

Institute for Public Policy Research



GROWING GREEN

**A PROPOSAL FOR A NATIONAL
INVESTMENT FUND**

**Simone Gasperin and
George Dibb**

August 2023

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SUMMARY

Achieving green growth is one of the most important economic opportunities of the 21st century and also among the greatest challenges. If the UK gets this right it could deliver a boost in its long-term economic growth, creating new highly skilled jobs and helping to reduce regional inequalities. But in the global green race to reap the benefits of the transition to a net zero economy, the UK is at severe risk of being left behind.

While other countries recognise the need for green investment and industrial policy, the UK government is sitting on the sidelines. In the US, the passage of the Inflation Reduction Act, CHIPS and Science Act, and the Infrastructure Investment and Jobs Act, two of which were passed on a bipartisan basis, mark a significant departure in American economic policy. Meanwhile, the EU seeks to respond in kind with its recently announced Green Deal Industrial Plan.

If the UK is to realise the significant benefits that the transition to net zero offers and accelerate its pathway to reduce emissions, then a green industrial strategy that is centred on investment will be crucial. As previous IPPR research has shown, such an approach can deliver prosperity, help level up, reduce emissions and restore nature.

This report recognises that any successful implementation of a UK green industrial strategy will require a coordinated set of policy instruments, particularly those providing financing for investments in net zero economic activities. To that purpose, this report proposes the establishment of a **national investment fund** (NIF).

The national investment fund proposed by IPPR has 10 key features.

1. **It should operate alongside existing policy tools** including state investment banks (UKIB, BBB, SNIB) and state grants to crowd-in additional private financing for capital expenditure on investment projects that would not otherwise be made.
2. **It would provide equity and equity-like (convertible loans) financing** to companies willing to expand production in green manufacturing activities and to decarbonise heavy industry processes. This would be entirely consistent with and permitted under the current Subsidy Control Regime.
3. **The NIF's financing operations should primarily have a place-based, industrial policy aim**, tilting the cost balance of investment projects and providing strategic signalling to private investors. At the same time, the joint-ventures with private players would ensure the long-term economic viability of the investment projects. **Funding would aim to reduce regional economic inequalities** preferencing investment projects in places in need of 'levelling up'.
4. Through its equity financing operations, **the NIF would become a holding organisation with minority stakes** in a broad range of companies. This would allow it to spread risk across its diversified portfolio. Even more importantly, the NIF could play the role of an 'enlightened' shareholder, influencing the governance of its invested companies, also through the appointment of representatives in the boards of directors.
5. **The NIF should encourage the companies it owns a stake in to reinvest profits rather than extracting value** in the form of dividend payments. Moreover, the holding formula would allow the NIF a coordinating role in promoting partnerships and potential technological-industrial synergies among the invested companies.

6. **The NIF should be created as a new public body to maximise its sense of purpose** (though it could be established by transforming the existing UKIB), with initial capitalisation coming from the Treasury or from UKIB's allocated resources. The NIF should be a non-departmental public body supervised by the Treasury and by the Department for Energy Security and Net Zero. It should be an autonomous public organisation with the capacity of hiring employees through private contracts.
7. **There should be an automatic recapitalisation mechanism that channels resources from the fossil fuel sector into the NIF** (such as from North Sea revenues or from levies on dividend buybacks made by British oil and gas companies). In this way, the NIF could transform the economic rents of fossil fuel activities into productive investments in a future green economy. The NIF would also have internal sources of recapitalisations, namely lump-sum dividend payments and capital gains from the divestiture of its equity assets.
8. **The NIF would have an autonomous management composed of experts on net zero technologies**, including from nations, regions, and cities of the UK. It should have a solid technical supporting structure with regional branches across UK regions responsible for supervising the implementations of the investment projects and for informing central decision-making.
9. **NIF employees should have knowledge of financial, but especially industrial and technological issues** relating to the net zero transition. A stakeholder council – representing various economic, social, and geographic interests – would support the NIF's executive board and technical structure with ideas and proposals.
10. **The NIF would operate under formal transparency and accountability rules, reporting annually to ministers and Parliament.** The evaluation of the NIF's operations should be based on metrics reflecting the real socio-economic returns in terms of regional rebalances, decarbonisation, job creation, reshoring of supply-chain segments, technology development and others.

Properly planned, funded, and staffed, the national investment fund would become an essential instrument for a green industrial strategy targeted on delivering energy security, a technologically competitive zero-carbon economy and regional prosperity.

1. BOOSTING INVESTMENT IN GREEN MANUFACTURING ACROSS THE UK

The Climate Change Committee (2023) has recognised that the transition to net zero emissions represents a challenge but also a unique opportunity for the UK economy. By manufacturing goods and providing services needed for the net zero transition domestically, the UK can capture the economic “upside” of the transition, creating jobs and prosperity. Alternatively, the technologies that the UK needs to realise a net zero economy could be developed elsewhere, but this might come at a slower pace and with higher long-term economic and social costs.

For example, being dependent on imported ‘green technologies’ might reduce the speed of adoption in the UK if global production does not match the growing demand (IEA 2022a). The cost of not developing domestic manufacturing and related service activities in wind, solar, batteries and other net zero technologies could further harm the UK’s balance of payments. It would also be a missed opportunity for generating real economic value and qualified jobs across the country.

At the same time, traditional heavy industries – such as steel, glass, ceramic, cement, paper, and others – might vanish from the UK altogether if their production processes are not adequately restructured (IEA 2022b), putting at risk jobs, technological capabilities, and incomes in relatively more deprived economic areas.

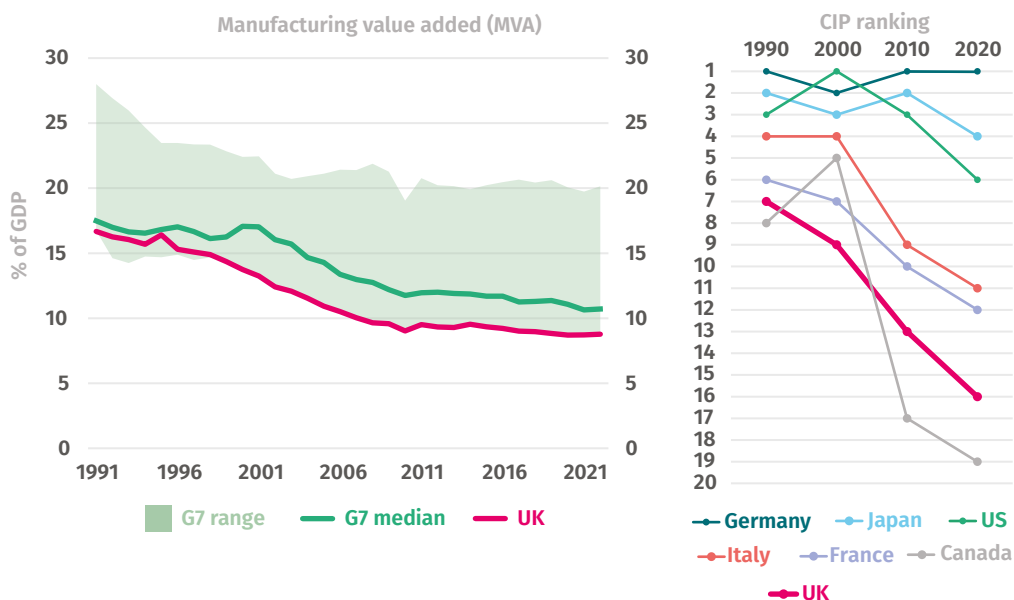
By contrast, the transition to a net zero system could foster a structural change in the UK economy. This would require moving away from the specialisation model adopted in the past three decades, which is now displaying all its intrinsic limits. The 2007-08 financial crisis and the consequences of Brexit have severely damaged the London-focussed specialisation in financial services (Dolphin 2012; Blakeley 2021), which had previously substituted the manufacturing sector as a driver of economic growth in the UK.

Manufacturing made a significant contribution to Britain becoming the leading global economy in the 19th century, its exports of manufactured goods accounted for about 40 per cent of the world’s total well into the 1870s (Owen 1999). Up until the mid-1950s, the UK remained the world’s second largest manufacturing exporting country – behind the US. In subsequent decades, the UK began experiencing a relative erosion of its manufacturing base, so much so that the term ‘de-industrialisation’ was first introduced in the late 1970s to describe the British case (Singh 1977).

However, in the early 1970s, the share of manufacturing value added over national GDP in the UK was still the second highest among industrialised countries (over 35 per cent). It was only during the 1980s that the UK manufacturing sector started to decline significantly, impacting its international competitiveness – as illustrated by the negative manufacturing trade balance since 1983 (Rowthorn and Coutts 2013).

FIGURE 1.1: THE DECLINE OF UK MANUFACTURING IN THE PAST THREE DECADES

Left: Share of manufacturing value added as a percentage of GDP in the UK compared to G7 countries, 1991–21. Right: Competitive Industrial Performance (CIP) ranking of UK manufacturing compared to G7 countries (1990, 2000, 2010, 2020)



Source: Authors' analysis of UNIDO data

By the early 1990s, the UK's share of manufacturing value added over GDP was the second lowest among G7 nations. It became the lowest in 1998 and fell below the 10 per cent threshold in 2007 (figure 1.1, left). Whereas in 1990 the UK manufacturing sector was still ranking 7th in the Competitive Industrial Performance Index (CIP) compiled by UNIDO, in 2020 it receded to the 16th position, a deterioration in the overall competitiveness second only to Canada (figure 1.1, right).

