IDDRI

POLICY BRIEF

N°06/16 JULY 2016 | CLIMATE

Long-term low emissions development strategies and the Paris Agreement – Why, what and how?

Henri Waisman, Thomas Spencer, Michel Colombier (IDDRI)

The Paris Climate Agreement represents a landmark for international efforts to mitigate and adapt to climate change. 195 countries agreed to an international treaty with *universal participation*, *ambitious objectives*, and *robust processes and rules* to ensure implementation and a continuous strengthening of action against climate change. However, the Paris Agreement represents a potential that is still to be realised.

One of the most crucial provisions of the Paris Agreement that remains to be elaborated is the call on all countries to develop "long-term low greenhouse gas emission development strategies, mindful of Article 2 taking into account their common but differentiated responsibilities and respective capabilities, in the light of different national circumstances" (UNFCCC 2015, Article 4.19).

This paper aims to explain what are "long-term low greenhouse gas emission development strategies" (LT-LEDS for short), why they are a crucial policy tool, and how countries could go about developing them in order to implement article 4.19. It is important to note that the answers to these questions are not independent: the usefulness of LT-LEDS depends on how they are done.

KEY MESSAGES

- Long-term low emissions development strategies (LT-LEDS) are a crucial policy tool that can help to place short-term actions in the context of the long-term structural changes required to transition to a low-carbon, resilient economy by 2050. Moreover, they can help to explore the consequences of policy choices in terms of integrated socio-economic objectives.
- LT-LEDS must be transparent, granular, structured and long-term to be useful; they should above all be seen as 'structured strategy exercises' rather than complex modelling exercises. LT-LEDS should be embedded in the national policy process, and represent a useful way of structuring national policy debates in a transparent, productive and ambitious way. The point of departure should be national socio-economic objectives, alongside the well below 2°C objective. Rather than *ex ante* allocation rules (the Paris Agreement has said that future contributions would be 'nationally determined'), national LT-LEDS should use per capita and sectoral benchmarks in order to ensure coherence with long-term emissions trajectories to meet the well below 2°C objective.
- International cooperation and dialogue can help to define and promote best practice LT-LEDS. In this regard, the G20 countries should play a leading role and commit notably to preparing LT-LEDS before 2019. LT-LEDS are explicitly not an element of the post-Paris negotiations as such; and should be kept distinct from discussions around NDCs.

This article is based on research that has received a financial support from the French government in the framework of the programme « Investissements d'avenir », managed by ANR (French national agency for research) under the reference ANR-10-LABX-14-01.

www.iddri.org

Institut du développement durable
et des relations internationales
27, rue Saint-Guillaume
75337 Paris cedex 07 France

SciencesPo

WHY ARE LT-LEDS IMPORTANT?

Climate change is a uniquely **long-term** and **structural** problem, which calls for a specific policy approach suited to address the ensuing complexities.

- Mitigating and adapting to climate change requires effecting change in **long-term, inert socio-technical systems** (energy systems, agricultural systems, workers' skills, scientific capital, etc.). This means that today's decisions affect significantly the nature of the transformation and notably the conditions for future deep emission reductions.
- Moreover, the socio-economic systems in question are highly complex, and both mitigation and adaptation are closely interlinked with the evolution of the broader socio-economic system. A consistent approach of **climate action and development** must therefore be developed to ensure the consistency of policies with important domestic socio-economic objectives.
- At the same time, climate change is **a global problem**, not just in its causes and impacts but also in its **solutions**. A country's or business's perception of the global strategic context in which it operates helps to shape its views on the feasibility, benefits and costs of climate action.
- All these changes must be approached taking into account the strong and multiple **uncertainities**, which make sequential decision-making necessary in the course of the transition, to build upon continual learning and permit the adaptation of policies in response to experience and increasing information over time. In such a context, an important role is played by policies that make the transformation more **robust** and **resilient.**

LT-LEDS provide a framework for approaching these dimensions of the climate agenda and are therefore a crucial enabler of both the implementation and ambition agendas. The interplay of these agendas is key for the post-Paris period: policies and measures to be adopted in the near term in all countries should be designed to both implement short-term targets and unlock deeper transformations in the future, aligned with the global, long-term ambition. In this context, LT-LEDS should be conceived to complement and inform the NDC process in 4 respects:

