IIPP POLICY BRIEF 16 SEPTEMBER 2021

OPINION ON THE FINNISH CLIMATE FUND (ILMASTORAHASTO) STRATEGY

Thomas Marois

Senior Research Fellow, Patience Finance and Public Banking UCL Institute for Innovation and Public Purpose

Introduction

Communities worldwide are faced with huge challenges that require systems change only possible through significant transformation. The impacts of COVID-19 have helped reveal that to solve complex societal challenges requires us to address questions of power and participation, from the details of service provision to the underlying structures of society itself. Yet we have also learned that it is possible to take on short- and long-term innovation to equitably address societal 'grand challenges' by organising around bold, ambitious missions; to 'flatten the curve', not only on COVID-19, but on the fundamental crises of climate change, social justice and poverty. To tackle the fissures exposed by COVID-19 and pursue public value, it is critical to recognise that markets will not find sustainable, inclusive, green and innovationled economic growth on their own. Rather, direction is needed from both the public and private sectors working together to co-create and co-shape markets to foster societal change. The role of finance is vital in helping to move us from the infrastructure of today's economy to an infrastructure that is ready to take on grand challenges, notably climate change and global decarbonisation. Finance, however, is not neutral; the type of finance available can affect both the investments made and the type of activity that occurs.



Source: Finnish Climate Fund

Patient, long-term, committed finance can underpin transformative climate action if properly structured and governed. Public banks and investment funds have underpinned societal development for generations. Recently, these public financial institutions have received resurgent interest in their potential to become key actors driving green and just growth, and innovation, often aimed at tackling societal challenges. The UCL Institute for Innovation and Public Purpose (IIPP) has been leading the charge on rethinking, researching and policy engagement around public financial institutions, and on how they can become mission-oriented, market-shaping institutions capable of directing the move towards the inclusive, equitable and sustainable societies that we need.

As emphasised in the 2021 Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, the problem of how to finance green transitions and climate change mitigation is urgent. Likewise, the European Green Deal has set ambitious climate change targets that require



This brief can be referenced as follows: Marois, T. (2021). *Opinion on The Finnish Climate Fund (Ilmastorahasto) Strategy*. UCL Institute for Innovation and Public Purpose, Policy Brief series (IIPP PB 16). financing if they are to be reached. It is in this context that the Finnish Climate Fund (Ilmastorahasto) requested that the IIPP provide a written opinion on its Climate Fund Strategy (version 1 April 2021), which in turn provides the content for this policy brief. The Finnish Climate Fund agreed to publish this as a contribution to the wider policy and academic community. The policy brief/opinion focuses on the Climate Fund Strategy's ability to deliver climate impact.



Source: Finnish Climate Fund

The opinion and policy brief have been prepared by Dr Thomas Marois, IIPP Senior Research Fellow, Patient Finance and Public Banking. The content provides neither an IIPP endorsement nor a repudiation of the Finnish Climate Fund Strategy. The opinion is based on an in-depth review of the Climate Fund Strategy document and it offers a series of reflections that the Climate Fund may consider in its future operations.

Summary

Patient, long-term, committed finance can underpin transformative climate action if properly structured and governed. The Finnish Climate Fund Strategy aims to situate the institution as a driver of green, high-impact climate financing. This opinion focuses on five areas that are important to the Fund maximising climate impact.

The first area relates to 'realising the potential of public ownership'. Public ownership is a foundational element of the Climate Fund's potential to deliver patient finance for climate impact. It enables the Fund to focus not on maximising returns, but on public purpose climate goals for people and planet. This important potential of public ownership should continue to guide how the Climate Fund operates and presents itself within society.

The second area relates to 'maximising the Climate Fund's mission and impact-orientation'. The Climate Fund's orientation towards generating climate impact is strongly represented within the Strategy and within its institutional mission. The Strategy's pre-conditions provide a firm 'floor' for subsequent climate-oriented investment decisions. There may be room to strengthen wording as a complement to European Union (EU) 'do no significant harm' conditions in the pre-conditions and to offer a vision of how the Fund connects climate impacts to societal impacts.

