

# Domestic Landscape of Climate Finance

Why systemic approach  
to climate finance matters?

The required mobilization of funds urges for an improved coordination between all of the actors involved in the low-emission transition as well as demands comprehensive knowledge base to address the systemic challenge of financing sustainable economic development.



Domestic Landscape of Climate Finance. Why systemic approach to climate finance matters?

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WiseEuropa Institute is an independent think-tank and research organization based in Warsaw that undertakes a strategic reflection on European politics, foreign policy and economy.

The mission of WiseEuropa is to improve the quality of Polish and European policy-making as well as the overall business environment by promoting the use of sound economic and institutional analysis, independent research and evidence-based approach to impact assessment.

In 2016 WiseEuropa has set up The Capital Market 25+ Research Program, which outlines the future development prospects for the capital market in Poland. Aiming to embed the ESG dimensions permanently in the financial sector architecture, WiseEuropa conducts analytical activities to facilitate transformation of a capital market into a driver of change needed to achieve a sustainable and inclusive growth.

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<b>Table of contents</b>	<b>3</b>
<b>1. Introduction</b>	<b>3</b>
<b>2. Tracking domestic climate finance flows</b>	<b>5</b>
2.1 Measuring finance for climate action	5
2.2 From an international to a Domestic Climate Finance Landscape Methodology	6
<b>3. Why is it important to track climate finance?</b>	<b>10</b>
3.1 Providing an empiric basis for policymakers	10
3.2 Understanding the role of the private sector	12
3.3 Civil society	13
<b>4. Decisions requiring systemic overview of climate finance flows in Poland</b>	<b>14</b>
4.1 Current state	14
4.2 Challenges for the future – selected case studies	15
<b>5. Conclusions</b>	<b>19</b>
<b>References and useful links</b>	<b>20</b>
List of tables	22
List of boxes	22



# 1. Introduction

Recently the Government of Poland made few important announcements regarding the development of the flagship initiatives to tackle air pollution, or dynamic roll-out of electromobility. Together with investment plans in the power sector, desired improvements of energy efficiency of buildings as well as other measures for the achievement of the long-term climate targets, they require large-scale redirection of existing financial flows and mobilisation of new funds. Given the unprecedented scale of the investment needed and financial support for climate action that varies between the sectors, as well as in light of the upcoming deadline for the submission of the National Energy and Climate Plans (NECPs) to the European Commission, it is ever more pertinent to develop a systemic analysis and an overview of the existing financial frameworks.

At the same time, the technological and structural changes within the global and European economy have contributed to the visible paradigm shift within the real economy and financial sector. The concept of sustainability is being gradually incorporated to the core of the capital markets and the transformation of the energy systems towards low-emission technologies gets traction thanks to both technological and regulatory trends. As a member of the EU and OECD, Poland is at the centre of these processes. Thus, the systemic analysis of the flows financing Polish low-emission transformation is a necessary step, needed for the efficient management of transition both in the public and private sectors.

The domestic climate finance landscape methodology is a tool that allows for tracking climate investment and finance flows on the national level by providing stakeholders with quantitative data on the current levels of investment and finance contributing to achieving national climate objectives as well as through mapping the actors in the market and identifying their contribution to financing of climate mitigation and adaptation investments and activities. Importantly, the methodology enables all stakeholder groups to play an active role in the process of scaling up climate investments, mobilizing finance and strategically exploiting the investment potential of the low-emission transition.

To address the existing knowledge gaps in the current public debate in Poland, the first part of this report is designed to provide background information on how “climate finance” is currently being defined and offers a detailed description of the domestic climate finance landscape methodology, indicating the benefits of its implementation. Second part of the report examines the need of implementation of the methodology in Poland and emphasizes that the project-based rather than system wide approach towards financing climate action as well as insufficient data on current financial flows towards low-emission investments suppress the progress in achieving the objectives set by the Paris Agreement. Moreover, the presented case studies serve as examples of decisions that in the near future will require evidence base offered by the domestic climate finance landscape. Presented conclusions take into account remarks that were made during the high-level workshop organised by WiseEuropa in cooperation with NewClimate Institute and I4CE – Institute for Climate Economics for key stakeholders in Poland in 2018.





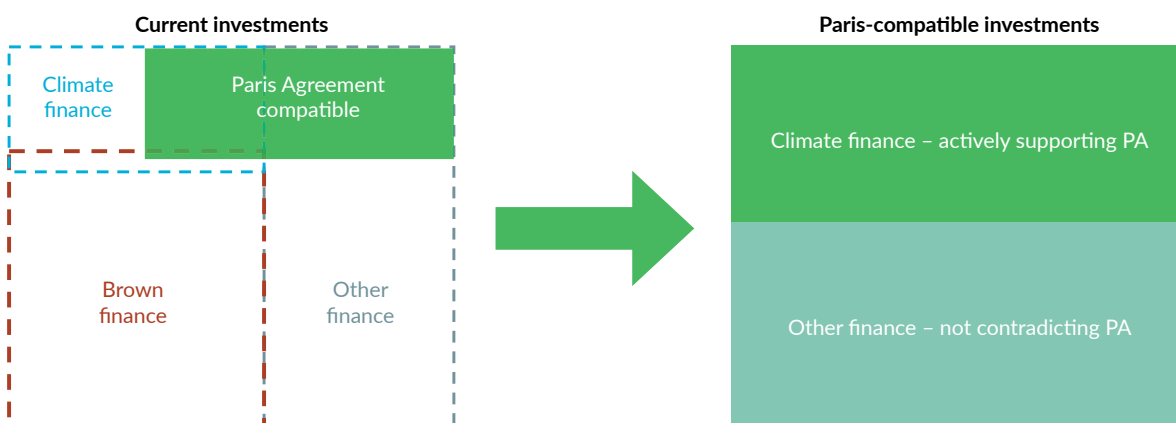
## 2. Tracking domestic climate finance flows

### 2.1 Measuring finance for climate action

Today there is no single internationally accepted definition of climate investment and climate finance. Principally the definitions can vary across countries and regions as they are linked to the steps that a given country can take to reduce its greenhouse gas emissions or improve its resiliency and adapt to climate change. They may cover different expenditures depending on the context (Caruso and Ellis 2013, Clapp et al. 2012) and the underlying definitions can vary as there is no harmonised global standard so far (Caruso and Ellis 2013). In general, the term ‘climate finance’ covers multilateral, bilateral and domestic financial flows relating to fixed capital investments contributing to either climate change mitigation or adaptation activities of both public and private sector. Whilst private sources include households, private companies, farmers and cooperatives, public funds include finance derived from national, regional or local government budgets or public financial institutions. Public finance covers direct infrastructure investments and financial incentives (policy-based finance) that leverage climate-related investments from the private and public sector.

Global interest in tracking climate finance grew particularly after the adoption of the Cancun Agreement in 2010 when developed countries committed to jointly mobilise USD 100 billion in climate finance annually by 2020 to address the needs of the developing world (UNFCCC 2010). This triggered the development of eligibility criteria and assessment methodologies as well as methods for tracking international climate finance flows. An emphasis was placed on their “additionality”, thus contrasting mobilised climate finance to other financial flows (Brown et al. 2011, Buchner et al. 2011). On a global level, climate finance definitions as given by several international organisations are broadly similar, yet differ in the details (Emmrich 2018). Overall, current levels of climate finance “remain far below estimates of what is needed” (CPI 2017a).