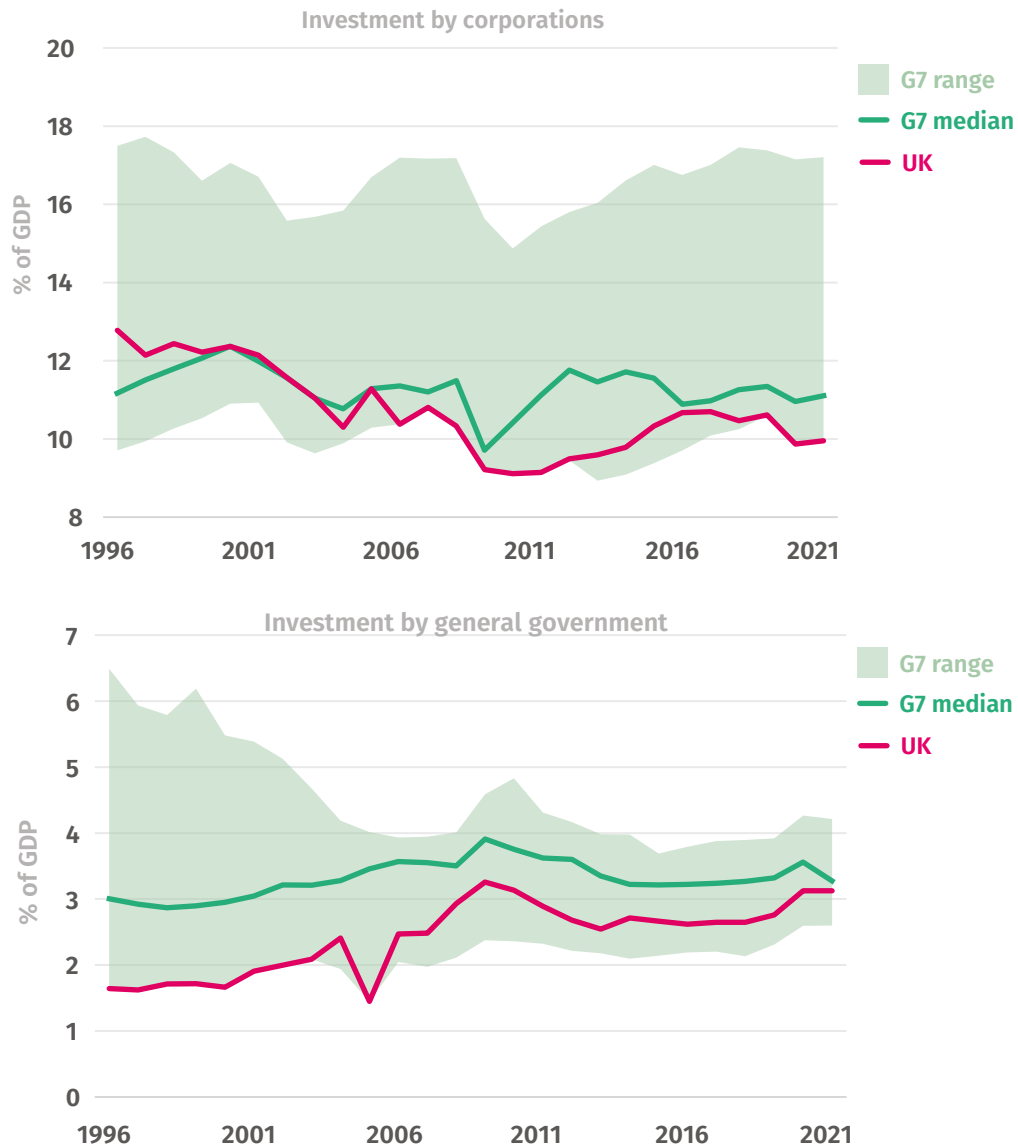
This is not good news for the future of the UK economy. International research shows that manufacturing is still a major driver of positive economic performance (Andreoni and Gregory 2013), driving innovation and providing a stable and geographically distributed source of qualified and well-paid jobs. This is partly due to the relatively higher intensity of capital expenditure and R&D expenditure¹ of the manufacturing sector.

At the same time, manufacturing and investment produce a feedback loop. In fact, a cause of the decline in UK manufacturing can be found in the comparatively lower level of investment in the economy (Dibb and Murphy 2023; Brandily et al 2023). Investment by UK corporations relative to GDP has decreased by almost 3 percentage points over the past 25 years (figure 1.2, left). It has also been significantly lower than the G7 average – the lowest for most of this period – and consistently among the lowest in the OECD. The decline in business investment has only marginally been compensated by a slight increase in government investment (1.5 percentage points relative to GDP), which has nonetheless remained below the G7 median over the period 1996–2020 (figure 1.2, bottom).

1 In 2021, the manufacturing sector accounted for 8.8 per cent of the UK value added but for 16.3 per cent of total business investment (ONS data). In 2019, the manufacturing sector accounted for 36.9 per cent of total business enterprise R&D (OECD data).

FIGURE 1.2: UK INVESTMENT HAS BEEN AMONG THE LOWEST IN G7 COUNTRIES

Top: Gross fixed capital formation by corporations (private and public) as a percentage of GDP, 1996–21. Bottom: Gross fixed capital formation by general government (central and local) as a percentage of GDP, 1996–21



Source: Authors' elaboration on OECD data

The vicious circle between de-industrialisation and low levels of investments translates into greater regional disparities. The loss of manufacturing capacity and related investments outside the main metropolitan areas have increased the economic gap between the south of England (London above all) and other areas of the UK. While the difference among ITL1 areas² is already quite significant – GDP per capita³ in the north east of England is around 68 per cent relative to the south east

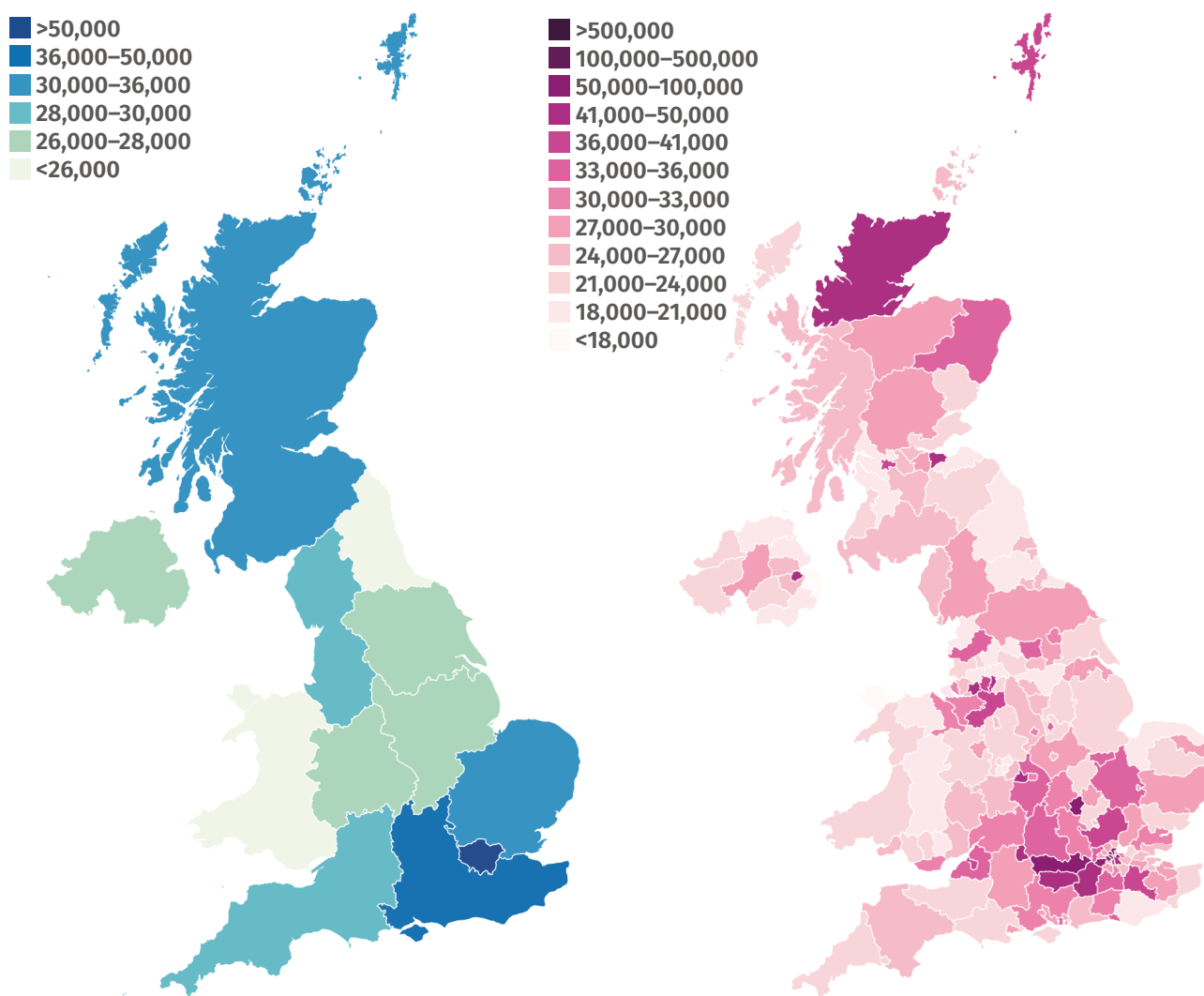
2 The ONS classifies 12 ITL1 areas: North East, North West, Yorkshire and the Humber, East Midlands, West Midlands, east of England, London, South East, South West, Wales, Northern Ireland, Scotland.

3 In 2021, ONS figures.

of England – territorial imbalances are even more considerable at a smaller level of regional classification, such as with the ITL3 areas⁴ (figure 1.3).

FIGURE 1.3: UK REGIONAL DISPARITIES ARE MORE SIGNIFICANT AT A LOWER LEVEL OF AGGREGATION

Left: GDP per capita at the ITL1 level of aggregation, 2021. Right: GDP per capita at the ITL3 level of aggregation



Source: Authors' analysis of ONS data

In GDP per capita terms,⁵ some ITL3 areas in the South of England (for example, most London councils, Berkshire, West Surrey, Oxfordshire, West Kent) are more than twice as affluent as corresponding ones in the North East of England (eg South Teesside), but also in Scotland (eg Ayrshire), Wales (eg Powys), Northern Ireland (eg Ards and North Down) and in other parts of England too (eg Dudley in the Midlands or Torbay in Devon). Regional disparities appear significant also

4 The ONS classifies 179 ITL3 areas: counties and groups of unitary authorities in England; combinations of council areas, local enterprise companies (LECs) and parts thereof in Scotland; groups of unitary authorities in Wales; local government districts in Northern Ireland.

5 In 2021, ONS figures.

in relation to labour market conditions. For instance, the unemployment rate in 2021⁶ was almost three times higher in South Teesside (7.5 per cent) than in Oxfordshire (2.8 per cent).

The UK economy needs to address its three malaises of de-industrialisation, low levels of investment, and regional disparities. The ultimate challenge to achieve a net zero economy offers enormous opportunities for the UK to confront these issues and to upgrade its economic specialisation by pursuing a green industrial ‘renaissance’.

An inclusive and sustainable re-industrialisation of the British economy can only be achieved through additional strategic investment targeted at green manufacturing activities in more disadvantaged areas of the country. Global economic competitors – such as the US, EU countries, and East Asian economies – have already outlined investment strategies and committed public resources towards building domestic capabilities along the supply chains of green manufacturing activities (Murphy 2023; Gasperin 2023).

It is time for the UK to mobilise public and private funding sources to achieve a comprehensive transition towards a net zero economy. This report proposes the establishment of a UK national investment fund (NIF) dedicated to that purpose. The NIF should become one of the key funding and coordinating tools for a UK green industrial strategy aimed at developing key net zero technologies, creating ‘green jobs’ and building resilient manufacturing capabilities across the entire country.

