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The economic implications of the transition to a low-carbon and resilient economy

A dashboard for Finance Ministers to support the implementation of long-term strategies

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INTRODUCTION

- As per the signing of the Paris Agreement, countries are committed to undertake structural changes to their economies to achieve deep decarbonisation and climate-change resilience. Long-term national climate strategies, such as Long-Term Strategies (LTS), are key documents laying out visions for countries to fulfil their Paris Agreement commitments. Implementing these strategies remains challenging, however, since they require large-scale yet targeted actions to be taken by the entire government of countries over multiple time-horizons.
- An essential first step to the sound implementation of long-term national decarbonisation and climate-resilience strategies is for Finance Ministries to develop and implement financing strategies. These are critical to ensure that climate investments are unlocked, that enough public funding is safeguarded to support effective climate action, and that the macroeconomic implications of the transition are anticipated and managed, maximising benefits.
- I4CE and the 2050 Pathways Platform have therefore developed a dashboard for Finance Ministries to assess, act on, and monitor the public finance implications and opportunities ensuing from long-term climate strategies.

Long-term national decarbonisation strategies are vital to drive the transition towards low-carbon and resilient economies. With the realisation that current and planned domestic policies are insufficient to keep the increase in global temperature well below 2°C, the Paris Agreement has called for countries to develop `long-term low greenhouse gas emission development strategies'[1] (LT-LEDS, or LTS). Their scope, depth, and granularity are determined by countries, but they are expected to share some common characteristics. Firstly, LTS should bridge the gap between short and long-term objectives, meaning they should enable the achievement of short-term targets while simultaneously laying the groundwork for deeper, future transformations and preventing carbon lock-ins. Secondly, LTS should cover both mitigation and adaptation, and should include detailed strategies for key economic sectors. It is critical that LTS incorporate domestic, social, and economic objectives to build cross-sectoral pathways that address decarbonisation, resilience, and development priorities. 53 countries[2] have submitted their LTS to the UNFCCC so far.

Translating LTS into concrete policies and action remains the main challenge faced by countries. Specific issues which can hinder the implementation of LTS have been identified, including:

- **A time horizon of 2050 (or longer) and intermediate timeframes:** administrations and politicians often face difficulties navigating long-term temporal trade-offs. This is in part due to cognitive temporal biases but is more importantly related to political and administrative processes which do not traditionally span over long timeframes. This is especially true in countries where frequent policy orientation changes and staff rotations are expected because of election cycles, or in countries with political or economic instability.
- **The need to implement profound structural changes:** many countries are now engaged in emissions reduction and adaptation efforts, but few have gone beyond surface-level actions to take steps towards deep decarbonisation. Implementing LTS requires profound structural shifts in national economies. It raises practical questions regarding how to generate these transformations and how to anticipate and manage both their positive and negative implications on people, firms, economic sectors, trade systems, and progress towards existing socio-economic objectives.
- **The lack of inter-ministerial collaboration:** LTS are primarily developed by Ministries of the Environment or Energy Ministries, with limited involvement from Finance Ministries and other line Ministries. As LTS implementation requires profound, cross-sectoral economic restructuring, their content, as well as general climate considerations, need to be streamlined across government entities. Furthermore, LTS content and implementation can only be sound if the broad range of Ministries' constraints and capacities are incorporated.
- **External factors shifting the focus of public action away from climate action:** the current context of rising energy prices and interest rates puts significant pressure on public finances and public opinion. This limits governments' range of action when it comes to implementing LTS objectives. In fact, governments currently tend to propose measures that go against LTS objectives (*e.g.*, energy tax shields). Whilst these external factors will likely be short-lived before 2050, other similarly constraining factors are likely to emerge in this period.

Governments would benefit from devising financing strategies, which take into account the issues identified above, to ensure the sustained implementation of LTS and the alleviation of their potential disruptive effects. LTS implementation essentially requires governments to anticipate long-term growing demand for public funding to support climate investments and policies (*e.g.*, public subsidies for thermal renovation of buildings), all while facing growing financial constraints with expected decreases in revenue associated with fossil fuel production and consumption (*e.g.*, decrease in revenue from fuel taxes). Reorienting public funding currently allocated to climate-harmful activities to support climate investments will provide a part of the solution. A sound public financing strategy is therefore needed to plan public funding reorientation and ensure LTS implementation does not lead to momentary economic disruption and instead maximises benefits associated with the transition.

In order to efficiently support the achievement of LTS objectives, these financing strategies should cover the following components:

- An assessment of the nature and volumes of climate investments to be unlocked in line with the LTS.
- An overview of the public policies to be put in place to trigger these investments (*e.g.*, regulation, subsidies, taxes, information provision) – this should also include policies to assist the private sector undertake these investments.
- An assessment of the levels of public spending required for these policies.
- An estimate of the expected funding gap and an overview of the potential sources of revenue which could be mobilised by governments to support the transition (*e.g.*, tax revenues, sustainable finance instruments, etc.).

