



GETTING ON TO THE RIGHT (EMISSIONS) PATH

AN ADEQUACY ASSESSMENT FRAMEWORK AND ITS APPLICATION WITHIN THE EU

Objective: Make the case for a multidimension framework to assess adequacy of the global response to the implementation of the Paris Agreement, and provide specific recommendations to the EU to apply this framework in its policy process to accelerating climate action in the context of the European Green Deal.

KEY MESSAGES

- ▶ We are not on track to meet the Paris Agreement mitigation goals: the challenge is to better understand the nature of this gap and to feed political discussions at all relevant levels and across these different levels on how to address it. Studies on general abatement potentials or theoretical economic assessments have played a role but have limited capacity in moving us further.
- ▶ The successful implementation of the Paris Agreement inevitably requires addressing different inter-connected dimensions: governance, economic and social, sectoral & physical transformations and GHG emissions.
- ▶ Political discussions on ambition need to be confronted with adequacy assessments that allow for these different dimensions to be considered. Rather than overcomplicating things, a more textured response, embedded in the realities of the different geographies and for each of the sectors, while making the best of international cooperation, will facilitate the design of possible new avenues to make a more rapid and effective transition (from an environmental perspective) possible.
- ▶ Adequacy assessments should also play a key role in tracking progress and identifying avenues for international cooperation given the highly dynamic and interactive nature of the ambition ratchet-up mechanism (i.e. NDC submission cycles and stock takes).
- ▶ For the EU, the application of this adequacy framework yields three specific recommendations for the very short term:
 - Use the National Energy and Climate Plans (NECPs) final review process to structure a political discussion on ambition and sector-level priorities by linking them to the European Semester
 - Inviting Member States (MS) to consider the creation of independent advisory bodies in the Climate Law to be presented by March and ensuring existing EU institutions support their collaboration at EU level
 - Establishing a European stocktake to prepare the EU contribution under the Paris Agreement as part of its Climate Pact.

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This brief compiles research from most deliverables and numerous consortium discussions and stakeholder engagement activities over the lifetime of the COP21 RIPPLES Project. To highlight, inputs are taken from D2.3, D2.4, D3.3, D3.4, D3.5, D4.2 and D4.3. All this work involves the following institutions: Bruegel, CA, CMCC, CNRS, COPPE, ENEA, IDDRI, IES-VUB, Tsinghua University, UCL, UCT, UEA, UOXF, WI, WiseEuropa. This brief has been coordinated by IDDRI.



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Not just more, but ‘adequately’ more

There is a generalised acknowledgment that the world is not on track to meet the Paris Agreement (PA) long-term goal of holding the increase in the global average temperature to well below 2C, let alone to 1.5C. In its final decision, the recent COP25 *re-emphasizes with serious concern the urgent need to address the significant gap between the aggregate effect of Parties’ mitigation efforts (...) and aggregate emission pathways consistent with the goal.*

If current efforts were to remain unchanged, the necessary transformation of the energy systems to reach carbon neutrality would be abrupt from 2030 with evident transition acceptability consequences and we would have missed the opportunity to reduce the overall cost of the transition through ‘learning by doing’ and avoiding locked-in investments [COP21 RIPPLESa]¹. The current ambition level becomes a fundamental matter of feasibility to meet the Paris Agreement mitigation goals, within and beyond the energy systems (**Figure 1**).

In 2020 countries have the first deadline to revise their current Nationally Determined Contributions (NDCs), following a 5-yearly successive review process defined in the PA. The ambition enhancement should only be considered adequate if it helps transform our societies so as to meet the

global mitigation goal. The brief aims to contribute to this discussion by providing a framework to think about the ‘adequacy’ of the global response to the implementation of the PA and policy recommendations on how and in which policy processes it could be applied within the EU in the months and years to come.