6 ONS figures.

2. THE ORIGINALITY OF THE NATIONAL INVESTMENT FUND

In most countries – including the UK – the state is an active investor through a variety of public financing institutions such as sovereign wealth funds, state investment banks, and grant funding schemes. The ultimate destination of their financing activities include financial funds, banks, non-financial corporations, investment projects and R&D programmes. The policy aims of these financing activities vary depending on whether they are established to meet domestic industrial policy objectives or – alternatively – the maximisation of financial returns (figure 2.1).

This chapter conceptualises existing public financing institutions (including in the UK), by looking at two different variables: how targeted the finance provided is and the specific policy aims in doing so. We argue that a national investment fund providing targeted equity (or equity-like) financing with specific industrial policy aims would fill a fundamental gap in the UK ecosystem of public financing institutions.

2.1. SOVEREIGN WEALTH FUNDS

The rise of sovereign wealth funds (SWFs) is a relatively recent phenomenon (Clark et al 2013), paralleling the opening of capital markets and the financial globalisation that took off after the 1980s (Glyn 2007). A general institutional framework for SWFs was codified in 2008 with the so-called ‘Santiago Principles’, as agreed by the International Working Group of Sovereign Wealth Funds, a network of 26 IMF member countries with SWFs.

The ultimate and distinguishing aim of SWFs is to maximise the long-term returns of a country’s global investments for future current expenditure requirements. The operational logic is first and foremost financial and only partially focussed on domestic assets. SWFs typically invest abroad in stocks and bonds of listed companies, but also real estate, commodities, cash, and other assets that could generate monetary returns.

The initial ‘wealth’ can derive from accumulated foreign exchange reserves, as in the case of China Investment Corporation (CIC). Alternatively, SWFs can be gradually built by accumulating receipts from oil and gas exploration, which contribute to their initial capital endowment and to recurrent recapitalisations – most notably in the case of the Government Pension Fund of Norway. In other cases, the initial capital endowment is provided by the transfer or sale of state-owned assets, as happened with Temasek (Singapore) and Bpifrance (France).

This points to the heterogeneity of sovereign wealth funds, further reinforced by the plurality⁷ of mandates, related to the different utilisation of their annual

⁷ As noted by Andrew Rozanov (2008) – who first coined the term ‘sovereign wealth fund’ – SWFs “differ in size, age, structure, funding sources, governance, policy objectives, risk/return profiles, investment horizons, eligible asset classes and instruments, not to mention levels of transparency and accessibility”.

profits. The destination of public wealth generated by SWFs takes different forms (Al-Hassan et al 2013). SWFs can operate as countercyclical stabilisation funds, helping to smooth commodity price volatility and external shocks on the exchange rate (for example, the Mexican Fondo Mexicano del Petróleo). They can represent saving funds, sharing wealth across generations by transforming currently available fossil fuel revenues from oil and gas into financial assets that could generate returns in the future (for example, the Abu Dhabi Investment Corporation). They can be used as vehicles for reinvesting foreign reserves, to earn higher returns from them while they are still counted as such (for example, the China Investment Corporation). Finally, they can work as pension reserves funds, representing a complementary financing source for current government expenditures on pensions (such as the Norwegian Government Pension Fund Global). SWFs normally cover more than one of those ‘financial’ policy functions. The intrinsic financial nature of SWFs – namely the maximisation of returns from globally invested assets – is a very different mandate to supporting domestic industrial policies.

Despite the existence of significant fossil fuel reserves in the British North Sea, the UK did not follow the Norwegian example in establishing an SWF (Garavini 2022). In 2018, IPPR estimated that a ‘citizens’ wealth fund’ capitalising over £200 billion – established using a mix of asset sales, capital transfers, new revenue streams, a small amount of borrowing and reinvested returns – could be set up by 2030 and provide annual interest payments of £7.43 billion to UK citizens (Roberts and Lawrence 2018).

2.2. STATE GRANT FUNDING

State grants funding (SGF) differs substantially from SWFs in terms of its policy aims. In this case, public investment is channelled to promote investment projects, to support struggling but strategic companies, or to subsidise specific activities (such as R&D programmes). Such grants are reserved to enterprises operating domestically. They have a strong industrial policy aim that relates to socioeconomic objectives such as the creation or maintenance of certain productions for reasons of national security, strategic independence, development of technologies (especially net zero), or employment preservation. State grants create direct policy additionality by enabling the cost effectiveness of capital expenditure plans and research projects.

As they come in the form of one-off free transfers, no direct financial return is expected from them. Although conditionalities could be attached to state grants (as France did with its national flag carrier Air France and carmaker Renault at the beginning of the Covid pandemic), the one-off and non-commercial nature of the transfer does not imply the possibility for a continuing strategic coordination of supported companies towards achieving further industrial policy and decarbonisation objectives.

One of the most interesting cases of grant funding – specifically targeted to green manufacturing industries – is the EU innovation fund: the European funding programme for the commercial demonstration of innovative low-carbon technologies (European Commission 2022a). It is funded via receipts from the EU emissions trading system (EU ETS), amounting to an estimated EUR 38 billion available for the period 2020–30. The non-commercial nature of its grant funding operations⁸ aims to achieve the maximum degree of industrial policy impact, excluding any financial returns for the state. Innovation fund

8 The EU innovation fund awards non commercial grants to eligible EU companies seeking to develop technologies and solutions aimed at decarbonising energy-intensive industries, boosting renewable energy and energy storage (including batteries and hydrogen) and strengthening net zero manufacturing supply chains in batteries, wind and solar energy, electrolyzers, fuel cells and heat pumps.

grants are awarded to specific selected investment projects, allowing them to become cost effective. As the innovation fund co-invests with the recipients of its funding, the leveraged capital expenditures are four times bigger than the awarded grants. Notably, the EU innovation fund has contributed EUR 118 million euros (around 20 per cent of the project's total capex) to establish the largest solar PV factory in Europe at Catania in Italy (European Commission 2022b).

The UK makes extensive use of state grants. They are deployed to fund a variety of R&D and innovation projects through UKRI and its constituent bodies such as Innovate UK. Other state grants for specific investment programmes in manufacturing activities are managed by dedicated ministerial departments. For instance, in 2020 BEIS launched the offshore wind manufacturing investment scheme to provide £160 million grant funding for investments targeted on the supply chain of offshore wind manufacturing (DESNZ 2023).

2.3. STATE INVESTMENT BANKS

State investment banks (SIB) represent an intermediate instrument between the opposite poles of sovereign wealth funds and state grant funding in terms of their policy aim. Their defining function is to provide a reliable, longer-term, and lower-cost source of finance that private counterparts may be unwilling to supply due to a lack of market incentives. The economic role of state investment banks is therefore to induce the realisation of investment activities by subsidising their financing costs. State investment banks, despite supporting domestic industrial policy objectives, maintain a commercial nature and are expected to guarantee positive financial returns overall.

Some state investment banks date back to the 19th century – such as the Italian Cassa Depositi e Prestiti (CDP) and the French Caisse des Dépôts et Consignations (CDC) – while others were established in the second half of the 20th century, notably the Brazilian Banco Nacional de Desenvolvimento Econômico e Social (BNDES), the German Kreditanstalt für Wiederaufbau (KfW) or the European Investment Bank (EIB). The China Development Bank (CDB) was founded more recently – in 1994 – but it has become the world's largest state investment bank by assets.

State investment banks were introduced with a fundamentally distinct function to that of private financial intermediaries. In their constituting mandates they incorporate public policy objectives, differing across various national and historical contexts (Macfarlane and Mazzucato 2018; Griffith-Jones and Ocampo 2018). Beyond their differing specific objectives, the policy role of state investment banks has been conceptualised into four main categories (Mazzucato and Penna 2018): counter-cyclical, developmental, venture-capital, and mission-oriented.

The geographical focus of state investment banks is the domestic economy, as opposed to the often international focus of SWFs. Their preferred way of financing is through loans, but they can also deploy equity instruments and guarantees. Sometimes state investment banks operate via financial intermediaries, but most often their financing targets are non-financial corporations and specific investment projects (especially in infrastructure).

Despite several recent proposals (Skidelsky et al 2011; Dolphin and Nash 2012; Labour Party 2017; IPPR Commission on Economic Justice 2018; IPPR Environmental Justice Commission 2021), the UK has never introduced a state investment bank

on a scale that can be compared to those operating in other European countries.⁹ The Green Investment Bank, established in 2012 with a mandate to boost financing sources for the green transition, was privatised and sold to Macquarie in 2017. Moreover, following its exit from the EU, the UK has relinquished its access to EIB's lending – corresponding to an annual amount of over £5 billion in the years 2013–16 (around 0.3 per cent of UK GDP on average).

The UK Infrastructure Bank (UKIB) was launched in June 2021 as a replacement for EIB operations with a committed capital of £22 billion. The new bank has a stated sectoral focus: financing investment in green **infrastructure** projects. Investment in **manufacturing** activities is therefore outside its current remit. UKIB defines itself as a 'policy bank' with 'additionality' as a central operating principle for its financing operations (UKIB 2022). At the same time, in January 2023 the Public Accounts Committee has reported how UKIB's operations have had a limited direct impact so far, given that its 10 deals (valued £1.1 billion) were executed by other intermediaries – loans to public authorities were extended through the Public Works Loan Board and equity financing to the private sector was provided via private financial funds (House of Commons 2023).

With the exception of the Scottish National Investment Bank (SNIB) – established in 2020 with a £2 billion 10-year capital endowment – the only other active UK public investment bank before the introduction of the UK Infrastructure Bank (UKIB) in 2021 was the relatively modest British Business Bank (BBB), set up in 2012 to support access to finance for smaller businesses.

2.4. THE DISTINCTIVE ROLE OF THE NATIONAL INVESTMENT FUND IN THE LANDSCAPE OF PUBLIC FINANCING INSTITUTIONS

The proposed national investment fund (NIF) would have a distinctive role in the landscape of existing public financing institutions in the UK (figure 2.1). As such it would represent a complementary and additional policy tool for a UK green industrial strategy.

First, the NIF would specifically finance capital expenditure on investment projects aimed at:

- increasing domestic productive capacity in green manufacturing activities
- decarbonising existing manufacturing processes.

