3 Policies to harness FDI for Chile's sustainable development

This chapter assesses the policy and regulatory framework influencing the impact of FDI on sustainable development in Chile, with a focus on productivity, innovation, skills development and the low-carbon transition. Policy recommendations are provided to strengthen the economic, social and environmental benefits of investment and help Chile diversify its production structure towards high-tech and knowledge-intensive economic activities.

3.1. Introduction

Foreign direct investment (FDI) can play a catalytic role in financing the Sustainable Development Goals (SDGs) and supporting inclusive and sustainable recovery and growth (OECD, 2022[1]). As described in Chapter 2, FDI provides technological and financial resources necessary to improve living standards, boost employment, trigger innovation and deliver green growth. However, FDI does not always go where it is most needed and its impacts on sustainable development are not always positive. The quality of the regulatory environment can determine whether a country can attract sustainable investment, and whether spillovers on the domestic economy can occur. A number of more targeted policies at the intersection of investment policy and sustainable development can also avoid negative implications that may result from the presence of foreign firms, such as crowding out of local SMEs, skills and jobs. These laws, regulations and policy initiatives cannot be considered in silos but in the framework of an adequate and coherent policy mix.

Chile's economy boasts sound macroeconomic fundamentals, capitalising on decades of careful economic management as well as political and institutional stability. Over the past ten years, Chile has undertaken ambitious reforms to continue improving its policies, regulations and institutional frameworks in key areas such as environmental sustainability, governance, competition, education, tax policy, and gender equality. An open investment and trade regime and a robust regulatory and institutional environment have supported FDI and made it an important driver of economic growth. Chile is now at a critical junction where many decisions are being taken that are likely to shape the future of its society and economy for years to come. Timely action is needed to harness the potential benefits of FDI as Chile embarks on reforms to strengthen the resilience of the economy and support an inclusive and sustainable recovery in the aftermath of the COVID-19 pandemic.

This chapter reviews the mix of policies in place for strengthening the contribution of FDI to sustainable development in Chile. It provides an overview of policy initiatives implemented by key Ministries and government agencies at the intersection of investment policy and sustainable development, focusing on productivity, innovation, skills development, green growth and the low-carbon transition. It also assesses various aspects of regulation affecting foreign MNEs' sustainable investment decisions, focusing on investment openness, competition policy and labour market regulations, and drawing comparisons with and examples from other OECD economies, which offer significant opportunities for mutual learning. These comparisons are complemented with a set of recommendations on how Chile can use FDI to diversify its production structure and hasten its transition towards a knowledge-based economy.

Policy messages

- Streamline sectoral licensing requirements for high-tech manufacturing and knowledge-intensive services, including by digitalising compliance processes related to setting up a business, acquiring permits and undertaking investments in strategic sectors of the economy. FDI restrictions are limited but approval processes for investment projects (e.g. environmental licenses) are not always clearly defined, sometimes leading to significant delays, uncertainties and discretionary decisions.
- Remove barriers to foreign supplier participation in public procurement and integrate environmental and social criteria into public tenders as well as clearly defined rules to avoid discretionary decisions. Public procurement can be a strategic tool to strengthen the sustainable development impacts of foreign firms and achieve policy goals such as job creation, environmental sustainability and innovation.
- Continue efforts to integrate sustainability considerations into Chile's international trade and investment agreements. Labour and environmental standards are increasingly part of free trade agreements negotiated by the Ministry of Foreign Affairs; however, more could be done to update "old generation" agreements that do not include sustainable development provisions and strengthen their effective implementation.
- Strengthen InvestChile's capacity to target high value-added investments (e.g. through incentives) and measure the contribution of investment promotion activities to the SDGs and sustainability more generally. Sustainability considerations are increasingly part of InvestChile's investment promotion activities, including through the prioritisation of low-carbon, technology-intensive and high value added FDI projects. Further efforts in this area could involve broadening the scope of indicators used by the agency for monitoring and evaluating its activities.
- Consider ways to strengthen InvestChile's investment promotion activities in key markets abroad, including by establishing overseas offices and strengthening co-ordination with ProChile and the Ministry of Foreign Affairs. Currently, InvestChile collaborates with ProChile's international network of offices to promote Chile as an attractive investment destination abroad, but joint activities are limited and take place on an ad hoc basis.
- Specify policy co-ordination mechanisms and monitoring and evaluation (M&E) tools for the implementation of the National Strategy for the Promotion of Foreign Investment. The strategy lacks a comprehensive description of the institutions that should be involved and of the governance arrangements that are needed to achieve the investment policy objectives set.
- Adjust the R&D tax incentive scheme to make it more attractive for foreign and domestic firms that seek to engage in innovation-based partnerships. Reporting and other compliance constraints limit the scheme's overall effectiveness in incentivising R&D-intensive investment. Consider the role that InvestChile's aftercare services could play in encouraging established investors to undertake R&D activities in Chile.
- Consider ways to streamline and consolidate Chile's investment incentives framework to support the financing of low-carbon and technology-intensive investments, including through enhanced co-ordination and joint management of the incentives system or through new funding tools by CORFO and the Banco del Estado. Although financial support for productive investments is offered by several public institutions, Chile provides one of the lowest levels of total government support for business R&D and innovation among OECD and partner economies.

- Implement FDI-SME linkage programmes and provide technical assistance to domestic firms, in particular SMEs, to help them become successful suppliers and partners of foreign investors. Knowledge spillovers from FDI will not materialise unless domestic firms' capacities are aligned with the needs of investors. To this end, joint policy initiatives could be undertaken by InvestChile, CORFO and Sercotec.
- Incentivise foreign MNEs to undertake training activities for their employees and local suppliers, by encouraging greater levels of permanent employment and allowing firms to tailor skills development programmes to the needs of their employees. Better co-ordination between InvestChile, CORFO and SENCE will be key to improve FDI's contribution to skills development.
- Continue policy efforts to create an enabling environment for renewable energy investments by removing regulatory barriers, providing specific incentives, and reforming the current carbon pricing framework. Chile's long-term goal of at least 80% renewable energy by 2050 will require policy co-ordination and consultation with industry to keep a fast pace of investment in clean energy.
- Explore measures to attract investment in the emerging green hydrogen industry – while taking into consideration the early technological maturity of hydrogen technologies and the high risks involved – including through public-private partnerships, incentives for investments in enabling infrastructure, capacity building and training programmes, R&D collaborations and regulation addressing demand-side bottlenecks.

3.2. The regulatory framework for investment

3.2.1. Chile's economy is open to FDI, but challenges remain for foreign firms

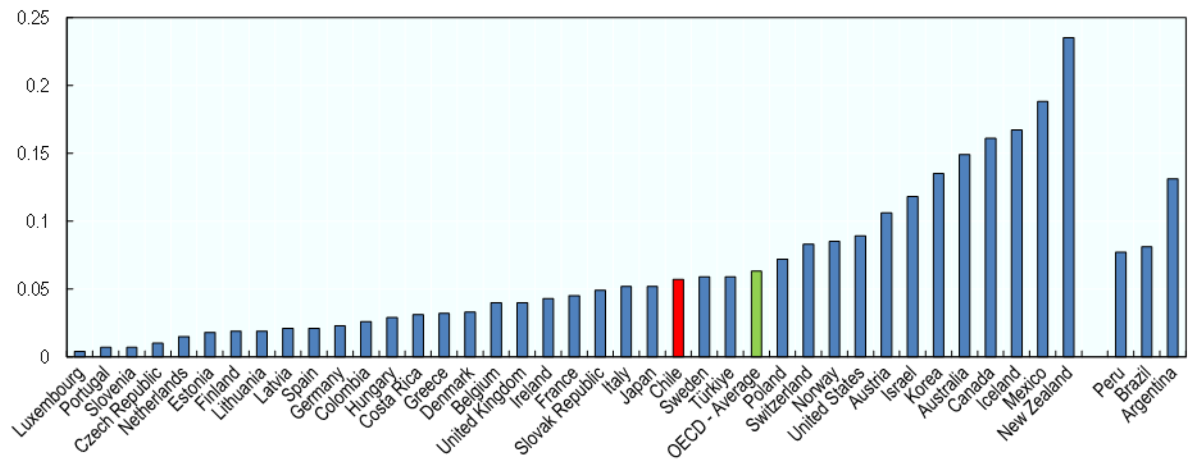
The type of FDI that a country attracts and the extent to which foreign firms can contribute to sustainable development depend, among other factors, on the regulatory environment for FDI and the legal framework for market entry and conduct. Openness to FDI may not only affect productivity and competitiveness in industries that get market access, but also those in downstream sectors that benefit from potentially better access to high quality inputs and services domestically.

The sound macroeconomic fundamentals, judicial security as well as economic and political stability of the past decades have made Chile one of the strongest investment destinations in the LAC region. Chile's statutory restrictions to foreign investment are slightly below the OECD average according to the OECD FDI Regulatory Restrictiveness (FDIRR) index, which gauges the restrictiveness of a country's FDI rules (Figure 3.1). The Chilean regulatory framework for FDI is also less restrictive than non-OECD LAC countries such as Peru, Brazil and Argentina. Investment-related regulations are non-discriminatory and foreign-owned enterprises are provided with national treatment, i.e. they have the right to establish a business enterprise under the same terms and conditions as domestic firms.

At the sectoral level, certain market access restrictions are found in transport and fisheries (Figure 3.2). For instance, foreign ownership in the maritime freight sector is capped while international reciprocity restrictions are in place for fisheries. In the media and broadcasting sectors, there are no foreign equity restrictions, but some limitations apply. There is a reciprocity requirement for the granting and use of radio broadcasting concessions, and key personnel of broadcasting companies must be Chilean citizens. Beyond these sectoral limitations, foreign investors must obtain specific authorisation to invest in strategic sectors such as the exploration and exploitation of hydrocarbons, mining or the production of nuclear energy. The Chilean Constitution stipulates the exclusive control of the State over all mineral, hydrocarbon and fossil fuel deposits, but the government is allowed to grant concession rights to foreign and domestic companies for exploration and exploitation activities.

Figure 3.1. Chile's statutory restrictions to foreign investment are close to the OECD average

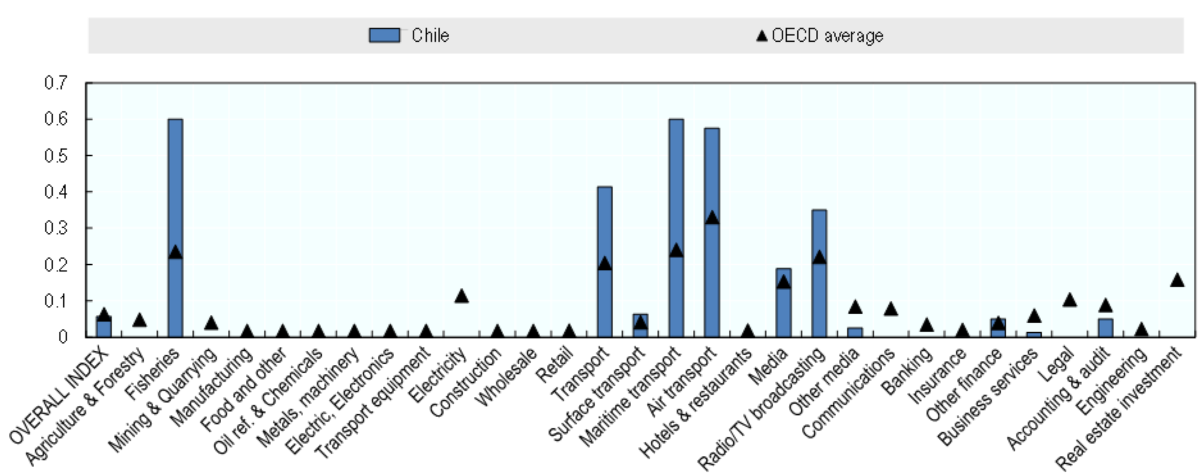
OECD FDI Regulatory Restrictiveness Index, 2020 (open=0; closed=1)



Note: The OECD FDI Regulatory Restrictiveness Index only covers statutory measures discriminating against foreign investors.
Source: OECD FDI Regulatory Restrictiveness Index (2020[2]), www.oecd.org/investment/fdiindex.htm

Figure 3.2. FDI restrictions are limited to a handful of sectors

OECD FDI Regulatory Restrictiveness Index, overall and sector-specific, 2020



Source: OECD FDI Regulatory Restrictiveness Index (2020[2]), www.oecd.org/investment/fdiindex.htm

The literature suggests that in many OECD economies, beyond FDI restrictions, there are also 'behind-the-border' regulations, including restrictions in trade, barriers to competition and other discriminatory measures that influence market access conditions not only in industries where FDI gains access but also in downstream sectors from which foreign firms can source their inputs and create supply chain linkages with domestic enterprises. Pro-competitive measures can support productivity growth by incentivising existing firms to innovate and adopt better technologies while also supporting the reallocation of resources towards more productive firms.