Adequacy to reveal underlying politics and track progress

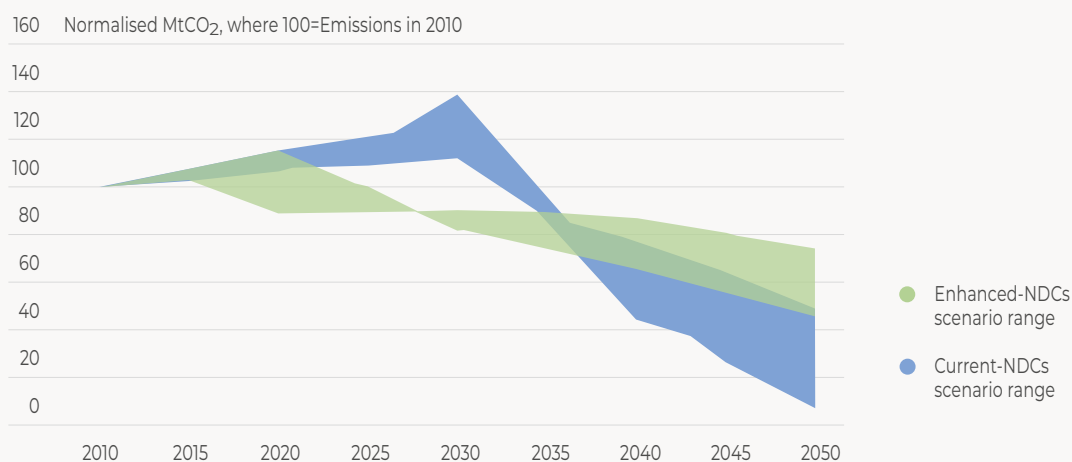
In spite of difficult geopolitics and power relations (IDDRI)², earnest political discussions on ambition are noticeable around the world and across constituencies, largely driven by the COP21 outcome, higher visibility of climate risks and impacts, and the civil society mobilisations stirred up by the youth. A framework for adequacy can help shaping these discussions with views to unblock action

¹ COP21 RIPPLESa - COP21 RIPPLES Consortium (2018). A sectoral perspective to embark on transformative pathways. COP21 RIPPLES, Policy Brief.

² Sebastien Treyer. Blog post – January 2020. Available at: <https://www.iddri.org/en/publications-and-events/blog-post/what-political-leadership-make-key-international-year-climate-and>

Figure 1. Illustrative pathways of global "Current-NDCs" and "Enhanced-NDCs" scenarios

Illustrative pathways of the "Current-NDCs" and "Enhanced-NDCs" scenarios for global CO₂ energy-related emissions as modeled by three different models: TIAM-UCL, POLES and ICES



and ambition. In fact, this is the first objective for establishing such a framework. It can bring the political discussions underlying the transformation to public attention and disclose its diverse and inter-connected dimensions for coherent policies and approaches.

The assessment of adequacy has a second objective: to track progress. The shift towards a dynamic, iterative regime of climate governance, based on learning and innovation and hopefully rapid strengthening of institutions, cooperation and policy commitments of the PA (Spencer *et al.*, 2015³) implies a thorough and continuous monitoring of progress and prospective analysis against normative deep decarbonization pathways and its underlying drivers, as well as metrics that help us understand the pace of the transition (willingness, consensus, confidence).

With these two objectives in mind, adequacy assessments should play a prominent role at two levels: first with sectoral approaches, which are more likely to deliver ambition and can make

transformation happen on the ground [COP21 RIPPLESa]¹; second, with multi-level approaches that are needed to coordinate across levels of governance and action. For the EU as an example, this would entail the need to consider the specificities of subsidiarity and sovereignty principles of Member States (MS)—in particular their sovereignty over their own energy mix guaranteed by EU Treaty—as well as embracing heterogeneity as starting point.

So, what is adequate?