**Figure 1.** Different types of finance and their inter-linkages



Source: NewClimate Institute based on Larsen et al. 2018

Article 2 of the Paris Agreement adopted in 2015 reinforced the need to define and track climate finance, although adjusting the scope of should be included to “finance flows that are consistent with a pathway towards low greenhouse gas emissions and climate-resilient development” (UNFCCC 2015). Consequently, the focus has shifted from mobilising additional climate investments to 1) redirecting existing finance flows to be Paris Agreement compatible as well as 2) avoiding finance that conflicts with the agreement. As illustrated in Figure 1, Paris-compatible finance flows either directly support reaching the Paris Agreement goal (e.g. support for renewable energy or adequate resilience measures) or do not contradict them; broadly a shift from “brown” to “green” finance. For mitigation, for example, this means following the goal to reach global net-zero CO<sub>2</sub> emissions around 2050 and total net-zero GHG emissions shortly after. In this case, the additionality of a given finance flow does not play as important a role, as all finance flows should be Paris Agreement compatible.

## 2.2 From an international to a Domestic Climate Finance Landscape Methodology<sup>1</sup>

The European Commission estimates that additional investments totalling EUR 180 bn a year are needed to meet the EU's 2030 climate targets (EC 2018). As the transition to a low-emission economy requires such unprecedented redirection of financial flows – equally of public and private capital, the in-depth knowledge and the well-rounded understanding of the current scale of domestic finance dedicated to climate-related investments on the EU and member states level became crucial for the achievement of the European climate policy objectives.

At the same time the EU member states are still at an early stage of building systematic data frameworks regarding their climate investment needs, status of current investment flows and any investment gaps they may face. The relatively recent emergence of climate investment and climate finance on the domestic scale (rather than international) means many countries have not dedicated the time and resources needed to monitor financial flows adequately. Thus, most of them do not have sufficient knowledge to comprehensively assess progress of undertaken climate actions arising from their near-term climate priorities and global commitments of developing the low carbon economies (EEA and Trinomics 2017). In most cases there is a significant gap in comprehensive data availability on climate investment needs as well as actual and planned climate finance spending on the national level. There are multiple data and knowledge gaps across all levels of analysis: Member States, European level, private sources of finance, as well as economic sectors (EEA and Trinomics 2017). The biggest knowledge gap regards private sources of finance, but the lack of detailed information has also resulted in a build-up of assumptions in the analysis of public financial flows at both the European and national levels.

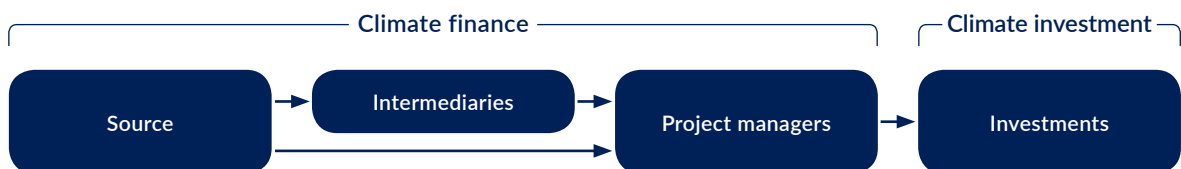
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<sup>1</sup> Description of the Climate Finance Landscape Methodology comes principally from the recent I4CE report: Hainaut, Hadrien, Ian Cochran, Lola Gouiffes, Jason Deschamps, and Alice Robinet. 2018. “Landscape of Domestic Climate Finance: Low-Carbon Investment 2011-2017.”

In order to tackle abovementioned problems, a number of national and international climate finance and investment tracking studies have been produced over the last decade. Some of the first work was conducted by the Climate Policy Initiative tracking global aggregate climate finance flows (CPI 2012a, 2013, 2014a, CPI 2015, CPI 2017a) followed by the application of their methodologies in Germany (CPI 2012b, IKEM 2018). Building on this work in 2012-2013, I4CE developed an adapted methodology to track domestic climate finance (“domestic Landscape methodology”) and over the years applied it to track climate finance flows in France (Hainaut and Cochran 2018). Other domestic tracking exercises have also been conducted in Belgium (Trinomics 2016), Indonesia (CPI 2014b) and Ivory Coast (CPI 2017b) and are currently being done in Czechia and Latvia (IKEM 2018).

This type of analysis – called Climate Finance Landscape – is essentially descriptive, but the resulting dataset can be used as a basis to identify explanatory factors of climate investment or to track how the “financial value chain” supports climate change action and the low-emission transition within the given country or region of the World.<sup>2</sup> The main part of the Landscape Analysis consists of documenting the individual financial flows by examining the volumes of capital invested in climate-related areas and analysing the manner in which such investments are funded. This can reveal significant differences in orders of magnitude of the total value of flows depending on the sector and area of investment. In this way the methodology provides a basis for the stakeholders to better understand the financing of the low-emission transition across sectors and the entire financial value chain, to highlight the principal trends, and to put forward an objective empiric foundation for public discussion.

**Figure 2.** Analytical framework of the landscape of domestic climate finance



Source: I4CE based on Hainaut et al. 2018

The landscape methodology provides a systemic overview of investment and financial flows that addresses knowledge gaps of the stakeholders involved in the low-emission, resilient transition i.e. policymakers at both central and local levels, private sector stakeholders as well as the civil society. This assessment can complement – and in many instances support – other studies such as macroeconomic modelling of policy impacts, assessment of investment needs to achieve policy objectives, etc. In particular, as it reveals the route taken by financial flows through national financial value chains and the broader economy – from their source through to sector and purpose of end use. The analysis of these investment and financial flows can be paired with other studies on climate-related investment needs or data on the end mitigation or adaptation impact of investments to gain a clearer understanding of how evolving levels of finance are contributing to achieve domestic climate objectives. This may offer the evidence showing that the engagement

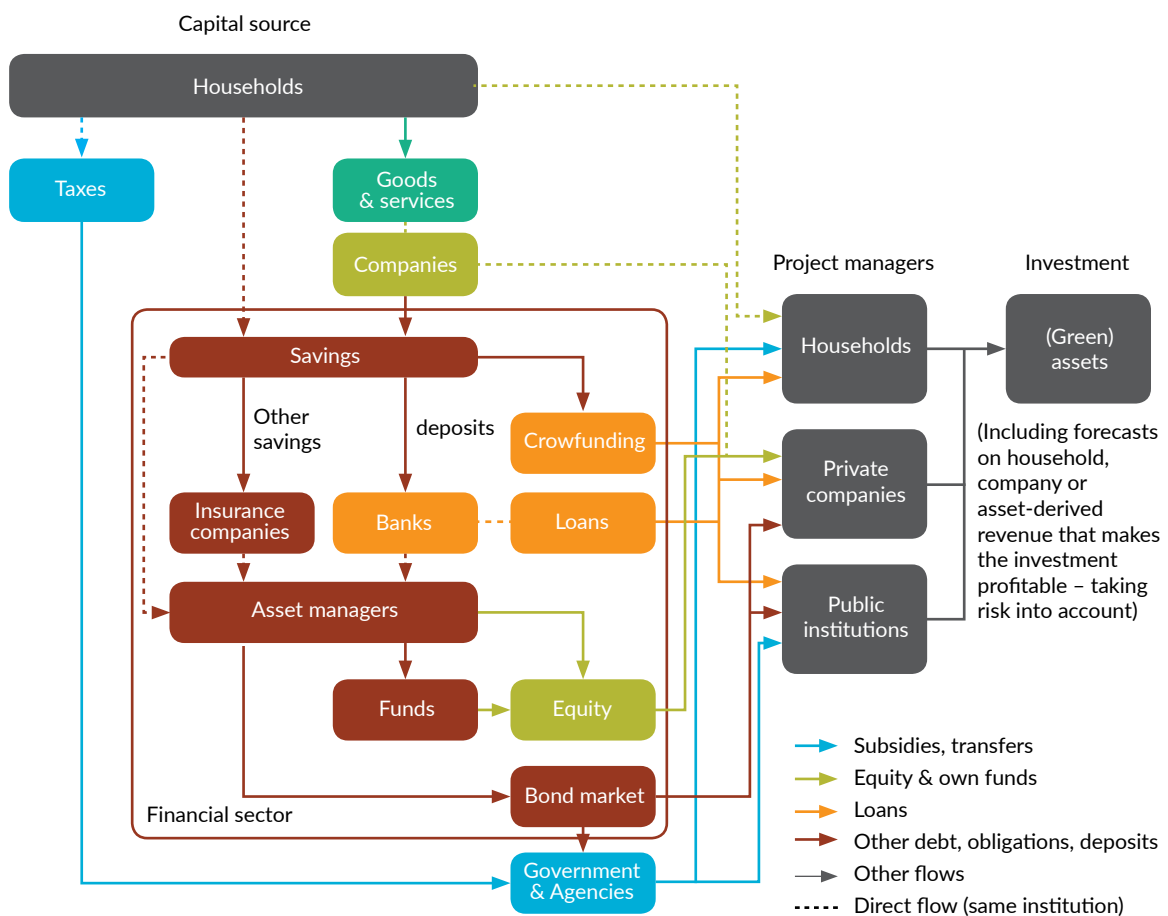
<sup>2</sup> A detailed overview of the methodological approach and the insights it can provide for policy making is also available in the Hainaut, Hadrien, and Ian Cochran. 2018. “The Landscape of Domestic Climate Investment and Finance Flows: Methodological Lessons from Five Years of Application in France.” International Economics.