These financing strategies should also assess and comprehend how key economic sectors, macroeconomic features, and social outcomes will be affected by successful LTS implementation. While studies indicate that decarbonisation and resilience pathways can be compatible with economic growth and development in the long-term, they will affect trade balance, debt levels, GDP, competitiveness, employment, and more in the short-term. This is particularly true for fossil-fuel

1 Requirement of Article 4, paragraph 19 of the Paris Agreement

2 Source: https://unfccc.int/process/the-paris-agreement/long-term-strategies

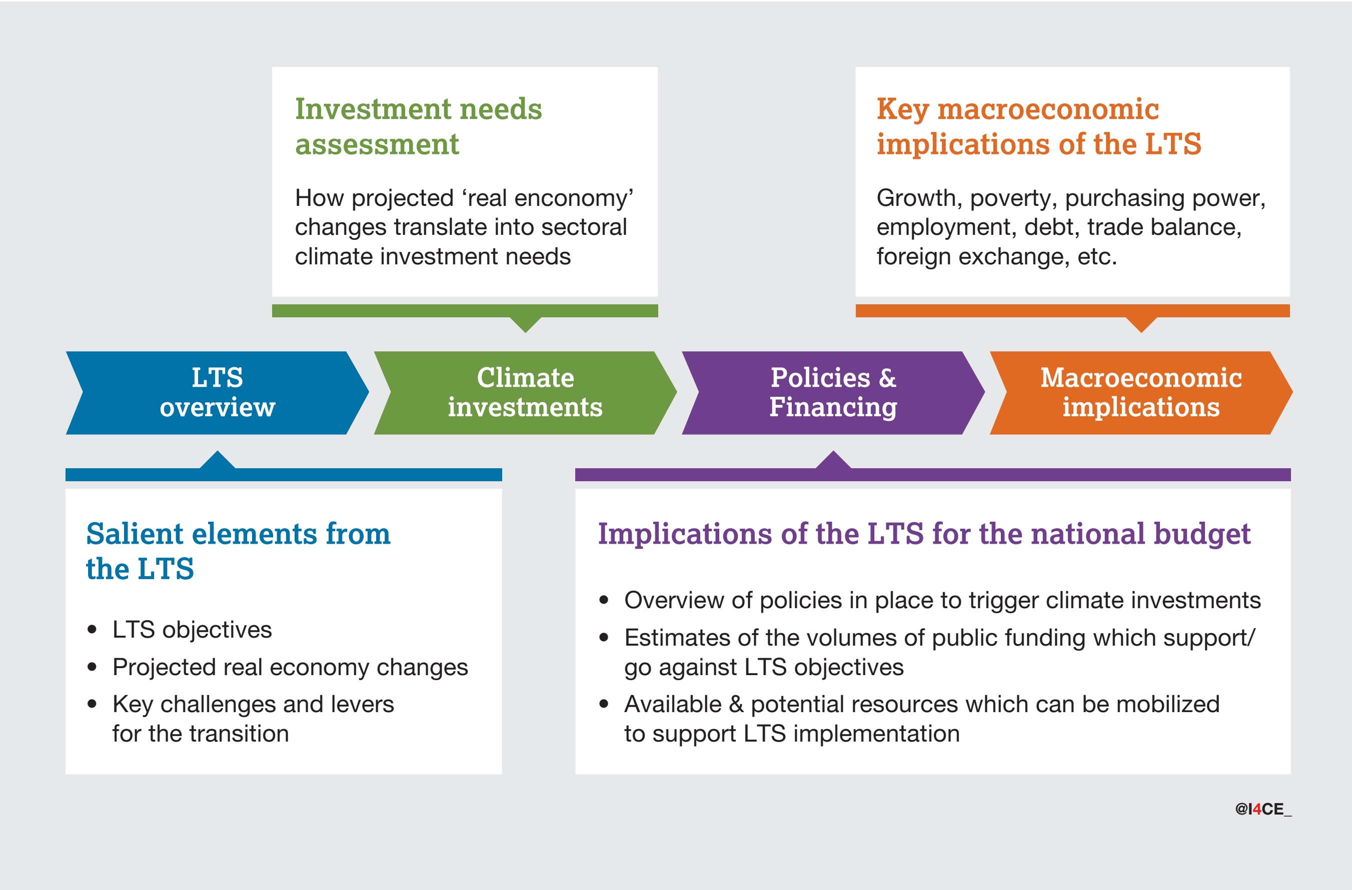
based sectors. These effects may not be negative, however, if they are understood well in advance and accounted for in LTS financing strategies.

Finance Ministries are key to the development of these financing strategies. Planning investments and strategies to trigger external financing, regulating public spending and revenues, and monitoring macroeconomics trends, all fall within Finance Ministries' mandates. Besides, their experience working over varied timeframes, managing temporal, social, and economic trade-offs (*e.g.*, infrastructure plans, pensions systems, etc.), and collaborating with line Ministries, facilitates the development of financing strategies that can circumvent issues commonly encountered in LTS implementation. However, it is essential that information on climate and environmental issues is streamlined within Finance Ministries as they work to prepare LTS financing strategies.

