

INVESTMENT POLICY MONITOR



INVESTMENT POLICY TRENDS IN CLIMATE CHANGE SECTORS *2010-2022*

H I G H L I G H T S

- Policy initiatives to promote climate change adaptation and mitigation through FDI focus primarily on the renewable energy and electricity sectors, which account for 60 per cent of the measures adopted to this aim around the world between January 2010 and June 2022.
- In developing economies, over 70 per cent of the measures were aimed to either liberalize the electricity or water sectors (30 per cent) or promote investments in those sectors through incentives and investment facilitation (43 per cent).
- Incentives were adopted across all continents and aimed primarily to attract FDI in renewable energy (42 per cent), environmental technologies and green industries (37 per cent), and electricity and water (21 per cent).
- In developed economies, 3 out of 4 policy measures in climate change sectors concerned the introduction or expansion of FDI screening mechanisms, confirming the trend towards heightened national security concerns highlighted by UNCTAD in recent years.
- Although renewable energy plays a key role in the transition to a low-carbon economy, other mitigation policies have not received equal policy attention, and policy measures to attract investment in climate change adaptation sectors still need to be developed and implemented in developing countries to respond to the growing financing needs in those sectors

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Introduction

Targeted policies for attracting FDI in climate change mitigation and adaptation sectors matter,¹ probably even more so than in other sectors. In the renewable energy sector, for example, literature shows the critical importance of renewable energy policies to attract FDI in developing countries. While FDI attraction in the sector also depends on other generally accepted determinants of investment such as institutional and macroeconomic conditions, the single most important determinant to attract FDI in the sector is the existence of renewable energy policies, including risk mitigation mechanisms and tariff regulation (e.g. feed-in tariffs) or regulatory aspects such as access to the grid (Keeley and Ikeda, 2017; Mahbub et al, 2022; Ragosa and Warren, 2019; Criscuolo and Menon, 2015; Keeley and Matsumoto, 2018). Other important determinants include the provision of international public finance (Ragosa and Warren, 2019, Haščič et al., 2015), the existence and quality of PPP mechanisms (Cedrick and Long, 2017; David and Venkatachalam, 2018), and policy stability and longer-term perspective of public policies (Criscuolo and Menon, 2015).

Studies also show that policies play a key role in mitigating the possible environmental harm of FDI in the host country and tapping into the positive environmental externalities, e.g. the transfer of technology and the diffusion of management practices to lower carbon emissions (Sarkodie et al, 2020; Udemba, 2021; Nejati and Taleghani, 2022).

On the eve of the adoption of the SDGs, UNCTAD estimated that between 2015 and 2030 the annual investment required for climate change mitigation and adaptation in developing countries was \$630-970 billion, with an investment gap of \$440-780 billion (UNCTAD, 2014). International investment in sectors relevant to the SDGs in developing countries increased substantially in 2021, by 70 per cent, but most of the growth went to renewable energy (UNCTAD, 2022). In the context of increasing financing needs² of developing countries to respond to the climate change adaptation challenge (UNEP, 2021) and the emergency to enable climate resilience in a rapidly narrowing window of opportunity (IPCC, 2022), effective policies to mobilize private sector investment and FDI in key adaptation and mitigation sectors are needed.

This note analyzes investment policy trends related to climate change sectors across the world between January 2010 and June 2022, based on [UNCTAD's Investment Policy Monitor](#). In that period, 103 measures affecting FDI in climate change-related sectors were adopted. Their analysis signals that initiatives to promote climate change adaptation and mitigation through FDI are still very concentrated in the renewable energy and electricity sector (60 per cent of the measures). It also highlights differing concerns between developing and developed countries. In developing economies, 30 per cent of the policy measures adopted in climate change-related sectors between 2010 and 2022 concerned liberalization, mostly related to the unbundling of the energy market or the privatization of State-owned enterprises (SOEs). The remainder primarily consisted of measures aimed at promoting investment in renewable energy generation and in green technologies (e.g. incentive schemes aimed at reducing the carbon footprint of industrial and agricultural production); or at introducing regulations to promote the green energy transition (e.g. the adoption of carbon taxes, the promotion of sustainability standards or the introduction of risk-based business licensing systems). Conversely, in developed economies, 3 out of 4 measures were related to the introduction or enhancement of FDI screening

¹ As per the *World Investment Report 2022*, climate change-related sectors are defined in this note as: Renewable energy; Environmental technologies, including batteries; Low-carbon transport, including e-vehicle; and Water.