Reaching the 1.5C target requires a gigantic transformation of our economies and societies (IPCC 1.5SR)⁴. Studies on general abatement potentials or theoretical economic assessments have played a role but have limited capacity in moving us further. The analysis of concrete changes that should drive pathways towards the 1.5C and its socio-economic implications must be focused on overcoming the technological, financial, policy, cultural and governance-related barriers that enables an acceleration of climate action and considerations of

³ Spencer, T. and R. Pierfederici et al. (2015), "Beyond the numbers: Understanding the transformation induced by INDCs", Paris: IDDRI. Report of the MILES Project Consortium. <http://www.iddri.org/Publications/Beyond-the-numbers-Understanding-the-transformation-induced-by-INDCs>

⁴ IPCC Special Report on 1.5C, <https://www.ipcc.ch/sr15/>

increased ambition in the context of new NDCs. An adequate response to this challenge should, at the very least (Figure 2):

- Not be assessed (just) in terms of GHG emissions, but its underlying drivers. This ensures a response that tackles the structural transformative changes that are required, and avoids unrealistic nor desirable sequential approach to sectorial changes or insufficiently consideration of the links between solutions
- Take into account the socio-economic reality, rather than define approaches based on oversimplified views of the world. For example, when discussing how technology is diffused in the real world, by understanding barriers to change (political, societal preference, behavioural, etc..)
- Use the potential of sectoral global approaches and international cooperation to support the transformation.

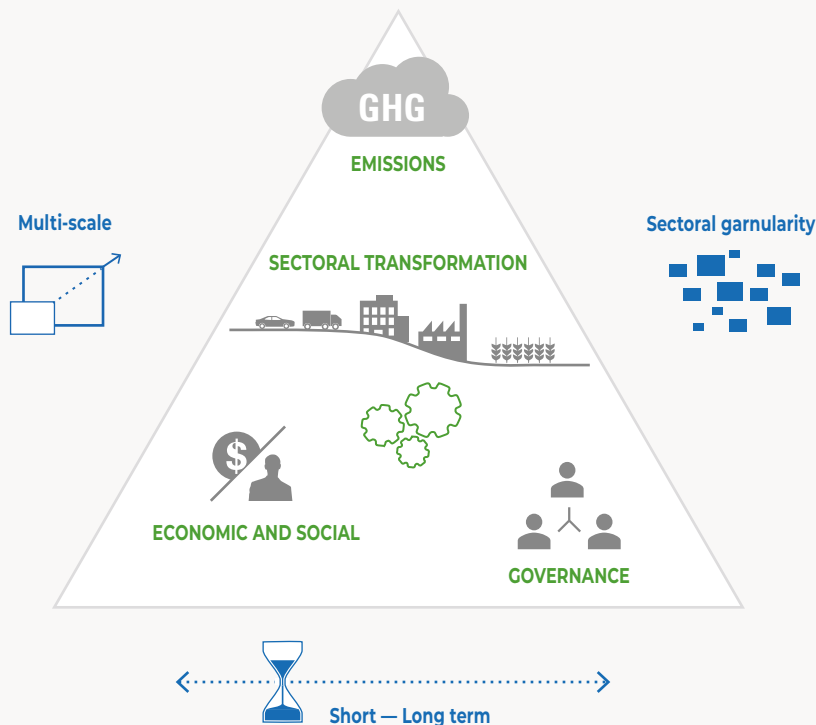
However, if we look at current NDCs, as main planning instrument to bridge the ambition gap at international level, the focus is on economy-wide

emissions, with few or no details on sectoral transformations and without factoring in the potential of international cooperation.

COP21 RIPPLES research shows that gaps and opportunities exist for different dimensions—economic and social, governance—but often the focus is solely on emissions. From an environmental viewpoint, the gap on emissions is not the only effective marker of the insufficiency of climate policies. When looking at emissions, the alignment between the short and the long-term desired outcomes are not always enforced [COP21 RIPPLESb]⁵ and the debate on temporal aspects is poorly associated to the transformation requirements. For a given volume of emission reductions over time, different emissions profiles allude to different transition stories and associated risks. In the EU for example, freezing ambition to current NDC level by 2030 would

5 COP21 RIPPLESb - COP21 RIPPLES Consortium (2019). Some arguments for increasing the EU's 2030 climate ambition. COP21 RIPPLES, Policy Brief.