Overall, regulatory barriers to competition in Chile are very close to the OECD average (Figure 3.3, Panel A). The presence of the state in the economy through the ownership of firms is limited when compared with most other OECD countries, in particular regarding ownership of shares in the largest operators in network sectors. The administrative burden on business and regulatory barriers in service sectors are below those present in many OECD countries. Similarly, regulation of retail trade and professional services is among the most conducive to competitiveness in the OECD (Panel B). In contrast, there is scope to align the regulatory set-up for network industries with international best practices, especially in the gas, transport and mobile e-communications sectors.

Another area with significantly more restrictions is the complexity of regulatory procedures for large investment projects in strategic sectors. Although progress has been achieved at the central government level in recent years through the establishment of a digital platform as a single point of contact to deal with sectoral licensing applications; approval processes for investment projects are not always clearly defined, leading to significant delays, uncertainties and discretionary decisions (OECD, 2022[3]). This is the case, for instance, of environmental licenses, whose final approval depends on a ministerial decision rather than an independent committee guided by clear and transparent rules.

To address these challenges, the government's Productivity Agenda, adopted in 2023, includes more than 40 measures that aim to lift regulatory barriers to productivity growth, including through the structural reform of sectoral permits for investments (Government of Chile, 2023[4]). A new law is expected later in the year to streamline administrative processes for five key permits for which excessive delays are usually observed (e.g. maritime concessions, construction permits, licensing for hydraulic works and excavations), and strengthen co-ordination between the relevant authorities. These reforms are a step in the right direction since they could significantly reduce the complexity of certain administrative procedures and facilitate the granting of construction permits.

As Chile seeks to diversify the type of FDI that it attracts away from natural resources and towards renewable energy, R&D and high-tech manufacturing activities, sectoral licensing requirements governing these activities could be further reviewed and, in the case of non-risk economic activities, replaced by a simple prior notification to the authorities through digital means (OECD, 2022[3]). Further digitalisation of compliance processes related to setting up a business, getting a permit and undertaking an investment could also help reduce uncertainty and the administrative burden on investors. According to a recent OECD survey of Investment Promotion Agencies (IPAs)' digital practices (de Crombrugghe and Moore, 2021[5]), investment authorisation procedures can be undertaken online only partially in Chile as opposed to the majority of OECD economies where authorisation and payment processes have been fully digitalised (Figure 3.4, Box 3.1).

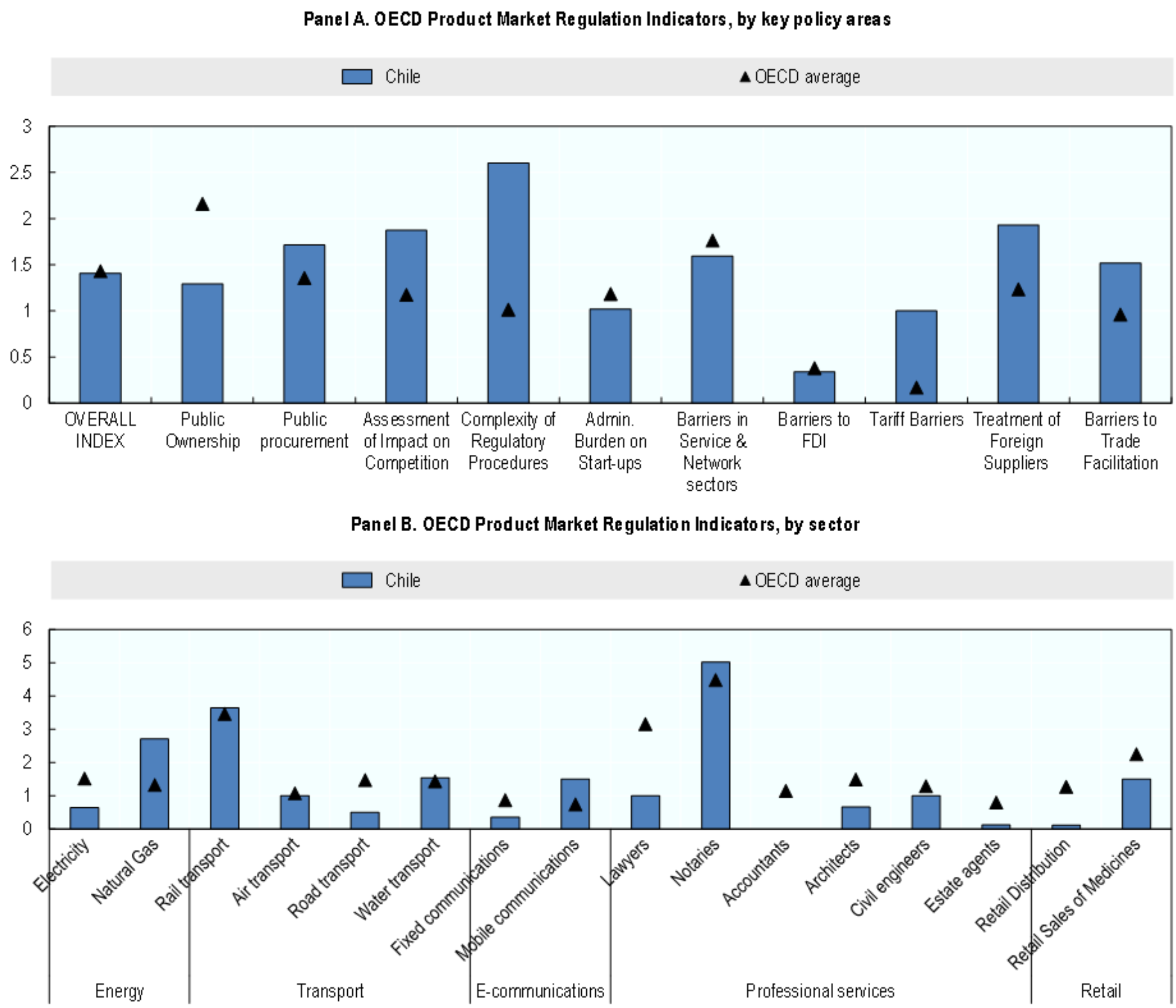
Box 3.1. Digitalisation of the investment process in Israel

Israel has embraced digitalisation with their entire process to set up a business and invest being fully online, including the procedures related to the investment authorisation and required payments. Invest in Israel's website provides a short questionnaire that makes an investing manual specific to the needs of the investor according to the company profile. The online tailored investment manual provides the necessary information on registering the company, land tenure, building permits, business licensing, operations as well as information on grants and benefits. The manual details the necessary steps and documents as well as the costs and time frame for each aspect of the investment process.

Source: De Crombrugghe and Moore (2021[5]), www.oecd.org/daf/inv/investment-policy/Investment-Insights-Investment-Promotion-Digital-Economy-OECD.pdf

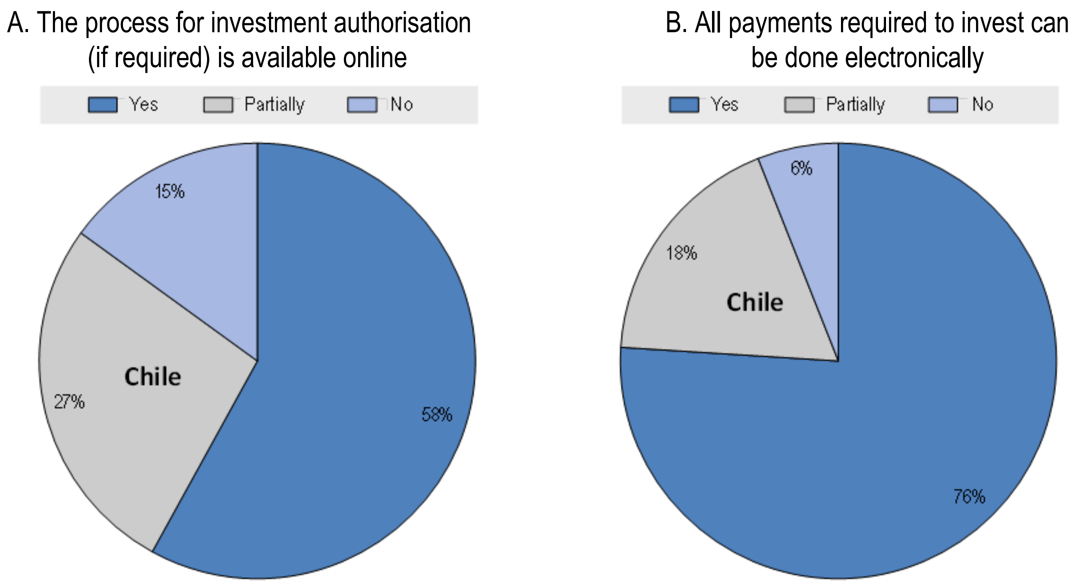
Figure 3.3. Pro-competitive regulation compares well on average, but challenges remain for foreign firms

OECD Product Market Regulation, 2018 (most competitive=0; least competitive=6)



Note: Index scale 0 to 6 from most to least pro-competitive regulation.
Source: OECD Indicators of Product Market Regulation, (2018[6]), www.oecd.org/economy/reform/indicators-of-product-market-regulation/

Figure 3.4. Availability of online procedures to undertake an investment in Chile and all other OECD countries



Notes: Charts A and B present the share of OECD IPAs that responded “yes”, “partially” and “no” to the questions of the OECD Survey on Investment Promotion and Digitalisation. Chile’s response to the questions relating to the availability of online procedures to undertake an investment was “partially”.

Source: de Crombrugghe and Moore (2021[5]), www.oecd.org/daf/inv/investment-policy/Investment-Insights-Investment-Promotion-Digital-Economy-OECD.pdf

The framework that regulates the public procurement of goods, services and public works is another area that could be further aligned with OECD best practices. While barriers to FDI are low, foreign suppliers of goods and services face higher barriers to participating in public procurement processes than in many OECD countries. Currently, Chile’s procurement framework affords preference to public tenders, but there are not clear rules when direct purchases, which are less transparent, can be used instead. Evidence from a recent review of public procurement cases by the Chilean Competition Authority points towards procurement practices that may hamper competition such as short tender periods, explicit reference prices and few competing participants (OECD, 2022[3]). The use of direct purchases with weak justifications for sidestepping public tenders appears to also be widespread in the public administration.

The Chilean Government could consider the role of public procurement as a strategic tool for strengthening the sustainable development impacts of foreign multinational enterprises (MNEs). In addition to improving efficiency and value for money, public procurement involves significant funds and is used to deliver public services to citizens as well as to achieve policy goals such as job creation, the development of small and medium enterprises (SMEs), environmental sustainability or innovation. The buying power of governments can be a lever for promoting sustainable investment practices, in particular in sectors of strategic importance for the Chilean economy. Removing barriers to foreign supplier participation should be combined with the integration of environmental and social criteria in public procurement tenders as well as clearly defined rules to avoid discretionary decisions and ensure their integrity and accountability.

Such a public procurement framework could be a useful tool to decarbonise infrastructure investment. If used in combination with long-term power purchasing agreements (PPAs), tenders can be an alternative way to attract private investment in clean energy. In Brazil, for example, the use of reverse auctions for wind energy (with 20-year PPAs) resulted in winning bids for which tariff rates were 42% lower than previously established feed-in-tariffs (OECD, 2022[1]). Integrating environmental criteria into tenders will, however, require technical capacity in the renewable energy field from procuring authorities. Co-ordination with sectoral ministries will be key for the successful implementation and outcome of tenders. Simplified procurement procedures, including through electronic systems, may also help ease the process and increase competition, including further involvement of foreign MNEs.

3.2.2. Sustainability considerations could be further mainstreamed into Chile's international trade and investment agreements

International trade and investment agreements that are aligned with climate objectives, international labour standards and principles on gender equality and encourage co-operation and monitoring of commitments can complement government efforts to enhance the positive impact of investment on sustainable development (OECD, 2022[1]). Provisions in these international agreements can be designed to allow treaty parties to make commitments to strengthen domestic law regulation and enforcement in several key areas relating to the qualities of FDI.

Chile is one of the leading Latin American countries in trade and investment treaty-making. In previous decades, Chile engaged in the negotiation of a wide-ranging network of bilateral investment treaties and preferential trade agreements that led to low tariffs and higher trade and investment, GDP per capita and employment (OECD, 2018[7]). The Ministry of Foreign Affairs' Undersecretariat for International Economic Relations (SUBREI) is responsible for negotiating international treaties on economic, trade and investment policy matters. It also supervises Chile's network of diplomatic missions abroad, including commercial offices, in collaboration with ProChile, the country's export promotion agency.

Chile's general investment treaty policy has been to negotiate investment chapters in Free Trade Agreements (FTAs). In this context, the number of bilateral investment treaties (BITs) concluded over the past two decades has decreased considerably. Since 2010 Chile has negotiated only two international investment agreements (IIAs) with Uruguay (in 2010) and Hong Kong (in 2016) that establish commitments to liberalise and protect foreign investment (SUBREI, 2022[8]). They both include a dedicated article recognising the parties' right to take any measure to ensure that investment activities consider environmental and public health objectives. However, they fall short of making specific references to international labour standards, gender provisions, the OECD Guidelines for Multinational Enterprises, and the right to regulate.