² In 2016, UNEP had estimated annual adaptation financing needs in developing countries at 140-300 billion USD by 2030, in its *Adaptation Gap Report 2021*, UNEP warns that the annual cost is now projected to be in the upper range of their 2016 estimate. Annual flows of adaptation finance to developing countries are estimated to have been only about \$20-30 billion per year.

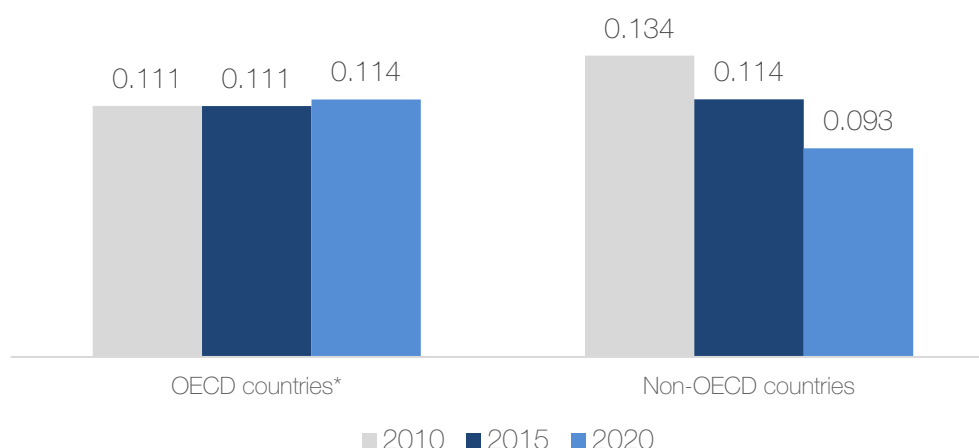
mechanisms, confirming the trend towards heightened national security concerns highlighted by UNCTAD in recent years.

Developing countries: focus on liberalization and investment attraction

The liberalization of the electricity sector is an important step to allow private investment in renewable energy. The average FDI restrictiveness index for the electricity sector of non-OECD countries shows an increase in liberalization over the last decade (figure 1). This trend reflects the continued opening of the electricity sector to investment, led by the liberalization of the Chinese and Russian electricity markets.

Figure 1: FDI Regulatory Restrictiveness index in the electricity sector, by group of countries, 2010-2020

(Average)



Source: OECD Stat, FDI regulatory restrictiveness index database

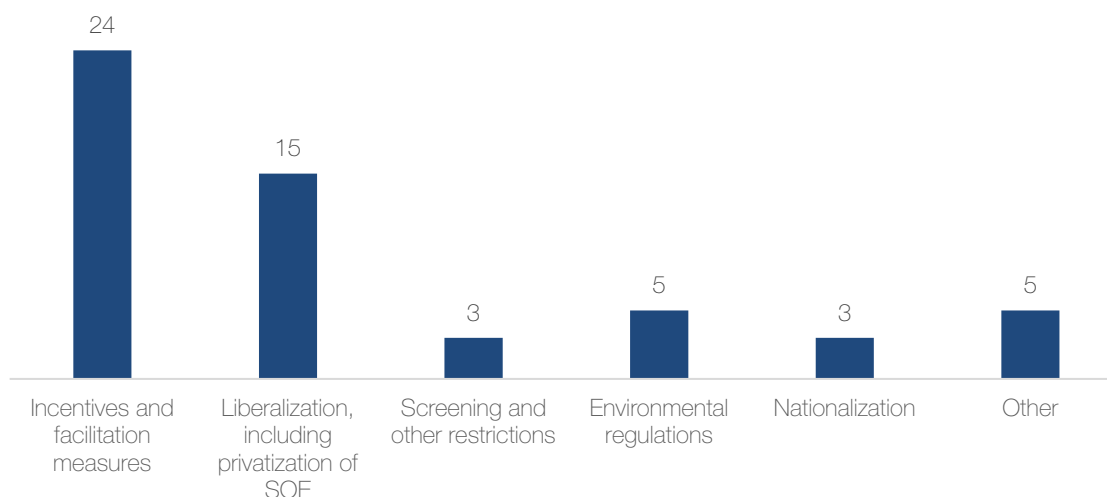
Note: *OECD countries in 2022 are considered OECD countries for the whole period analyzed