- *Linking short-term policy to the longer-term, systemic transformation required.* LT-LEDS can provide a framework to explore the implications of short-term policy decisions on the long-term transformations required for deep decarbonization of emitting sectors. They can provide a framework for understanding the adequacy of proposed actions, without reference to international burden sharing frameworks: the key criteria to evaluate policy in its ability to trigger deep, structural change.
- *Providing a framework for the national mitigation policy discussion.* Developing robust policies able to trigger systemic change efficiently and effectively requires buy-in from different stakeholders, with different perspectives, objectives and values. Providing a clear and transparent framework to explore the implications of different policy options, LT-LEDS can help to **structure a policy debate** at the national level.[1] Crucially, LT-LEDS can provide an 'ambition back-stop' to the national policy discussion, by continuously putting actors in front of the reality of the need for short-term actions to trigger a pathway towards deep systemic change.
- *Coordinating sustainable development, adaptation and mitigation objectives.* Developing policies that address consistently both domestic sustainable development objectives and mitigation targets requires economy-wide, cross-sectoral perspectives that consider the interplays between different policies and measures. By situating individual, sectoral policies within a systemic perspective, LT-LEDS can provide a **framework to explore the cross-sectoral interactions** in the light of the multiple policy objectives of mitigation, socio-economic development and adaptation specific to each national context.
- *Linking the national and global perspective.* LT-LEDS can reveal important strategic information about countries' expectations for the future: about what technologies they will deploy, what policies, what investments, what market opportunities they will create and so on. These expectations can in turn inform the strategic decisions of other countries and actors (corporations, investors, innovators, etc.). While INDCs have been crucial in terms of creating expectations about future policy directions, investment requirements, technology deployment etc., they are limited in terms of their detail, scope and time horizon. LT-LEDS can therefore provide an important complement to INDCs, in terms of setting out an **indicative longer-term, detailed vision**.

WHAT IS A LT-LEDS?

Some key characteristics must be satisfied by a LT-LEDS, in order to be useful for the above objectives.

1. Or indeed, regional, corporate, or city level. The focus here is on the national level, as this is the jurisdiction to which the Paris Agreement refers.

- It needs to have a **long enough time horizon** to capture the necessary changes for decarbonization. Construction of a LT-LEDS begins by considering the policy goal in the future and aims to assess the action required from today out to this future as a sequence of near, medium and long-term policies to meet this objective. 2050 is considered as the relevant milestone given the lifetime of crucial infrastructure for mitigation and adaptation, for example power plants, buildings, cities or dams.
- It needs to be **transparent, structured and detailed** in its assumptions and results to provide coherent and policy-relevant information to decision makers. In this regard, a LT-LEDS should provide explicit information on the physical infrastructure and equipment needed for the transformation as a basis for assessing investment needs. Sector by sector approaches, assembled from the bottom-up, are the most suitable for engagement in stakeholder debates because they make policy options "visible and tangible", and debatable at the non-expert level.
- The point of departure should be relevant **socio-economic objectives** established by the national policy debate. Analyses must typically address key development metrics (e.g. energy security, competitiveness, local pollution, employment, access to basic services, urbanization) in order to inform not only economic efficiency or technical feasibility but also political economy and social acceptability, administrative feasibility in the prevailing institutional and market conditions, and distributional equity.
- It must make explicit the **external conditions** assumed in the domestic transformation. These conditions form the boundaries of the country-scale strategy and include all variables that significantly drive the national transition but mainly depend on global conditions. This information is a crucial input for the identification of global cooperation priorities and enabling conditions able to facilitate the domestic transformation. It could include for example, assumptions on technology performance and availability; investment needs and financial flows; trade and competitiveness issues, etc.

METHODOLOGICAL INSIGHTS FOR DEVELOPMENT OF LT-LEDS

The Paris Agreement provides no terms of reference for the development of LT-LEDS; nor does it establish a process to develop such TORs. In this context, informal exchange between governments and between governments and researchers should seek to establish a set of shared best practices that can develop in a more *ad hoc* way norms about how LT-LEDS should be developed. We provide some initial guiding principles here:

- *A backcasting approach with relevant benchmarks.* A central challenge lies in the articulation between the ambition necessary to meet global climate goals and the necessity of defining the emission trajectories at the country level, according to national circumstances and independently of any formal *ex ante* allocation rule (as the Paris Agreement makes clear, future contributions will be 'nationally determined', cf. UNFCCC 2015, Articles 4.2 and 4.9). In order to ensure consistency with the pathways required to maintain the 2°C limit, a long-term "benchmark" expressed in emissions per capita can be used. For example, according to IPCC assessments, having the global average of energy-related emissions significantly below 2 tCO_2 per capita in 2050 is a necessary (although not sufficient) condition for 2°C-compatible trajectories. 2 tCO_2 per capita as a general guiding benchmark *replaces* an approach based on *ex ante* allocation of a 'carbon budget' at nation level: it describes the level of global ambition required to meet the 2°C. Subsequently, it is up to each country to decide how it can contribute to this objective in designing its LT-LEDS, in the knowledge that such a stringent target means that no country can be far from 2 tCO_2 if the aggregate pathway for 2°C is to be met. The LT-LEDS process means accepting that, at least in a first round, coherence with 2°C is not pre-assured: this is exactly the value of LT-LEDS, in the sense that they expose the requirements, opportunities but also the blockages to deep decarbonization. A subsequent iterative process and international cooperation (as envisaged in the Paris Agreement) can progressively bring each national vision of its LT-LEDS into collective alignment with the 2°C.
- *A sectorally detailed reporting template.* As noted above, the Paris Agreement provides no TORs for the development of LT-LEDS. However, the *ad hoc* development of best practices could help to converge countries' production of LT-LEDS towards common but flexible approaches. Ideally a common reporting template would be used. This template would have a number of objectives. Firstly, it would present the required transformations in a more policy relevant way. Secondly, it would provide an integrated framework to ensure the coherence between sectoral strategies and overarching, economy-wide parameters and objectives. Thirdly, a template for developing LT-LEDS should provide a framework to address country specificities and development metrics that drive emissions pathways

