

For a better integration of lifestyles changes in decarbonisation pathways

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Who are we? Why this subject?

IDDRI is an independent policy research institute, a think-tank to facilitate the transition towards sustainable development based in Sciences Po Paris.

> *coordination of the Deep decarbonization pathway project*

CIREN is a joint research unit (Unité Mixte de Recherche) between CNRS, ENPC, EHESS, AgroParisTech and CIRAD

> *a long experience in pathways mitigation modelling*

A growing interest for lifestyles changes within the framework of decarbonisation pathways

- In the scientific literature (van Sluisveld *et al.* 2015; van den Berg *et al.* 2019)
- At the national levels with stakeholders scenarios: the example of France

Part of a renewed effort to highlight demand sides issues

(Mundaca *et al.* 2019, Creutzig *et al.* 2018)

Why ?

It can be seen:

- In the light of the gap between the limited progress made on emissions reductions in the past thirty years and the increasingly ambitious mitigation target (IPCC, SP 1.5°C)
- In the light of the limits and risks associated to BECCs use in mitigation pathways (Anderson and Peters, 2019; Beck and Mahoni, 2018)
- And this encouraged to explore other avenues (Grubler *et al.* 2018, van Vuuren *et al.* 2018).

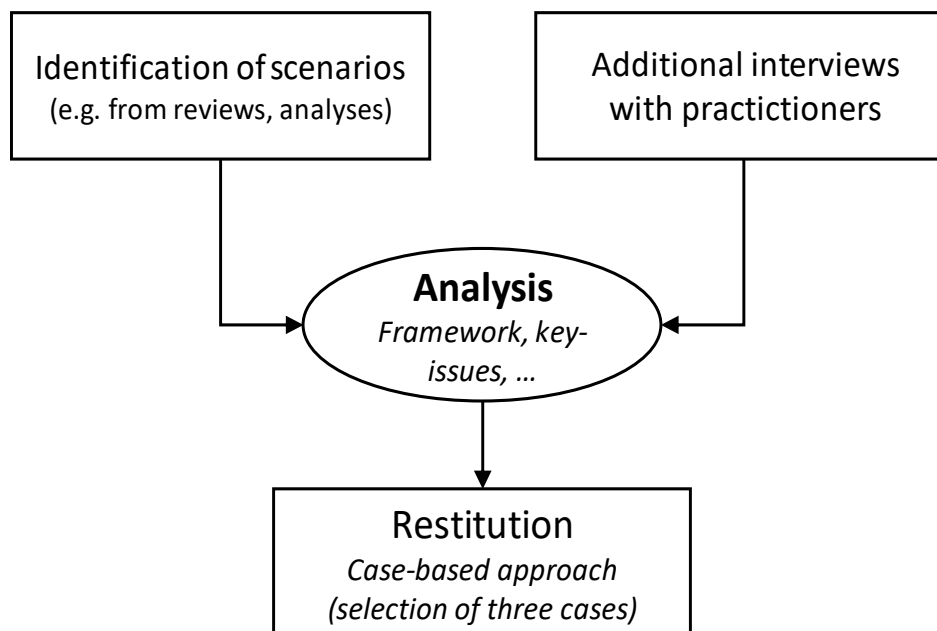
However not so obvious and consensual

- How to deal the political dimension of lifestyle changes ?
- Identifying the most appropriate scientific approaches for generating assessment in terms of climate mitigation potential is not easy

Our goal: To better understand the political and scientific implications of considering lifestyle changes in mitigation pathways dedicated to inform the decision-making.

- We combine an analysis of a range of concrete exercises (n=70) with a discussion on how it could affect the policy relevance of the knowledge they develop.
- We are jointly interested in scenario production practices, including those of the modellers, and in the science-policy process in which there are included

Method



Since the analysis covers a very heterogeneous material, we adopted a case-based approach to deliver its key messages.