The third area relates to 'targets and ways of financing'. The Climate Fund's initial focus for funding targets climate solutions and platforms for emissions reductions. In time, the Strategy may benefit from developing an explicit missions approach to increase impact.

The fourth area relates to 'scope for coordination, planning, and cooperation'. The Strategy provides an opportunity for the Climate Fund to take a pioneering role as a committed agent of change, externally and internally, by developing coordination, planning and cooperation capacities to tackle grand societal challenges like climate change and decarbonisation.

The fifth area relates to 'the importance of monitoring and conditionalities'. It is a strength of the Strategy that it provides for monitoring throughout the life of the project to guide directionality and to ensure funding impact. The Climate Fund may consider strategically developing its in-house capacity and expertise capable of monitoring investments and impacts, and developing a type of Climate Fund branding that acts as a signal of climate excellence within the market.

The Finnish Climate Fund Strategy

The Finnish Climate Fund (Ilmastorahasto) was founded in 2020 out of the State Development Company, Vake, as a 100 per cent state-owned special-assignment company. The Climate Fund belongs to the administrative branch of the Ministry of Economic Affairs and Employment. The Climate Fund is intended to supplement public sector investments by funding private and public projects where its involvement 'is crucial for the project's success or will enable it to be realised earlier or on a larger scale' $(3)^*$. The Climate Fund's involvement should supplement other public and private funding. In broad terms, the Climate Fund uses capital loans and other instruments to finance industrial scale-ups of climate solutions and platforms that enable emission reductions. The Climate Fund initially has about EUR 85 million of available funds. The Government will further capitalise the Fund with an additional EUR 300 million, with additional capitalisations possible by 2022.

This opinion points to where the Climate Fund Strategy is well-positioned to provide catalytic funding in support

^{*} Italicised numbers in brackets refer to specific page numbers in the Climate Fund Strategy.

of environmental sustainability in Finland, and suggests options and alternatives to enhance its climate impact. It does so in five sections: realising the potential of public ownership; maximising the Climate Fund's mission and impact-orientation; targets and ways of financing; scope for coordination, planning and cooperation; and the importance of monitoring and conditionalities.

Realising the potential of public ownership

Public ownership is a foundational element of the Finnish Climate Fund's potential to deliver patient finance for climate impact, to shape markets and to catalyse green transitions. State institutions and public authorities do more than just fix markets; they can 'tilt' social and economic change in new directions, including towards green and just transitions (Mazzucato 2018). Public institutions can and often do play a dynamic co-creating and directionsetting role (Mazzucato 2021). This includes public financial institutions, which can perform a vital function in developing and offering effective and innovative sets of dynamic capabilities within the public sector (Kattel and Mazzucato 2018; Mazzucato 2021; cf. Marois 2021).

As a public financial institution, the Climate Fund can be made more responsive to demands for climate action as a matter of public policy and as a reflection of societal demands for change. It is by being located within the public sphere of the Finnish state that the Climate Fund can be potentially, if not necessarily, shielded from direct market forces that often compel financial institutions to respond to short-term and profit-maximising conditions (Marois 2021b). Because it has been given a public purpose mandate to generate climate and societal impact, the Climate Fund can function differently than private financial institutions. As the Climate Fund Strategy notes, 'The company can take bigger risks or accept smaller profits in its investment activities than private investors would. Instead of seeking to maximise its own profit, the Climate Fund aims at fulfilling its mission as efficiently as possible and creating societal impact.'

While this trajectory must be pursued in Finland within the limits of EU state aid regulations (*3*; *16*), it opens up multiple possibilities of how to realise climate impact and to create 'public value' according to its public purpose. Public value is 'created by public sector actors creating and co-shaping markets in line with public purpose. This direction-setting role enables public, private and civil society sectors to collaborate effectively to solve societal problems' (Mazzucato and Ryan-Collins 2019). Moreover, there are direct and indirect ways that public institutions create public value, including at the individual, industry and societal scales (Mazzucato et al. 2020). The role the Climate Fund serves in creating public value and fulfilling public purpose should figure prominently internally, as a part of its institutional culture, and externally, as part of how the Fund presents itself externally in society. In turn, this can provide a foundation for fostering public financial institutional collaboration to tackle the global challenge of accelerating climate change (see below).

