental awareness and education. They point out that many circular initiatives face barriers due to a lack of consumer knowledge or commitment, which limits the impact of efforts made in production and waste management.

Civil society organizations, such as social organizations and NGOs, play a key role in informing, educating, and mobilizing citizens, promoting cultural changes that strengthen the circular economy.

e. Service providers and financial institutions

Specialized service providers and financial institutions play a key complementary role in the circular economy ecosystem. Logistics companies, certification agencies, environmental and technology consulting firms provide technical solutions that enable companies to improve processes, meet sustainability standards, and advance material and waste traceability.

Based on the perceptions gathered in the surveys, it is recognized that having reliable suppliers and certified services is key to advancing circularity. They also identify investors and the financial sector as essential players in enabling investments, highlighting the need for green loans, subsidies, and flexible financing to support the transformation of business models, especially for small and medium-sized enterprises.

B.2.4 Relationship between factors and actors

According to surveys, the interaction between key stakeholders in the circular economy (the State, public agencies, businesses, associations, consumers, academia, recyclers, industrial clients, investors, certifiers, and suppliers) is dynamic, multifaceted, and mediated by cooperation mechanisms, demands, incentives, and structural challenges.

Table B.2 Relationship between factors and actors regarding to circular economy in the Plastic Industry

Key player	How you interact with other actors	Relationship with key factors
State and public bodies	It defines regulations, oversees, provides incentives, finances infrastructure, and collaborates with companies, associations, and academia to design and implement circular policies.	It enables opportunities, regulates barriers, and responds to market and societal demands; its administrative agility and leadership capacity are key to addressing structural challenges.
Companies and associations	They cooperate with recyclers, suppliers, and industrial clients; they participate in trade associations (ASIPLA, AB Chile) to align standards and strengthen sector alliances.	They innovate in response to regulatory and consumer demands; they face costs, incentives, and market pressures; and they depend on infrastructure, financing, and technology transfer.
Consumers and civil society	They demand sustainable products, adopt responsible practices, and pressure companies and authorities; NGOs promote educational and awareness-raising campaigns.	Their demand and behavior are key drivers of regulatory, technological, and market change; they influence the opportunities and challenges of the circular ecosystem.
Academia and research centers	They collaborate with companies and the government in research, innovation, and talent development; they facilitate technology transfer and applied solutions.	They contribute to overcoming technical barriers, developing value-added solutions, and generating knowledge to strengthen the circular economy.
Base recyclers and waste managers	They ensure collection, separation, and traceability; they collaborate with companies, municipalities, and digital platforms (such as Reciclapp).	They are operationally essential for closing material cycles; they require integration, formalization, and access to infrastructure and technology.
Investors and the financial sector	They finance infrastructure, innovation, and scaling; they participate in public-private partnerships and develop instruments such as green loans.	They enable opportunities and circular growth; their accessibility and conditions are crucial for projects, especially for SMEs.

B.2.5 Policies and strategies to strengthen relationships between stakeholders

The surveys conducted highlight that strengthening the relationship between key players in the circular economy in the plastics sector requires concrete and coordinated measures. The main strategies mentioned include:

- Create clear economic incentives, such as tax breaks, subsidies, green loans, and funds for circular projects, especially to support SMEs.
- Develop decentralized infrastructure and improve logistics to facilitate waste management throughout the country.
- Promote educational campaigns aimed at both citizens and the productive sector, and strengthen technical capacities through partnerships with universities.
- Establish clear standards for the mandatory use of recycled materials and differentiated criteria based on the recyclability of products.
- Implement certification and traceability systems that generate confidence in the processes and results of circular initiatives.
- Promote public-private partnership platforms to connect businesses, academia, investors, and the public sector in joint projects.
- Simplify procedures and harmonize regulations to reduce regulatory barriers and boost innovation.
- Facilitate access to competitive financing, including international sources, to scale high-impact solutions.

Rather than generating new, isolated measures, what's needed is to strengthen collaboration, trust, and alignment among strategic actors so that each can contribute, based on their role, to advancing the circular economy in Chile.

B.2.6 Plastic recycling in Chile

In 2023, Chile recycled approximately 7% of its post-consumer plastics, or about 83,679 tons per year, out of a total consumption estimated at between 990,000 and 1,200,000 tons (ASIPLA, 2024). However, PET packaging recycling rates have improved, particularly driven by the EPR Law.