We selected three scenario development initiatives that are both typical and complementary.

| <i>Main reference</i> | <i>Scenarios</i> | <i>Type of initiator</i> | <i>Spatial level</i> | <i>Position related to the science policy interface / Science-policy context</i> |
|---|--|-------------------------------|----------------------|--|
| <i>Grubler et al 2018</i> | Low energy demand scenario | Academic team | Global | Scientific expertise produced within the IPCC schedule (Special Report 1.5 of the IPCC, post Paris Agreement) |
| <i>European Climate Foundation 2018</i> | Zero emissions pathways produced within the “Net-zero 2050” initiative | Non-governmental organisation | Regional (Europe) | Expertise produced following the Paris Agreement “The project seeks to answer the question of ‘how’ we achieve the required transition.” |
| <i>French Ministry of ecology 2018</i> | Scenarios supporting the National Low-Carbon Strategy | Government | National (France) | Knowledge produced within the revision of the national strategy to reach the mitigation goals The “scenario is not prescriptive, only indicative”. It does not constitute a long-term action plan, instead it serves as a reference for the definition of the carbon budgets in particular. It also gives some guidelines to monitoring how the energy transition is being managed” |

| Changes in practices | Common indicators used to quantify the effects | Grubler et al 2018 | | European Climate Foundation 2018 | French Ministry of ecology 2018 |
|--|---|----------------------|-----------------|----------------------------------|---------------------------------|
| | | Global North | Global South | | |
| Consumption practices (e.g. food, goods) | Further accumulation of consumer goods and device | ↑ (moderate) | ↑ | | |
| | Changes in consumer behaviour leading to lower product demand | | | ↓ | |
| | Increase of living standards | | ↑ | | |
| | Growing concerns for healthy living and dietary shifts | ↓ (moderate) | ↓ (moderate) | ↓ | ↓ (moderate) |
| Mobility practices | Increase of living standards | ↑ (moderate) | ↑ | | |
| | Partial substitution of physical mobility by telepresence | ↓ (moderate) | ↓ (moderate) | ↓ (moderate) | ↓ (moderate) |
| | Shift towards shorter trips accompanied by urban policies | | | ↓ | |
| | Substitution of private cars by shared or active modes | ↓ | ↓ | ↓ | ↓ |
| | Share transportation | ↑ | ↑ | ↑ | ↑ |
| | Towards preferences for urban and dense areas | ↓ | ↓ | ↓ | ↓ |
| | Reverse preferences for distant holidays | → (stabilisation) | | ↓ | |
| Housing practices | Increase of living standards | | ↑ | | |
| | Towards preferences for urban and dense areas | ↓ | | | |
| | Saturation of preferences for larger dwelling | → (stabilisation) | | ↓ | |
| | Change in comfort standards | | | | ↓ |

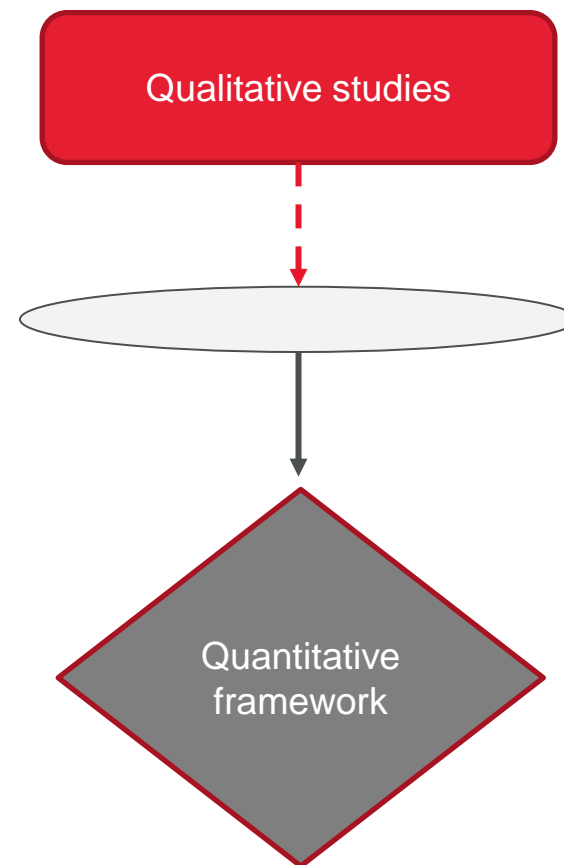
A common approach

- Variety of modelling tools.
- A global and qualitative reflection process that goes through an interpretation exercise to be integrated in the modelling exercise.