Importantly, public ownership provides a potential alternative to private finance, which has tended to take a more financialised and profit-oriented approach to financing climate change mitigation projects, which can undermine its capacity to drive innovative and transformative climate solutions (Mazzucato 2015; EPSC 2017). The drive for returns can manifest in climate actions problems such as greenwashing. Public ownership in itself does not guarantee an alternative, but it does provide an enabling environment for the Climate Fund to take a more focused and proactive approach that does not place profits before people and planet. Democratic, transparent and accountable governing practices can help ensure public purpose continues to meaningfully guide Climate Fund operations (Mazzucato and Ryan-Collins 2019; Marois 2021).

Maximising the Climate Fund's mission and impact-orientation

The Climate Fund's orientation towards generating climate impact is strongly represented within the Strategy and its institutional mission. The Fund was established to help Finland achieve carbon neutrality (3). The Strategy provides a clear statement on this: 'The mission of the Climate Fund is thematically defined as combating climate change, boosting low-carbon industry and promoting digitalisation. Instead of maximising returns, the company seeks to maximise societal impact in line with its mission' (4; 9). Therein, the Climate Fund aims to decrease Finland's carbon footprint, strengthen its carbon handprint, and promote innovative climate solutions and digital solutions (3).

To this end, the Strategy sets out a series of funding preconditions related to climate impact (*4-5*). The Strategy aligns the Climate Fund with the principle of 'do no significant harm' to any of the six environmental objectives of the EU's sustainable investment framework (notably climate change mitigation; climate change adaptation; sustainable use and protection of water and marine resources; transition to a circular economy; pollution prevention and control; and protection and restoration of biodiversity and ecosystems).

The pre-conditions provide a firm 'floor' for subsequent climate-oriented investment decisions. Based on this, the Climate Fund is to prioritise and select investments based on impact. The Climate Fund's funding criteria specifies two core impacts: 1) emission reductions or 2) productivity potential and/or business potential (2). The Strategy also notes the Climate Fund's general impact criteria, which include emission reduction potential; productivity potential; alignment with the EU taxonomy; and business potential, productivity benefits and added value (5-6). The Strategy also refers to seeking 'societal impact' from time to time (7).

Notwithstanding the strength of putting climate impact as a forceful pre-condition, two considerations can be raised. First, the Climate Fund may wish to include explicit wording in the pre-conditions specifying that investments 'must' contribute positively to climate change mitigation, emissions reductions, biodiversity or environmental sustainability. It may not be the case for the Climate Fund, but where climate finance strategies elsewhere have allowed flexibility between productivity and climate gains, productivity and/or economic growth benefits can outweigh climate gains (see, for example, Nordic Investment Bank reporting, NIB 2021 and 2021b; Marois 2021). Wording that emphasises an explicit positive climate requirement can complement the pre-condition's existing EU phrasing of 'do no significant harm', which offers a band of interpretation and does not explicitly require that investments positively benefit the environment.

Second, the Climate Fund may consider adding wording that offers a vision of how it connects, conceptually and in terms of causality, its climate impacts to societal impacts. This is an under-developed feature of the finance industry in general and an area where the Fund can exert leadership. How does the Climate Fund understand these relationships? There may be an opportunity to explore other public financial institutions with explicit 'social' missions, like the Council of Europe Development Bank. Specifying the societal purpose of its climate mission can help to bolster the Climate Fund's long-term institutional credibility within Finnish society.