of only the public sector is not sufficient to meet the demands of the transformation and aid the identification of regulatory barriers and public funding gaps, which limit the potential for the involvement of private resources.

**Box 1. Linking financial sector action with redirection of investment in the real economy – financial value chain**

Climate finance landscapes link actions taken in the financial sector with real-economy investment. By doing so, they appraise the efficiency of public and private relative contributions, including instrument's leverage effects as well as identify bottlenecks throughout the financial value chain (Hainaut et al. 2018).

**Figure 3. Financial value chain – from household savings to (green) assets**



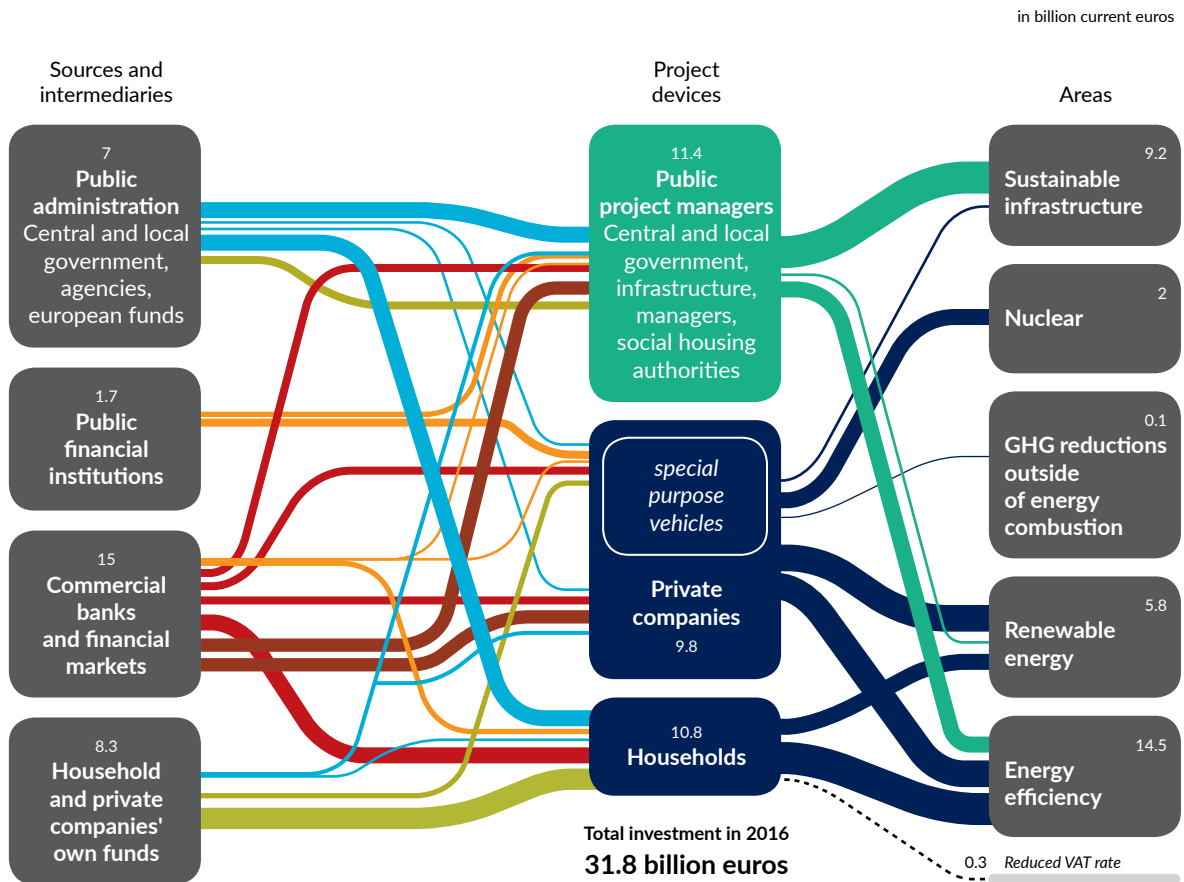
Source: I4CE based on Hainaut et al. 2018

The approach developed by I4CE focuses on financial value chain by assessing spending in gross fixed capital formation including spending on material assets, such as buildings, transport, network, energy generation or energy consumption infrastructure and equipment. Furthermore, it also covers some types of durable goods – particularly those related to energy efficiency and transport-related vehicles. The application of this approach aims to provide the data necessary to understand climate-related investment at the level of different jurisdictions. The resulting studies specifically seek to contribute to policy discussions on current investment levels, the actors which are conducting these investments, how the investments are being financed and whether the current trends are sufficient to meet national and international climate change objectives.

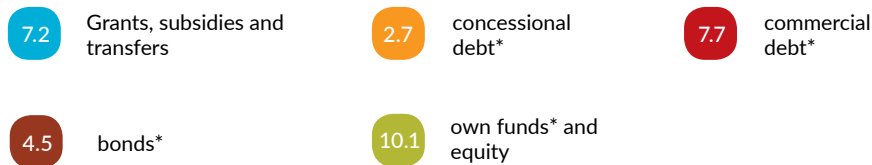
Source: I4CE based on Hainaut and Cochran 2018 and Hainaut et al. 2018



**Figure 4.** I4CE's domestic landscape of climate finance in France 2016



**Financing instruments**



**Investments**



\* including balance-sheet financing in companies

Source: I4CE based on Hainaut et al. 2018

# 3. Why is it important to track climate finance?

## 3.1 Providing an empiric basis for policymakers<sup>3</sup>

The instrumental role of climate finance landscapes in the policymaking process is evident from the analysis of not only global political settlements such as Paris Agreement, but also European strategic documents (EC's Action Plan on Financing Sustainable Growth EC 2018) and national frameworks (e.g. French Energy transition and green growth act – LTECV). All of these documents call for the suitable instruments, structures and conditions that will help to reorient capital flows towards low-emission investments, in order to achieve sustainable and inclusive growth.