In this context, it is not surprising that about 30 per cent of policy measures adopted in climate change-related sectors in developing countries between 2010 and 2022 concern liberalization (figure 2). These included the unbundling of the energy market and the privatization of SOEs (15 measures in total). Privatization measures concerned primarily the electricity and water sectors. Based on the analysis of the Investment Policy Monitor database, 7 developing countries (China, Ethiopia, India, Indonesia, Syria, Türkiye, and the United Arab Emirates) adopted measures to open their electricity market to private and/or foreign investment during the last decade, while the Philippines and the United Arab Emirates have also adopted measures to specifically open the renewable energy sector to foreign investors. Restrictive measures affecting FDI in climate change-related sectors were less frequent. They included the nationalizations of electricity companies (3 measures), and the introduction of screening mechanisms or other restrictions (3 measures), such as the prohibition of foreign investment in specified activities (e.g. drinking water).

Other policies adopted by developing countries aimed mainly to attract investment through incentives and investment facilitation in climate change-related sectors (figure 2). Such policies account for 43 per cent of measures taken between 2010 and June 2022 (24 measures).

Figure 2: Developing economies: investment policy measures in climate change-related sectors, 2010-2022

(Number of measures)

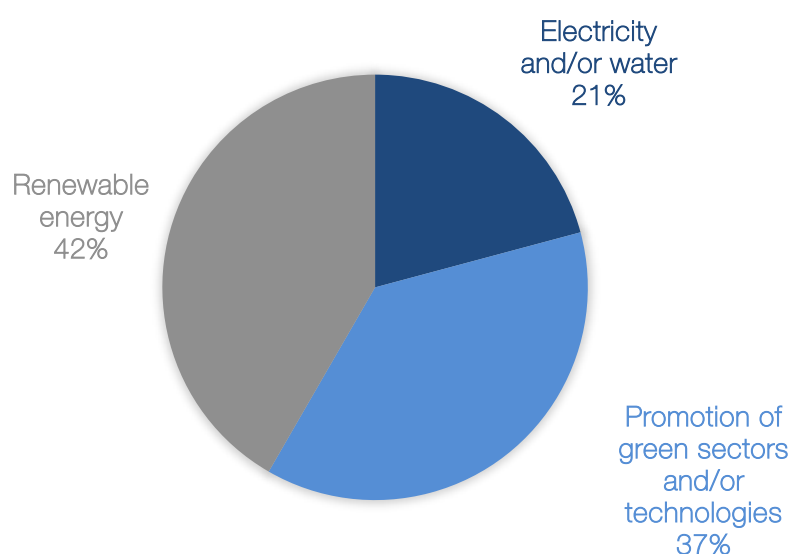


Source: [UNCTAD's Investment Policy Monitor](#)

Out of the 24 policy measures aiming to promote investment in climate change-related sectors adopted by developing countries, 42 per cent concerned specifically investment in renewable energy and 37 per cent aimed to promote and facilitate investment in green sectors and technologies in general. This latter category includes, for example, the promotion of FDI in energy-saving and environmental technologies or tax incentive programmes in support of green industries. Finally, 21 per cent of these 24 policy measures concern the promotion of investment in the electricity and/or water sector in general (figure 3). These incentives and promotion mechanisms vary depending on countries and targeted sectors, as illustrated in Box 1.

Figure 3: Developing countries: Investment incentives and promotion measures by sector, 2010-2022

(Percentage)



Source: [UNCTAD's Investment Policy Monitor](#)

Finally, several developing countries have adopted environmental regulations or other measures to enhance sustainability. These include the adoption of a carbon tax by South Africa (2019), the enactment of a law on prior consultation in environmentally sensitive investment projects by Peru (2012), or the issuing by the Philippines of an executive order to ensure that the environmental standards in mining are fully enforced (2012). Other relevant measures included the creation of guidelines for sustainable outward FDI by Chinese companies released by the Chinese Government (2013), and the introduction of a risk-based business licensing system in Indonesia (2021).