Chile has concluded 11 FTAs with investment chapters that establish liberalisation commitments as well as protection standards for said investments (SUBREI, 2022[8]). As opposed to older FTAs, more recent agreements (e.g. FTAs with Canada, Brazil and Pacific Alliance countries) have been significantly geared towards sustainable development principles (e.g. gender, labour and responsible business conduct standards) (Table 3.1). For instance, Chile's FTA with Brazil entered into force in 2022 and includes dedicated chapters on SMEs, labour standards, the environment, and gender equality. The agreement's investment chapter also contains explicit provisions acknowledging that investors should contribute to social and environmental objectives, respect human rights, promote human capital development, build trust with local communities, and strengthen domestic productive capacities, amongst other objectives.

Similar language is found in FTAs that have been recently updated following renewed bilateral negotiations to reflect new areas of interest for the parties involved. The amended FTA with Canada came into force in 2019 with updated language that reaffirms the state's right to regulate in the public interest and a new dedicated article on corporate social responsibility (Government of Canada, 2019[9]). A new chapter on trade and gender was also included acknowledging the importance of applying a gender perspective to economic issues to ensure that the benefits of trade and investment are realised in all parts of society.

The inclusion of such provisions in recent agreements is a step in the right direction. The relevance of these provisions will depend on their implementation, however. The bulk of Chile's IIAs, most of which were concluded in previous decades, does not contain strong commitments to sustainable development principles, and when they do, references are mainly found in the preamble of FTAs (WTI, 2022[10]). Chile could continue efforts to integrate sustainability considerations into new IIAs while at the same time engage in dialogue with its international partners to explore opportunities to update “old generation” agreements (as was the case with Canada). Efforts should be also made to improve the quality of these provisions by ensuring that they make reference to a wider set of sustainability principles and international standards (e.g. ILO and RBC standards), and are not limited to the preamble of IIAs but are rather entrenched into the text of the treaties.

Table 3.1. Sustainable development provisions in investment chapters of Free Trade Agreements signed by Chile

	Sustainable development provisions
US – Chile Free Trade Agreement	Article 10.12 – Investment and Environment: “Nothing in this chapter shall be construed to prevent a Party from adopting, maintaining, or enforcing any measure otherwise consistent with this chapter that it considers appropriate to ensure that investment activity in its territory is undertaken in a manner sensitive to environmental concerns”.
Chile – Canada Free Trade Agreement	Article G-14: Environmental Measures: “The Parties recognise that it is inappropriate to encourage investment by relaxing domestic health, safety or environmental measures. Accordingly, a Party should not waive or otherwise derogate from, or offer to waive or otherwise derogate from, such measures as an encouragement for the establishment, acquisition, expansion or retention in its territory of an investment of an investor.”
	Article G-14 bis: Corporate Social Responsibility: “The Parties reaffirm their commitment to internationally recognised standards, guidelines and principles of corporate social responsibility that have been endorsed or are supported by the Parties, including the OECD Guidelines for Multinational Enterprises, and each Party should encourage enterprises operating within its territory or subject to its jurisdiction to voluntarily incorporate these standards, guidelines and principles into their business practices and internal policies.”
Chile – Brazil Free Trade Agreement	Article 8.15 –Social Responsibility Policies: “Investors and their investments should develop their best efforts to comply with the OECD Guidelines for Multinational Enterprises of the Organization for Economic Co-operation and Development, in particular: (a) Contribute to economic, social and environmental progress, with a view to achieving sustainable development; (b) Respect the internationally recognised human rights of people involved in the activities of the companies; (c) Stimulate the generation of local capacities through close collaboration with the local community; (d) Promote the formation of human capital, especially through the creation of employment opportunities, and offering training to employees; (e) Refrain from seeking or accepting exemptions not contemplated in the legal framework or regulatory framework related to human rights, the environment, health, security, work, tax system, financial incentives, or other questions.”

Source: OECD elaboration based on SUBREI (2022[11]), www.subrei.gob.cl/acuerdos-comerciales/acuerdos-comerciales-vigentes

3.3. Leveraging investment promotion and facilitation for Chile’s sustainable development

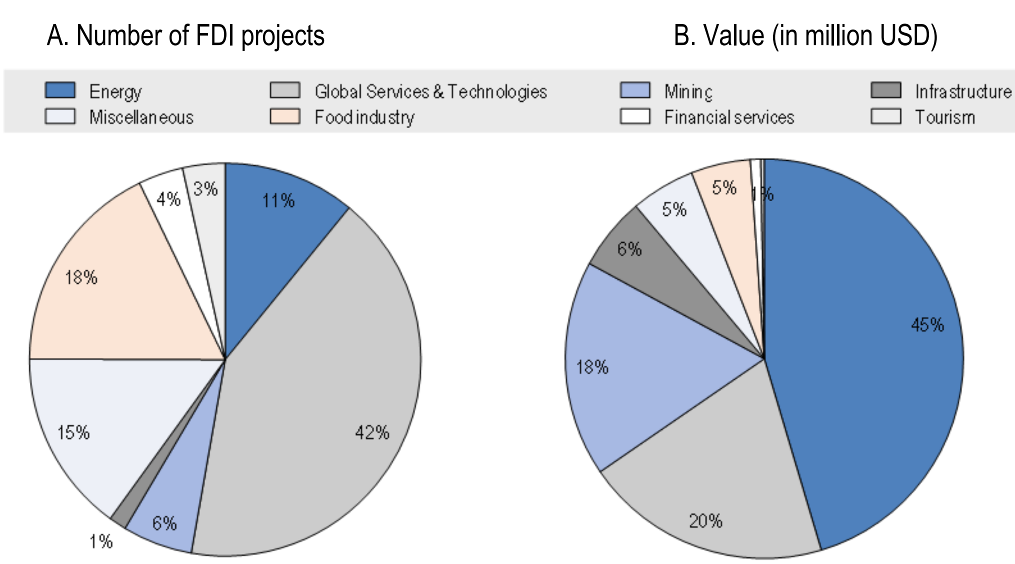
3.3.1. InvestChile could further improve its capacity to track and measure the contribution of investment promotion activities to the SDGs

IPAs are key players in bridging information gaps that may otherwise hinder the realisation of foreign investments, and their potential sustainable development impacts. Most IPAs prioritise certain types of investments over others, by selecting priority sectors, countries or investment projects, and allocating resources accordingly. InvestChile’s organisational structures and strategies, just like that of other IPAs worldwide, have evolved over time, with increased focus on technological change and sustainable development. Since its creation in 2016, the core roles and responsibilities of the agency are to promote inward FDI and support the economic development of national and subnational regions (OECD, 2015[12]). Central to its mission is the provision of business consulting, information and facilitation services that promote high value-added investment and contribute to the diversification of the Chilean economy.

Based on the number and type of responsibilities, InvestChile can be categorised as a specialised type of agency, focusing on investment attraction and investment-related mandates, as is the case for the Czech or Irish agencies, for example. Other IPAs around the world have included additional responsibilities such as innovation and export facilitation. The number and type of mandates can affect the level of resources that IPAs devote to each task and the degree of co-ordination with complementary policies, particularly those related to sustainable development priorities. InvestChile's narrow mandate does not necessarily undermine its capacity to promote investment that brings social and environmental benefits, but it does mean that robust policy co-ordination mechanisms are necessary to maximise synergies with other parts of the government that operate at the intersection of investment promotion and sustainable development. It also means that sustainability considerations in relation to investment promotion should be further mainstreamed into the agency's core functions and activities.

This has been reflected in the evolving focus of InvestChile's sector- and country-based targeting strategy. In recent years, InvestChile has developed new initiatives to improve the quality of its investment promotion activities and pro-actively target foreign MNEs that contribute to FDI diversification. Notable examples are the *Invest in Chile Now* initiative, which began during the COVID-19 crisis and aimed to proactively seek out leading businesses that have the potential to undertake high value-added investment projects. The campaign was carried out primarily through business intelligence, bilateral meetings and tailor-made value propositions addressed to MNEs operating in strategic markets around the world. Over 2020-22, several promotional activities were undertaken in the Middle East and Asia regions, and emphasis was placed on promoting investments in the renewable energy, finance, infrastructure, technological services and agribusiness industries. The prioritisation of low-carbon, technology-intensive and high value added FDI is reflected in InvestChile's portfolio of clients. In 2021, 42% of the supported FDI projects took place in knowledge-intensive services and the technology industry, followed by the agri-food (18%) and energy (11%) sectors (Figure 3.5, Panel A). In terms of value, almost half of supported investments went into the renewables energy sector followed by tourism and mining (Panel B).

Figure 3.5. InvestChile prioritises investments in energy and technology-intensive services, 2021



Source: OECD elaboration based on InvestChile (2022[13]), https://investchile.gob.cl/wp-content/uploads/2022/03/reporte-ied-en-chile-a-marzo2022.pdf

As part of its aftercare services, the agency has supported better measurement of sustainability-related outcomes of foreign MNEs. For instance, the *"Measure what matters"* programme, implemented since 2020, seeks to promote the adoption of sustainable investment practices among foreign MNEs that have already set up their operations in Chile and are part of the agency's client portfolio. The programme is free of charge, lasts four months and involves an evaluation of the economic, social and environmental performance of companies and their contribution to the 2010 Agenda for Sustainable Development. Emphasis has been also placed on strengthening collaboration with subnational governments, many of which have developed specialised programmes, units and services with the support of InvestChile to promote foreign investment in their regions. InvestChile is currently implementing a Regional Plan to attract investments according to the development objectives of each region, including through a diagnosis of local investment opportunities and gaps, training of subnational government officials on investment promotion, development of regional value offers and pilot initiatives to improve regional capacities.

Although these initiatives strengthen the role of sustainability in investment promotion, due consideration should be given to the scope and complementarity of policies implemented by InvestChile. While the agency is the first point of contact for many foreign investors and the main government body providing information and technical assistance to foreign firms, it does not have the mandate to provide incentives to stimulate particular types of investment. Incentives are instead provided by the Chilean Economic Development Agency (CORFO) and other public agencies (see Section 3.4.2 and Table 3.2). Effective targeting requires a mix of different types of policy instruments that support firms at every stage of the investment process. In the early 2000s, the Government of Chile had successfully implemented the High Technology Investment Promotion Programme, which is a good example of how a more diverse range of policy instruments combining financial support, technical assistance and greater co-ordination among the various agencies can promote investments of high technological intensity (Box 3.2). A similar programme could be implemented by InvestChile, in collaboration with other public agencies, to complement existing promotional initiatives in emerging industries such as renewables (e.g. green hydrogen industry), ICTs and high-technology manufacturing.

Furthermore, the government could consider how investment promotion activities and incentive schemes could be better integrated and streamlined to create a continuum of support to foreign firms. One option would be for InvestChile to acquire its own financial incentives that could freely use for its clients. An alternative, potentially complementary, option would be for InvestChile to be involved in the administration and granting of existing incentives that are currently managed by CORFO and other public agencies. This will require the consolidation of the incentive system and a joint pool of financial resources, but clearly delineated responsibilities, target groups and budgets.

In Portugal, for instance, all investment incentives fall under the umbrella of the Portugal 2020 Incentives System, which is jointly managed by three different agencies, each focusing on different aspects of business growth (OECD, 2022[14]). The Portuguese Innovation Agency (ANI) manages incentives that support collaborative R&D projects and partnerships between companies and R&D institutions, while the Investment and Trade Promotion Agency (AICEP) and the SME Competitiveness Agency (IAPMEI) support investment and business internationalisation projects. A clear distinction is made between the types of companies and investment projects that can be supported by AICEP and IAPMEI. AICEP's clients are solely large companies with an annual turnover of EUR 75 million or companies that implement investment projects of over EUR 25 million. IAPMEI, on the other hand, supports investment projects whose value is less than the thresholds established for AICEP. To ensure the smooth functioning of the Portugal 2020 Incentives System, an inter-institutional network has been created bringing together all the relevant agencies and ministries.

Tracking and measuring InvestChile's contribution to the SDGs, and sustainable and inclusive development in general, could be also improved further. Currently, InvestChile tracks a set of basic key performance indicators (KPIs), relating mostly to productivity and job creation, such as total value of investment and number of jobs. These indicators are common among OECD IPAs: 90% of them use productivity and innovation performance indicators, and 87% use indicators linked to job creation and skills. However, over time OECD IPAs have added additional and more targeted criteria, including those related to sustainability and inclusiveness, to their KPI toolkit. For example, about half use low-carbon transition-related indicators and one-third of them KPIs on digital transformation (Sztajerowska and Volpe Martincus, 2021[15]). In addition, many IPAs include metrics related to the quality of jobs created (e.g. average wage, occupational characteristics). Finally, numerous OECD IPAs developed dedicated sustainability scoring mechanisms (SSM), i.e. sets of predefined sustainability-related criteria beyond the sheer sector of operation of the investor, to guide their prioritisation efforts. Over 40% of OECD IPAs had such a mechanism in place by September 2022 (at the time of OECD survey on the subject) and several other agencies are working on its implementation.