The domestic Landscape methodology responds to these needs on a national scale. For example in France, since 2015 the French government is required by law to track public and private climate investments and include this information as part of the budget planning process. I4CE's domestic landscape has therefore been used as an important input into this tracking and is a part of the official budget appendix dedicated to cross-policy climate expenditure (Document de politique transversale, DPT Climat). At the European level, this issue has been gaining attention with work conducted by the European Environment Agency (EEA) on the current state of practice in the EU. More recently, better data on investment and finance to achieve the EU and domestic climate objectives is seen as key component of both discussions around NECPs as well as a means of contextualizing the Sustainable Finance discussions in terms of end-investment in the real economy.

More generally, domestic climate finance landscapes are seen as providing useful quantitative estimates to support public discussion allowing for the:

- assessment of the efficiency of policies and financial flows they govern;
- recommendation of solutions for reducing the variations between current financial structures and the objectives for national low-emission transition;
- development of strategies and plans based on an overall view of the players involved and the financial flows mobilized;
- identification of the explanatory factors of observations and tendencies (see Figure 4 for an example concerning use of different types of financial instruments);

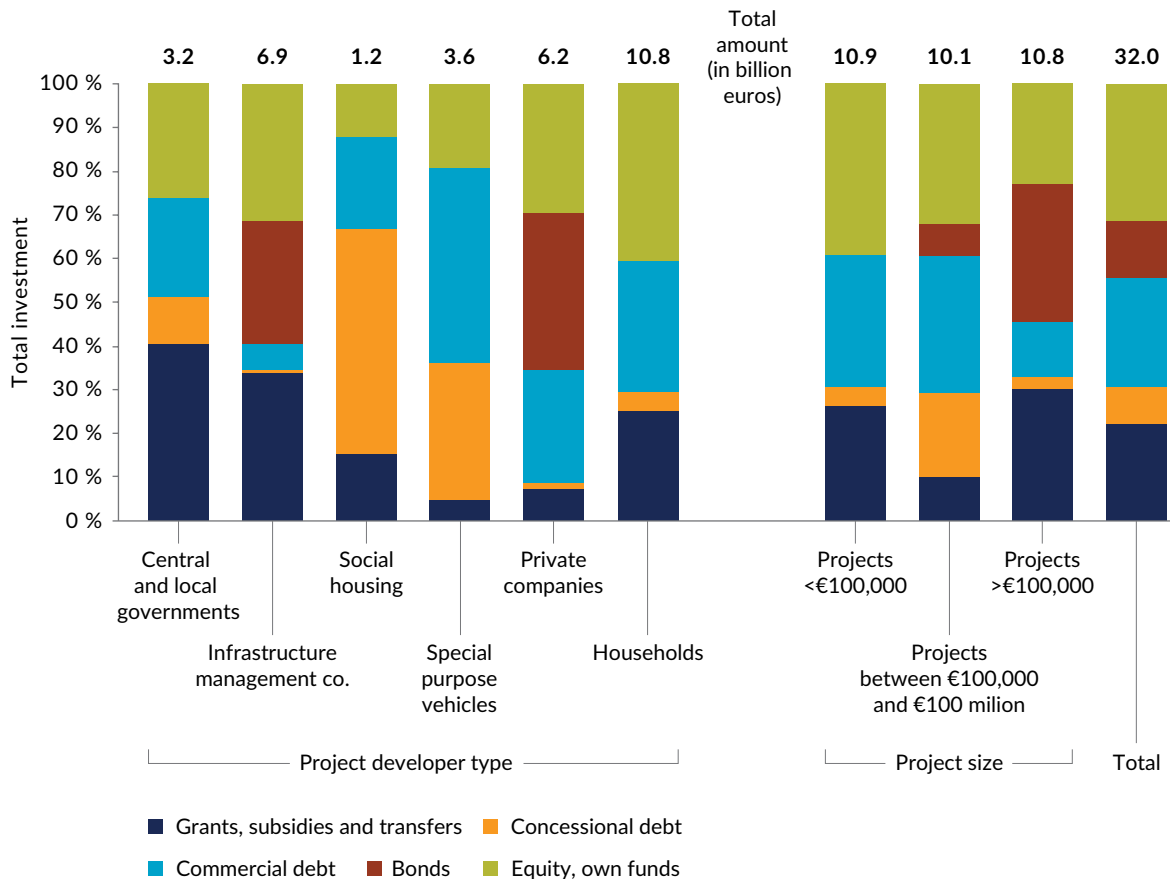
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<sup>3</sup> Text comes principally from the recent I4CE report: Hainaut, Hadrien, Ian Cochran, Lola Gouiffes, Jason Deschamps, and Alice Robinet. 2018. "Landscape of Domestic Climate Finance: Low-Carbon Investment 2011-2017."



- reporting to decision-makers on the status of climate-related investments and flows;
- comparison of the results year on year with similar work carried out in other countries;

**Figure 5.** Example of policy relevant information: Low-carbon investment funding instruments by project developer and project size in France in 2016



Source: I4CE based on Hainaut et al. 2018

The flexibility in choosing the level of granularity both in respect to the spatial coverage (country-wide or regional) as well as the scale (of the whole economy or of its particular sector) allows to obtain a tailored knowledge base – a synthetic diagnosis of the current state of financial flows to investments in climate mitigation and adaptation measures, what constitutes a first step towards increasing their scale and improving their efficiency.

Furthermore, the domestic landscape methodology enables the policymakers to assess whether current investments are sufficient to achieve national climate and energy objectives; whether certain sectors or areas are likely to expand – and if so, to what proportion. For this, historical investment levels can be compared with the investment levels needed to achieve the objectives of national plans and strategies of which estimates can be obtained from the existing studies (e.g. economic assessments of NECPs) or which can be addressed by a dedicated methodology developed as part of a Landscape exercise. This is essential to provide a basis for the evaluation of which instrument or combination of instruments is most adequate to increase and

redirect finance flows towards investments aligned with a long-term development pathway compatible with climate change mitigation and adaptation objectives.

In the short run, the results obtained from the implementation of the methodology would be of high relevance not only for the internal assessment of the policies, but also for the EU Member States to plan, in an integrated manner, and report their climate and energy objectives, targets, policies and measures to the European Commission.<sup>4</sup> Currently, Belgium, France and Germany have conducted such structured analysis of the financial flows and actively relate the Low Carbon Development Strategies, Integrated National Climate and Energy plans or National Adaptation Strategies to the results of these studies.

## 3.2 Understanding the role of the private sector

The scale of required investments means that the public sector alone cannot be the sole driver of the low-emission transition. Globally investments across the economy are largely made by private actors, hence financing for the low emission transition will largely depend on the direction of private finance flows. Therefore, the diagnosis of the current state-of-the-art and identification of existing bottlenecks within the financial value chains will not only enable to ensure the most efficient use of public resources but also facilitate the redirection and mobilization of private financial flows aligned with national and European climate policy objectives to support the sustainable investments.

In practical terms, the implementation of the domestic climate finance tracking methodology is beneficial for the private sector stakeholders for two reasons, as it:

1. **provides a unique knowledge platform** – crucial for improved, well-rounded understanding of current spending levels and identification of new market entry strategies that arise from the low-carbon development;
2. **increases the credibility and transparency of policymaking process** – through the provision of transparent and available data on both public and private flows. This can help strengthen the policy signal and serve as a starting point for the discussion on how to scale up private investment and finance on climate action.

Although, the substantial share of climate relevant investments occurs in sectors dominated by private entities, the role of public finance remains crucial – as a source of additional capital or enabler for the private sector to change its investment patterns. The domestic Landscape

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<sup>4</sup>For an overview of the state of tracking of climate investment and finance in the EU at the end of 2016, see EEA and Trinomics. 2017. "Assessing the State-of-Play of Climate Finance Tracking in Europe." European Environment Agency & Trinomics Consultancy.