Targets and ways of financing

The Climate Fund's Board of Directors has decided to initially focus funding operations on 1) scaling up the deployment of climate solutions and 2) platforms enabling emissions reduction (10). The first focus targets companies that are looking to expand commercial activities, that meet the preconditions and that show promise to generate significant climate impact. The second focus targets entities looking for funding for 'shared testing or piloting infrastructure for emission reductions, carbon binding or climate solutions, or digital platforms that promote the use of data for reducing emissions' (10). The Climate Fund aims to dedicate about 65 per cent of investments to climate change and about 35 per cent to digitalisation, all of which is fundamentally shaped by its climate mission (9). Therein, the Climate Fund 'does not specify the types of projects or companies it invests in any more precisely than set out in its funding criteria and categories' and it does not 'decide

in advance which technologies or specific climate solutions it will fund and by how much,' Instead, it focuses on its funding criteria and categories (7).

It is a strength of the Strategy that its focus for funding is guided by a clear climate challenge. Importantly, funding is not oriented towards picking specific types of industrial 'winners' or towards focusing on a specific economic sector for growth. This allows for flexibility and can help to avoid institutional or mission capture by any particular business, industry or sector in ways that might undermine the Climate Fund's public purpose and climate impact ambitions. It is likewise understood that funding is not constrained by a client's ownership, with financing being open to public and private entities capable of delivering climate impact.

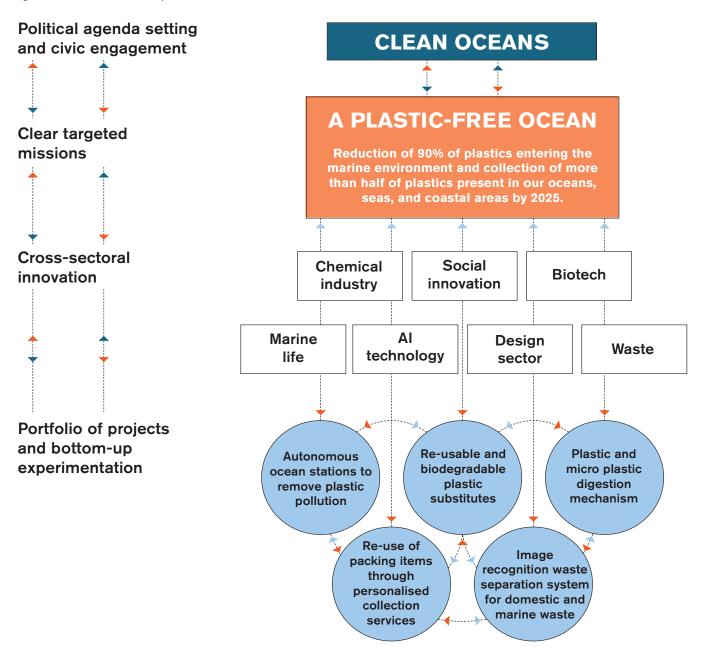
The Climate Fund may benefit from exploring options around specific mission-oriented investment strategies that direct funding within the larger grand challenge of climate change mitigation. Climate missions would not alter the broad climate directive given to the Climate Fund, but they might help to identify and target priorities, and assist in maximising impact. For example, the Climate Fund already takes into consideration the broad operating environment in its investment targets, as illustrated by the 'Operating environment analysis process'. A missions approach could assist in synthesising influences from global to sectoral levels and help to feed that information into a climate strategy aimed at confronting societally relevant missions that confront the challenge of climate change. Missionoriented policy focuses on problem-specific societal challenges, aiming to draw in many different sectors and actors in seeking a resolution. The problem-oriented mission approach represents a wide range of projects and technologies that as a whole encourages new types of collaborations between public and private actors to solve the problems in ways that have more potential for spill overs than via a sectoral approach to funding (Mazzucato 2019; Mazzucato and Dibb 2019; Mazzucato and Mikheeva 2020, 22). A missions example on plastic-free oceans (Figure 1), taken from a report on the EIB report, helps to illustrate the point.

In a missions framework, a 'grand challenge' is defined as 'a difficult but important, systemic and society-wide problem with no 'silver bullet' solution'. A 'mission' is defined as 'a concrete target, an achievable step towards a grand challenge that contextualises projects'. Therein, a 'project' specifies 'a single, isolated, clearly defined innovation activity with risky or uncertain outcomes' (Mazzucato and Mikheeva 2020, 17).