In the future, the set of indicators and approaches used by InvestChile for M&E could be expanded to consider a broader set of sustainability-related considerations and obtain finer insights on activities of foreign firms in the economy. It could be considered which specific indicators could be usefully added, given the overall policy objectives, the type of data available, among others. The OECD stands ready to support the agency in this reflection and the analysis of specific best practices in this area. For instance, cross-checking data provided by investors with the official statistics and tracking a wider range of firm-level data through the agency's customer relationship management (CRM) system could help evaluate the impact of investment promotion activities in a more consistent and accurate way. In some countries, IPAs are also able to gain access to administrative data on firm-level emissions, energy consumption and other environmental and social variables from environmental protection, certification and emission-disclosure monitoring bodies. In the case of Chile, the national Register of Emissions and Transfers of Pollutants includes such data for both industrial and non-industrial activities. If combined with the internal data available to InvestChile on their assistance to foreign MNEs, it could provide valuable insights into the potential climate contribution of assisted and non-assisted investment projects.

Box 3.2. CORFO's High-technology Investment Promotion Programme

In the early 2000s, CORFO implemented the High-Technology Investment Promotion Programme, which aimed to attract high-tech investments that could diversify Chile's productive base and position the country as an export platform of technological services in the Latin America region (Agosin, 2009[16]). The programme included financial incentives, coupled with technical assistance and information provision, for the adoption of advanced technologies, the implementation of employee training programmes, and the completion of pre-feasibility studies; promotional campaigns and targeted investment generation activities in major tech hubs around the world; and network development initiatives to transfer international best practices from American and European markets to Chile.

The programme's design was based on the experience of other countries, in particular Ireland and Costa Rica, whose investment promotion approach involved the targeting of incentives to specific sectors, emphasis on the technological content of promoted investments, and the use of direct subsidies rather than tax exemptions. In Chile, the prioritisation of high-technology sectors was done in line with the strategic objectives identified by the National Innovation Council for Competitiveness, an inter-institutional body responsible for co-ordinating and advising the government on innovation, science and technology policy (Agosin, 2009[16]). Efforts focused on attracting firms that could contribute to the development of the clusters identified by the Council as having the greatest potential for economic growth such as ICTs, biotechnologies and new materials.

Although the programme's budget and number of staff were small by international standards, CORFO managed to leverage the expertise of various government actors and international stakeholders. A team of government agencies was created to facilitate investment promotion activities, bringing together the National Commission for Science and Technology, Fundación Chile, a non-profit foundation that supported new technological applications in a number of industries, and Chile's official IPA, the Foreign Investment Committee (Nelson, 2007[17]). To ensure alignment of the programme with industry priorities, CORFO also created a transnational strategic network consisting of a business school in the United States, sectoral experts associated with successful IPAs, US-based consulting firms specialising in business services, software development and ICTs, US business associations and foreign investors established in Chile. All played an important role in the effective development and evolution of the programme.

In 2001-03, 219 companies had received technical assistance, including information and advice for the evaluation of investment opportunities and conditions in Chile. Overall, for each US dollar of public financial support provided to foreign investors, the programme had yielded USD 10 of materialised investments (Agosin, 2009[16]). Thanks to the programme, in 2007, there were 60 international technology service centres operating in the country and leading companies in the ICT, business services, and software development sectors had been established in Chile.

Source: OECD based on Agosin (2009[16]) and Nelson (2007[17]).

3.3.2. Overseas offices and stronger collaboration between InvestChile and ProChile could help target investors in strategic markets abroad

InvestChile's collaboration with the Ministry of Foreign Affairs and ProChile, the country's export promotion agency, could be leveraged to promote Chile as an attractive investment destination in key markets abroad, reach out to potential investors and generate leads and investment projects that contribute to sustainable development. Co-ordination with diplomatic missions in foreign countries can be very important for IPAs and for investment promotion in general because it spearheads the efforts of a country to promote itself and establish strategic relationships with investor networks abroad (OECD, 2018[18]). These relationships can also foster strong ties with economic diplomacy, including foreign trade policy, and help attract export-oriented investors that will set up their business activities in Chile to trade with the LAC region and the rest of the world.

Currently, InvestChile's presence abroad includes six representatives. Three representatives report directly to InvestChile and serve as regional contact points for Asia, Europe and North America, while the other three are presidential attachés, appointed by the President, but co-ordinated by InvestChile, assigned to Rome, Ottawa and Paris. In addition, there is ad hoc collaboration with the Undersecretariat for International Economic Relations (SUBREI) of the Ministry of Foreign Affairs and ProChile's international network of offices. The latter includes 57 international commercial offices, which primarily aim to connect Chilean exporters with companies abroad and provide them with tailored information on how to access foreign markets. Although ProChile's offices have been given a formal mandate to work on investment promotion in co-ordination with InvestChile and SUBREI, in practice joint investment promotion activities are limited and take place on an ad hoc basis. Lack of resources, overlaps between investment promotion and other foreign policy mandates and absence of clearly defined roles and responsibilities are the major factors making co-ordination complex and ineffective.

InvestChile could consider establishing a small number of own overseas offices abroad in the form of "regional hubs" which will cover specific continental regions and be tasked with image building and investment generation activities in collaboration with Chile's diplomatic missions and ProChile's offices (e.g. organising sector- or investor-specific missions abroad, handling investor enquiries and requests, implementing pro-active campaigns). These satellite offices would be better positioned to lead investment promotion activities in strategic markets, ensure consistency in the country brand messaging and information delivered to potential investors, and foster greater synergies with Chile's existing network of agencies and representations abroad. IDA Ireland, for example, shares local market plans and teams with embassies abroad (OECD, 2018[18]). Invest in Canada, in addition to its network of 35 offices abroad, relies on some 140 diplomatic missions around the world. Among them, 24 are located in strategic markets and are tasked to actively attract FDI, whereas other missions are given “reactive” mandates.

Existing mechanisms for co-ordination with ProChile and the Ministry of Foreign Affairs should be also strengthened to foster economies of scale in countries in which InvestChile will not be present but still offer opportunities for investment generation. Such collaboration will need well-functioning processes and mechanisms such as shared customer relationship management systems, dedicated communication channels and tools, and clear and well-defined responsibilities to enable follow-up on investment project leads and requests. These strategic links could be formalised through inter-agency collaboration agreements (e.g. contracts, MoUs) that define the responsibilities of each institution and specify the internal management processes that will be used for the delivery of investment promotion services.

3.3.3. The new National Strategy for FDI Promotion will require robust inter-institutional co-ordination mechanisms for its successful implementation

In 2022, Chile’s Inter-ministerial Committee for the Promotion of Foreign Investment adopted a new national strategy on FDI promotion, which places foreign investment at the epicentre of Chile’s economic transformation agenda. The strategy identifies the low degree of FDI diversification, high concentration in natural resources and limited FDI flows into manufacturing (discussed in Chapter 2) as key challenges for the Chilean economy. It also explicitly reflects Chile’s emerging policy priorities relating to FDI diversification and sustainable development by proposing to build the country’s strategic framework for investment promotion around four key themes, namely FDI growth, economic transformation, sustainability and impact.

The strategy revises InvestChile’s investment prioritisation framework, which has so far focused on the targeting of a limited number of sectors, and suggests instead a flexible approach that relies on 17 criteria linking investment projects to specific activities and performance outcomes. For instance, the agency has been tasked with targeting investment projects that are aligned with the SDGs and responsible business conduct (RBC) standards; contribute to addressing global challenges such as digital transformation, the climate crisis and technological disruption; foster business linkages with local supplier ecosystems; and support the development of highly skilled human capital, quality jobs and technology transfers to the local economy, amongst others. The implementation of this new framework will rely on several action plans that will be developed and executed annually by InvestChile and the various ministries that make up the inter-ministerial committee. The plans will include specific actions, establish objectives and identify target markets and performance criteria that investment projects should fulfil. A novelty of the action plans is that their objectives and actions will be also linked to concrete proposals for policy initiatives and government reforms to address potential regulatory barriers or underdeveloped capacities in the Chilean economy. This is expected to strengthen InvestChile’s policy advocacy role by monitoring foreign investors’ perception of the country’s investment climate and proposing changes to improve investment policy.

Although the strategy includes several references to the need for inter-institutional co-ordination to successfully implement the new investment policy priorities, it lacks a comprehensive description of the institutions that should be involved and of the governance arrangements that are needed to achieve the objectives set by the inter-ministerial committee. As Chile has entered a new policy cycle and sustainability considerations are already increasingly mainstreamed into investment policy, the lack of clarity around the strategy’s governance model increases the risk of policy overlaps and contradictions and could lead to ambiguity about the pursued policy objectives and the responsibilities of various institutions. In the months following the adoption of the strategy, the technical secretariat of the Inter-Ministerial Committee for the Promotion of Foreign Investment will be charged to develop sector-specific Action Plans that will detail co-ordination and collaboration arrangements among the various line ministries.

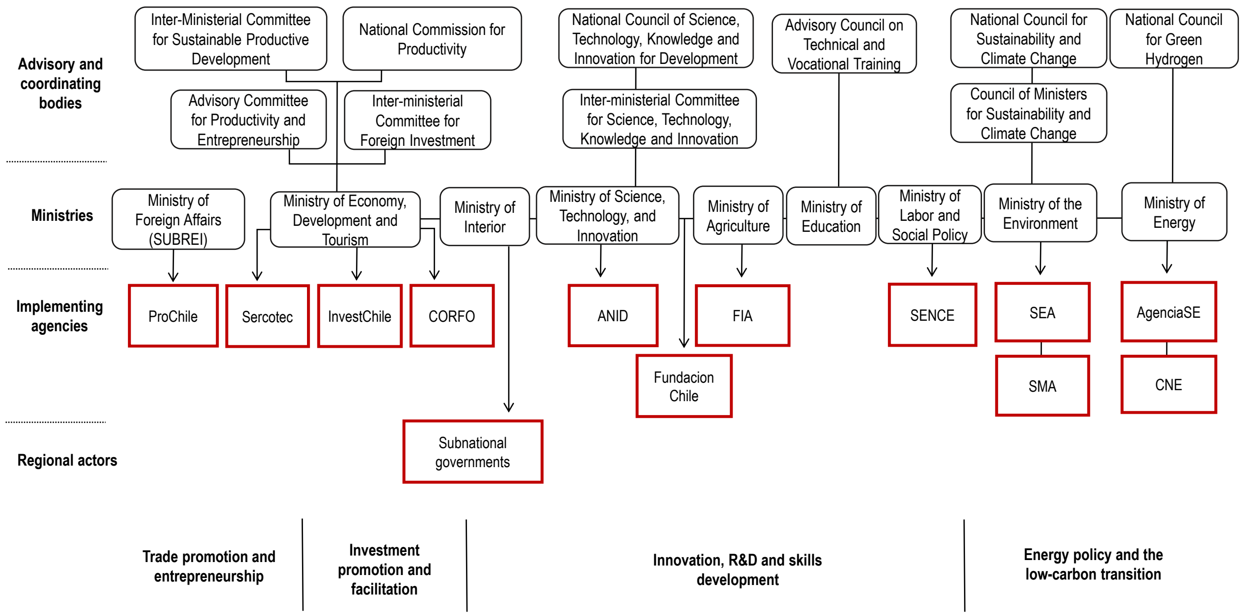
Similarly, the strategy does not provide details on the monitoring and evaluation (M&E) framework that will be used to track its implementation. InvestChile is given a broad mandate to monitor and evaluate the investment promotion activities included in the prospective action plans on an annual basis. However, such a mandate should be accompanied with the necessary organisational, monitoring and data collection frameworks as well as sufficient resources to ensure that the strategy remains effective. InvestChile should be supported in developing a comprehensive internal M&E framework that will allow them to track and collect reliable statistical data based on international standards.

Setting the strategy in motion will require increased attention on the issues of policy alignment and co-ordination as well as the use of robust monitoring tools to identify policy inefficiencies and take corrective action. The Action Plans that will be developed by InvestChile in the first months of 2023 should create an integrated vision across government and set out long-term strategic objectives, quantifiable targets, programme actions and clearly defined roles for all the institutions involved in their implementation. They should include a detailed description of communication channels and co-ordination mechanisms as well as a set of quantifiable performance indicators that allow the tracking of investment promotion activities and the collection of data on their impact.

In this context, InvestChile's co-ordinating role could be strengthened through the agency's participation in high-level government councils that focus on sustainable development. Currently, InvestChile is a member of the Inter-Ministerial Committee for Foreign Investment and the National Council for Green Hydrogen (Figure 3.6). Participating in the activities of other councils such as the ones dealing with productivity, innovation, sustainability and skills development could help foster greater synergies between these policy areas and Chile's investment promotion priorities.

Overall, improving the inclusiveness of high-level government councils could become a priority to help address challenges in co-ordination. For instance, in January 2023, the Ministry of Economy established an Inter-Ministerial Committee for Sustainable Productive Development to co-ordinate policy efforts aimed at the diversification of the economy, without however InvestChile and the Ministry of Foreign Affairs, in particular SUBREI, being part of it. Given the importance of investment and trade policy in improving the productivity and accelerating the diversification of the Chilean economy, ensuring their involvement in the committee's deliberations and policy initiatives will be of paramount importance. Effective horizontal co-ordination across ministries and agencies will require clear and strong decision-making processes and high-level political commitment – i.e. at the ministerial and presidential levels – to overcome potential policy siloes, mobilise public resources and government actors, and build momentum behind the sustainable investment policy agenda.