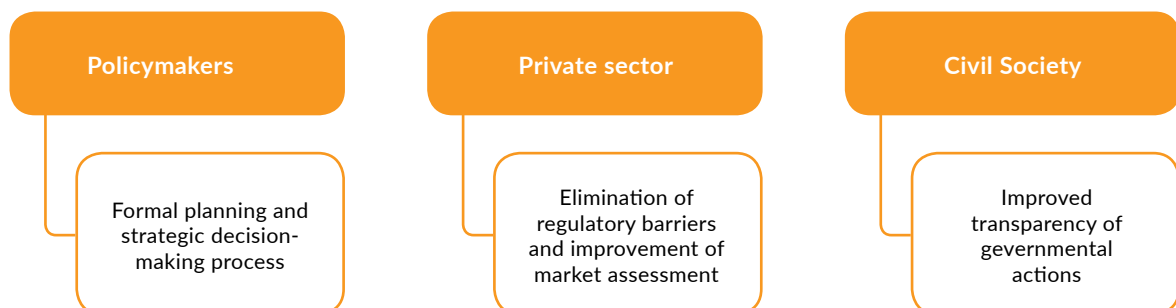
methodology reveals where the interface between these sources of finance lies within each sector and at the level of whole economy. This can contribute to understanding of the relative economic maturity of sectors and subsectors, given market and regulatory conditions. It also enables the assessments of whether particular investments are economically and financially viable at the sector and sub-sector level without direct public financing. Thus, to both actors it supplies key information for undertaking strategic investment decisions and promotes the uptake of innovative approaches (e.g. new blended finance vehicles).

### 3.3 Civil society

Given the extent of the knowledge gap of the civil society regarding the topic of climate finance, the implementation of the methodology could not only inform the wider public on the current state of climate action undertaken by different stakeholders and the investment gap between the current and future investment needs, but also help providing the necessary information regarding the financial risks related to climate change and the opportunities arising from sustainable development. Beyond raising awareness, the domestic climate finance methodology enhances the ability of civil society to keep the government and other stakeholders accountable for them to meet their climate finance commitments and to prevent misinformation and greenwash.

One of the key features of the domestic Landscape methodology is that it improves the transparency of how public funds are being spent. The methodology disentangles the complexities of interactions between different sectors, actors and financial instruments making it possible for any actor to ground truth the information on the progress towards meeting the climate objectives. The diagnosis of a particular sector as well as of the whole economy can serve as a reference point and act as a database that systemises the available knowledge and enables translation of data into operational arguments, needed for the civil society to actively engage and participate in the public debate on the topic of mobilization of climate finance.

**Figure 6.** The utility of the domestic climate finance methodology for different stakeholder groups



Source: WiseEuropa

# 4. Decisions requiring systemic overview of climate finance flows in Poland

## 4.1 Current state

Despite the growing interest, both from the public and private stakeholders and the ongoing developments at the European level, in Poland there is limited awareness of domestic players including the policymakers, regulators and Polish financial institutions regarding the different dimensions of sustainable finance, and the financing needs of the transition towards the low-emission economy.

Predominantly, Polish policymakers have an inconsistent approach towards climate investments and lack the necessary analytical tools such as the domestic Landscape methodology, needed to support the decision-making process. This coupled with the lack of centralized and systematized data collection on investment support programmes, sources of financing and investment levels, results in a lack of assessment of financial needs associated with the near-term priorities of the government or broader ambitions set by the Paris Agreement, what ultimately leads to underfinancing of climate action across the sectors.

The debate on the systemic tracking of climate finance is especially timely as by the end of 2019 Poland and other member states will have to submit the final version of the NECPs to the European Commission. Implementation of the methodology in Poland would respond both to the process of development of the overarching long-term climate strategy as well as sectoral initiatives (such as the energy sector policy or initiatives tackling air pollution). Although currently these are devised on a sector-by-sector basis, they should also consider the wider economic perspective as well as overarching public sector resource constraints and trade-offs across different areas of interventions.

Both the announcements made by the Polish government regarding the development of the energy sector and thermal renovation of buildings, as well the need to increase the efficiency of the EU-financed programmes constitute perfect examples of the decisions that need to be developed already in the short-term perspective and which are substantially hindered by the lack of systemic review of financial flows. Given that their implementation is dependent on the successful identification of potential sources and mobilization of large volumes of financial support, policymakers and financial institutions, without the assessment of current financial flows cannot ensure that their actions are carried out in the economically most efficient and effective manner.

The shortcomings arising from lack of insights into the financial value chain at the scale of the whole economy are already apparent in the abovementioned sectors. Lack of evidence-based reasoning that takes into account the interactions between different sectors and actors in the governmental announcements undermines the credibility of these plans, escalates the uncertainty on the market and raises concerns among investors, whilst slowing down the progress of the low-emission transition.

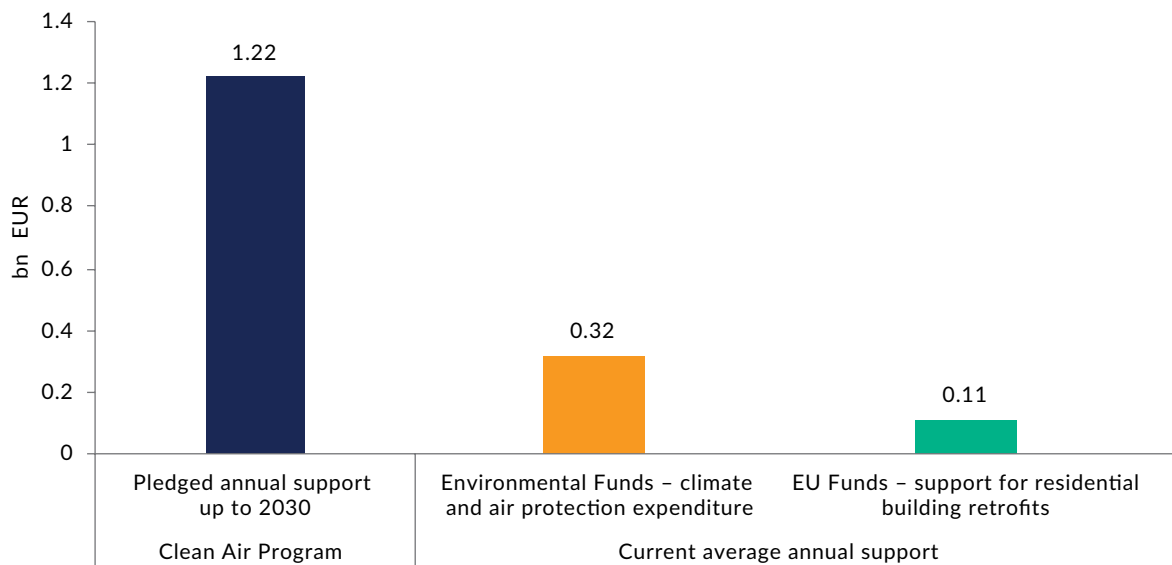
## 4.2 Challenges for the future – selected case studies

### Low-emission investments in the building sector

Low energy efficiency and outdated heating systems in Polish buildings are one of the main causes of the elevated levels of air pollution in Polish cities. Aiming to tackle the problem, the government has recently announced a country-wide retrofit programme within the “Clean Air” programme. However, the analysis of the support programmes shows that the scale and scope of the current actions are not sufficient. Due to the lack of cross-cutting analysis, programmes previously devised by the government targeted the same issues with several overlapping instruments. This led to different support programmes ultimately competing with each other in one area (e.g. multifamily buildings), while largely neglecting others (e.g. single family housing). The result was an inefficient use of public resources as well as limited progress in energy efficiency improvements.