Figure 2. COP21 RIPPLES Assessment framework features



imply that the relative reduction effort between 2030-50 would need to be almost twice as high compared to a scenario of enhanced ambition by 2030 in the energy system [D2.4]⁶. The analysis of socio-economic consequences in COP21 RIPPLES, for energy security [D3.2], industrial competitiveness [D3.4] or inequalities [D3.6] illustrates the need to manage the transition in the short term for effective transformations. Results on energy affordability in Bulgaria [D3.2] or upfront costs in developing countries [D3.5] require attention, to name few. [D3.5] argues for the need of early investments to foster learning and countries specialization to certain low-carbon technologies, often blind to ambition assessments. [D3.5] finds that an existing strong sector can fail to develop new technologies (electric vehicles in Italy), but also massive industrial expansions do not automatically yield the latest technology (PV in China) or same policy frameworks result in different outcomes from country to country (local content requirements for wind energy in Brazil and South Africa), which emphasises the importance of the context. On governance, [D4.2] identifies opportunities to strengthen governance for most sectoral systems, and interestingly different across them, and [D4.4] highlights the potential of international governance to tackle political economy barriers in emerging economies. International cooperation in the format of decarbonization clubs within the industrial sector can precipitate the transformation of specific sub-sectors, such as iron and steel, at the global level in a way that an in-country industrial and/or climate policy could not achieve. These findings illustrate the importance of the different dimensions and the need to connect dots among them. We argue that only comprehensive approaches that address all of them, taking into account their interrelationships, are likely to keep 1.5C within reach. Rather than overcomplicating things, a more textured response, embedded in the realities of the different geographies and for each of the sectors, while making the best of international cooperation, will facilitate the design of possible new avenues to make a more rapid and effective transition (from an environmental perspective) possible.

⁶ Cf. COP21 RIPPLES website for deliverables: <https://www.cop21ripples.eu/resources/>

⁷ GHG emissions compared to 1990.

Leading by example: recommendations to apply adequacy assessments in the EU

The European Union is facing internally similar coordination challenges as elsewhere: finding a balance between Member States (MS)/regional *versus* pan-European approaches, sectoral *versus* national policies and short- *versus* long-term objectives. Applying “at home” the principles above mentioned will both help the EU and MS political processes and represents an opportunity to become a role model in ensuring an efficient implementation of its environmental objectives. A first priority should be to ensure existing tools of the Governance Regulation -the integrated National Climate and Energy Plans (NECPs) for 2030 and the national long-term strategies (LTSs) for 2050 - produce the necessary level of detail to reveal how they intend to fulfil their part of the EU climate mitigation effort. Both the NECPs and LTSs should give sufficient details on sectoral transformations, integrate socio-economic realities and identify areas of cooperation both with neighbouring countries, within the EU and at the international level. Importantly, NECPs should be assessed against the capacity to deliver the long-term ambition defined at national and EU-level. This should facilitate the needed political conversations at EU level and may be regulated in the context of the Climate Law.

The high-level political priority given to the European Green Deal will help drive changes in many existing policy levers and drive the creation of new ones at the EU and MS levels. However, ensuring that changes in existing policy packages happen in a coherent manner to deliver on all priorities will be of crucial importance to increase their efficiency and, in the end, the ability of the EU to deliver on its promises. The recent endorsement of the climate neutrality objective for 2050 and update of EU's GHG emission objective from -40% to -50% or -55% in 2030⁷ announced as part of an overarching Green Deal policy initiative implies overall targets more aligned with the PA goals but also an even more intensive coordination across dimensions and sectors and a higher value in identifying

synergies among them. To have a brief overview of the challenge, consider the 11 priorities (see Figure below) set by the European Commission. All of these priorities and policy areas are strongly interlinked and require mobilising a variety of policy levers (regulation, standards, investments and innovation) at both the EU and MS levels. In addition, most identified priorities will have important impacts on other dimensions: energy policy will increasingly crossover with land-use and ecosystems protection as energy systems become more renewable-based while urban and space developments will impact the ability to shift to a more sustainable mobility (Figure 3).