Figure 3.6. Institutions at the intersection of investment promotion and sustainable development



Note: SERCOTEC: National Service for Technical Co-operation; CORFO: Chilean Economic Development Agency; ANID: National Agency for Research and Development; FIA: Foundation for Agricultural Innovation; SENCE: National Service for Training and Employment; SEA: Environmental Assessment Service; SMA: Environmental Superintendency; AgenciaSE: Energy Sustainability Agency; CNE: National Energy Commission.
Source: OECD elaboration.

Box 3.3. FDI and economic diversification policies delivered by the Slovak IPA

The Slovak Republic shows a high level of economic specialisation. Most of the country's value added and employment, are concentrated in a few sectors, mainly in the automotive industry, and a number of low-tech sectors, such as wholesale and retail trade, real estate activities and construction. Although the motor vehicles industry alone is responsible for 20% of total manufacturing value added, foreign affiliates operating in the automotive industry are involved in low value-added activities (fabrication and assembly of imported car components). Their investment generates, therefore, scarce local technology diffusion, which hampers the sector's and the overall economy's potential to upgrade to more knowledge-intensive activities.

Recent policy reforms in the Slovak Republic have focused on diversifying the economy beyond low value-added manufacturing and strengthening its innovation potential. The Regional Investment Aid Scheme is the main instrument used by the Slovak Government to support investments that help the economy move away from low value-added manufacturing and towards more knowledge-intensive and high-tech sectors. The scheme provides aid in the form of grants for tangible and intangible fixed assets, corporate income tax relief, wage subsidies for newly created jobs and discounts in the renting or selling of real estate. The sectoral scope of the Regional Investment Aid Scheme illustrates the government's strategic choice to support FDI-intensive sectors to move higher up the value chain and engage in technologically sophisticated activities with more local content in their products. To benefit from the aid, investment projects should fall under one of the defined investment categories, namely industrial production, technological centres and business services centres, each one of which is linked to priority sectors (e.g. chemicals, electronics, automotive, business services etc.) and relevant smart industry technologies (e.g. robotics, artificial intelligence, big data, cloud, etc.).

In recent years, investment facilitation and aftercare services have also focused on encouraging foreign and domestic firms to collaborate on the implementation of R&D and technology-based projects. The Slovak IPA, SARIO, has established an Innovation Services Platform, which connects some of its most technologically advanced foreign clients with innovative Slovak firms to undertake R&D. In addition to policy efforts aimed at increasing the knowledge intensity of FDI (see section on productivity-enhancing FDI), similar initiatives have been recently introduced to help the Slovak SMEs diversify their activities towards high-tech sectors. In 2019, SARIO started providing diversification services to the Slovak SMEs that want to expand their operations into the space, aviation, smart mobility and medical technologies industries. The support includes business-consulting services, seminars, matchmaking events and workshops for B2B collaboration.

Source: OECD (2022[19])

3.4. Boosting productivity and innovation through sustainable investment promotion

3.4.1. Financial support for business R&D and innovation is among the lowest in the OECD area

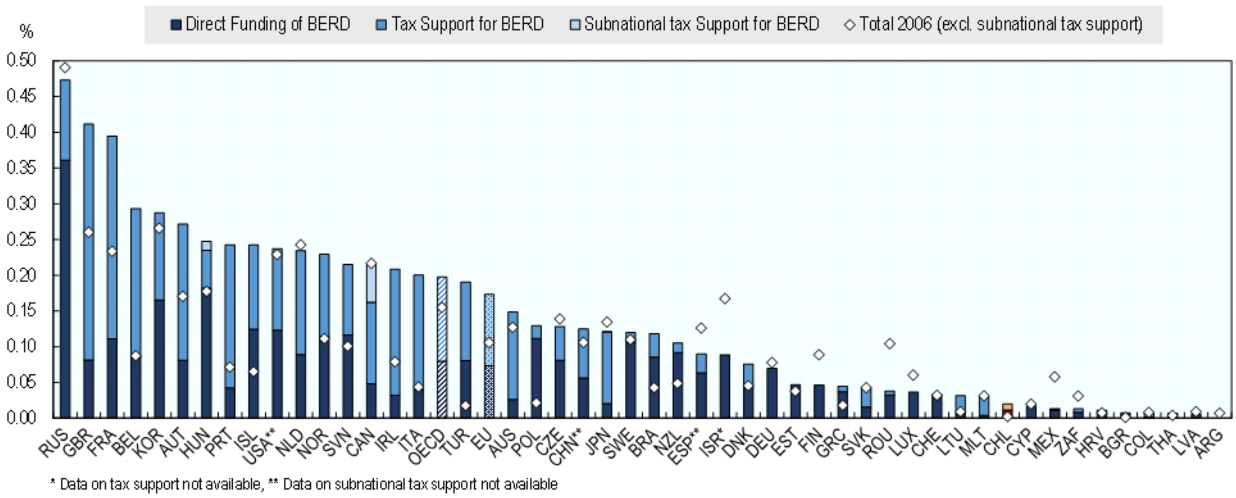
Chile is placed among OECD and partner economies that provide one of the lowest levels of total government support for business R&D, at a rate equivalent to 0.03% of GDP in 2018 (latest available data (Figure 3.7). The Chilean support to business R&D – both direct (e.g. grants, loans) and indirect (e.g. tax relief) – ranks far from top innovators such as the US, Canada, France and Portugal.

R&D tax incentives account for the smallest share of public support to business R&D (28%) (OECD, 2021[20]). A tax incentive for extramural R&D was first introduced in 2008, whereby enterprises operating in Chile are entitled to a 35% tax credit for R&D certified contracts entered into with a registered research centre. The scheme is jointly administered by the Chilean Internal Revenue Service (IRS) and the Chilean Economic Development Agency (CORFO). The latter is also responsible for approving the registration of local research centres and certifying their R&D contracts agreed with business enterprises. The generosity of the tax incentive increased significantly in 2013 with the extension of the scope of R&D tax support to additionally cover intramural R&D and the ceiling on qualifying R&D expenditure was lifted from UTM 5 000 to 15000.

The magnitude of tax support, while small by international standards (in absolute and relative terms) has increased significantly over the past decade, ranging from USD 47 million in 2008 to USD 15 382 million in 2018. This was also reflected in the number of recipients, which increased in Chile, from less than 5 in 2008 to around 50 recipients in 2019 (OECD, 2021[20]). Unlike other OECD economies, this increase is primarily driven by large firms, which accounted for 73% of recipients and 92% of R&D tax support, while SMEs accounted for only 27% and 8% respectively. Although there are no disaggregated data on the basis of firm ownership to distinguish between domestic and foreign-owned firms, these findings are a sign that the scheme likely has a strong uptake among knowledge-intensive foreign MNEs, which are often large firms operating in the manufacturing and services sectors.

Figure 3.7. Chile's government support to business R&D is among the lowest in the OECD area

Percentage of GDP



Source: OECD R&D Tax Incentive Database, (2021[21]), http://oe.cd/rdtax

However, the overall low level of R&D government support could be a barrier to attracting additional investment in R&D-intensive activities, in particular given that certain LAC countries may provide more generous schemes (e.g. Brazil, Colombia). Cross-country differences in the generosity of R&D tax allowances can lead to differences in the cost of capital faced by foreign MNEs – and subsequently encourage or discourage them from increasing their R&D investment or locating their R&D functions in a country.

The low uptake of R&D tax relief by Chilean SMEs may also be a sign of weak domestic capacities in the area of innovation, which could be an important barrier for domestic enterprises to develop value chain linkages and technology-intensive partnerships with foreign MNEs operating in Chile. This is unlike other OECD economies. Overall, SMEs represent at least 70% of tax relief recipients in 24 out of 30 countries included in the OECD R&D Tax Incentives Database, ranging from around 70% in Japan and 90% in the Netherlands to 100% in Denmark and New Zealand.

Potential reporting and other compliance constraints may limit the scheme's overall effectiveness in incentivising R&D collaborations. For instance, a pre-approval process is required to obtain the incentive and only expenses associated with pre-approved R&D projects are eligible for tax relief (EY, 2022[22]). In addition, the registration of research centres with CORFO comes with several requirements such as proving that they have the necessary organisational and material means and human resources to perform R&D, operating for at least six months and proving that they have sufficient financial reporting mechanisms to manage R&D projects. In many cases, delays in the certification of R&D expenditures by CORFO have led to the need to rectify tax declaration ex-post, adding administrative burden on firms that choose to claim the tax relief (OECD, 2022[3]).

Chile could consider adjusting the current scheme to make it more attractive and less burdensome for both foreign and domestic firms who seek to engage in innovative activities (e.g. simplifying application procedures, increasing the scheme's ceilings), while at the same time monitoring the scheme's impact and evaluating whether its benefits outweigh potential costs (e.g. in terms of forgone public revenue, economic distortions, etc.). Such reforms should be accompanied by measures to remedy a lack of awareness of the tax credit among smaller enterprises and other R&D institutions that operate in FDI-intensive sectors.

Certain OECD countries offer preferential provisions for SMEs and loss-making firms, and others provide comprehensive investment incentive packages that go beyond tax relief and seek to encourage the establishment of R&D and technology centres by foreign MNEs (e.g. Slovak Republic, see Box 3.3). Incentives are not the only policy tool to boost R&D investment, putting aside the question of their effectiveness and the forgone revenues they can generate. In many cases, the expansion of existing investors seems to be the most common entry mode of R&D-intensive FDI. As part of its aftercare services, InvestChile could step up efforts to convince already established firms to relocate their R&D activities to Chile. This will require stronger support from the government for the adoption of advanced technology and machinery, technical assistance to link applied university research to the needs of foreign investors, as well as training and skills development programmes to help investors find qualified workers. Science and technology parks could be further supported and leveraged to attract knowledge-intensive foreign MNEs in line with the specialisation patterns of local economies within which these are embedded.

Given Chile's increasingly sustainability-driven policy agenda, emphasis could be placed on better linking R&D incentives to green growth and decarbonisation objectives. A few OECD countries have in place special, temporary or emergency tax relief provisions for R&D in specific priority areas such as green or energy-related R&D (OECD, 2021[23]). Such schemes can be particularly useful for the competitive development of industries targeted by Chile's investment promotion framework, such as the green hydrogen and renewable energy sectors. In Italy, for instance, a higher tax credit rate applies for technological innovation aimed at industry 4.0 innovation or ecological transition. Similarly, in Portugal, relief for expenses related to the making of eco-design products is increased by ten after approval by the Portuguese Environment Agency.

3.4.2. Streamlining and scaling up Chile's investment incentives framework could help attract technology-intensive and low-carbon investments

Direct government funding in the form of grants and loans could be also increased and better co-ordinated and targeted in order to promote Chile's strategic priorities in the area of sustainable development and economic diversification. Direct funding often represents a more discretionary and selective form of public support as it allows governments to target specific economic activities that are considered to offer high social returns – as opposed to tax incentives, which are in principle available to all firms carrying out R&D.

In Chile, financial support for innovative and productive investments is offered by several public institutions. CORFO, under the supervision of the Ministry of Economy, Development and Tourism, offers more than 50 programmes and financial instruments aimed at promoting innovation, stimulating entrepreneurship, and strengthening the competitiveness of the Chilean economy (Table 3.2). In recent years, the focus of the agency has shifted towards financing national and foreign investment projects in sectors and value chains of strategic importance for Chile's economic transformation. For instance, since 2020, CORFO has launched several financing calls inviting domestic and foreign firms to benefit from preferential prices on Chile's lithium production for the manufacturing of lithium-based products (e.g. batteries). Similar financing schemes have recently been launched for the agricultural and green hydrogen industries.

Like CORFO, the National Agency for Research and Development (ANID), which reports to the Ministry of Science, Technology, Knowledge and Innovation, offers a wide range of short-term funding tenders as well as technical assistance programmes focusing on the promotion of both basic and applied research in all areas of knowledge, technological development and scientific innovation. Finally, the Foundation for Agricultural Innovation (FIA), under the supervision of the Ministry for Agriculture, provides support for the implementation of innovation initiatives in the forestry and agricultural sector and the associated agro-food chain through financing, seed capital, training and consulting services.

Table 3.2. Main investment incentives offered by Chilean Government institutions

Incentive scheme	Description
CORFO's Investment and Working Capital Guarantees	Intended to improve the access and funding conditions for companies developing an investment project or requiring working capital. Guarantees are granted to lending institutions by CORFO.
VAT exemption	Projects that involve an investment of at least USD 5 million can apply for a tax credit with regards to capital goods imported.
Tax credits and grants for investments in remote areas	Tax credit and grants for projects in Chile's northernmost regions of Arica – Parinacota & Tarapacá, as well as the southernmost Chilean zones of Palena Province (Los Lagos Region), Aysén and Magallanes (Chilean Patagonia). A special subsidy is also granted for productive investments by small and medium-sized investors.
Free trade zones	Free trade zones are defined physical places located in the Arica y Parinacota, Tarapacá and Magallanes regions, where goods are exempt from customs duties and taxes.
CORFO's Programme for Integrated Development Initiatives	Support for the materialisation of investment projects or expansion of existing technological investments, which generate impact in relevant productive or geographical sectors, by virtue of its alignment with the strategic axes of CORFO.