Even a preliminary analysis of domestic investment and financial flows proves that it is necessary to increase efforts in redirecting financial flows towards building retrofits (including both energy efficiency improvements and shift toward low-emission heating systems) as well as to provide new support mechanisms. In 2017, WiseEuropa estimated the required support associated with modernization of buildings in Poland at EUR 14 bn up to 2030 (Bukowski et al. 2017). So far, in 2018 as part of the strategic “Clean Air” programme, the government has pledged to contribute a matching amount of EUR 15 bn up to 2030 in form of direct subsidies (NFOŚiGW 2018). Polish policymakers stated that the support programme will be financed from both the national resources (National and Regional Funds for Environmental Protection) and from the EU funds. However, these will probably not be sufficient if the architecture of the financing system will remain unchanged, as mobilization of over a billion Euro a year for the purpose of buildings’ renovations substantially exceeds the scale of current support programmes and domestic funding sources.

**Figure 7.** Current average annual support for energy efficiency in buildings and future investment needs



Source: WiseEuropa based on Central Statistical Office data (Central Statistical Office 2015-2017) and National Energy Efficiency Action Plan for Poland 2017 (Ministry of Energy 2017)

Currently, the Polish National and Regional Funds for Environmental Protection dedicate on average EUR 0.3 bn a year to fund the protection of air and climate. For further comparison, on average the combined annual income of Funds amounts to EUR 0.9 bn. This means that even if all of the resources from the Funds were redirected towards buildings retrofit (neglecting investment in other areas, such as recycling, water management or other climate-friendly projects beyond buildings sector), a fourth of the required support would still be missing.

Thus, if the historic investment patterns were to be projected up to 2030 the Funds' share in financing retrofit programme is likely to be very limited and the additional funds (approximately 75% of the pledged support) would have to be acquired from new sources. While the government indicates that the EU funds will complement the domestic funding, it is also implausible that they will cover the whole gap. The average annual support for the low emission transition from the EU funds on the national level (from Infrastructure and Environment Program) is EUR 0.3 bn (Ministry of Investment and Development 2018), while the average annual support for thermal modernization of residential buildings regional EU-funded programmes amounts to approximately EUR 0.1 bn (Ministry of Energy 2017). Thus, covering the energy efficiency funding gap with the European financing would require large-scale restructuring of the EU funds expenditure in Poland, with significant cuts required in other types of the programmes (e.g. infrastructure, innovation, human capital, environmental protection beyond buildings sector), especially taking into account expected decrease in the level of the EU support in 2020s.

These numbers suggest that, given the early stage of the development of the support programme, it is crucial to address questions of how to design the system to enable mobilization of the additional finance and of how to fine tune the support programmes and their financing structure for them to both be cost-effective and deliver the highest added value. Analysis conducted



by WiseEuropa in 2017 (Bukowski et al. 2017) provided evidence that the public financing needs associated with large-scale building retrofit programmes could be matched by the auction revenues acquired by Polish government through the EU ETS system. Nevertheless, only a detailed assessment of all the funding needs and sources of financing in cooperation with policymakers would allow to provide comprehensive picture of the existing financing gaps and efficient ways to close them. The implementation of the domestic Landscape methodology – a monitoring and transparency tool, provides a starting point to devise strategies and policy measures to redirect flows more efficiently.

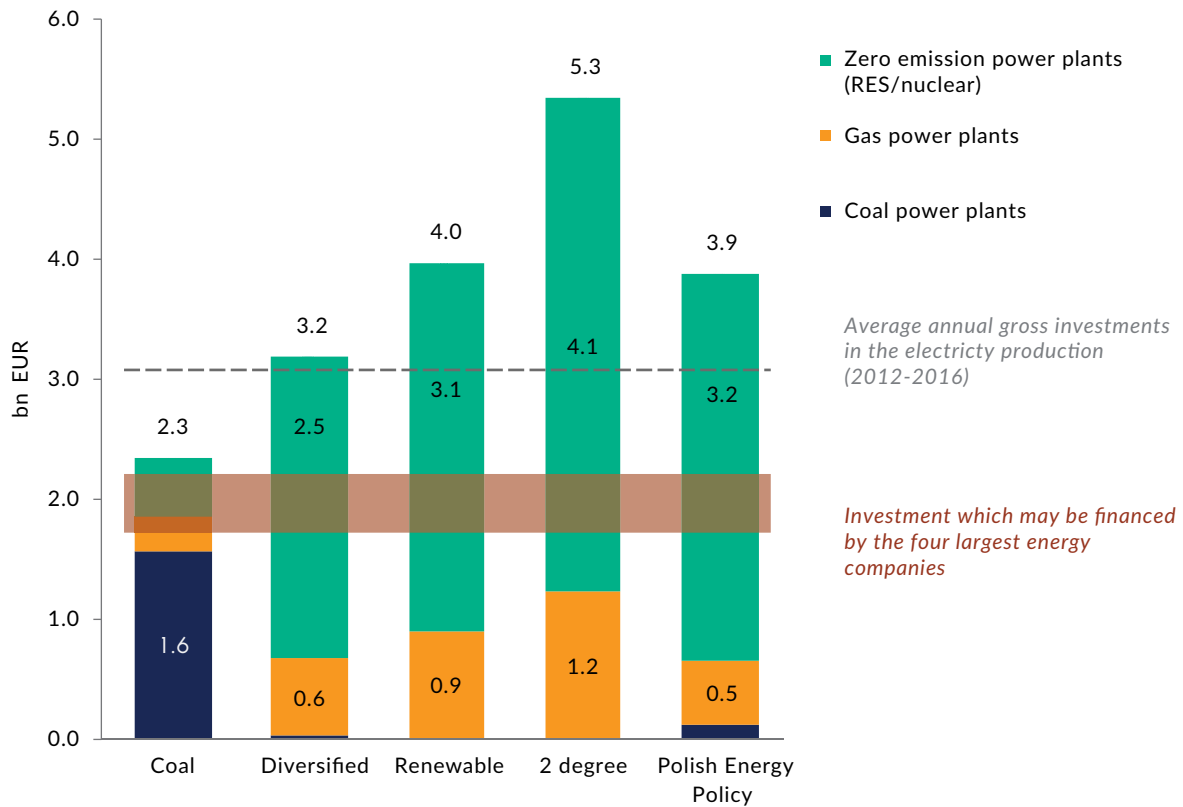
## Low-emission transition in energy sector

The modernization of the Polish energy sector in line with the long-term climate targets and divestment away from fossil infrastructure require major investment in low-emission technologies over next decades. Estimates of the total investment needs associated with the structural changes outlined in the recently published draft of Polish energy policy until 2040 are at EUR 77.4 bn up to 2040 – on average at EUR 3.9 bn a year (Ministry of Energy 2018). However, the current average annual gross investments (2012-2016) in the production of electricity amount to EUR 2.5 bn (Eurostat 2019).

The scale of needed funds as well as considerable share of coal in the energy mix (approx. 60% in 2030 and 33% in 2040) envisaged by the draft of the strategy raise concerns as to whether the announced policy achieves the highest added value in the most cost-effective way. According to the WiseEuropa own estimates, the same amount would be sufficient to drive deep decarbonisation of the sector in economically efficient way by mid-century.