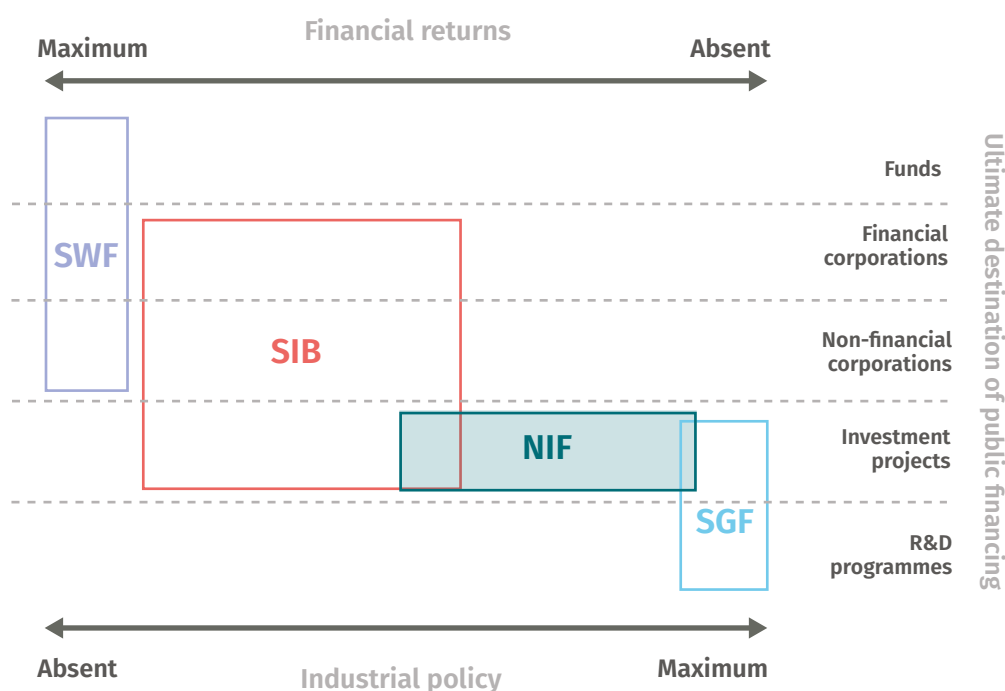
This would fill the gap in the UK ecosystem providing policy-oriented funding to net zero manufacturing activities – currently outside the remit of UKIB. The focus on manufacturing would also be functional to rebalance regional inequalities across the UK, as it allows the localisation of investment in poorer areas that would benefit the most from the direct and induced creation of qualified manufacturing jobs.

Second, the NIF should primarily play a domestic industrial policy role, addressing the effective lack of financing tools with that explicit orientation. The NIF's funding operations should prioritise achieving broader **economic returns** for the UK economy – in terms of alleviation of regional disparities through the creation of value added and jobs in less affluent areas and reduction of foreign dependencies, for instance – while considering the long-term commercial viability of its financed operations, which will eventually provide **financial returns**.

9 In 2021, Italy's CDP had total assets of EUR 517.1 billion (29 per cent of national GDP), total assets of Germany's KfW amounted to EUR 551 billion (15.3 per cent of national GDP), France's CDC totalled EUR 1,066.7 billion of consolidated assets (42.6 per cent of national GDP). By comparison, the UK British Business Bank had only £2.6 billion of total assets (0.11 per cent of national GDP).

Third, the NIF would operate mainly through equity and equity-like financing instruments, which allow the realisation of joint ventures with private industrial players as well as the possibility of coordination and synergies among invested companies. Public equity financing can have a strong crowding-in impact in so far as it provides strategic signalling for private businesses to invest, representing a long-term commitment by public authorities to the realisation of specific policy objectives. The provision of equity finance by the NIF should not be exclusive when it comes to achieving industrial policy objectives in net zero activities. While filling a specific functional gap, equity financing by the NIF could be accompanied by complementary financing via SIBs or state grants.

FIGURE 2.1: A TAXONOMY OF PUBLIC FINANCING INSTITUTIONS



Source: Authors' analysis

Notes: The x axis represents the policy aim of public financing institutions, ranked according to their objectives from financial returns to industrial policy. The y axis represents the ultimate destination of public financing. SWF stands for 'sovereign wealth funds'; SIB stands for 'state investment banks'; NIF stands for 'national investment fund'; SGF stands for 'state grant funding'.

3.

ECONOMIC FUNCTION AND OPERATIONAL DESIGN OF THE NATIONAL INVESTMENT FUND

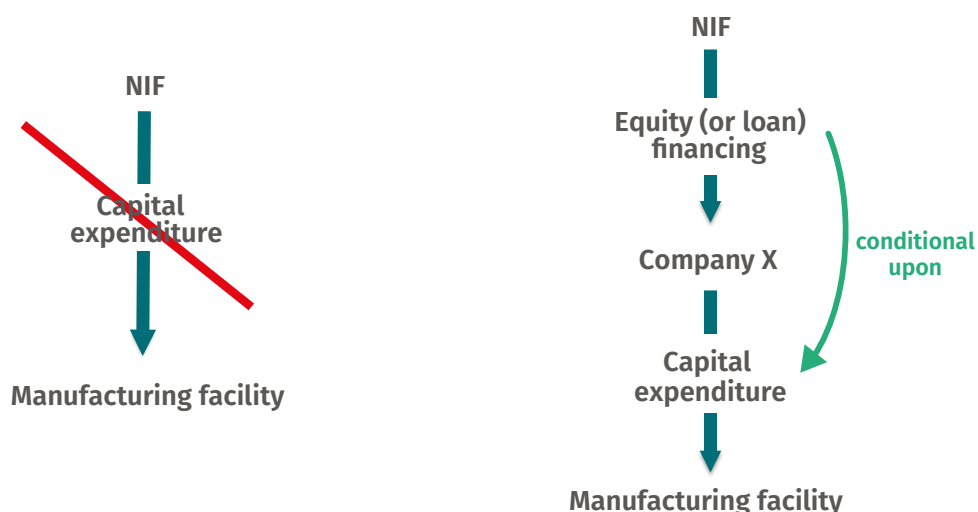
The proposed national investment fund should operate to promote entrepreneurial initiatives and regenerative investment in net zero manufacturing activities across the UK. The following sections illustrate its economic function and operational design.

3.1. THE NATIONAL INVESTMENT FUND IN ACTION

As a funding instrument, the NIF would not make direct capital expenditure in manufacturing activities. The NIF would act as a financing intermediary. It would provide finance conditional upon specific investment projects to be delivered by manufacturing companies (figure 3.1). Ensuring public investment is of high-quality and delivers additionality is a key objective and this structure ensures that 100 per cent of the financing from the NIF would be translated into effective capital expenditure.

FIGURE 3.1: THE FUNDING MECHANISM OF THE NIF

The NIF would not make direct capital expenditure, but it would provide targeted financing to manufacturing companies delivering capital expenditure on specific investment projects



Source: Authors' analysis

Such funding operations would naturally qualify as subsidies under the Subsidy Control Act 2022. However, the subsidy control regime does not rule out the use of subsidies, rather it simply imposes additional requirements on said funding that we believe the NIF could easily meet. As explained in box 3.1., **if properly designed and targeted to deliver policy objectives such as addressing regional inequality and achieving net zero, the NIF's funding operations would not infringe the current state aid rules.**

BOX 3.1: THE NIF AND THE UK'S SUBSIDY CONTROL REGIME

Under the Subsidy Control Act 2022, the NIF's funding to companies would be classified as subsidies. NIF's equity financing and equity-convertible loans would constitute 'financial assistance' given from public resources by a public authority that is capable of affecting competition or investment within the UK and between the UK and other countries, by conferring an economic advantage to one or more enterprises with respect to the production of goods.

Without a 'subsidy scheme', each of NIF's funding operations (apart from very small subsidies of below £315,000 over 3 years) would require to be assessed by the NIF against the seven 'subsidy control principles' outlined by the Subsidy Control Act. Moreover, given its peculiar focus on net zero policy objectives, much NIF's funding would also need to be assessed against the "energy and environmental principles", as they incentivise the beneficiary in "delivering a secure, affordable and sustainable energy system" or in "increasing the level of environmental protection compared to the level that would be achieved in the absence of the subsidy". In broad terms, however, the two sets of principles allow for the grant of subsidies that deal with market failures and promote public policy objectives such as equity and environmental protection: the principles essentially require an analysis of whether the subsidy is necessary and proportionate to meet its objectives, of the distortive effects of the subsidy, and an overall balancing exercise.

As confirmed by the statutory guidance for the UK subsidy control regime (BEIS 2022), the new legislation "enables public authorities to deliver strategic interventions to support the UK's economic growth and allows them to deliver their policy priorities, such as levelling up and achieving net zero".

Funding of over £10 million would need to be referred to the Competition and Markets Authority (CMA) for their public advice before being granted . The consequence of failing to apply the principles would be that the funding decision could be judicially reviewed (for example, by a competitor of the beneficiary).

Legislation allows for the prior approval of an entire 'subsidy scheme', which would relieve the burden of the NIF of going through assessment of each individual loan or grant. This could be proposed by ministers or by the NIF itself, setting out a class of funding that would be covered by it. The subsidy scheme would likely need to go to the CMA for advice but anything covered by it would then not need an individual assessment. Alternatively, the same result would be achieved if ministers laid a streamlined subsidy scheme before parliament: such a scheme would not need to be referred to the CMA. Both subsidy schemes and streamlined subsidy schemes would require ministers (or the NIF, as the case may be) to be able to show that they had taken a rational view, applying the law correctly, that subsidies covered by the scheme would be consistent with the Subsidy Control Act principles, and the scheme could be judicially reviewed if they could not do so.

The UK has extensive subsidy control obligations in the Trade and Cooperation Agreement (TCA) with the European Union. The EU could in principle take action under the TCA – or under general WTO anti-subsidy rules – if it felt that the UK's subsidies were unacceptable and damaging its industries. However, since the EU is also seeking to incentivise a green transition by relaxing some of its state aid rules through the recently announced green deal amendment to the General Block Exemption Regulation (9 March 2023), it is unlikely to have any objection in principle to the type of funding being granted by the NIF.

The NIF intervention should generate two main effects:

1. **crowding-in**, whereby public investment mobilises or catalyses further private investment
2. **additionality**, meaning that NIF's funding would facilitate investments or economic activity that would not otherwise occur.

Especially in an initial phase, the NIF's funding decisions would be guided by the proposals of companies willing to invest in net zero manufacturing technologies. The NIF should outline publicly the economic activities eligible for its funding (such as wind manufacturing, electric batteries, and decarbonisation of steelmaking processes), without the need to elaborate detailed public tenders but simply general expression of interests. Interested companies could then draw up project plans that would be discussed and approved on an ad hoc basis, depending on the evaluation of the NIF. Rather than 'picking winners' in advance (*ex ante*), the NIF would be 'picking the willing' after they express interest (*ex post*). As the NIF becomes fully operative and increases its institutional knowledge about net zero sectors and technologies, it should set out more detailed funding requirements in its strategic plans, for better orienting investment in scaling up net zero manufacturing activities and in decarbonising heavy industry production processes.

In order to understand the NIF's funding operations, it is useful to specify the nature of their recipients, the geographical preferential element, and the types of financing instruments that it would deploy.

Recipients of NIF's funding: What does the NIF invest in?