Source: OECD based on InvestChile (2022[24]), https://investchile.gob.cl/programs-and-incentives-for-investment/

Despite the multiplicity of government actors involved in supporting innovative and R&D-intensive investment projects, Chile's current institutional arrangements, funding mechanisms and policy mix lack an overarching framework that could identify strategic opportunities across sectors and provide the necessary long-term finance to diversify the country's production structure and hasten its transition towards a knowledge-based economy. The current financing model, which consists of a variety of calls and funding tenders with different requisites, objectives and timeframes, and implemented by various sectoral ministries and government agencies, does not provide the necessary long-term perspective in practice, which is particularly important for foreign firms when they consider where to locate their investments.

Given the need to catalyse additional investment for productivity growth and innovation, the Government of Chile is currently considering ways to streamline and consolidate its financial incentives framework. One option would be to leverage the potential of the new Inter-Ministerial Committee for Sustainable Productive Development to co-ordinate the administration and granting of the various incentive schemes in a more coherent way. Another option would be for the government to leverage the potential of CORFO, or a new development bank or the already established Banco del Estado, a state-owned bank which has been providing financial solutions to consumers and businesses, in particular SMEs, since 1955. The aim should be to make available a diverse portfolio of funding tools (e.g. loans, grants, guarantees, equity investments) and network-building initiatives to crowd-in private investors, including foreign MNEs, through risk-sharing, co-financing strategies and public-private partnerships (OECD, 2019[25]).

The relevance of such alternative financial options for sustainable investment promotion in Chile stems from the need to mobilise additional foreign investment through risk mitigation tools and approaches. The experience of other OECD economies suggests that direct financial support for the competitive development of strategic sectors should be transparent, time-limited and address well-identified market failures in order to avoid potential market distortions (OECD, 2022[1]). The conditions and criteria for granting financial support should be clearly defined and rules-based to avoid discretionary and distortive granting decisions. The activities should be also evaluated periodically to ensure that the benefits outweigh potential costs.

It will be important that the consolidation of the incentives framework relies on clear strategies, policies and targets that align available funding tools with Chile's investment promotion, innovation and low-carbon priorities. Such alignment can be achieved through the participation of key government agencies such as InvestChile, CORFO and ProChile in the management and coordination of the new framework. In Portugal, for instance, the national IPA is one of the shareholders of the National Promotional Bank, together with the Portuguese entrepreneurship and tourism promotion agencies (Box 3.4). The bank has been given a broad mandate to support investments in areas such as business financing, innovation funding, green finance, social cohesion and infrastructure development.

Box 3.4. Promoting innovation and the low-carbon transition through a national promotional bank: the case of Portugal

The ease of financing and promoting innovation has been a longstanding issue in Portugal. In 2020, the Portuguese Government established a National Promotional Bank (Banco Português de Fomento, BPF) to support SMEs, midcaps as well as large companies considered important for the development of strategic sectors of the Portuguese economy, by means of targeted funding, equity, and hybrid instruments and guarantees. BPF is a fully state-owned bank and its shareholders include: (i) the Portuguese State; (ii) the Agency for Competitiveness and Innovation (IAPMEI); (iii) the National Tourism Agency (Turismo de Portugal); and (iv) the Agency for Investment and Foreign Trade (AICEP Portugal Global). The participation of key government agencies in BPF's corporate governance structure as shareholders facilitates co-ordination and allows for greater synergies across the investment promotion, innovation and entrepreneurship policy agendas. At the same time, it acts as a bridge between the different needs and priorities of foreign and domestic firms, and expands credit supply for innovative, technology-intensive and low-carbon investment projects.

BPF has been given a broad mandate to ensure that its financing instruments support investments that contribute to sustainable development objectives. The bank's activities focus on five key areas of the Portuguese economy:

- Business financing: particularly SMEs and mid-caps, but also large corporations under certain conditions.
- Innovation funding: projects related to digital transformation, connectivity, entrepreneurship and R&D
- Green finance: investments related to sustainable infrastructures, transport, carbon neutrality, and the circular economy
- Social impact: health care, education, social housing
- Infrastructure: national and local infrastructure development projects in collaboration with local actors

Source: OECD (2022[14])

3.4.3. Strengthening knowledge and technology spillovers from FDI will require greater collaboration between InvestChile, Sercotec and CORFO

Business linkages between foreign investors and domestic firms, in particular small and medium-sized enterprises (SMEs), can be an important channel for the transfer of technology, knowledge and skills. Business linkages can take many forms. They may involve buyer-supplier arrangements along local value chains or formal strategic partnerships such as joint ventures, contract manufacturing, and R&D collaboration.

InvestChile does not implement any FDI-SME linkages programmes and does not operate a suppliers database, which is a common tool used by IPAs to support foreign MNEs' local sourcing strategies. They do, however, organise bilateral meetings between their clients and representatives of local business ecosystems to exchange information on potential opportunities for collaboration. InvestChile could consider complementing its portfolio of services with an online suppliers database and the organisation of regular matchmaking events and business fairs in sectors of strategic importance for the Chilean economy. Efforts to strengthen FDI-SME linkages will require sufficient resources and dedicated staff that is trained to identify the sourcing needs of foreign investors and steer FDI projects towards locations with the greatest potential for supporting supplier linkages.

For the implementation of these initiatives, synergies could be developed with CORFO, which supports many large domestic companies, and Sercotec, which supports Chilean SMEs through technical assistance, funding for innovative and export-oriented activities, and entrepreneurial training programmes. Sercotec also provides financial support to groups of companies to collaborate, establish business associations and participate in international business fairs. Although the support offered to Chilean SMEs is comprehensive, its scope is not always sufficiently aligned with the needs of foreign investors and the country's investment promotion priorities. This is also reflected in the limited co-ordination and collaboration that currently exists between InvestChile and Sercotec. To harness FDI-SME linkages, supplier development programmes should be aligned with the priorities and objectives of investment promotion and facilitation (e.g. in terms of sectors, activities and types of firms targeted) and combined with other types of support such as capacity building for local firms, training programmes for local staff, and cluster development initiatives. Knowledge and technology spillovers from FDI-SME linkages cannot materialise unless Chilean SMEs have sufficient absorptive capacities and can become successful suppliers and partners of foreign investors.

The Supplier Clubs programme, which is implemented jointly by the Portuguese IPA (AICEP) and SME agency (IAPMEI) is a good example of how public policy can mobilise actors across the business ecosystem to help local SMEs collaborate with foreign MNEs. The programme combines matchmaking services to help foreign and domestic firms identify collaboration opportunities and agree on jointly implemented projects; business consulting services and training programmes provided by foreign affiliates to their suppliers based on an assessment of the latter's performance; and financial support through EU-funded incentive schemes to help SMEs upgrade their technological capabilities for the implementation of the agreed joint projects. Such a systematic approach to value chain building in Chile will require the use of a more diverse range of policy instruments and greater co-ordination among the agencies involved in investment promotion and SME growth policies. InvestChile could consider collaborating with CORFO and Sercotec for the implementation of a supply chain development programme, involving investors and domestic firms, including SMEs, supported by the three agencies.

3.5. Promoting skill-intensive investment and addressing skill gaps in FDI-intensive sectors

3.5.1. Labour market regulations may discourage foreign MNEs from investing in training

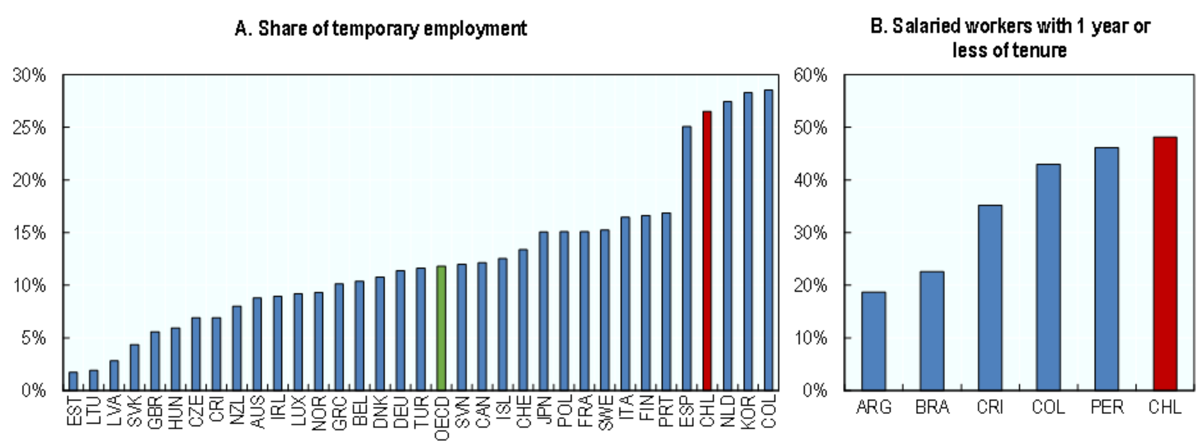
Labour market regulations can support foreign firms' adjustments while providing a level of employment stability that encourages learning in the workplace. Balanced labour market rules matter for the location choice of foreign investors and affect FDI volumes – and thus potential job creation – as well as their knowledge intensity (Javorcik and Spatareanu, 2005[26]). But job security also protects workers from being fired in response to small fluctuations, which can encourage foreign MNEs to invest in long-term training. In Chile, restrictions to individual and collective dismissals of regular workers are relatively strict and slightly above the OECD average (OECD, 2019[27]). Rules for hiring workers with temporary contracts are less strict but still above many other OECD countries.

As seen in many OECD economies (e.g. Portugal, the Netherlands, Sweden) relatively low regulation of temporary contracts in situations of high regulation of regular contracts can deter employers from offering permanent employment opportunities to workers. This labour market duality results in Chile having one of the highest shares of temporary jobs and a high job turnover (OECD, 2020[28]). In 2021, Chile ranked fourth among OECD economies in terms of the share of workers on temporary employment (26.5%), and far above the OECD average of 11.8% (Figure 3.8). Among LAC economies, Chile also has the highest share (48%) of workers with one year or less of job tenure, followed by Peru and Colombia. Short job tenure and low costs of dismissal severely affect foreign and domestic firms' incentive to invest in job training.

Employment protection reforms can reduce labour market duality between secure and precarious jobs by lowering the opportunities and incentives for firms to replace regular with temporary contracts. In the case of Chile, this would involve reforms that restrict the valid cases for use of temporary employment. In Portugal, for instance, the 2019 labour market reform reduced the maximum duration of temporary contracts from three to two years and introduced a requirement for firms to justify their use (OECD, 2022[14]). The Contrato-Geração incentive scheme was also implemented with the aim to promote permanent employment for both first-time jobseekers and the long-term unemployed.

As seen in Chapter 2, foreign MNEs in Chile create more skill-intensive jobs than domestic firms. However, opportunities for human capital development could still be further leveraged by diversifying the type of FDI that Chile has attracted so far, mainly in medium- and low-tech manufacturing, mining and construction. Reducing the complexity of regulatory procedures, in particular for large investment projects, in high-tech and knowledge-intensive activities (e.g. business services) would support FDI to create better paid and more high-skilled jobs. FDI impacts on jobs and skills are also likely to be greater in settings where pro-competition policies allow for more efficient resource reallocation. Perceptions of the private sector suggest that several key markets in Chile are dominated by relatively few firms, making Chile the 39th most concentrated economy out of 141 (OECD, 2022[3]; WEF, 2019[29]).

Figure 3.8. High employee turnover limits incentives for firms to invest in training



Note: Data in Panel A refer to 2021. Data in Panel B refer to 2019.
Source: OECD labour force statistics (OECD, 2023[30]), https://doi.org/10.1787/23083387, and IADB Sims Database (IADB, 2022[31]), https://mydata.iadb.org/en/Labor/Database-of-Labor-Markets-and-Social-Security-Info/v2c9-36h7

The government has sought to incentivise on-the-job training through a tax franchise scheme, which allows foreign and domestic firms to benefit from tax credits (up to 1% of their wage costs from their tax liability) if their workers participate in training courses offered by the National Training and Employment Service (SENCE). The latter supervises and promotes a wide variety of upskilling and reskilling initiatives and supports the employability of workers, whether they are employed or not. However, evidence from multiple evaluations suggests that government-funded training programmes face challenges in matching the supply and demand of jobs, have high dropout rates and poor results in terms of addressing skill gaps in strategic sectors of the Chilean economy (Bogliaccini et al., 2022[30]). The number of workers benefitting from the tax franchise scheme has been following a downward trend over the past decade while there is little involvement of employers on the type of training that their workers get. An important root cause of these problems relates to the fragmentation of the institutional framework governing skills development as well as the lack of effective skill anticipation systems that take into account MNEs' changing needs with regard to workforce skills (see next section).