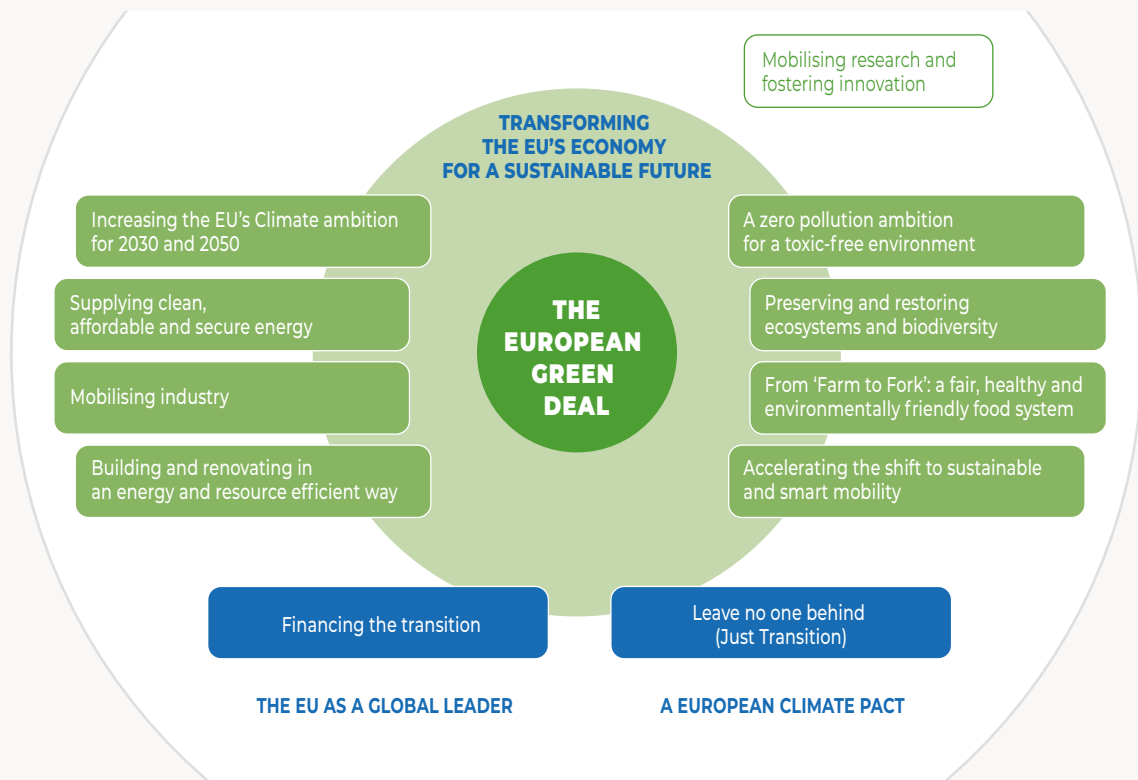
NECPs, LTSs, and the application of the adequacy framework principles can help refocus the political discussion on identifying the areas where strategic alignments at the EU level or for a group of MS through regional cooperation are necessary such as finance regulation and macroeconomics policies, trade, industrial policy or energy

infrastructure. In particular, an increased role should be given to monitoring and reporting on progress and implementation in the EU policy process as it allows to: (1) collect information that can inform the revision of policies by drawing lessons from experience; (2) present this information in an accessible format that ensure a transparent public debate regarding the achievement of objectives; and (3) understand the drivers and barriers to implementation by providing invaluable evidence to ground foresight work (Rudinger, 2018).⁸

Based on this diagnosis and the learnings emerging from COP21 RIPPLES, next we focus on three actions that the EU could engage today regarding the recently adopted EU energy and climate governance process, the European Climate law to be presented in March, and its announced Climate Pact as part of the Green Deal.