Box 1

Examples of incentives and promotion measures

Incentives and promotion of green sectors and/or technologies:

- In 2010, *South Africa* launched an incentive programme consisting of investment and training allowance deductible from the taxable income of companies in several sectors, including agro-industries and 'green' industries.
- In 2012, the Government of *Brazil* issued a Decree that regulates the implementation of the "Inovar Auto" programme, which seeks to promote innovation in the automotive sector through research and development. It focuses on environmentally sound technologies, with incentives such as a tax rebate on the taxation of industrial products.
- In 2014, *Malaysia* announced its National Automotive Policy 2014, to promote a competitive and sustainable domestic automotive industry and to make Malaysia the regional automotive hub for energy-efficient vehicles. An exemption of excise duties and import taxes for hybrids and electric vehicles (EV) will be granted for models assembled in the country.
- In 2021, *China* issued the "Circular Centering on Building a New Development Pattern and Effectively Stabilizing Foreign Investment". The Circular calls for making good use of preferential tax and land policies to attract foreign investment in advanced manufacturing, high-tech, energy-saving, and environmental protection industries and emerging industries.
- In 2022, *Albania* adopted a law "On the Support and Development of Startups". The law provides financial support to national and foreign startups. To be eligible for grants or other financial support, the start-up project must have, among other criteria, "a positive environmental impact".

Incentives and promotion of renewable energy:

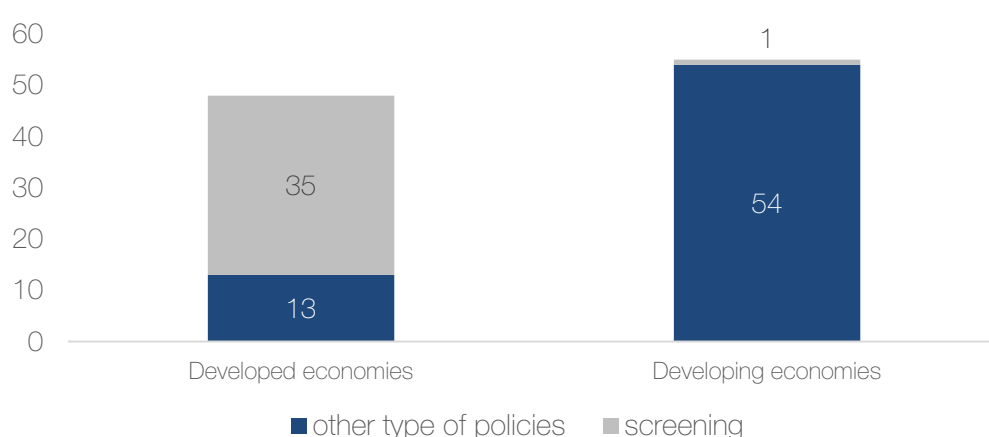
- In 2010, *Jordan* adopted a Renewable Energy Law designed to facilitate investment. Under the new law, the National Electric Power Company (NEPCO) will be obliged to purchase all energy produced by renewable energy companies and cover the cost of connecting their projects to the main grid. Another important feature of the new law is the establishment of the Renewable Energy and Energy Efficiency Fund, which will be devoted to supporting energy-saving and renewable energy initiatives.
- In 2011, *Indonesia* issued a regulation offering a tax holiday for specified industries, which included the renewable energy sector.
- In 2018 in *Burkina Faso*, a new Investment Code was adopted. Its scope was extended to clean and renewable energy actors, as well as to the protection of the environment. It also included incentives to invest in strategic activity sectors such as green energy, renewable energies and handicrafts.
- In 2022, the Government of *Brazil* issued a decree which provides rules for allocating the use of physical spaces and natural resources in open waters for energy production. It allows the exploration and production of energy from wind sources, establishing rules for the allocation of areas for exploitation and exploration by investors.