Chile shares common challenges with other Latin American countries, such as infrastructure deficits, limited environmental education, poor traceability, and problems formalizing recycling systems. However, the 7 The percentage achieved by Chile is above the regional average and reflects some regulatory progress and sector mobilization. While countries such as Mexico and Brazil have made significant investments in recycling, they face similar challenges in terms of oversight and coordination. In this context, Chilean initiatives such as collective management systems, represented by ReSimple, and the creation of "bottle-to-bottle" plants position the country as a pioneer in the region.

Although Chile has made progress thanks to policies such as the EPR Law and the Single-Use Plastics Law, the country still faces significant challenges in scaling up its recycling capacity and aligning with international circularity goals. Strengthening

infrastructure, economic incentives, technological innovation, and environmental education are key factors in transforming plastics recycling into a robust and effective strategy for the country.

B.2.7 Relationship between the Academy and the Plastics Industry at the national level

The analysis of surveys and documents reveals a diversity of relationships between academia and the plastics industry in Chile, especially in areas of recycling and the circular economy. These relationships range from strong strategic alliances to one-off interactions, and reflect both advances and challenges in academic-industry collaboration.

Organizations such as ASIPLA maintain close relationships with universities (e.g., UNAB), holding talks on the circular economy and the EPR Law, promoting training among partners, and establishing cooperation agreements. Natural Plas maintains a four-year partnership with the University of Concepción's University of Technology (UTT), working on proposals for the circular economy and new recycling solutions. RECUPAC, for its part, has an innovation department that connects with universities and startups to seek new solutions and processes.

The AB Chile association (food and beverage sector) collaborates with universities such as PUCV, developing advanced recycling technologies and facilitating knowledge transfer. Companies such as REVALORIZA are advancing waste recovery projects, technology transfer, and technical training through collaborations with universities and technology centers.

Some companies, such as PATIO PARQUE SpA and RECICLAPP, acknowledge unsystematic relationships with universities, limited to consulting, specific projects, or hosting interns. This pattern is also observed in companies such as Ecopropilenos, Recicladados Industriales S.A., Greendot SPA, Qactus, and Comercial LML S.A., which emphasize the need to strengthen these ties to achieve more significant impacts.

This scenario demonstrates that the academic-industry relationship in the plastics sector in Chile is diverse and heterogeneous. While some companies and associations have consolidated alliances to promote innovation and sustainability, many others maintain sporadic ties, which represents a clear opportunity to strengthen collaboration and move toward a more robust and effective circular economy.

B.2.8 Innovations in the plastics industry

The Chilean plastics industry is moving toward circular economy models through various innovations that encompass both product redesign and process transformation. Companies are rethinking their product designs to make them more durable, repairable, or recyclable, incorporating ecodesign and circularity principles from the outset. Furthermore, there is a growing use of post-industrial and post-consumer waste as raw materials for new products, allowing for new value for materials that were previously discarded.

Another relevant aspect is the incorporation of advanced technology, such as recycling plants with automated sorting, washing, and processing systems, which increases the quality of recycled materials and allows for the expansion of production capacity to domestic and international markets. Along with this, new business lines are emerging that apply recycled plastics in sectors such as mining, retail, construction, and industrial footwear, diversifying applications and generating solutions tailored to different industries.

A cross-cutting element that stands out is the increase in partnerships between companies, universities, startups, and public entities, which allow for knowledge sharing, technology development, pilot projects, and capacity building in recycling, reverse logistics, and waste recovery. Together, these innovations reflect a paradigm shift in the Chilean plastics sector, which seeks to move away from the linear model of production, use, and disposal, moving toward a system where resources are optimized, environmental impacts are reduced, and sustainable social and economic value is generated.