Investment promotion and incentive policies have a crucial role to play in supporting skills development. Foreign MNEs operating in Chile should be further incentivised to undertake training activities for their own employees or for their local suppliers. For instance, Thailand's investment incentive scheme includes a set of merit-based incentives that provide an add-on to the basic scheme with additional tax exemptions if a project undertakes R&D and skills development activities or locates in specific regions or in an industrial area (OECD, 2021[31]). Financial incentives targeting large investments, particularly those administered by CORFO and having a sectoral focus, could be aligned with these performance criteria. Such eligibility conditions require careful monitoring to ensure that the outcome has been met and to avoid fraudulent behaviour. The experience of Chile's tax franchise scheme suggests that training incentives should be flexible enough to allow foreign MNEs to tailor programmes to the needs of their employees. For instance, IDA Ireland has partnered with Skillnet Ireland, the Irish public agency responsible for skills development, to facilitate foreign investors' access to Skillnet's talent development programmes and provide them with tailored coaching and mentoring to assess their talent needs (Box 3.5). Sometimes, foreign MNEs create their own training centres, and many IPAs support them by ensuring that trainings are recognised by the relevant authority. Better co-ordination and collaboration between InvestChile and SENCE will be key to improve FDI's contribution to job training opportunities.

Box 3.5. Tailored skills development programmes for foreign investors in Ireland

In 2022, Ireland's investment promotion and skills development agencies, IDA Ireland and Skillnet Ireland respectively, launched a strategic talent development partnership. The partnership aims to supporting FDI companies who are looking to attract and retain talent by offering them access to tailored skill development initiatives implemented across Skillnet Ireland's 73 networks nationwide. This new engagement model combines the IDA's business development and support services for foreign MNEs with Skillnet Ireland's talent development expertise and extensive delivery network to help drive companies' growth.

Before the official launch of the partnership, the two agencies successfully piloted the programme by helping a selected number of foreign MNEs put together a strategic training and development plan to meet their business objectives. The programme involved coaching and mentoring to help companies assess their talent needs. External consultants were also assigned to work with them and help them address skill gaps and identify strengths and opportunities for further improvement. By the end of 2022, more than 20 companies have gone through the programme in a wide range of different sectors such as financial services, biopharmaceuticals, aviation communications, manufacturing and software development.

Skillnet Ireland has previously teamed up with IDA Ireland and Technological University Dublin to develop its Transform programme, an accredited course designed to help companies equip their staff with automation and tech skills. The programme has had notable success for Dell Technologies in supporting the company to enhance the talent capacity of 600 members of its Ireland-based workforce and has resulted in the development of 190 business innovation projects. In 2021, Skillnet invested EUR 1m to bring the programme to a wider network of businesses in Ireland. This supports businesses – large and small – in their adoption of digital transformation and propels their workforce to embrace digitisation as it applies to leadership, strategic business models and advancing human digital capital capabilities.

Source: OECD based on IDA Ireland (2022[32])

3.5.2. Skills development incentives and programmes should be better linked to foreign MNEs' changing needs

Chile's plan to become a value-based, innovation-driven economy, and to attract investment accordingly, is only possible if the skills gap and mismatch are addressed quickly. Most importantly, ensuring that everyone has the right skills for an economy increasingly driven by sustainability considerations and the digital transformation is essential to promote inclusive labour markets, spur innovation, productivity and growth.

In Chile, responsibility for the formulation of skill development policies is shared among the Ministry of Education, the Ministry of Economy and the Ministry of Labour. Government agencies under their supervision are responsible for implementing a variety of reskilling and upskilling initiatives. The National Agency for R&D (ANID) implements the Becas Chile Scholarships programme, which supports Chilean students to pursue postgraduate studies at high-quality universities and enhance their research, technology and innovation skills. CORFO is also financing the training and certification of workers in programming and ICT skills. The agency's human capital scholarships support workers in various productive sectors and geographic areas of the country through professional specialisation courses.

Many programmes also aim to improve institutional capacities. For instance, CORFO's New Engineering 2030 programme helps universities that teach civil engineering to transform their institutional practices, training and links with industry and society, and contribute to the productive development of the economy through innovation, entrepreneurship and technology transfer. Sectoral programmes are also implemented. The Foundation for Agricultural Innovation (FIA) seeks to develop knowledge, skills and attitudes around the cycle of innovation and entrepreneurship in youth, adults, professionals, technicians and entrepreneurs linked to the forestry and agricultural sector and/or the country's agri-food chain.

Despite the number of skills development programmes offered by the various government agencies, evidence suggests that training programmes are not always of good quality, face challenges in targeting their objective population and are insufficiently aligned with the needs of the labour market (Larrañaga, 2011[33]; OECD, 2018[7]). Recent ILO research has found that in Chile there is an overall lack in demand for training, and, when it occurs, training benefits mostly highly educated workers (e.g. senior professionals) or workers in occupations with high demand for specific skills (Bogliaccini et al., 2022[30]). Training programmes in Chile should mutually strengthen the skills of the highly and less educated in order to address the challenges that digitalisation and the low-carbon transition – all accelerated by FDI – impose on the labour market. They should also better target job seekers and vulnerable groups of workers, including women and unemployed, who may be adversely affected by foreign MNEs' changing needs or FDI's diversification away from natural resources sectors. To this end, sectoral retraining programmes can be more impactful than general training courses, as they reduce skills shortages in target sectors where FDI may crowd out competitors unable to retain their talented staff.

The government has realised the benefits of opening the labour market to highly skilled non-Chileans, particularly for knowledge-intensive activities. Chile has modernised its immigration regulations offering a clear regulatory framework to promote and facilitate the movement of natural persons for business purposes. Through the recently approved Law No. 21,325, on Migration and Foreigners and Decrees No. 296 and No. 177, the country has established certain mechanisms to facilitate the process of granting visas for foreigners who intend to settle in Chile for a limited period and develop activities related to the business world. Despite this, 19 commercial agreements have assumed commitments in the movement of business people, establishing different categories in which the investor is incorporated.

Although facilitating labour mobility across all sectors could help address skill gaps across the entire economy, the government should ensure that FDI-intensive sectors and sectors with significant skills gaps remain a priority. Robust monitoring mechanisms to track the evolution of skill shortages could allow the government to quickly identify gaps and prioritise those sectors that need international talent the most. InvestChile could play an important role in that respect by liaising with the National Migration Service to address potential excessive delays in the granting of visas for its clients and help them find the skills they need. Policies to attract higher-end foreign investments should mechanically result in attracting highly skilled foreigners to work in the promoted projects.

If Chile wants to diversify into high-tech and knowledge-intensive activities, including by attracting more FDI in these sectors, it needs to invest in a broader set of skills, beyond those required in sectors where FDI is already present (i.e. natural resources, finance, low-tech manufacturing). This will require robust skills anticipation systems that involve the investment community and allow to design evidence-based and forward-looking programmes that match expected skills needs in various industrial sectors (e.g. data science, artificial intelligence, cloud computing). The Advisory Council on Technical and Vocational Training (an entity headed by the Ministry of Education in collaboration with other ministries, agencies, educational institutions and some business associations) could play a more active role in the implementation of skills needs assessments and in the collection of information on foreign firms' operations and skills needs. Involving InvestChile in the council's activities and foresight exercises could help better reflect the skills needs driven by FDI.

On the investment promotion side, InvestChile could also further promote sectors or activities in alignment with the existing skills base and provide appropriate information to investors on labour market characteristics. Currently, the agency does not provide any services to help foreign investors identify local workers with relevant skills. Recently, however, it has collaborated with CORFO and Fundacion Chile, a public-private innovation agency, to support foreign MNEs that had reinvestment processes paused due to a lack of skilled workforce. The programme seeks to train 1 000 workers according to the specific requirements of their companies, enabling a potential investment of USD 80 million and an increase of approximately USD 20 million in services exports.

Moving forward, InvestChile should co-ordinate with SENCE, CORFO and Chile's labour intermediation offices for the development of joint programmes and initiatives that allow foreign MNEs to find the skills they need. Costa Rica's IPA, CINDE, helped create an online platform, "The Talent Place", that provides detailed up-to-date information regarding in-demand occupations, skills required to apply and links to resources to obtain need certification (Box 3.6). SENCE already operates the Geo-SENCE platform, which geographically visualises skills distributions and needs, as well as training and company-employee matching opportunities throughout Chile. Further synergies could be built between skills development and investment promotion initiatives to ensure that InvestChile's clients have tailored access to CORFO and SENCE's existing information services.

Box 3.6. Costa Rica's framework for linking FDI to labour market outcomes

Costa Rica is one country in which the IPA, CINDE, plays a particularly significant role in skills, through partnerships, studies and advocacy. Education and human talent is one of CINDE's identified strategic pillars. According to the IPA's 2019-22 strategy, the agency identifies itself as a key player in supporting skills development for jobs of the future, and in the transitioning towards a knowledge economy. CINDE is fulfilling the strategy to boosting skills in Costa Rica in partnership with ministries, other agencies, universities, technical institutions and the foreign MNEs themselves, allowing the IPA to closely track patterns in emerging human talent Among other objectives, it aims to strengthen the links between the enterprises it attracts and the local economy and improve the level of skills and labour market outcomes of the local population through several programmes:

- CINDE helped create an online platform, "The Talent Place" (www.thetalentplace.cr) that provides detailed up-to-date information regarding most in-demand occupations, current vacancies in the companies located in Costa Rica, skills required to apply and links to resources to build them and obtain needed certification, including though free-of-charge online courses. Aiming at directly linking employers with employees, CINDE also organises, on an annual basis, the "CINDE Job Fair" (www.cindejobfair.com) which matches available vacancies in MNEs that were supported by CINDE with potential job seekers. During the 15 years of the fair's operation, 10 000 people assisted the fair, 24% of which have completed the recruitment process.
- Together with the Ministry for Science, Technology and Telecommunications and "Essential Costa Rica", responsible for the country brand, CINDE has also designed a programme for innovation and human capital development (Programa de Innovación y Capital Humano, PINN). The initiative provides Costa Rican nationals with access to scholarships funding educational opportunities in science, technology, engineering and mathematics (STEM). The programme is supported by the Inter-American Development Bank, and CINDE serves as a certification and capacity-building body under one of its pillars.
- CINDE also contributes to an overall understanding of the labour market and education outlook of Costa Rica, including skills needs, which encourages programmes that further boost the country's attractiveness as an FDI destination. One of these programs was launched in September 2021, Technological Seedlings, in which CINDE has partnered with Microsoft to boost the talent pool in certain high-tech sectors identified in CINDE's studies as needing the most new entrants. The training of these students has been relegated to the INA, Costa Rica's primary agency for learning and skills development, showing a strategic positioning of an IPA to actively shape skills development at home.
- In light the COVID-19 crisis, in April 2020, CINDE also created an online platform that offers information on job vacancies available in MNEs located in the country. The goal has also been to facilitate a transfer of employees from sectors most affected by the pandemic (e.g. tourism) to other sectors that have remained relatively intact as well as more generally support worker mobility. As of April 2020, 950 jobs were on offer on the platform.

Source: OECD (2021[31])

3.6. Harnessing the potential of FDI for green growth and the low-carbon transition

3.6.1. Promoting green FDI will require reforms in carbon pricing and incentives for further renewable energy expansion

Creating an enabling environment for green and low-carbon investment has been an important and longstanding policy priority for the Government of. The key institutions responsible for developing, implementing and financing proactive policies and programmes to decarbonise the economy are the Ministry of Energy and the Ministry of the Environment. However, other sectoral ministries and government agencies such as the Ministry of Mining, the Ministry of Economy, CORFO and InvestChile are also involved in efforts to decarbonise the economy. An Inter-ministerial committee and a national council on sustainability and climate change have been established to assess the environmental impact of economic activities and foster co-ordination and synergies among the public and private sectors.

Recent initiatives have focused on setting low-carbon transition targets and long-term policy strategies that send investors, including foreign ones, strong signals regarding the government's climate ambitions. Chile is the first Latin American country that made emission targets legally binding through its 2022 Framework Law on Climate Change. The law establishes the requirement to develop a national multi-sector climate strategy that will define specific measures to achieve carbon neutrality emissions and sets out sectoral reduction targets that should be achieved through action plans developed by the respective sectoral ministries. It also defines specific policy instruments to achieve these objectives, including the development of a climate financing strategy by the Ministry of Finance and a law that defines greenhouse gas emissions limits and creates a transfer system when emission surpluses are detected.

In agreement with the coal-fired plant owners and operators, the government has put forward a decarbonisation plan for the electricity system, which aims to phase out or reconvert all coal-fired power plants by 2040 (IEA, 2021[34]). The first phase, planned to be completed by 2024, will decommission 11 out of the 28 coal-fired units that are currently concentrated in six communes across Chile. Such clear and long-term targets are critically important to build capacity for investors to understand transition risks and to attract foreign investment that contributes to the country's climate agenda.