(e.g. energy security, competitiveness, local pollution, employment, access to basic services, urbanization). This requires typically addressing key development metrics that drive emission pathways (population, GDP per capita, economic structure, access to energy services, etc.).

- *A targeted use of mathematical models and use of quantitative and qualitative storylines.* Mathematical models are useful tools to inform the design of LT-LEDS, but their use should be conceived in light of the additional information they can bring. LT-LEDS should be conceived as above all 'structured strategy exercises', not as modelling exercises; models can be used as a framework to test strategies, but cannot substitute the phase of strategy development. This means that no standard modelling framework can be used to design country LT-LEDS. Rather, modelling frameworks should be used to inform the crucial questions that arise from the strategy exercise. Depending on the context, this can mean developing modelling structures able to quantify the link between low-emission pathways and e.g. local air pollution, poverty alleviation, employment, adaptation and water availability, etc.
- *An inclusive process to design a robust and policy-relevant LT-LEDS.* The process leading to the design of a country LT-LEDS is as important as the result itself. Indeed, only domestically-owned processes (and not only domestically-produced results) can help build policy strategies that are truly resilient and robust to political vagaries and uncertainties. And for this, domestic institutions independent of their government (NGOs, academics, business, utilities…) must be offered the possibility to propose their visions of the low-emission transformation in a consultative process, with sufficient level of detail to reveal the underlying assumptions and socio-economic impacts. The production of LT-LEDS is therefore not a one-shot activity to be delegated to external consultants of official administration, but should rather be the result of a process engaging all stakeholders.

HOW TO IMPLEMENT LT-LEDS AND ARTICLE 4.19?

The above discussion provides us with some insights into how article 4.19 should be implemented. First and foremost, it is important to understand the invitation contained in article 4.19 to develop LT-LEDS not as an 'international reporting requirement', but rather as an opportunity to define long-term strategies at the national level to inform short-term policy decisions, and to derive from this insights into required frameworks for international cooperation.

Secondly, given the absence of TORs for LT-LEDS in the Paris Agreement, and the non-mandatory nature of article 4.19, it will be important to build coalitions of countries willing to develop and release their LT-LEDS. The release of sensitive information around the country's perceptions of future strategies may naturally raise concerns. To this we would provide two responses. Firstly, LT-LEDS are explicitly not an element of the post-Paris negotiations as such; and should be kept distinct from discussions around NDCs. Secondly, the development and release of LT-LEDS can provide great benefits at the national level in terms of supporting domestic policy; and, coming from a sufficient group of countries, can provide strategic information to guide future cooperation efforts.

Thirdly, a coalition of countries moving forward on LT-LEDS should work to define good practice in terms of what constitutes a 'good LT-LEDS'. This relates in particular to the methodological approaches for providing transparent, coherent and detailed LT-LEDS, from which policy relevant information can be derived. The use of informal exchange between governments and between governments and researchers can help to share experience with developing LT-LEDS and develop best practices.

Fourthly, it is important to provide further momentum to the implementation of Article 4.19, given its non-mandatory nature. Coordinated announcements of timelines to develop and publish LT-LEDS can help to do this. Commitments to develop and publish LT-LEDS in fora such as the G7 and G20 can provide further momentum. Ideally, the G20 countries could commit to using the G20 working group on energy to exchange on the development of LT-LEDS, and commit themselves to developing and publishing LT-LEDS on a specific timeline, i.e. before 2019.

Fifth, it is crucial that LT-LEDS are appropriated at the national level, and become a real part of the policy discussion. Consultation and dialogue processes at national level in the development of LT-LEDS are important. Likewise, LT-LEDS should be explicitly part of the policy process, and form an input into future policy decisions at the national level.