⁸ Rudinger (2018), Creating a dashboard to monitor progress for the low-carbon transition, IDDRI study n°11/2018

Figure 3. The European Green Deal



Use the NECPs final review process to structure a political discussion on ambition and sector-level priorities by linking them to the European Semester

A first assessment of draft NECPs in 2019 produced by the European Commission⁹ identified significant ambition gaps, in particular in aligning with renewable and energy efficiency targets defined at the EU level and in integrating industry, innovation, financing opportunities and social dimensions. Therefore, the EU should give a high political priority to ensuring final NECPs do respond to the identified gaps and communicate its assessment at the highest political level. Then, the information included in the NECPs should serve as a basis to evaluate progress of MS regularly in the European Semester, including progress at sectoral level. The EU should also make sure that all MS produce their long-term strategy in 2020 with the appropriate amount of detail. The EU should review MS assessments on the alignment of NECPs with national long-term strategies; it should also compare the combination of these national strategies with the EU long-term vision for a climate neutral economy in 2050 in order to foster a country-driven policy debate on how to achieve carbon neutrality in the EU in the context of the sectoral policies work scheduled for 2021.

Invite MS to consider the establishment of independent advisory bodies in the Climate Law to be presented by March and ensure existing EU institutions support their collaborations at EU level

Independent advisory bodies can be very effective climate governance tools to inject the long-term nature of climate action into current policy processes. The UK has been a pioneer in putting in place the Climate Change Committee in 2008 which now has a central role in evaluating the impact of climate mitigation and adaptation policy and defining UK carbon budgets.¹⁰ Today, a growing number of EU countries—and some EU subnational authorities—have recently put in place such entities (France, Sweden) to measure progress and advise on climate policy (both mitigation and adaptation) with a right to propose measures or targets. In developing these activities, these advisory bodies benefit greatly from cooperation with their counterparts and the

use of similar adequacy assessment frameworks. The UK, German and the former French advisory bodies¹¹ already developed common reflections in workshops¹² and some of its members recently advocated for establishing an Expert Advisory Commission to assist the G20's Energy Transformation Processes.¹³ EU institutions have a role to play to support this type of cooperation. At the EU level, the European Environmental agency (EEA) already produces indicators on climate and energy policy and Sustainable Development Goals.¹⁴ Its current role is limited to producing data and analysis on a regular basis or on demand but it could support a collective work on applying a common adequacy framework and develop a large set of 'adequacy indicators' and should be made up of experts.

As part of the Climate Law, the EU should mandate the EEA to support cooperation among climate advisory bodies for the production of analysis and data recollection and invite MS that do not have such advisory bodies to consider putting one in place. The EU should offer the support of its existing institutions and a common framework laying down the terms of reference on their function (independence, monitoring of the transition, policy and target recommendations, and publicity of their work) leaving the introduction of such advisory bodies in the different institutional contexts in the hands of national governments. In the future, national advisory bodies' cooperation could develop in a similar way than what the ACER¹⁵ did for National Regulation Agencies on energy regulation. Broader cooperation to include subnational advisory bodies could be explored, following the example of the EEAC Network.¹⁶

⁹ European Commission (2019). Communication "United in delivering the Energy Union and Climate Action - Setting the foundations for a successful clean energy transition <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1565713062913&uri=CELEX:52019DC0285>".

¹⁰ Rudinger, A. and Vallejo, L. (2018). Le comité pour le changement climatique au Royaume-Uni, quel retour d'expérience et quels enseignements pour la France?, IDDRI Study n°06/18.

¹¹ Before the current Haut Conseil pour le Climat was established, the comité d'expert pour la transition énergétique existed since 2015 with a more limited mandate.