Table B.3 Types of innovations in companies and organizations

Innovation Area	Examples of companies
Transformation of waste into new products	<p>Cactus: recycled plastic 3D filaments, sustainable packaging).</p> <p>Artplas Plastics: cross members and components with post-industrial waste.</p> <p>Patio Parque SpA: new products with recycled materials.</p>
Circular economy from design and refurbishment	<p>IKEA: products designed for circularity, repair centers, compostable utensils.</p> <p>Comercial LML S.A.: reconditioning of industrial packaging, circular economy for 20 years.</p>
Technological innovation and advanced infrastructure	<p>Recupac: flexible plastics recycling plant, packaging with recycling.</p> <p>Industrial Recycling S.A.: process automation, export, environmental certifications.</p>

Innovation Area	Examples of companies
New markets and lines of business	<p>Natural Plas: Circular solutions in industrial textiles and footwear for mining, retail, and energy.</p> <p>White Corner SpA: marketing of compostable products after the EPR Law.</p>
Systemic and collaborative innovation	<p>Revalues: improved sorting, reverse logistics, public-private partnerships.</p> <p>AB Chile: “bottle to bottle” plants, eco-design, alliances with universities/startups.</p> <p>ASIPLA and partners: recycled resins, certifications, training, energy efficiency, EPR compliance.</p>

B.3 REFERENCES

- Alomar, J. M. (2021). *Reciclaje de plásticos en Chile: avances y brechas de una industria clave para una implementación exitosa de la Ley REP*. País Circular. <https://www.paiscircular.cl/industria/reciclaje-de-plasticos-en-chile-avances-y-brechas-de-una-industria-clave-para-una-implementacion-exitosa-de-la-ley-rep/>
- ASIPLA. (2024). *Estadísticas industria del plástico 2023*. En <https://asipla.cl/>. Recuperado junio de 2025, de <https://asipla.cl/>
- ASIPLA. (2023). *Estadísticas industria del plástico*. En <https://asipla.cl/>. Recuperado junio de 2025, de <https://asipla.cl/>
- Agencia de Sustentabilidad y Cambio Climático. (w. d.). *Financiamiento Economía Circular*. https://www.ascc.cl/pagina/financiamiento_economia_circular
- Caballero, C. M. (2024). *Industria nacional del plástico aumentó el uso de resinas recicladas en el país en reemplazo de materia prima virgen*. País Circular. <https://www.paiscircular.cl/economia-circular/industria-nacional-del-plastico-aumento-el-uso-de-resinas-recicladas-en-el-pais-en-reemplazo-de-materia-prima-virgen/>
- Celis, R. (2024). *BancoEstado lanza programa Mundo Verde MiPyme para apoyar la transformación energética de micro, pequeñas y medianas empresas*. Agencia de Sustentabilidad Energética. <https://www.agenciase.org/2024/04/22/bancoestado-lanza-programa-mundo-verde-mipyme-para-apoyar-la-transformacion-energetica-de-micro-pequenas-y-medianas-empresas/>
- Gallardo, M. (2022). *Consumo de plástico en Chile aumentó 30% en un año*. La Tercera. <https://www.latercera.com/pulso/noticia/consumo-de-plastico-en-chile-aumento-30-en-un-ano/PSFRO73OSBHVBOI224GYG3HZIU/>
- Gaete, R. (2021). *Sector del Plástico se une para potenciar la demanda de resinas recicladas*. Diario Sostenible. <https://www.diariosostenible.cl/noticia/actualidad/2021/09/sector-del-plastico-se-une-para-potenciar-la-demanda-de-resinas-recicladas>
- InvestChile & Circula El Plástico. (2021). *Infraestructura para el reciclaje: envases y embalajes plásticos Oportunidades de inversión en Chile*.
- Núñez, T. (2021). *Reciclaje en Chile: desafíos legales y sociales para potenciar la reutilización de nuestros residuos*. Ladera Sur. <https://laderasur.com/articulo/reciclaje-en-chile-desafios-legales-y-sociales-para-potenciar-la-reutilizacion-de-nuestros-residuos/>

Pacto Chileno de los Plásticos. (2024). *Un 15% creció el reciclaje de plásticos en Chile post pandemia. Circula el Plástico.*
<https://pactodelosplasticos.cl/noticias/un-15-crecio-el-reciclaje-de-plasticos-en-chile-post-pandemia/>

Scapini, V., & Berrios, P. (2021). *Circular economy in chile: background, law and opportunities.* WIT Transactions On Ecology And The Environment, 1, 185-194.
<https://doi.org/10.2495/sc210161>

Tendencias y Cultura. (2020). *Reciclaje en Chile: Un cambio cultural que requiere más impulso. Cultura y Tendencias.*
<https://www.culturaytendencias.cl/2020/05/17/reciclaje-en-chile-un-cambio-cultural-q-ue-requiere-mas-impulso>