Source: [UNCTAD's Investment Policy Monitor](#)

Developed economies: heightened national security concerns underpin tighter investment regulation

Electricity generation and transmission and water supply are among the critical sectors usually protected by FDI screening mechanisms, falling under the general term of “critical infrastructure”. With the growing importance of renewables in their energy mix, several developed countries have broadened the scope of critical industries and technologies to explicitly include clean energy, energy storage systems or environmental technologies. As a result, 73 per cent of the identified policy measures concerning these sectors in developed economies were related to the introduction or expansion of FDI screening mechanisms (figure 4).

Figure 4: Type of investment policy measures in climate change-related sectors, 2010-2022
(Number of measures)



Source: [UNCTAD's Investment Policy Monitor](#)

In particular, 22 countries have taken measures related to screening mechanisms in climate change-related sectors in the period under consideration, including: Australia, Canada, Israel, Japan, the United Kingdom, the United States, and several European Union countries (see examples in box 2). China is the only developing country who has adopted screening measures related to climate change-related sectors in the period.

Box 2

Examples of screening measures in climate change-related sectors

- In 2012, *Italy* established a mechanism for Government review of transactions regarding assets of companies operating in the sectors of defense or national security, as well as in strategic activities, including the electricity sector.
- In 2018, *Australia* announced that, in order to manage national security risks, all future applications for the sale of electricity transmission and distribution assets, and some generation assets would be assessed on a case-by-case basis and may attract restrictions or conditions for foreign buyers.
- In 2018, *Hungary* introduced a national security review of foreign investments. The screening applies to companies whose activities are important for national security, including those involved in weaponry and dual-use object manufacturing, cryptography, utilities (gas, water, electricity), financial sector, electronic communication and public communication systems.
- In 2020, *Japan* released a list of 518 companies in the 12 sectors deemed important to national security, which included the electricity sector. Any foreign investor is required to submit a prior notification of stock purchases to the Government via the Bank of Japan, when planning to acquire a stake of 1 per cent or higher in these listed companies.
- In 2021, *France* extended its FDI review mechanism to technologies involved in the production of renewable energy.
- In 2021, the *United States* updated the list of critical and emerging technologies potentially significant for national security, which now includes, among other technologies, renewable energy generation and storage.
- In 2022, the *United Kingdom* designated 17 sensitive sectors in which investment is subject to prior approval, including the energy sector.

Source: [UNCTAD's Investment Policy Monitor](#)

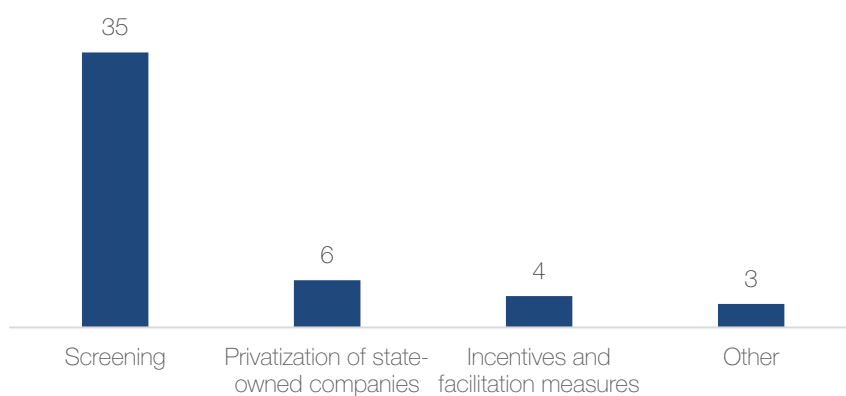
The trend towards increased controls on FDI in climate change-related sectors is also reflected in the FDI restrictiveness index. For OECD countries, the average index in the electricity sector has been relatively stable in the last decade (figure 1), as most developed economies had already liberalized the sector before 2010. In Europe, for example, the liberalization of the electricity market started in the 1990s. The average index for 2020, however, shows a slight increase in FDI restrictions, explained by the screening policies that have been put in place in many developed economies. This trend is likely to continue in light of the energy security concerns raised by the war in Ukraine and its impact on energy supply and prices.³

In developed economies, non-screening measures adopted in climate change-related sectors between 2010 and 2022 concern mainly the further liberalization of the electricity market through the privatization of the remaining SOEs (6 measures), followed by the introduction of investment incentives for the promotion of green sectors and technologies, including renewable energy (4 measures). Other measures include the revoking of the license of a foreign power firm in Albania as well as the reform of the renewable energy subsidies in Spain and in the United Kingdom in 2013, to better align them with technology maturity and political priorities respectively (figure 5).