Mobilising low-carbon FDI to support Chile's climate ambitions will require strong co-ordination for the implementation of targeted policies, in particular for hard-to-abate sectors and industries for which FDI could significantly contribute to their decarbonisation. Currently, energy is responsible for 52% of greenhouse emissions in Chile, followed by the transport sector with 25% (OECD, 2022[3]). Over the past decade the contribution of fossil fuels to electricity generation has declined while wind and solar energy have gained traction. Renewable sources produce 47% of electricity; however, coal is still used to generate one-third of total electricity, significantly above the OECD average. These findings suggest that, despite progress, Chile still heavily relies on carbon energies due to the weight of the transport sector and the growth in the energy-intensive needs of certain industries (e.g. mining). There is room for the energy, electricity generation and transport sectors to further contribute to the country's low-carbon transition.

Chile has been a regional leader in attracting FDI in renewables over the past decade (see Chapter 2). An important feature of the Chilean renewable market development is the absence of investment support mechanisms or direct public subsidies, tax benefits or feed-in tariffs. Instead, the Government of Chile has relied on mandatory quotas; auctions that allow renewable energy generators to have power purchase agreements with distribution companies; and recently a system of net metering allowing consumers to produce their electricity from renewable energy sources (Bersalli, 2019[35]). Clean energy projects are exempted from paying tolls for using the main electrical transmission system (InvestChile, 2021[36]). Measures were also taken to facilitate the connection of the electrical system to renewable energy plants of smaller capacity and guarantee their access to distribution facilities. Challenges regarding access to land for renewables investment are also being addressed. Between 2018 and 2021, the Ministry of National Assets tendered 136 plots of land for energy investment, all of them located in Chile's northern regions (InvestChile, 2021[36]).

Chile's current long-term goals of 100% zero-emission electricity generation and 80% renewable energy by 2050 will require to keep a fast pace of investment in clean energy. Achieving this target may require the government to put forward additional policy instruments in the future. For instance, feed-in tariffs are a type of incentive designed specifically to accelerate investment in renewable energy technologies by offering long-term contracts to renewable energy producers (OECD, 2022[1]). They reduce the risk of renewable energy investments by guaranteeing a predetermined price (or revenue) for the electricity generated for a predefined period of time. Studies have found evidence that feed-in-tariffs are a powerful tool for attracting FDI in renewables, both in advanced and developing countries (Wall et al., 2018[37]). For carbon and energy-intensive activities in the mining and industrial sectors, in which many foreign MNEs are concentrated, incentives for the deployment and use of renewable energy could be another option. Guaranteed access to networks, priority dispatch, tax credits and soft loans could accelerate the energy transition in these industries (Simsek et al., 2019[38]).

Carbon pricing is also a core climate policy instrument that provides a technology-neutral case for low-carbon investment and consumption. While carbon pricing policies do not specifically target FDI, they are a necessary first step to send the socially optimal price signals to all investors, including foreign ones, and raise the returns on low-carbon relative to high-carbon investments. In 2017, Chile introduced a set of taxes on emissions of pollutants and a tax for new vehicles. However, the level of carbon taxes is significantly low compared to international standards and their coverage is limited. In 2021, carbon taxes in Chile covered 33.2% of greenhouse gas emissions, while fuel excise taxes, an implicit form of carbon pricing, covered 22.6% of emissions, unchanged since 2018 (OECD, 2022[39]). The tax level of USD 5 per ton of CO2 emitted is also far from the commonly used benchmark of EUR 60 per ton (OECD, 2022[3]). The 2022 OECD Economic Survey of Chile provides a set of recommendations to improve the effectiveness of the carbon pricing framework (Box 3.7), focusing in particular on streamlining aspects related to the level and coverage of carbon taxes as well as co-ordinating their implementation with industry.

In terms of regulation, market access restrictions in the transport sector, a major CO2 pollutant, (Figure 3.2) could be lifted to help Chile meet its net-zero emission targets. Current restrictions on FDI are likely to result in sub-optimal flows of investment, limit the transfer of know-how and may hamper the deployment of low-carbon technologies. The Government of Chile has introduced a requirement that only zero-emission vehicles can be sold after 2035, including light vehicles, public transport and machinery, including mining trucks. Opening up the sector to technology-intensive foreign MNEs will be necessary for the electrification of the vehicle fleet.

Box 3.7. OECD recommendations to reform Chile's carbon pricing framework

The 2022 OECD Economic Survey of Chile has found that the limited impact of Chile's carbon tax scheme may be related not only to its low level, but also its limited coverage. The review proposes the following recommendations:

- The current level of the carbon tax limits abatement efforts. Higher carbon prices are crucial to accelerate the transition towards sustainable energy sources.
- Future policy initiatives should establish a gradual timeline towards higher levels of the carbon tax and wider implementation of cap-and-trade systems. The latter will allow power plants to exchange permits through trade and auctions.
- The scheme's coverage could be improved by considering accelerated exemptions for power plants using renewable energy sources from the carbon tax.
- The establishment of a climate advisory board, as done in the UK for example, or of other institutionalised channels for climate policy dialogue could help improve the industry's acceptance of higher carbon prices.

Source: OECD (2022[3]), OECD Economic Surveys: Chile 2022, https://doi.org/10.1787/311ec37e-en.

3.6.2. Chile's emerging green hydrogen industry will require investment and capacity building across the entire value chain

The Government of Chile has made its priority to create an enabling framework for attracting investment in the green hydrogen industry. A national strategy was adopted in 2021 setting ambitious targets for the development of the industry, including for Chile to produce the cheapest hydrogen in the world by 2030 and to be among the world's three largest exporters by 2040 (Ministry of Energy, 2020[40]). Specific measures have been identified to speed up green hydrogen use in the domestic market and identify opportunities for future exports. Measures include a USD 50 million round of finance for green hydrogen projects to create an early demonstration experience for potential investors (CORFO, 2021[41]). At the end of 2021, CORFO approved six project proposals for the establishment of production plants that are expected to enter operation by 2025 and attract investments of USD 1 billion. The strategic framework was complemented with the adoption of a 2023-30 Action Plan which defines the roadmap for the sustainable development of the industry, focusing on clarifying the institutional framework, developing the local value chain for green hydrogen production, and strengthening the necessary infrastructure and territorial readiness.

If the Government of Chile decides to pursue the development of the green hydrogen industry, uncertainties about the demand for green hydrogen versus other energy-related sources and technologies, which are currently more cost-competitive, should be taken into consideration since they are a key obstacle for mobilising private capital. In addition, given the early technological maturity of hydrogen technologies and the high risks involved, regulatory reforms across the value chain and targeted public policy interventions will be necessary to create the conditions for private investment. As was the case with the deployment of wind and solar energy generation facilities over the past decade, achieving industry growth will require a trained workforce, pursuing parallel demonstration projects, the use of public-private partnerships and financial incentives to derisk production costs and create certainty for investors.

For the initial phase, time-limited financial support schemes could reduce the investment risk for the industry and close part of the cost differential with other types of energy sources. The establishment of new financial tools, as mentioned in the previous section, could help in the deployment of grants, concessional loans and guarantees to make investment projects more bankable (IEA, 2021[42]). The Australian Government, for instance, has put forward an investment package for new energy technologies, including for hydrogen for which more than USD 1.26 billion have been pledged (IRENA, 2020[43]). The Australian Energy Agency (ARENA) currently implements a grant programme aimed at demonstrating the technical and commercial viability of hydrogen production, and the Clean Energy Finance Corporation, Australia's government-owned green bank, will make more than USD 200 million available to support the hydrogen industry. In the case of Chile, such a specialised financial institution could also support feasibility studies to identify near-term opportunities, and provide technical assistance and capacity building for the initial deployment of key technologies.

Scaling up low-carbon hydrogen and use will require timely investments in enabling infrastructure, including new transmission lines (for low-carbon electricity to reach the electrolysers for on-grid projects), hydrogen transport and storage infrastructure and port terminals (IEA, 2021[42]). Incentives for investments in value chain segments that support the production of green hydrogen solutions should be also considered, e.g. for the manufacturing of equipment such as electrolysers and fuel cells, that could help reduce production costs but also create highly qualified jobs and economic opportunities for regional economies. Given the segmentation of the value chain, it is important that investment incentives for green hydrogen target locations that already have facilities for renewable energy production so that inter-related value chain segments can be better integrated.

While FDI can play a strategic role in sustainable energy supply and green hydrogen manufacturing, scaling up private investment in green hydrogen will not be possible without addressing demand-side bottlenecks. Demand for green hydrogen could be promoted through phase-out mandates, similar to those implemented in fossil fuel or nuclear power – for instance by phasing out blast furnaces for steel or fossil fuel-based ships and replacing them with green hydrogen-powered components (IRENA, 2020[43]). Legally binding mandates and quotas are also alternative options to create a market for green hydrogen and other renewable energy sources (e.g. solar and wind energy), for instance by requiring a share of gas demand to be met by renewables or specifying a share of renewables in existing uses and for specific applications. In the EU, France has already mandated the use of 10% of low-carbon hydrogen in industry by 2023, which is meant to go up to 40% by 2028.

Chile's mining industry, which is dominated by foreign MNEs and continues to receive significant FDI, could use green hydrogen as well as electricity from solar and wind energy to displace large volumes of diesel and enable significant emissions reductions in the long term. The mining sector is one of the largest emitters of greenhouse gas in Chile, and about 30% of electricity is used to extract and process raw materials (Ministry of Energy, 2021[44]). Foreign mining companies operating in Chile, like Collahuasi for instance, have already announced their plans to replace current diesel-powered haul trucks with hydrogen-powered technology. The Government of Chile has recently launched the National Mining Policy 2050 that sets ambitious targets for the low-carbon transition of the mining sector, including zero-emission fleet plans for all large-scale mining operations by 2025 (Ministry of Mining, 2022[45]). Setting these targets is a step in the right direction; however, achieving carbon neutrality in the mining sector will also require consultation with the industry to assess the feasibility of the transition plans as well as technical co-operation with foreign MNEs and public-private partnerships to resolve potential regulatory bottlenecks in the deployment of the green hydrogen technology. Portugal's Sectoral Pacts for Competitiveness and Internationalisation represent a good example of how such collaboration among various sectoral stakeholders could take place, by integrating clear-cut targets, a diverse range of support instruments – including reforms to the regulatory environment – and a robust monitoring and evaluation framework to ensure the alignment of policy initiatives with regional and sectoral needs (Box 3.8).

Box 3.8. Fostering public-private partnerships: the mineral resources cluster in Portugal

Since 2017, the Portuguese SME Competitiveness and Innovation Agency, IAPMEI, has recognised 18 industrial clusters (*clusters de competitividade*) in Portugal with the aim to foster greater collaboration among government agencies, domestic and foreign companies, business associations, universities and other non-corporate entities of the Portuguese research and innovation ecosystem. Since their establishment, the clusters have played a crucial role in supporting foreign MNEs and Portuguese SMEs to implement smart specialisation strategies, identify bottlenecks in the industry's performance, and provide feedback to government on the implementation of regulatory reforms and business support programmes. Financial support to recognised clusters is provided through the Portugal 2020 Incentives Scheme, which includes a dedicated set of financial instruments for collective actions, networks and other forms of business-to-business and science-to-business partnerships.

In 2019, "Sectoral Pacts for Competitiveness and Internationalisation" were signed between the Ministry of Economy and Digital Transition and some of the recognised clusters. The Pacts provide a framework to strengthen the innovation and internationalisation of industrial clusters through joint public-private sector initiatives, including: measures that promote industry 4.0 practices; industry-led training and skills development programmes; innovation activities; actions to promote the brand and strengthen the attractiveness of Portuguese clusters; and targeted reforms in the regulatory environment to address barriers to innovation and internationalisation in specific sectors and value chains. A Monitoring Committee was also set up to ensure the implementation of the agreements.

The Mineral Resources Cluster

In 2019, the Mineral Resources Cluster was among the clusters that signed a Sectoral Pact with the Ministry of Economy and Digital Transition, setting out several objectives for the internationalisation of the minerals sector and specific measures to achieve them. These include:

- *Produce knowledge and induce innovation in the sector* – Measures: i) Create an online platform with information about mineral resources; ii) Implement an innovation programme for Portugal's lithium resources; iii) Conduct a study to support mineral exploration; iv) Establish an integrated system to assess the potential use of abandoned flooded quarries as water reserves; v) Support the digital transformation of the industry's business models, processes and products; vi) Conduct a study to assess the potential of marine mineral resources in the continental shelf.
- *Promote the creation of value and identify opportunities for exports* – Measures: i) Strengthen the internationalisation of the cluster; ii) Support companies that aim to initiate export processes; iii) Promote international brands; iv) Create a Centre of Intelligence and Technology for Natural Stone.
- *Promote efficiency and sustainability in the use of mineral resources* – Measures: i) Implement an integrated mining plan in the Marble Zone; ii) Establish a Green Agenda for Mineral Resources; iii) Conduct a study on the environmental liabilities of mineral raw materials.
- *Promote skills and social responsibility practices* – Measures: i) Promote training programmes on digitalisation, circular economy, occupational health and other skills related to extraction activities; ii) Promote the "Social License" concept; iii) Bring young people closer to the industry.
- *Increase the visibility of the sector* – Measures: i) Strengthen networking with international clusters; ii) Open specific tenders for the implementation of cluster strategies; iii) Foster greater synergies with IAPMEI.

Source: IAPMEI (2021[46])

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