As mentioned, the NIF would co-finance capital expenditure on investment projects in net zero manufacturing activities relating to the scaling up of green manufacturing productions or to the decarbonisation of production processes. This would be the ultimate destination of its funding operations. But the actual recipient of NIF's financing resources would be manufacturing companies delivering capital expenditure in investment projects. The manufacturing specialisation of the NIF would be complementary to UKIB's focus on infrastructure projects.

Ideally, the NIF should co-invest or become a joint shareholder with industrial partners (rather than with financial funds), assuming that they would be more inclined to delivering the technical results of the investment projects. When the NIF's funding is deployed to establish a new manufacturing facility of a big international player, its financing should be accompanied by the creation of a separate company (a UK subsidiary of the international group) that would own and operate the manufacturing site. The NIF would invest directly in that new company, rather than providing its financing to the parent multi-national. The NIF should focus on investing in domestic activities (UK companies or UK subsidiaries of foreign companies), where its impact on the governance of those companies can be maximised.

Geographical preference: Where does the NIF invest?

The NIF would finance investment projects only within the UK territory. Access to its funding should be preferential for companies located or wanting to locate their facilities in regions with lower income per capita and with higher unemployment rates. The NIF would encourage investment in ITL3 areas¹⁰ presenting worse structural economic indicators, where this could activate a virtuous circle of incomes, jobs, and new investments.

10 The ITL3 level of statistical identification should be preferred to more aggregated ones due to the high degree of variance within ITL2 and ITL1 areas.

The geographical element by itself would not determine the eligibility of an investment project, but it would help discriminate among comparable ones. For instance, suppose that two companies were proposing similar investment projects respectively in Northumberland¹¹ and in West Surrey¹² (with GDP per capita 2.3 times higher and unemployment 2.6 percentage points lower). In that case, the first would be preferred by the NIF.

The exact location of the manufacturing facility under consideration should be an important element for the NIF to allocate its funding, but not a conclusive one. For instance, a particular manufacturing investment made in a relatively affluent area could induce a series of complementary investments in related activities located outside that area. For this reason, when engaging with the NIF for accessing its funding, private industrial players should estimate the overall direct and indirect effects of their proposed investments on the neighbouring areas. Only then could the NIF make sure that the benefits of that a particular investment are captured across various regions (see section 3.4.).

Types of financing instrument: How does the NIF invest?

The NIF would operate through equity financing and equity-convertible loans. Despite being market instruments, they should be deployed with the priority of achieving industrial policy objectives. In some cases, this might mean postponing the economic viability (and the potential financial returns associated with it) of the investment to a later phase. The immediate purpose of the NIF financing operations would be to lower the overall financing costs of long-term investment projects, securing their cost effectiveness in advance.

The preferred instrument should be **equity** financing, which should be entirely translated into capital expenditure on the targeted investment project. Through its equity financing operations, the NIF would become a shareholder of the invested companies. This implies the possibility of influencing their governance through the appointment of NIF representatives in the boards of directors (see section 3.4.). Another feature of the equity instrument is that, by investing into a plurality of companies, the NIF would assume a holding configuration with a portfolio of stakes in various sectoral activities. This diversification would not only minimise the investment risk, but it could also create the potential for a policy-oriented coordination of the invested companies (see section 3.5.).

The other financing instrument of the NIF would be **equity-convertible loans**, which should be provided at a zero nominal interest rate, meaning that the beneficiary will have to repay its principal at the initial nominal amount with no interest payments.¹³ During the pandemic, the British Business Bank (BBB) Future Fund deployed so-called ‘convertible loan agreements’ to support struggling companies. From May 2020 until the end of January 2021, the BBB provided £1.2 billion of convertible loans to 1,236 companies (BBB 2021). Loans of this type still have an equity-like nature, as the recipient has the option to convert part or the entirety of the loan into company’s shares, corresponding to the outstanding value of the loan relative to the company’s equity capital. In this case, the recipient would not have to repay the principal on the initial loan, but the NIF (now a shareholder) would be able to enjoy any future financial returns, in the form of dividend payments and divestment of the equity stake. Hundreds of firms who received convertible loans during the pandemic opted to switch from debt to government-held equity shares in this way (Thomas 2022). As this scheme of loans would never bring positive financial returns for the NIF (unless they were

11 With 2021 GDP per capita at £20,391 and unemployment rate at 5.7 per cent (ONS figures).

12 With 2021 GDP per capita at £ 47,386 and unemployment rate at 3.1 per cent (ONS figures).

13 In the context of moderate inflation, this would amount to a lower real burden for the borrower in the long term.

converted into equity), the NIF's resources destined to loan financing should represent a smaller share of the total – possibly less than one-third.

3.2. A SIMPLE TAXONOMY OF THE NIF'S OPERATIONS

The NIF's funding operations can be further understood in two ways: the nature of the investment target and the nature of the investment projects. This creates a simple taxonomy with practical examples of the NIF's operations (table 3.1).

Nature of the investment target

NIF's funding can be classified as **greenfield** or **brownfield** depending on the investment *target*. A **greenfield** investment would be when NIF's funding is channelled to deliver a project setting up a new manufacturing facility which would imply establishing a new company.

A **brownfield** investment would describe the case when NIF's funding delivers an investment project targeted at an existing manufacturing facility, for example in energy efficiency improvements.

Nature of the investment projects

NIF's funding can be classified as **extensive** or **intensive** depending on the investment *project*. An **extensive** investment projects would be the creation of additional productive capacity or the expansion of existing one.

Alternatively, an **intensive** investment projects are those focussed on existing production processes, without creating additional output, but improving technical and environmental performances that would allow a financially sustainable preservation of jobs over the long term.

TABLE 3.1: A TAXONOMY OF THE NIF'S FUNDING OPERATIONS

By combining the nature of the investment project (extensive vs intensive) with the nature of the investment target (greenfield vs brownfield) it is possible to obtain a taxonomy of the NIF's funding operations with practical examples

		Nature of the investment project	
		Extensive Increasing production of green technologies	Intensive Decarbonisation of production processes
Nature of the investment target	Greenfield Capital endowment for a new company	Establishment of a gigafactory for electric batteries	Establishment of a new paper mill with 100% renewable electricity
	Brownfield Capital injection in an existing company	Expansion of electrolyzers' production capacity in existing plant	Deployment of green hydrogen in the steelmaking process of existing plant

Source: Authors' analysis

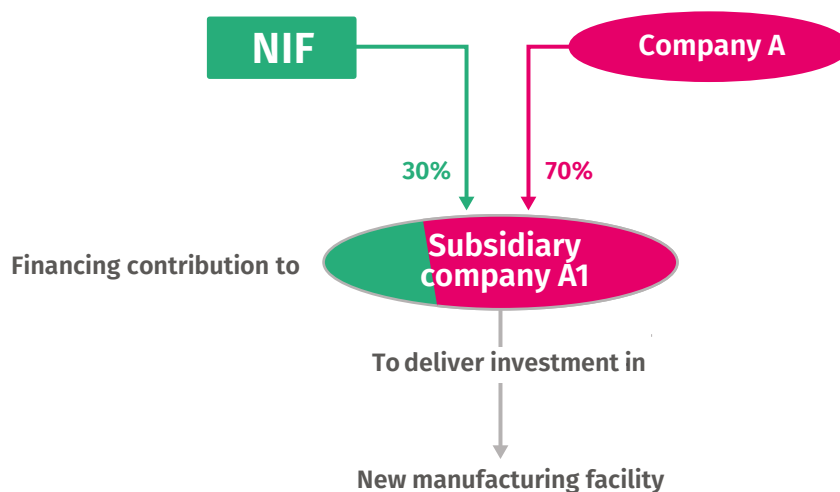
Following this classification, it is possible to put forward four different combinations with relative examples (table 3.1). The NIF should seek to operate in all these four areas.

3.3. PRACTICAL EXAMPLES OF THE NIF'S FUNDING OPERATIONS

This section illustrates three practical examples of how the NIF's operations could materialise. In the first example below (figure 3.2), the NIF provides equity financing for the establishment of a new enterprise (company A1), which will be a UK unlisted subsidiary of an existing company – domestic or foreign – operating in a green manufacturing sector (company A). With this equity operation, the NIF becomes a minority shareholder of the new company with a 30 per cent stake, the remaining 70 per cent equity being provided by the industrial partner. As this NIF operation concerns the establishment of a new manufacturing facility for green technology products (eg solar panels, batteries, etc), it will qualify as equity financing for a greenfield and extensive investment project. To give a more concrete example, if Company A were “Windcorp Inc.” a global multi-national owner and installer of windfarms, the NIF would become a joint owner of Company A1 “Windcorp (UK) Ltd”, a new, unlisted subsidiary. This type of arrangement is common for firms establishing domestic subsidiaries.

FIGURE 3.2: EXAMPLE OF AN EQUITY, EXTENSIVE, AND GREENFIELD NIF'S FINANCING OPERATION

By providing equity financing, the NIF becomes the minority shareholder of a new enterprise (company A1) which will be jointly established with an industrial partner (company A) to build a new manufacturing facility

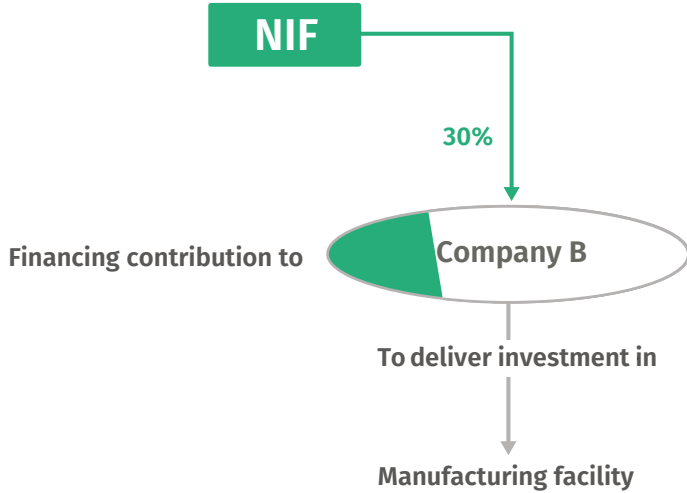


Source: Authors' analysis

In the following case below (figure 3.3), by providing equity financing to an existing company (company B), the NIF becomes a minority shareholder. Such financing contribution will be used to deliver a specific investment aimed at building a new manufacturing facility or at expanding production in an existing one. This NIF operation would qualify as equity financing for a brownfield extensive investment project.