There is the potential added benefit that defining a mission-oriented framework within the Climate Fund may assist the Fund in its strategy of leveraging EU resources and seeking out collaborative European Investment Bank (EIB) funding (14). Given EU commitments to a climateneutral continent and the EIB Climate Bank Roadmap 2021-2025 strategy in support of the European Green Deal, there is increased scope for collaboration. Therein, the European Commission (EC) has begun working with mission-oriented innovation to confront societal challenges, including climate change [see reports published by the Commission on Mission-Oriented Policy (Mazzucato 2018b) and Governance of Missions (Mazzucato 2019)]. In the case of the EIB, one of the main recommendations is that climate missions 'require patient, long-term finance, but also finance that is willing to take on higher risks' (Mazzucato and Mikheeva 2020, 15). The Climate Fund is well-positioned on this front.

Figure 1: The EIB and a plastic-free oceans mission

In time, the Climate Fund's ways of funding will include equity financing, debt financing and mezzanine funding. In the early stages, however, the Climate Fund Strategy notes that it will focus on capital loans to a maximum of 50 per cent of total funding. There may be scope here to develop collaborative partnerships with other public financial institutions to co-finance high-impact climate projects (see below). The Climate Fund Strategy notes that it may also establish and contribute to special investment funds (*12*). So long as rigorous climate conditionalities can be attached to these funds to give them a clear climate directionality, this can be a useful way to leverage existing resources.



Source: Mazzucato and Mikheeva 2020, 22.

Presently, the Climate Fund Strategy states that it will not participate in projects deemed as state aid, and this limits the use of grants and other subsidised support to fund planning or project demonstration work. This may be an area to revisit in the future, as subsidised support can play an important role in supporting innovation. Similarly, the Strategy specifies that the Climate Fund can 'take the role of owner for the duration of the investment'. While this may not be an immediate term priority, the equity option can open opportunities for the Fund to share in the rewards of climate investments, not just the risks, in ways that can support climate impact objectives. Additionally, the Strategy's funding target for 'climate solutions' is worded in terms of being geared towards the private sector, while funding for 'platforms' is worded as being more open to public and private sectors. The Climate Fund may wish to support and foster high-impact public sector climate solutions as part of its Strategy.



Source: Finnish Climate Fund

The Climate Fund is required to be financially sustainable and self-sustaining. The Strategy suggests that this will be assessed over time and without the pressure of responding to quarterly shareholder demands: 'when assessed as a whole, its investments and funding must be self-supporting in the long term' (3-4; 12;16). This should enable the Climate Fund to prioritise climate impacts by offering patient finance across a portfolio of investments without having to respond to short-term financial return pressures. The Climate Fund's public purpose is a key element of this distinctive public purpose funding strategy. It is worth noting that in the long-term the Climate Fund's Board aims for investments to break even (that is, to achieve a 100 per cent rate of return over time). However, the Strategy singles out the financial risk entailed in the Fund's income revenue derived from its 8.3 per cent stake in Neste (a Finnish state-owned oil company). To the extent that this income stream might hinder the Climate Fund's ability to deliver patient, long-term and stable climate finance impact, the Board may consider ways of mitigating the risks of this revenue stream through diversification.

Scope for coordination, planning and cooperation

The Strategy offers scope for the Climate Fund to play a pioneering role as a committed agent of change, externally and internally, by developing coordination, planning and cooperation capacities directed towards realising highimpact climate financing (cf. Mazzucato and Mikheeva 2020). Realising these capacities could provide important demonstration effects within the quickly evolving climate finance sector. Publicly-owned financial institutions, like the Fund, are uniquely placed to assume the lead transformative roles needed to tackle grand societal challenges like climate change and decarbonisation (and including COVID-19) (Mazzucato and Penna 2016; McDonald et al. 2020; Marois 2021).