Even if the diversification of energy mix in Poland will happen with a delay and at the modest pace suggested by the governmental strategy, this still implies significant redirection of funds on a national level. New sources of financing are needed, as the volume of foreseen investments substantially exceeds the combined investment capacity of the largest Polish energy utility companies. Even in the best-case scenario, they would only be able to mobilize approximately a third of needed funds, unable to match even the average investment level from recent past (when debt levels of largest utilities were lower and RES support system mobilized investments from smaller companies). The large financing gap supports a case for a new approach towards energy sector investments, based on a stable and inclusive regulatory framework that would enable greater engagement of more diversified group of stakeholders, especially of smaller investors – representatives of the private sector.

**Figure 8.** Annual investment needs in the energy sector for different scenarios, 2021-2040



Source: WiseEuropa based on Bukowski et al. 2018, Eurostat data and draft of the Polish Energy Policy up to 2040 (Ministry of Energy 2018)

Note:

*Coal scenario, assumes maintenance of a dominant role of conventional hard coal and lignite power plants up to 2050 (gradual decrease from ca. 75% to 60% of domestic power generation).*

*Diversified scenario, assumes a significant change in the energy mix that includes the combination of renewables, nuclear power plants and gas plants, with coal capacities shifting mostly to reserve, generating ca. 10% of electricity in Poland in 2050.*

*Renewable scenario, assumes reaching almost a 3/4 RES share in 2050, supported by gas CHP and peaking plants, with no coal in the energy mix by mid-century.*

*2-degrees scenario, assumes complete replacement of the coal generation capacities by additional renewables supported by gas reserves before the year 2040.*

In light of the key energy policy challenges that Poland will have to face in the coming years, thorough assessment of current financial value chains both at the scale of the energy sector as well as of the whole economy could offer actionable recommendations. By enabling identification of type and scale of inefficiencies in the current regulatory framework financing system of the investments in the energy sector, the domestic Landscape methodology would contribute to choosing the more adequate policy tools and financing instruments as well as engaging wider group of stakeholders. Without the proper understanding of the current market situation, mobilization of additional funds and achievement of the low-emission transition may prove to pose unnecessary challenges that could be avoided with the support of extensive knowledge base.

## 5. Conclusions

The examples presented in this policy brief demonstrate the unprecedented scale of investment needs in Poland arising both from the near-term priorities of the Polish government and the global climate commitments. The required mobilization of funds urges for an improved coordination of efforts between all of the actors involved in the process of the transition as well as demands comprehensive knowledge base to address the systemic challenge of financing sustainable economic development. Polish government will soon face the challenge of designing policies which will redirect substantial share of current financial flows towards the sectoral low-emission transition challenges. Thus, implementation of the climate finance tracking methodology in Poland may provide crucial support for complex policymaking processes which will occur in the next few years.

At a national level, domestic climate investment and finance Landscape studies have already been implemented in several European countries such as France and Germany. They have provided a framework for devising the financing plans encompassed in the national strategic documents (e.g. NECPs). Polish stakeholders can thus benefit from the international exchange of lessons learned as the uptake of best practices – tracking of climate finance, will enable improved assessment of current investment levels and will support an increase in financial flows towards sustainable solutions.

The best practices identified by the broader stakeholder community, if tailored to the local specificity and demands of the country's policymaking objectives, have great potential to improve the assessment and design of domestic climate finance investment frameworks. In the Polish case, implementing an extensive analysis of climate finance flows within the economy is needed for the decision-making process both in the public and private sector, to provide the highest value added both in terms of the cost-efficiency and climate benefits.

Urging Polish policymakers to address this global trend and act pre-emptively by assuming the results based approach, WiseEuropa (Poland) together with the NewClimate Institute (Germany) and I4CE – Institute for Climate Economics (France) facilitate the process of the uptake of the domestic Landscape methodology and ultimately through its implementation foster a more targeted and systemic support for climate action. The ongoing discussions with public sector stakeholders that were initiated in 2018, will not only allow for further tailoring of the methodology to the needs of Polish stakeholders, but also for the transfer of best practices between countries that have implemented it or are in the process of implementation. Furthermore, the organisations have established the EU Climate Investment and Finance Tracking Contact Group – a unique platform for cooperation that enables exchange of experiences between institutions and stakeholders working on this topic. This vehicle, provides the necessary structure enabling a debate on methodological issues, whilst improving the visibility of the need and value of this type of work for achievement of European climate and sustainable finance objectives.

# References and useful links

- Brown, J., et al. 2011. "Climate Finance: A Survey of Leveraging Methodologies." Venice. Climate Policy Initiative.  
<https://climatepolicyinitiative.org/wp-content/uploads/2011/11/Effectiveness-of-Climate-Finance-Methodology.pdf>.
- Bukowski, M., et al. 2018. "The climate finance domino. Transition risks for the Polish financial sector." Warsaw. WiseEuropa.  
<http://wise-europa.eu/wp-content/uploads/2018/06/The-climate-finance-domino.pdf>.
- Bukowski, M., et al. 2017. „Uwalniając ukryty potencjał Gospodarczy wpływ inwestycji w mikroinstalacje OZE oraz termomodernizację budynków.” Warsaw. WiseEuropa.  
<http://wise-europa.eu/wp-content/uploads/2017/12/Uwalniajac-ukryty-potencjal.pdf>.
- Caruso, R. and Jane, E. 2013. "Comparing Definitions and Methods to Estimate Mobilised Climate Finance." Climate Change Paris. Expert Group Paper.  
[http://unfccc.int/files/cooperation\\_and\\_support/financial\\_mechanism/standing\\_committee/application/pdf/comparing\\_definitions\\_and\\_methods\\_to\\_estimate\\_mobilised\\_climate\\_finance\(2\).pdf](http://unfccc.int/files/cooperation_and_support/financial_mechanism/standing_committee/application/pdf/comparing_definitions_and_methods_to_estimate_mobilised_climate_finance(2).pdf).
- Central Statistical Office. 2015-2017. "Influence on Regional Environmental Protection and Water Mangement Fundamentals by voivodeship in 2017."  
<https://stat.gov.pl/obszary-tematyczne/srodowisko-energia/srodowisko/ochrona-srodowiska-2018,1,19.html>.
- Clapp, C., et al. 2012. "Tracking Climate Finance: What and How?" Paris. OECD.  
<https://www.oecd.org/env/cc/50293494.pdf>.
- CPI. 2011. "The Landscape of Climate Finance." Climate Policy Initiative.  
<https://climatepolicyinitiative.org/publication/the-landscape-of-climate-finance/>.
- . 2012a. "Global Landscape of Climate Finance 2012." Climate Policy Initiative. <http://climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2012/>.
- . 2012b. "The German Climate Finance Landscape." Climate Policy Initiative. <http://climatepolicyinitiative.org/publication/german-landscape-of-climate-finance/>.
- . 2013. "Global Landscape of Climate Finance 2013." Climate Policy Initiative. <http://climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2013/>.
- . 2014a. "Global Landscape of Climate Finance 2014." Climate Policy Initiative. <http://climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2014/>.
- . 2014b. "The Landscape of Public Climate Finance in Indonesia." Climate Policy Initiative. <http://climatepolicyinitiative.org/publication/landscape-of-public-climate-finance-in-indonesia-3/>.
- . 2017a. "Global Landscape of Climate Finance 2017." Climate Policy Initiative.  
<https://climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2017/>.
- . 2017b. "Landscape of REDD+ Aligned Finance in Côte d'Ivoire." Climate Policy Initiative.  
<https://climatepolicyinitiative.org/publication/landscape-redd-aligned-finance-cote-divoire/>.
- EEA and Trinomics. 2017. "Assessing the State-of-Play of Climate Finance Tracking in Europe." Rotterdam. European Environment Agency & Trinomics Consultancy.  
<https://trinomics.eu/wp-content/uploads/2017/07/State-of-play-of-European-climate-finance-tracking-published-6-July-2017.pdf>.
- Emmrich, J. 2018. "Tracking Climate Finance in the German Building Sector: A Landscape of Finance Flows for Building Decarbonisation in 2016." IIIIEE Masters Thesis. Lund. Lund University.  
<http://lup.lub.lu.se/luur/download?func=downloadFile&recordId=8958325&fileId=8958326>.