³ In July 2022, for instance, the Government of France announced its intention to take full control of the power company EDF in a deal worth \$9.8 billion. The Government intends to hold 100 per cent of EDF's shares, compared with the 84 per cent it owns currently. The Ministry of Economy and Finance stated that the project to nationalize EDF "comes in the context of a climate emergency and at a time when the geopolitical situation requires strong decisions to ensure France's energy independence and sovereignty". (<https://presse.economie.gouv.fr/19-07-2022-letat-annonce-son-intention-de-lancer-une-offre-publique-dachat-simplifiee-sur-les-titres-de-capital-dedf-dans-lobjectif-de-retirer-la-societe-de-la-co/>)

Figure 5: Developed economies: investment policy measures in climate change related sectors, 2010-2022

(Number of measures)



Source: [UNCTAD's Investment Policy Monitor](#)

Conclusion

Financing and investing in climate change have been growing significantly, but the need for investment in climate change mitigation and adaptation is still substantial. However, the growth of international private investment in climate change has been limited to renewable energy and concentrated in developed economies (UNCTAD, 2022). Twin challenges persist for private investment in climate change: 1) channeling mitigation investment into developing countries, and 2) upscaling adaptation investment through viable business models.

The global environment for international investment changed dramatically as a result of the war in Ukraine, which occurred while the world was still recovering from the impact of the pandemic. Energy security concerns have increased. In this context, the trend towards tighter FDI access policies is expected to continue and may increasingly extend to developing countries. While regulations will continue to be adopted in most countries due to the strategic nature of the sector, a certain degree of liberalization is an important step to attract FDI and private finance in renewable energy and accelerate the decarbonization of electricity generation in developing economies.

Attracting international private investment to respond to countries' specific needs in climate adaptation and mitigation is key to closing the financing gaps in these sectors. Innovative ways and means are needed to foster public and private partnerships, improve the enabling policy frameworks, and build capacity for preparing pipelines of bankable and impactful projects in developing countries. Countries should also consider providing political-risk insurance to de-risk climate FDI, adopt climate impact assessments when reviewing investment projects, and, to further facilitate such low carbon investments, investment promotion agencies (IPAs) could develop "red carpet" services for climate FDI. Moreover, these new incentives and instruments to attract climate FDI need to be aligned to commitments in Nationally Determined Contributions, and, to encourage and protect low carbon investments, provisions related to climate FDI should be included in international investment agreements. In addition, at a time where ESG reporting requirement for MNEs is gaining momentum around the world, countries could include outward FDI policies as part of their climate strategies, for example, by linking outward FDI support to carbon content and standards, and require reporting (Stephenson and Zhan, 2022).

Investment policy measures to promote climate change mitigation and adaptation are still highly concentrated in the renewable energy and electricity sectors. Although the deployment of renewable energy plays a key role in the transition to a low-carbon economy, other mitigation policies such as energy and resource efficiency technologies and other environmental technologies would also need to be promoted. Moreover, climate change adaptation-related sectors need to be defined on a country-basis as vulnerabilities and priorities differ nationally and locally.

Climate change strategies should comprehensively address energy issues such as security of supply, efficiency and affordability, and environmental sustainability, but also the development of climate change mitigation and adaptation sectors and technologies. Such strategies should be developed through a participatory process and be publicly communicated. Climate change strategies should embed investment promotion as a key component and clearly communicate the government's priorities in the medium and long run. In parallel, the targets arising from the comprehensive climate change strategy should be embedded in investment promotion strategies to inform the activities of the actors involved in the investment promotion efforts, so it is important to include climate goals in the strategies and the key performance indicators of IPAs.

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