Externally, the Climate Fund can build on its status as a public institution and on its funding strategy to seek out partnerships with the EIB to work strategically with other peer financial institutions nationally, regionally and across the EU. Nationally, the Climate Fund can explore cooperative partnerships and climate expertise-building relationships with other national financial actors, such as MuniFin, Finnvera and Finnfund. Regionally, there is scope to forge coordination, planning and cooperative relationships in terms of financial leveraging and expertisebuilding. This could encompass coordination and planning relationships with the Nordic Investment Bank and with similar climate funds, such as the Danish Green Investment Fund, the Dutch Invest-NL and so on. The Climate Fund could take a lead demonstration role by including in its Strategy an obligation to foster public financial institution collaborations, taking a role in devising the most innovative and cooperative climate financing strategies globally. In doing so, this too would help develop the Climate Fund's brand nationally, regionally and internationally as a preeminent climate financier. There is an enormous public and private sector appetite to make progress on climate finance in ways that eliminate greenwashing approaches and foster substantive transformation. Public-led coordination, planning and cooperation is one way to foster that kind of transformational potential.

There is also scope for the Climate Fund to ensure internal institutional synergies. The Climate Fund Strategy specifies that the 'operating model has been designed to generate the societal impact specified in its operational guidelines as efficiently as possible' (6). To do so the Climate Fund is institutionally divided four functions (15): 1) investments, 2) customer and deal flow, 3) communications and 4) finance and administration. This is an expected operating structure. However, as the Climate Fund expands operations and becomes an increasingly complex and busy organisation, it will be vital that mechanisms and procedures are in place from an early stage to ensure that Climate Fund financing decisions do not become siloed according to pre-established institutional functions. In other words, what internal forums can be put in place to develop a culture of knowledge sharing, co-creation of knowledge and collective risk-taking within the Climate Fund wherein the best inputs from staff across the organisation can be expressed and heard (cf. Kattel and Mazzucato 2018)? As a nascent institution, there is an opportunity to craft an organisational culture of intra-institutional collaboration and understanding. Developing such inclusive forums within the Climate Fund could help to facilitate similar opportunities with other public financial institutions within the region, where promising climate finance practices can be shared and supported collaboratively.

The importance of monitoring and conditionalities

A strength of the Climate Fund Strategy is that it provides for monitoring throughout the life of the project to guide directionality and to ensure funding impact (8). The Strategy specifies that the terms of the investment are also often tied to the realisation or verification of the soughtafter impact. The Climate Fund's ability to set conditions on investments and link disbursements to climate-related indicators and impacts is a powerful direction-setting lever for the Fund.

plt is worth highlighting that monitoring should move beyond retrospective data collection and analysis. To help maximise its climate finance impacts and to support market shaping directionality, monitoring and evaluation should be present from the start of the funding process and ongoing, and thus able to provide dynamic feedback to the Climate Fund. By making monitoring part of the funding process and project expectations, this should minimise the burden of data collection and avoid the problems associated with reporting after the fact (and once nothing can be done to change direction) (cf. Mazzucato et al. 2020, 40).

There are two further points that the Climate Fund might wish to consider. First, on monitoring, the Fund may wish to develop in-house capacity and expertise that is capable of monitoring investments and impacts. While this would not necessarily exclude external support, amassing internal capacity should augment the Fund's ability to judge investments across the entire decision timeline, from inception to completion. The lack of in-house capacity, by contrast, could present a barrier to the Fund's ability to make long-term and strategic investment decisions (cf. Mikheeva 2019). Having internal capacity supports continuous learning that can stretch beyond the immediate financing of specific projects and promote innovation, as well as collaboration among peer institutions (cf. Mazzucato and Mikheeva 2020, 25-26). This can include providing expert public financial sector inputs to wider government climate strategies as a matter of the Climate Fund's public purpose. From sub-national public financial

institutions in North Dakota and Alberta to national ones in France, Germany, India, China and so on, this has been an important and time-tested public purpose function (Anielski and Ascah 2018; Griffith-Jones and Ocampo 2018; Marois 2021).