European Commission. 2018. "Communication from The Commission to The European Parliament, The European Council, The Council, The European Central Bank, The European Economic and Social Committee and The Committee of the Regions. Action plan: Financing Sustainable Growth." Brussels.  
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN>.

Eurostat. 2019. Current average annual gross investments (2012-2016) in the production of electricity.  
<https://ec.europa.eu/eurostat/data/database>.

Hainaut, H. and Cochran, I. 2018. "The Landscape of Domestic Climate Investment and Finance Flows: Methodological Lessons from Five Years of Application in France." *International Economics*.  
<https://doi.org/10.1016/j.inteco.2018.06.002>.

Hainaut, H., et al. 2018. "Landscape of Domestic Climate Finance: Low-Carbon Investment 2011-2017." I4CE - Institute for Climate Economics.  
<https://www.i4ce.org/wp-core/wp-content/uploads/2018/09/I4CE-Landscape-of-Climate-finance-in-France-1.pdf>.

IKEM. 2018. "Climate investment capacity (CIC2030) - Investigating climate finance dynamics and structures to finance the 2030 energy and climate targets."  
<https://www.ikem.de/en/portfolio/cic2030/>

Larsen, G. et al, 2018. "Towards Paris Alignment. How the Multilateral Development Banks Can Better Support the Paris Agreement." WRI. NewClimate Institute, Germanwatch and Fundacion Avina.  
<https://newclimate.org/wp-content/uploads/2018/12/WRI-MDBs-and-Paris-Report-.pdf>.

Ministry of Energy. 2018. "Conclusions from prognostic analyzes for the energy sector - annex No. 1 to Poland's energy policy until 2040 (PEP2040)." Warsaw.  
<https://www.gov.pl/web/energia/polityka-energetyczna-polski-do-2040-r-zapraszamy-do-konsultacji>.

Ministry of Energy. 2018. "Energy policy of Poland until 2040." Warsaw.  
<https://www.gov.pl/web/energia/polityka-energetyczna-polski-do-2040-r-zapraszamy-do-konsultacji>.

Ministry of Energy. 2017. "National Energy Efficiency. Action Plan for Poland 2017." Warsaw.  
<https://www.gov.pl/web/energia/krajowy-plan-dzialan-dotyczacy-efektywnosci-energetycznej>.

Ministry of Environment, National Fund for Environmental Protection and Water Management, Voivodeship Funds for Environmental Protection, Bank for Environmental Protection. 2018. Priority program "Clean Air."  
[http://www.wfosigw.pl/sites/default/files/program\\_czyste\\_powietrze.pdf](http://www.wfosigw.pl/sites/default/files/program_czyste_powietrze.pdf).

Ministry of Investment and Development. 2018. "Operational program Infrastructure and Environment for 2014-2020." [https://www.pois.gov.pl/media/54287/POiS\\_2014\\_2020\\_v\\_6.pdf](https://www.pois.gov.pl/media/54287/POiS_2014_2020_v_6.pdf).

Trinomics. 2016. "Landscape of Climate Finance in Belgium. Final Report." Rotterdam.  
[http://www.klimaat.be/files/4914/6901/4152/Landscape\\_of\\_climate\\_finance\\_in\\_Belgium.pdf](http://www.klimaat.be/files/4914/6901/4152/Landscape_of_climate_finance_in_Belgium.pdf).

UNFCCC. 2010. "Report of the Conference of the Parties on Its Sixteenth Session, Held in Cancun from 29 November to 10 December 2010, FCCC/CP/2010/7/Add.1." Paris. UNFCCC.  
<https://unfccc.int/sites/default/files/resource/docs/2010/cop16/eng/07a01.pdf>.

———. 2015. "Adoption of the Paris Agreement." Vol. 21932.  
<https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>.



## List of boxes

<b>Box 1.</b> Linking financial sector action with redirection of investment in the real economy – financial value chain	8
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## List of figures

<b>Figure 1.</b> Different types of finance and their inter-linkages	5
<b>Figure 2.</b> Analytical framework of the landscape of domestic climate finance	7
<b>Figure 3.</b> Financial value chain – from household savings to (green) assets	8
<b>Figure 4.</b> I4CE's domestic landscape of climate finance in France 2016	9
<b>Figure 5.</b> Example of policy relevant information: Low-carbon investment funding instruments by project developer and project size in France in 2016	11
<b>Figure 6.</b> The utility of the domestic climate finance methodology for different stakeholder groups	13
<b>Figure 7.</b> Current average annual support for energy efficiency in buildings and future investment needs	16
<b>Figure 8.</b> Annual investment needs in the energy sector for different scenarios, 2021-2040	18



WiseEuropa

## WiseEuropa

**WiseEuropa** is an independent think-tank and research organization based in Warsaw that undertakes a strategic reflection on European politics, foreign policy and economy. The mission of WiseEuropa is to improve the quality of Polish and European policy-making as well as the overall business environment by promoting the use of sound economic and institutional analysis, independent research and evidence-based approach to impact assessment.

**Website:** [wise-europa.eu/en](http://wise-europa.eu/en)

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## NewClimate Institute

**NewClimate Institute** supports research and implementation of action against climate change around the globe. NewClimate Institute generates and shares knowledge on international climate negotiations, tracking climate action, climate and development, climate finance and carbon market mechanisms. They connect up-to-date research with the real world decision making processes, making it possible to increase ambition in acting against climate change and contribute to finding sustainable and equitable solutions.

**Website:** [newclimate.org](http://newclimate.org)

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## Institute for Climate Economics (I4CE)

**Institute for Climate Economics (I4CE)** is a think tank that provides public and private decision-makers with expertise on economic and financial issues related to the energy and ecological transition. I4CE strives to implement the Paris Agreement and make global financial flows compatible with low-carbon development that is resilient to climate change. Since 2012, I4CE has conducted and published multiple iterations of the French Landscape of Climate Finance, a study that tracks domestic climate investment and analyzes how it is financed. I4CE will build on its experience and success in France in increasing granularity on climate finance data and linking this with national policy planning processes.

**Website:** [i4ce.org](http://i4ce.org)

## Energy, Climate and Environment Programme

Poland, Europe and the world are currently facing unprecedented challenges associated with the environment and resources. Avoiding dangerous climate change, improving public health and increasing resource security requires a profound economic transition. Taking advantage of opportunities and avoiding the associated developmental traps requires in-depth evaluation of the short- and long-term impacts of environmental protection and natural resource management policies. Under the Energy, Climate and Environment Programme, we prepare comprehensive sectoral and macroeconomic analyses, focusing on the broadly defined low-emission economic transition in Poland and globally. We are active in areas such as: Polish and EU energy and climate policy, domestic resource policy, improving resource efficiency in the economy, protection of the environment and public health by limiting harmful emissions, sustainable transport policy. This paper is a part of the Energy and Climate Project.



ENERGY, CLIMATE AND ENVIRONMENT

Other publications:

"Sustainable finance in Poland. The state of play and prospects for progress",  
Bukowski M., Śniegocki, A. and Wetmańska, Z.; WiseEuropa, Warsaw 2019

"The climate finance domino. Transition risks for the Polish financial sector",  
Bukowski M., Śniegocki A., Wetmańska Z. and Wis-Bielewicz J.; WiseEuropa, Warsaw 2018