¹² "Monitoring and managing energy transitions: Experiences in the UK, Germany and France" workshop in Paris the 27th of March 2017 and "Seminar of the German and French Expert Commissions for the energy transition", Mannheim 26th of September 2018.

¹³ https://www.g20-insights.org/policy_briefs/establishing-expert-advisory-commission-assist-g20s-energy-transformation-processes/

¹⁴ The European Environment - State and Outlook 2020: Knowledge for Transition to a Sustainable Europe (European Environment Agency).

¹⁵ The Agency for the cooperation of Energy regulators <https://www.acer.europa.eu/fr>

¹⁶ The European Environment and Sustainable Advisory Councils (EEAC) <https://www.eeac.eu>

A European stocktake to prepare EU contribution under the Paris Agreement as part of its Climate Pact

The Climate Pact announced for March 2020 rightfully emphasises the need to engage with the public on climate action by multiplying information sharing and citizen's dialogues and providing opportunities to civil society and grassroots initiatives to express ideas and work on how to achieve climate objectives. To do so, it is essential that the EU takes a proactive role in exposing the priorities and socio-economic consequences of the ecological transition. However, it is equally important that the views of citizens', subnational authorities, local authorities and civil society resonate into the climate governance process across all dimensions and to the top. Building on the learnings on adequacy laid above, this stocktake should be designed in a way that provides a systematic assessment of transformation challenges and barriers. In addition, the EU is an example of multi-level governance and the way it builds its consensus could contribute to smooth a consensus at the global level. Therefore, the EU could inform its internal policy process by organizing a regular process where governments and all actors of the EU society build a common understanding in the progress made in the low-carbon transition, present and discuss their way forward and potential readjustment of long-term strategies and accordingly short term public policies. This could take the form of a European stocktake among all EU MS governments and open to all actors of EU societies. Though focus and features may not fully coincide with the Global Stocktake laid down in the PA, implementing an European one will also contribute to the design and the credibility of the Global, supporting the EU leadership in the international sphere. To be able to inform the update of the EU contribution to the global effort, this EU stocktake should ideally take place at least every five years ahead the PA's Global Stocktake.

Final remark

This brief has focused on the application of an adequacy framework to the EU. Similarly, this can be done at international level. The PA's Global Stocktake is a critical opportunity to assess adequacy, and therefore establish a political discussion beyond emissions, including sectoral assessments (Hermwille 2019¹⁷, Jeffery 2019¹⁸). Developing the global framework will make it possible to "sum up" these visions and discuss the global image that is progressively emerging, compared with more normative top-down vision. For this to happen, new NDCs and LTSs expected in 2020 should enable such discussions. The EU needs to take leadership in framing NDCs in a way that will invite others to reveal these sectoral dimensions, their multidimensional framing, and the policy assumptions (beyond domestic level) and in promoting the development of LTSs that empower domestic thinking and policy exploration within the global long-term Paris vision of neutrality.

¹⁷ Hermwille, Lukas, Anne Siemons, Hannah Förster, and Louise Jeffery. 2019. 'Catalyzing Mitigation Ambition under the Paris Agreement: Elements for an Effective Global Stocktake'. *Climate Policy* 19 (8): 988-1001. <https://doi.org/10.1080/14693062.2019.1624494>.

¹⁸ Jeffery, Louise, Anne Siemons, Hannah Förster, and Lukas Hermwille. 2019. 'Tackling the Challenges of Assessing Collective Progress for an Effective Global Stocktake – Executive Summary'. Discussion Paper 41/2019. Climate Change. Dessau-Roßlau: Umweltbundesamt. <https://www.umweltbundesamt.de/publikationen/global-stocktake-summary>.

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The COP21 RIPPLES project

"COP21: Results and Implications for Pathways and Policies for Low Emissions European Societies" aims to analyse the transformations in the energy systems, and in the wider economy, that are required in order to implement the Paris Agreement (NDCs), and investigate what steps are needed to attain deeper, more ambitious decarbonisation targets, as well as the socio-economic consequences that this transition will trigger.

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