Second, on conditionalities, the Fund may need to explore and experiment with different types of performance incentives on top of the baseline funding conditions. For example, in cases where the funded project exceeds its climate impact projections, the Fund can provide rewards in the form of interest rate rebates, financial benefits or other non-financial incentives. In terms of nonfinancial incentives, for example, the Climate Fund could develop a 'stamp of excellence' that could emerge as an industry standard or mark of climate impact superiority or excellence, which in turn has value to clients in the market. This has been done by the KfW in Germany and the Nordic Investment Bank (Marois 2017 and 2021). In terms of financial incentives, historically public financial institutions have exercised such 'duty losses' to encourage structural economic and social transformation more rapidly than would otherwise be possible (Marois and Güngen 2016). The costs incurred should not be seen as a barrier. Vitally, however, any costs incurred for impact-oriented performance incentives, to the extent they create losses, need to be covered by government transfers so as to not undermine the financial sustainability of the Fund. This approach may be hampered by EU state aid limitations. As regards the urgent challenge of climate change, the Fund and its owners may consider lobbying the European Union or working with the European Association of Public Banks to alter state aid limits relative to climate investments.

Concluding observations

The Climate Fund emerges at a time when it is not only necessary that it takes concerted action towards confronting climate change, but also when public opinion and economic thinking are aligned with public financial institutions doing so. This is reflected in an increasingly positive worldview towards the catalytic potential of public financial institutions that has emerged since the 2008-09 global financial crisis and, notably, since the 2015 Paris Agreement. Patient public financing provided in accordance with public purpose can prove to be the difference between reaching global climate targets and missing them. In this, public climate funds and financial institutions must be prepared to take bold action, ensuring that the funds employed reduce carbon emissions and protect against further environmental degradation. However, green transitions must also be socially just in order to preserve their credibility and vitality. New green jobs must be created that provide decent livings for people and equitable opportunities for all. To fail on the social equity side is to risk our collective ability to deliver on climate action. As such, the Climate Fund's Strategy may

consider developing its approach to social impact by linking climate action to just transitions in ways that promise to reduce existing social- and gender-based inequalities. Such forward-looking climate planning and bold societal aspirations can place the Finnish Climate Fund at the forefront of innovative public purpose financial institutions in global efforts to reverse climate change.

About this brief

This work is the product of an IIPP consultancy to review and support the Finnish Climate Fund Strategy, awarded in July 2021. The Finnish Climate Fund (Ilmastorahasto) website can be accessed at <u>www.ilmastorahasto.fi/</u><u>en/.</u> This policy brief is based exclusively on the original content of the opinion delivered to the Finnish Climate Fund in August 2020. It refers to the 1 April 2021 version of the Finnish Climate Fund Strategy. The content of the opinion and this brief benefitted from wider IIPP support. I would like to acknowledge the contributions to its framing from Rainer Kattel, Deputy Director of IIPP, Josh Ryan-Collins, Head of Finance and Macroeconomics, and Olga Mikheeva, Research Fellow in Public Banking. This policy brief is published with the consent of the Finnish Climate Fund.

References

Anielski, M. and Ascah, B. (2018). *Alberta's Public Bank: How ATB Can Help Shape the New Economy.* University of Alberta, Edmonton, Canada: Parkland Institute. Available from: <u>https://www.parklandinstitute.ca/</u> <u>albertas_public_bank.</u>

European Political Strategy Centre (2017). *Financing sustainability: Triggering investments for the clean economy.* EPSC Strategic Notes, Issue 25, 8 June 2017. Brussels: European Political Strategy Centre, European Commission. Available from: <u>https://gsgii.org/wp-content/</u> <u>uploads/2017/10/strategic_note_issue_25.pdf</u>

Griffith-Jones, S. and Ocampo, J.A. eds. (2018). *The Future of National Development Banks*. Oxford University Press.

Kattel, R. and Mazzucato, M. (2018). Mission-oriented innovation policy and dynamic capabilities in the public sector. *Industrial and Corporate Change*, 27(5): 787-801.

Marois, T. (2017). *How public banks can help finance a green and just energy transformation*. Amsterdam: TNI. Available from: <u>https://www.tni.org/en/publication/how-public-banks-can-help-finance-a-green-and-just-energy-transformation</u>

Marois, T. (2021). *Public Banks: Decarbonisation, Definancialisation, and Democratisation.* Cambridge University Press.