FIGURE 3.3: EXAMPLE OF AN EQUITY, EXTENSIVE, AND BROWNFIELD NIF'S FINANCING OPERATION

By providing equity financing, the NIF becomes the minority shareholder of an existing enterprise (Company B) to build a new manufacturing facility or to expand production in an existing one

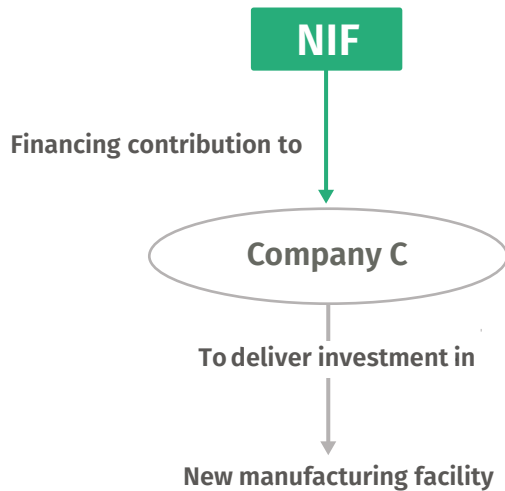


Source: Authors' analysis

Finally, figure 3.4 shows the case where the NIF provides a zero-interest loan to an existing company (Company C) to invest into a new manufacturing process aimed at significantly reducing its carbon footprint or any other polluting waste from current production activities. This NIF operation would qualify as loan financing for a brownfield intensive investment project.

FIGURE 3.4: EXAMPLE OF A LOAN, INTENSIVE, AND BROWNFIELD NIF'S FINANCING OPERATION

By providing a zero-interest loan to Company C, the NIF contributes to restructuring the production process of an existing manufacturing facility



Source: Authors' analysis

3.4. THE RELATIONS OF THE NIF WITH ITS PRIVATE INDUSTRIAL PARTNERS AND THE INVESTED COMPANIES

As mentioned, the NIF should not deliberately select in advance its private industrial partners based on predetermined decisions over what specific investment projects to finance. Especially in an early phase, the NIF should simply highlight the sectors and the net zero technologies that could be in receipt of its funding. The NIF should then invite businesses to submit investment proposals with an indication of costs, job creation and their contribution towards achieving net zero and levelling up objectives.

Companies eligible for NIF's financing should then enter into an agreement with the NIF – a sort of memorandum of understanding (MoU) – which would specify:¹⁴

- the investment timeframe (including when the investment project is expected to become economically viable)
- the overall capital and operating costs
- the amount of resources committed by the NIF and by the company
- the economic contribution to achieving levelling up objectives (such as the number of direct and indirect jobs created or preserved), not just relative to the area where the investment will be located but also considering the induced impact on neighbouring regions
- the contribution towards achieving net zero objectives (such as the reduction of greenhouse emissions, energy consumption and foreign dependency from on critical technologies)
- the duration of the NIF financial commitment (and the possibility of its renewal)
- the option for the NIF to divest its equity stake at not less than a certain amount of its initial book value (so as to minimise potential capital losses)
- responsibilities in case the partner company wanted to recede from its investment commitment (whether another industrial partner would take over its stake, or if instead the NIF should acquire the remaining share at some predetermined price).

Apart from the predetermined agreement on the specific investment project, the NIF should also influence the governance of its invested companies in the longer term, through its acquired role of shareholder (in the case of equity financing operations). As mentioned, the NIF would have the right to appoint representatives in the boards of directors of the invested companies. Preferably these would be senior employees of the NIF, as this would contribute to the circulation of knowledge and ideas about key technological and market issues concerning net zero economic activities. A NIF representative could sit on more than one board, thus being able to promote joint initiatives or explore technological-industrial synergies among the different companies. Furthermore, having its representatives in the boards of the investment companies could facilitate the definition and achievement of the NIF's industrial policy objectives, as its employees would be better able to sustain informed discussions on strategic investment decisions with the management of the participated companies (see also section 4.2).

The initial equity operations of the NIF should avoid it turning into a majority or controlling shareholder of the invested companies, as this would imply a further degree of technical and managerial responsibilities. The NIF-invested enterprise would normally become a subsidiary of an existing company (in case of a greenfield investment), or it would remain controlled by the private majority

¹⁴ The MoU should also include an annex composed of indicators quantifying the listed items. This would allow the two parts to objectively monitor the execution of the investment project, in order to signal possible delays and to modify parts of it accordingly.

shareholder (in case of a brownfield investment). The NIF would nonetheless play the role of an active and ‘enlightened’ minority shareholder with a long-term industrial policy orientation. The NIF should encourage retaining (as reserves) or reinvesting net profits generated by the company to seek further growth, rather than distributing them through dividend payments. If the company were to remunerate its shareholders without compromising future investments, the NIF would receive dividends proportional to its shareholding, which would partially reconstitute the initial capital of the NIF and could then be used for further funding operations.

NIF-invested companies might require further recapitalisations over the course of the years. In those cases, the NIF would maintain its initial share if it were to contribute proportionally to the capital injections. Otherwise, the NIF’s shareholding values in those companies could change overtime. There might be two possibilities:

1. the NIF does not contribute (or contribute less than proportionally) to the recapitalisation, in this case the NIF’s participation will be diluted
2. the NIF contributes more than proportionally to the recapitalisation, thereby increasing its shareholding stake into that company.

In the first case, the NIF would maximise the financing commitment of the private partner, while partly reducing its degree of influence in the company. In the second case, the NIF could potentially overcome the 50 per cent threshold and become the majority shareholder of the company.

As mentioned, the NIF should initially refrain from operating as a majority or controlling shareholder of companies. The NIF should be conceived as a policy-oriented financing instrument for long-term investments, rather than a multi-sectoral industrial group. Nevertheless, as it accumulates experience and capabilities, it might be conceivable for the NIF to progressively assume that role, at least in part. This could happen out of necessity – if for instance the industrial partner was withdrawing its financial commitment – or following strategic policy considerations. Naturally, the NIF would not be directly responsible for running the company on a daily basis. That task would always be delegated to a separate management specialised in the technical aspects of the company’s specific branch of activity.

The opposite could also happen, given the flexibility allowed by the equity instrument. The NIF should adopt a long-term investment perspective, but after a certain period it could eventually divest some of its minority stakes. This could happen when the invested company does not require any further strategic support or when the private partner is sufficiently capable or willing to ensure its future development. The company’s controlling entity or shareholders could then buy the NIF’s shares, at a value determined through a due diligence process, but in any case no lower than a given threshold established in the MoU (to insure the NIF against considerable capital losses).

With the divestiture of its stake in the participated company, the NIF would abdicate to the possibility of influencing the company’s future investment decisions. At the same time, the fund would realise a capital gain, as the company becomes more valuable than before the initial investment was made. This would constitute a lump-sum receipt for the NIF, contributing to recovering its own initial capital, which could then be reinvested in other initiatives.

3.5. THE HOLDING CONFIGURATION OF THE NIF

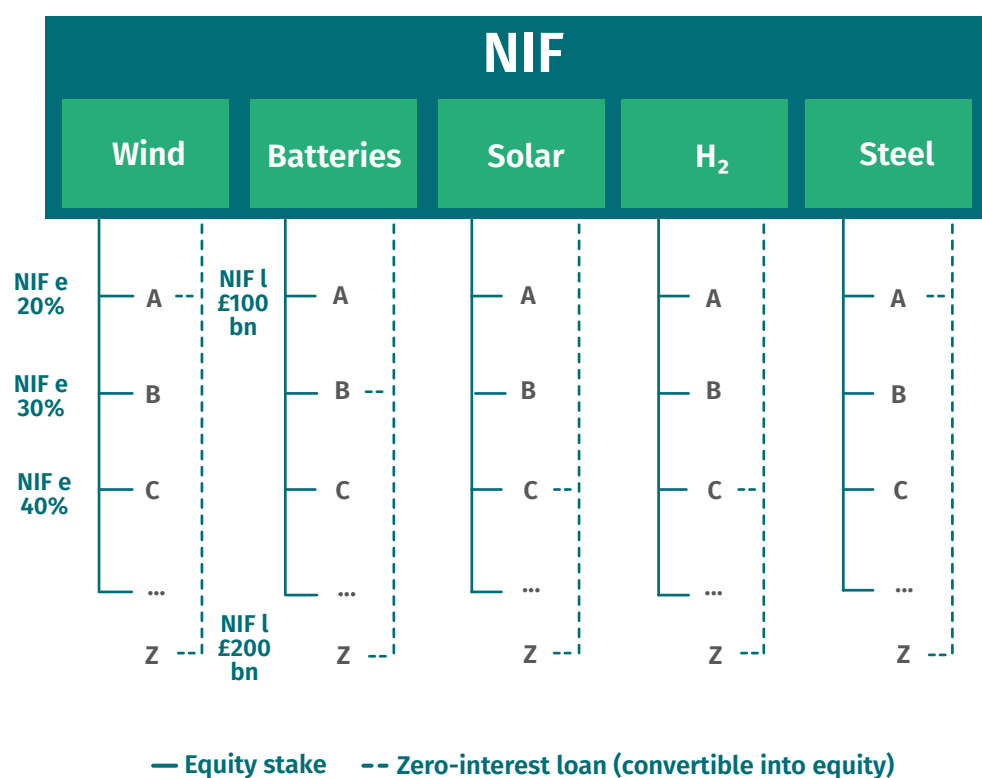
As opposed to other public financing options mentioned before, the equity or equity-convertible nature of its financing operations would eventually turn the NIF into a holding entity with minority stakes in a broad range of companies.

It would then be possible for the NIF to diversify its investments and spread risk across the entire portfolio. In addition, the equity nature of the NIF's investments would allow the promotion of potential industrial synergies among the participated companies. These could come in the form of proposals for partnerships and further joint entrepreneurial initiatives in similar or complementary technologies.

In order to facilitate a closer technical scrutiny of its financing operations, the holding structure of the NIF could be organised into sectoral divisions (such as batteries, wind, solar, green hydrogen technologies, and steel), taking the form reproduced below in figure 3.5. A variety of shareholding combinations is conceivable. For instance, Company A under the division 'wind' has received equity financing (NIF e) from the NIF (amounting to a 20 per cent equity stake) and it is also recipient of a £100 million loan from NIF (NIF l). Company B is only funded through equity (NIF e), with the NIF having a 30 per cent participation. Company C is instead only funded through a £200 million loan (NIF l). In this latter case, the connection with NIF will expire once the loan is fully repaid – unless it is converted into equity.

FIGURE 3.5: THE SECTORAL SHAREHOLDING CONFIGURATION OF THE NIF

The NIF would become a financial holding which could organise its investment portfolio into sectoral divisions



Source: Authors' analysis

4. THE CONSTITUTION OF THE NATIONAL INVESTMENT FUND

The introduction of the national investment fund would require the specification of its legal status, mandate, establishment process, sources of financing, internal organisational structure, governance framework and public accountability.

4.1. LEGAL STATUS

In the current UK legal context, the NIF might assume two alternative legal configurations. It could be established as a **public corporation**,¹⁵ supervised by a responsible ministerial department. Examples of public corporations in the UK are the Post Office (under the Department for Business and Trade), Channel 4 (under the Department for Culture, Media and Sport) and The Royal Mint (under the Treasury).