I4CE and the 2050 Pathways Platform propose a dashboard template designed to help Finance Ministries develop LTS financing strategies. Designed following exchanges with key stakeholders, including staff at Finance Ministries in a selection of countries, the dashboard template features key economic indicators to help Finance Ministers visualise the alignment of policies and investments with LTS, and to help the development of comprehensive LTS financing strategies. Publicly available, the dashboard template is meant as a flexible decision-making tool that countries can adapt, based on their capacity and the availability of economic and climate data.

The dashboard template is organised in four sections, logically unfolding LTS objectives, the climate investment gap, necessary policies and financing, and sectoral and macroeconomic implications. A user guide can be found on I4CE's website.

FIGURE 1 : DASHBOARD OVERVIEW



LTS OVERVIEW

The purpose of this section is to highlight critical mitigation and adaptation efforts to be undertaken according the LTS. In doing so, this section lays the foundations to compute investments needs associated with LTS objectives. It may also highlight areas of the LTS that would need clarification to become being fully actionable.

Key indicators

- ***Mitigation:*** current and projected national contribution to climate change, GHG emission reductions targets, expected mitigation challenges and levers.
- ***Adaptation:*** current and projected economic and social impacts of climate change, adaptation objectives, expected challenges and levers.
- ***Other:*** socio-economic development objectives stated in the LTS.

CLIMATE INVESTMENTS

This section records investments consistent with LTS objectives and those which are counterproductive. The transition to a low-carbon economy will materialise in sizeable, real economy investments such as in renewable energy power plants, energy-efficient building renovations, electric vehicles to replace internal-combustion engines (ICE) vehicles on roads, new low-carbon urban transport networks, etc. The indicators in this section build on information provided in the LTS to provide estimate investments needed in the real economy.

Key indicators

- ***Mitigation:*** current investments *vs.* projected investments needs at LTS milestones.
- ***Adaptation:*** current investments *vs.* projected investments needs at LTS milestones.
- ***Climate-harmful activities:*** current investments *vs.* projected investments reduction needs at LTS milestones.
- ***Total climate investment gap:*** gap between current adaptation and mitigation investments and projected adaptation and mitigation investments needs at LTS milestones.

POLICIES & FINANCING

This section details the means and implications of implementing LTS for public finances. It includes (i) current, planned, and proposed public policies to trigger climate investments and real economy changes required for the implementation of the LTS; (ii) projected volumes of public spending to support the implementation of the LTS; and (iii) an overview of current, projected, and potential sources of government revenue to fund the transition (*e.g.*, green tax revenue, green bonds, etc.). This section builds on the previous sections and gathers key elements to figure in LTS financing strategies.

Key indicators

- ***Mitigation:*** current, planned, and projected government spending for mitigation at LTS milestones.
- ***Adaptation:*** current, planned, and projected government spending for mitigation at LTS milestones.
- ***Climate-harmful activities:*** current, planned, and projected government spending for mitigation at LTS milestones.
- ***Government revenue for the transition:*** *e.g.*, revenue from climate taxes, green bonds, international climate finance, etc.

MACROECONOMIC IMPLICATIONS

This section highlights areas of the macroeconomy that need to be given particular attention when laying out LTS financing strategies. To this end, this section proposes to compare key macroeconomic metrics under LTS and the business-as-usual scenarios. The section comprises of (i) a list of key indicators derived from existing literature on macroeconomic implications of low-carbon transitions; and (ii) a list of additional indicators accounting for the country's priorities as stated in the LTS.

Key indicators

- ***Based on the literature:*** GDP growth, income level, sectoral contributions to GDP, employment, key imports and exports, debt, etc.
- ***Based on national circumstances:*** *e.g.*, exchange rate, poverty index, inequality index, debt structure, etc.

CONCLUSION

LTS are essentially nationally owned documents, comprehensive of the unique set of issues, constraints, and options available to countries to organise their transition towards low-carbon and resilient economies. Exchanges with key stakeholders in various countries have highlighted the need for governments to develop and implement a financing strategy for the transition. The dashboard template developed by I4CE and the 2050 Pathways Platform proposes a coherent structure to monitor LTS opportunities and implications for public finances and to develop financing strategies while accounting for the uniqueness of each LTS.

I4CE is hoping to launch a pilot study to put this dashboard into practice in the coming year. In the meantime, please do not hesitate to get in touch with us.

The Institute for Climate Economics (I4CE) is a Paris-based think tank with expertise in economics and finance with the mission to support action against climate change. Through its applied research, the Institute contributes to the debate on climate-related policies. It also publishes research to support financial institutions, businesses and territories in the fight against climate change and that assists with the incorporation of climate issues into their activities and operations. I4CE is a registered non-profit organisation, founded by the French National Promotional Bank Caisse des Dépôts and the French Development Agency.

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