Marois, T. (2021b). A dynamic theory of public banks (and why it matters). *Review of Political Economy*. Available from: <u>https://doi.org/10.1080/09538259.2021.1898110</u>

Marois, T. and Güngen, A.R. (2016). Credibility and class in the evolution of Turkey's public banks. *Journal of Peasant Studies*, 43(6): 1285-1309.

Mazzucato, M. (2015) [2013]. *The Entrepreneurial State.* Revised edn. London: Anthem Press.

Mazzucato, M. (2018). *Mission-oriented innovation policies: challenges and opportunities*. Industrial and Corporate Change, 27(5): 803–815, <u>https://doi.org/10.1093/icc/dty034</u>

Mazzucato, M. (2018b). *Mission-oriented research and innovation in the European Union*. Report for the European Commission. Available from: <u>https://ec.europa.</u> <u>eu/info/sites/info/files/mazzucato_report_2018.pdf</u>

Mazzucato, M. (2019). *Governing missions in the European Union.* Report for the European Commission.

Available from: <u>https://ec.europa.eu/info/sites/info/files/</u> research_and_innovation/contact/documents/ec_rtd_ mazzucato-report-issue2_072019.pdf

Mazzucato, M. (2021). *Mission Economy: A Moonshot Guide to Changing Capitalism.* London: Penguin.

Mazzucato, M., Conway, R., Mazzoli, E., Knoll, E and Albala, S. (2020). *Creating and measuring dynamic public value at the BBC*. UCL Institute for Innovation and Public Purpose, Policy Report (2020-19).

Mazzucato, M. and Dibb, G. (2019). *Missions: A beginner's guide.* UCL Institute for Innovation and Public Purpose, Policy Brief Series (IIPP PB 09). Available from <u>https://www.ucl.ac.uk/bartlett/public-purpose/</u>publications/2019/dec/missions-beginners-guide_

Mazzucato, M. and Mikheeva, O. (2020). *The EIB and the new EU missions framework: Opportunities and lessons from the EIB's advisory support to the circular economy.* UCL Institute for Innovation and Public Purpose Policy Report (2020-17). Available from: <u>https://www.ucl.ac.uk/</u> <u>bartlett/public-purpose/publications/2020/nov/eib-andnew-eu-missions-framework</u>

Mazzucato, M. and Penna, C.C.R. (2016). Beyond market failures: The market creating and shaping roles of state investment banks. *Journal of Economic Policy Reform*, 19(4): 305-326.

Mazzucato, M. and Ryan-Collins, J. (2019). *Putting value creation back into 'public value': From market fixing to market shaping.* UCL Institute for Innovation and Public Purpose, Working Paper Series (IIPP WP 2019-05). Available from: <u>https://www.ucl.ac.uk/bartlett/public-purpose/wp2019-05</u>

McDonald, D.A., Marois, T. and Barrowclough, D.V. eds. (2021). *Public Banks and COVID-19: Combatting the Pandemic with Public Finance*. Municipal Services Project (Kingston), UNCTAD (Geneva) and Eurodad (Brussels). Available from: <u>https://publicbankscovid19.</u> <u>org/index.php/publications</u>

Mikheeva, O. (2019). 'Financing of innovation: National development banks in newly industrialized countries of East Asia.' *Journal of Post Keynesian Economics*, 42 (4): 590-619.

Nordic Investment Bank (2021). *Financial Report 2020.* Helsinki, Finland: Nordic Investment Bank.

Nordic IB (2021b). *Impact Report 2020*. Helsinki, Finland: Nordic Investment Bank.

The UCL Institute for Innovation and Public Purpose (IIPP) is a department within University College London (UCL) - founded in 1826 to solve grand challenges - and part of The Bartlett faculty, known internationally for its radical thinking about space, design and sustainability. We apply our critical thinking to research and thought leadership; teaching and training; influencing public policy; and engaging the broader public.



UCL Institute for Innovation and Public Purpose 11 Montague Street, London, WC1B 5BP

> @IIPP_UCL ucl.ac.uk/IIPP