Alternatively, the NIF could be established as a non-departmental public body. **Non-departmental public bodies (NDPBs)** are arm's length bodies (ALBs) that operate separately from their sponsoring departments, while being classified as part of general government (Cabinet Office 2016). Examples of NDPBs are Network Rail (sponsored by Department for Transport), but also UKIB (sponsored by the Treasury) and the British Business Bank (sponsored by the Department for Business and Trade).

Given the functional similarity with the BBB and UKIB as public financing entities, the NIF should adopt the status of a non-departmental public body.¹⁶ Similarly to the BBB and UKIB,¹⁷ the NIF could be established as a limited company, with its shares owned jointly by the Treasury and by the Department for Energy Security and Net Zero.

4.2. MANDATE

The establishment of the NIF should be accompanied by a clear definition of its mandate, which should be incorporated in its statutory documents. The NIF's mandate should be quite specific so as to insulate it from inexpedient political requests and to provide its personnel with a defined sense of purpose.

The mandate of the NIF should stress its distinct policy role in stimulating investment in net zero manufacturing activities, with an orientation to addressing regional imbalances across the UK.

15 In national accounting, value added and investment by public corporations are classified as 'corporation' rather than under government. The personnel of public corporations is classified as public sector, a category that coincides with the more specific one of government employees. At the same time, net debt and economic results of public corporations are included in public sector net debt and public sector net borrowing figures.

16 With the NDPB legal status, the NIF would fall under the central government classification, in terms of all its economic and financial figures (value added, investment, employment, debt and economic results).

17 BBB is registered as a public limited company (wholly owned by former BEIS), while UKIB as a private limited company (wholly owned by HMT).

4.3. ESTABLISHMENT PROCESS

The establishment of the NIF could happen in different ways and it will be ultimately a political decision. There are two distinct options that could be pursued, here presented listing different pros and cons. The following sections on the proposed organisational structure and governance of the NIF could suit both establishment options. Nevertheless, the first approach should be considered preferable, as it would preserve UKIB's specialisation on financing green infrastructure, while complementing it with the NIF's focus on green manufacturing.

1. Creating the NIF from scratch

In this case the NIF would be established as a separate and complementary new entity. The initial capital endowment could come from either additional Treasury resources, or from part of UKIB's current capital allocation or a combination of both. Instituting the NIF from scratch would preserve the specialisation of existing instruments while introducing an additional policy tool that would cover specific functional and sectoral areas (ie supply-side industrial policy for manufacturing activities).

The **advantages** of this solution are the opportunity to outline a clear motivating purpose – which is essential to attract talent into public entities (Mazzucato and Kattel 2018) – and the preservation of UKIB as a financing instrument for green infrastructure. The main **disadvantage** would instead be the longer setting-up period, which should nonetheless be balanced against the difficulty of changing the internal culture of an existing organisation (see option 2). The initial staff could be seconded from the supervising ministerial departments as well as from UKIB and from the British Business Bank.

2. Transforming the existing UKIB

Under this possibility, the NIF would replace UKIB, shifting the sectoral specialisation from infrastructure to manufacturing, extending the use of equity instruments and increasing the policy additionality element by scrapping the positive financial returns target.

The main **advantages** of this solution are that the NIF would already have allocated financial resources and a structure with active personnel. The main **disadvantage** is the elimination of UKIB as a specialised policy instrument in financing green infrastructure. Moreover, adopting the NIF's model and industrial policy orientation would imply a significant and challenging transformation of UKIB's existing organisational culture.

4.4. SOURCES OF FINANCING AND CAPITALISATION

The NIF should dispose of an initial capital endowment, to be invested over a 10-year period. However, as the NIF begins its operations, the allocation of resources to the various initiatives would progressively erode its available capital endowment after a few years. For this reason, over the course of the period, the NIF might need to be recapitalised to enable its further operativity. This could happen in two ways.

First, through **self-recapitalisations** as a result of its loans and equity operations. Any financial intermediary with an expected positive return on its overall investments would gradually see the initial value its capital growing through time. However, due to the zero-interest nature of its loans, the NIF would only recover the nominal amount of the initial invested sum (which would be lower in real terms at a later stage). At the same time, the long-term and project-linked nature of its equity financing operations might not secure dividend payments for several years until the investment becomes economically viable. Moreover, even as the company turns profitable, the NIF

should champion the reinvestment of profits rather than their distribution through dividends. As mentioned in section 3.4, the NIF might be able to realise significant capital gains if it divested its equity stake into a company – once the latter has increased in value, as a result of the investment project – but this could only materialise as a lump-sum payment in the future.

Second, in the short-to-medium term, the NIF might need to be **recapitalised by external sources**. This does not necessarily mean a discretionary annual allocation from the state budget. Instead, the NIF establishing act could incorporate a special fiscal rule that foresees the possibility for the Fund to be automatically recapitalised through a dedicated source of revenues. For instance, as the EU Innovation Fund is funded via receipts from the EU emission trading system, the proposed NIF could obtain regular financial contributions from the UK Emissions Trading Scheme (UK ETS).

However, as the NIF would fundamentally promote the UK transition to a net zero economy, there is a strong case for funding its operations through receipts accruing from domestic fossil fuel activities (see box 4.1). For instance, reforming the North Sea fiscal regime (to be aligned with other comparable countries such as Norway and The Netherlands). Alternatively, given that the significant share buybacks made by British oil and gas companies demonstrate those firms are unable to identify productive green investment opportunities, the state could impose levies on buybacks to secure a stream of annual receipts that can partly be channelled to recapitalise the NIF (Evans, Hayes and Dibb, 2022). Both these solutions would see the **transformation of fossil fuel rents into productive green manufacturing investments, intermediated by the NIF**.

BOX 4.1: TRANSFORMING FOSSIL FUEL RENTS INTO GREEN INVESTMENT

Over recent decades, the UK has failed to capture the economic and financial opportunities deriving from the North Sea oil and gas reserves. The privatisation of the British National Oil Corporation (BNOC) and the divestiture of the majority stake in BP during in the 1980s, together with the introduction of an increasingly generous tax and royalties regime, deprived the British state of precious fiscal resources.

Another North Sea country – Norway – took a different route. The Norwegians developed their domestic oil and gas industry through the state-owned company Statoil and adopted a fiscal regime that allowed the creation of one of the world's largest sovereign wealth funds (with capitalisation of 1,262 billion US dollars in 2022). Oil and gas expert Juan Carlos Boué (2020) has calculated that had the UK fiscal regime for fossil fuel exploration in the North Sea been the same as in Norway, **the UK government would have received an extra \$324 billion of tax revenues between 2002 and 2015**.

The difference between Norway and the UK rests on a different institutional governance of their respective oil and gas extractive industries. Due to the increased importance of tax reliefs for capital allowances and expenditure on decommissioning oil and gas infrastructure, the UK's 'effective tax ratio' (ETR) is now reduced to an insignificant amount. According to NSTA official data, in the fiscal years from 2015/16 to 2021/22, cumulative net government receipts amounted to less than £5 billion, compared to around £139 billion of gross commercial revenues (OBR 2023) from oil and gas upstream production over the same period (an average effective tax ratio of 3.6 per cent). In the same six-year period, according to HMRC estimates (of January 2023), the total cost of tax reliefs for decommissioning expenditure

has amounted to £4.9 billion while first-year capital allowances for plant and machinery has amounted to £8.1 billion (NSTA 2023a). Therefore, tax reliefs for upstream oil and gas companies operating in the UK and on the UK Continental Shelf have far exceeded actual government fiscal receipts. Projected into the future (April 2023 figures for the period 2022–67), HMRC estimates that the Exchequer cost of tax relief from decommissioning all upstream UK oil and gas infrastructure would be £21.8 billion (NSTA 2023b).

The UK is an outlier with respect to the fiscal regimes of other North Sea countries, not just Norway. Denmark, The Netherlands, and the German land of Schleswig-Holstein have all higher effective tax ratios compared to the UK. The UK could increase its ETR on North Sea oil and gas revenues – thus raising a higher amount of fiscal resources – simply by scrapping or at least reducing the extraordinary amount of tax reliefs that are granted to oil and gas companies.

Modifying the North Sea fiscal regime would require the passing of an act of parliament. This could be the opportunity for incorporating a legal norm establishing that a given share of annual North Sea oil and gas receipts could be channelled to recapitalise the national investment fund. For instance, had the UK not provided tax reliefs for capital allowances and decommissioning in the period 2015/16–2021/22, a 10 per cent of total fiscal receipts from North Sea oil and gas would have provided an average of £300 million pounds for annual recapitalisations of a hypothetical NIF.

Other countries have successfully converted long-term rents deriving from fossil fuel industries into productive domestic investments. There is no reason for the UK to be an exception. Norway has transformed a national fossil fuel rent into a long-term public financial investment for future social expenditures. The German land of Schleswig-Holstein has deployed part of its North Sea fiscal resources to install massive offshore windfarms, becoming a renewable energy exporter (it produces 160 per cent of domestic power consumption with renewables).

4.5. INTERNAL ORGANISATIONAL STRUCTURE

The NIF would to some extent be a hybrid organisation. On one hand, it would be a government agency with a public mandate and supervision. Its operations would be guided by the policy aim to stimulate investment in net zero manufacturing activities across the national territory. On the other hand, it would be an independent state holding entity, seeking economic returns from its invested companies. These would be financial returns in the long term, but first and foremost permanent socioeconomic returns such as the creation of innovative industrial ecosystems offering qualified and well-paid jobs in net zero economic activities.

In order to satisfy these constituting features, the NIF should have a dedicated organisational structure divided into three functional bodies:

- an **executive board** with managerial autonomy
- a competent **technical structure** supporting and guiding the NIF's managerial decisions
- a **stakeholder council** with proposal and consulting powers on certain matters.

Figure 4.1 illustrates the composing elements of the proposed NIF, their interactions and the governance links with the political process (presented in section 4.6).

The **executive board** would be the ultimate decision-making body of the NIF. It would have managerial autonomy with respect to the investment decisions and

the use of funds. It would be composed by a chairperson and a deputy chairperson with proven managerial skills, by a group of six experts and by three non-elected officials or businesspeople representing UK nations, regions and cities. Decisions within the board should be taken by a simple majority. Members of the executive boards would be indicated by the NIF's supervising ministerial departments (see section 4.6) and formally appointed by Parliament. The chairperson and its deputy would have further delegated autonomy and powers. The appointed experts and representatives from UK nations, regions and cities would need to have proven expertise in net zero industrial and technological issues.

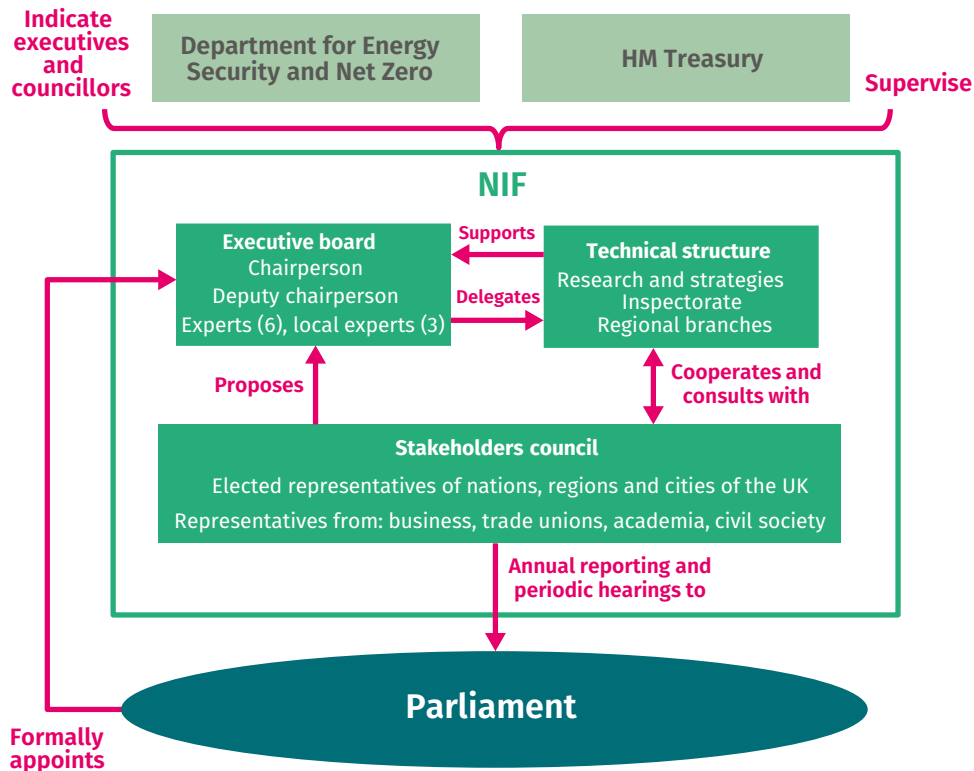
The **technical structure** should be more than a simple administrative body. It should also be the NIF's strategic brain, supporting the executive board in its managerial decisions with technical advice on specific issues. For that purpose, it should have an internal research and strategies division specifically devoted to the elaboration of industrial-technological analyses and related investment strategies. The technical structure of the NIF could also include an inspectorate division, with officials dedicated to following closely the operational and financial conduct of the invested companies, in order to supervise, coordinate and facilitate the emergence of industrial synergies among them. The entire technical structure would be divided into sectoral areas of investment and supervised by responsible figures that could be also appointed as a NIF representatives in the boards of executives of the participated companies. The personnel of the NIF's technical structure should have proven expertise not simply in financial, but also in industrial matters, with a specific focus on energy and net zero technologies.

NIF employees should be initially seconded from existing ministerial departments and public bodies (central and local), but later hired through standard recruitment. If the NIF was established as a non-departmental public body, its employees would normally obtain the status of 'public servants' (Cabinet Office 2016). However, given the entrepreneurial nature of the NIF, attributing a private sector status to its employees could provide more dynamism and risk-aversion to its organisational structure and, at the same time, facilitate the hiring of highly qualified talent – as the NIF would be able to offer higher salaries to its staff.

Finally, while the technical structure of the NIF would be hosted within a central headquarters, it should also establish regional branches for each ITL1 area. The role of the NIF's regional branches and the division of responsibilities with the central NIF is further specified below in a dedicated presentation of the NIF's governance (section 4.6.).

The **stakeholder council** would operate as a proposal and consulting body within the NIF. It would be composed by elected representatives from nations, regions and cities of the UK as well as other representatives from ministerial departments, business associations, trade unions, academia and civil society organisations. The stakeholder council should be able to make new investment proposals to the executive board, which in turn would have to report periodically to the council, explaining its past managerial decisions and motivating its future strategies. The stakeholder council would not have blocking powers on any substantial or formal decisions adopted by the executive board, but could be allowed to express non-binding consulting opinions. The stakeholder council would also cooperate with the technical structure, providing consultancy on specific issues as well as working together on drafting the NIF's annual reports and on elaborating internal evaluation metrics.

FIGURE 4.1: ORGANISATIONAL AND GOVERNANCE ELEMENTS OF THE PROPOSED NIF
The composing elements of the NIF, their interaction and governance relations with the supervising public authorities



Source: Authors' analysis

4.6. GOVERNANCE FRAMEWORK

The governance of the NIF should be specified in advance and explicitly stated in its bylaws. It should concern the relations of the NIF with external public authorities (ministerial departments and Parliament), the division of responsibilities between the central decision-making level of the NIF and its regional branches, and the processes of general accountability to the public.

As for the relations with external public authorities, the NIF would be jointly supervised by the two joint shareholders: HM Treasury and the Department for Energy Security & Net Zero. They should be responsible for indicating the members of the executive board that would be scrutinised and formally appointed by Parliament for a fixed-term period of three years. The supervising ministerial departments would not interfere with the managerial and investment decisions made by the NIF's executives. The ministerial supervision of the NIF would only concern its adherence to the provisions of its establishment act and it would monitor any formal breaching of rules of conduct by its appointed executives.

As mentioned in section 4.5, the institution of regional branches of the NIF's technical structure would imply a division of responsibilities between the 'central NIF' and 'regional NIFs'. The central NIF should retain the ultimate decision-making power. It should be responsible for elaborating a unitary investment strategy and for negotiating directly with the co-investing industrial partners. It should also maintain the control of the NIF's financial resources.

The regional branches of the NIF would have an essential input function in nurturing the central NIF with useful information and advice on specific local economic issues. The inspectorate division should be mostly based at the NIF's regional branches, to follow closely the implementation of the investment projects (a responsibility of regional NIFs). In this respect, regional NIFs would be the direct interface with companies and local authorities for any ordinary matter. Regional NIFs should have at least one representative in the boards of directors of the invested companies operating within their area. They would also provide the central NIF with information about challenges or investment opportunities that could arise in their respective regions.

In order to ensure the maximum degree of transparency and public accountability, the NIF would have to produce annual reporting documents that should be presented and discussed in Parliament. The NIF's chairperson and its deputy should also be subject to regular parliamentary hearings by a dedicated select committee. Parliament would also have the power to scrutinise and formally approve the appointment of the NIF's executives, upon indication from the supervising ministerial departments.

Finally, a crucial element of the NIF's public accountability would be its performance evaluation. As a public body, the financial accounts of the NIF would be audited by the National Audit Office (NAO). However, the NIF's performance should not exclusively be reduced to an assessment of its financial figures. In fact, as mentioned in previous sections, the NIF would not expect overall positive financial returns in the first years of its investment activity. Instead, given its industrial policy function, the NIF should be primarily evaluated with respect to its effectiveness in delivering the stated policy mandate contained in the bylaws.

The NIF – through its central and regional technical structures, in collaboration with the ONS and government departments – should estimate the economic and social impact of its investments. This should be made available to the public on an easily accessible section of its official website and reported in details in the NIF's annual reports. The NIF should publish regular reports on the direct and indirect creation of value, investments and jobs related to its funding operations. The NIF should also estimate and report its contribution towards alleviating regional disparities as well as the UK foreign dependency on energy sources, raw materials and components. Finally, the NIF should expose its contribution towards reducing greenhouse gas emissions and waste.

5. CONCLUSION

The UK economic model is once again at a crossroads. The transition to a net zero economy represents a serious challenge but also a great opportunity. Over the next decade, the UK economy faces two potential scenarios.

One in which the path towards decarbonisation is halted by the domestic unavailability of green technologies, which would further increase the UK dependency from limited, unreliable, and potentially costly foreign supply. This would also imply the inability of heavy polluting sectors – such as steelmaking, chemical processes, transport by internal combustion car vehicles – to adequately restructure their activities, which would eventually imply further losses of production capacity and related manufacturing jobs, accompanied by the exacerbation of regional disparities.

The other scenario is one in which the UK economy reacts to an avoidable decline, by adopting a comprehensive green industrial strategy. This would also require introducing new innovative policy instruments. The proposed national investment fund could play an essential role in the UK alternative path to a net zero industrial ‘renaissance’.

If properly designed and supported, the NIF would be able to revamp private investments and to activate a re-industrialisation process based on green manufacturing technologies and jobs, through the virtuous nexus of evenly distributed economic prosperity and climate mitigation.

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APPENDIX A

TABLE A1: TAXONOMY OF PUBLIC FINANCING INSTITUTIONS

	Examples	Geography	Targets	Financing instruments	Financial objective	Industrial policy aim	Rationale	Advantages and limitations
Sovereign wealth funds	Norway Global Pension Fund Temasek Bpifrance	Mostly global	Funds Financial corporations Non-financial corporations	Equity Fixed income	Maximisation of financial returns over the long term	Absent	To secure a stream of future revenues for various spending purposes (current or capital expenditure)	Advantages They could serve a macroeconomic purpose (taming business cycle, exchange rate stability) and social security aims (pension payments) Limitations They do not contribute to investments in domestic activities
State investment banks	British Business Bank (BBB) UK Infrastructure Bank (UKIB) European Investment Bank (EIB) Scottish National Investment Bank (SNIB)	Domestic	Financial corporation Non-financial corporations Investment projects	Loans Equity Guarantees	Reasonable and regular financial returns	Moderate	The supply of safe and low-cost financing to existing business enterprises	Advantages Support for credit-constrained business enterprises with relevant investment projects or wanting to scale up Limitations The market-based nature of lending leaves less scope to move beyond the existing specialisation
State investment funds	National investment fund (NIF)	Domestic	Investment projects – manufacturing	Equity Interest-free loans	Non-regular financial returns	Strong	Making private investments cost effective and signalling strategic orientation in order to crowd in private investments for new projects and initiatives	Advantages Long-term coordination of investments through potential synergies among invested companies Limitations It needs recurrent recapitalisation from non-market sources (state transfers) as returns might not materialise or be lump-sum capital gains from divesting equity stakes
State grant funding	EU Innovation Fund BEIS state grants UKRI (R&D)	Domestic	Investment projects (R&D programmes)	Grants	Non-repayable (no financial returns)	Very strong	Subsidisation of non-market activities	Advantages Maximum degree of subsidisation for policy purposes Limitations One-off transfers that do not guarantee financial returns or the possibility of being involved in further strategic business decisions

Source: Authors' analysis

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The background features an abstract design with two main colors: a light teal and a dark teal. A large, dark teal shape starts from the top right and curves downwards and to the left, forming a large, irregular block. A smaller, light teal shape is positioned to the left of this dark teal block, partially overlapping it. The overall composition is minimalist and modern.

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