Limits observed

Despite methodological efforts:

- **This involves the reductive prism of modelling tools:** the analysis of lifestyles must be done within a predetermined framework that is fairly constrained by the modelling structures, which were not initially thought to deal with lifestyle changes.
- **Certain hypotheses are precisely described and others remain not completely explicit,** which may be prejudicial to the collective discussion.



Potential benefits we observed in our sample.

Taking a broader view of the possible futures

Demand is a dimensioning variable that makes possible to explore alternative pathways

Describe the changes in all components of society

Pathways, by highlighting that demand can change, contribute to reaffirming the social nature of the transition

Foster increased knowledge of the synergies with SDGs

Description of future lifestyles encourages the exploration of synergies and trades-off with "other societal objectives" and biodiversity

Rooting the transition into "everyday life"

Portraits or ideal-types to better explain and show the transition issues.

Would exploring lifestyle change in mitigation pathways challenge their policy relevance?

A challenge for policy neutrality

Challenge the value-neutrality of the pathways because lifestyles = values, preferences, social and individual representations...

Their change is not consensual and difficult to prove (credibility issue)

A potential threat for freedom



However, « standard » pathways are neutral only in appearances (Rosenbloom, 2017; Cointe *et al.*, 2019) and all make assumptions about future lifestyles.



To better address interactions between science and policies

Would exploring lifestyle change in mitigation pathways challenge their policy relevance?

A challenge for the scientific basis

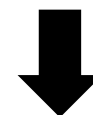
A large part of what is embodied in the lifestyle concept still remains outside the scope.

This concept calls for a plurality of disciplines

Lack of representation of social sciences > lack of legitimacy



However a greater integration of social sciences into existing frameworks is proving to be a challenge (Geels *et al.*, 2016).



To reinforce the dialogue with other disciplines

Going beyond the improvement of models

Constraints brought by the analytical decomposition framework

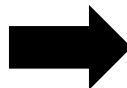
Improvements (van Den Berg *et al.* 2019) are valuable but not enough to overcome specific policy challenges

Necessary to think about the scope of relevance of the models (black box effect, calibration, capacity to be used...)

- Exploring lifestyle change in mitigation pathways challenges at first their policy relevance
- Overcoming these challenges would ultimately strengthen it



Because of epistemic differences, it is probably more about bridging approaches (Geels *et al.*, 2016).



A need to design richer approaches to develop pathways and to integrate them in the science-policy process (Waisman *et al.* 2019)

- Many promises with these developments.
- Important to link the work on methodologies with the reflection on the policy context.
- Collective work in France in the community to explore new methodologies

THANK YOU FOR YOUR ATTENTION

<https://www.iddri.org/en/initiative/lifestyles-transition>

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Lifestyles in transition: challenges and opportunities of their integration in low-carbon pathways

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While the question of lifestyles, including different perspectives on their possible future evolution, has long been central to ecological thinking, the explicit integration of this dimension within the framework of decarbonisation pathways is a relatively recent development. Narrative components and quantified hypotheses are gradually being introduced in the decarbonisation discussion and becoming the subject of investigation, alongside the more conventional technical and economic discussions (e.g. on the development of renewable energy, electrification, agricultural intensification, etc.).

This renewed focus responds in particular to the gap between the limited progress made on emissions reductions in the past 30 years and the increasingly ambitious climate objectives being set in light of new scientific knowledge regarding lifestyle impacts. The extent of the transformation in all economic systems needed is gradually becoming clearer, as is the need to integrate carbon neutrality objectives into general development pathways.

The carbon neutrality objective presents considerable challenges to traditional approaches to measuring decarbonisation pathways and on measures responsible for finding emissions reduction pathways. This somehow leads to a shift in approach: rather than identifying the best options, an "as of the above" approach is now required that presents all available and viable options and mobilises all available resources. This includes not only technical solutions, but also strong demand-side measures (efficiency and sufficiency).

Amidst increasing awareness and growing media attention on individual action and lifestyle changes, it is crucial to understand how these societal aspects can be integrated structurally in the analysis of long-term decarbonisation pathways and included as a core component of debates on policies and actions. This Issue Brief clarifies the challenges and, based on the analysis of foresight exercises, provides conceptual frameworks that can help navigate the issues and structure political discussions.

KEY MESSAGES

These changes must be backed in order to better integrate lifestyle changes into low-carbon pathways:

- Acknowledging the political dimensions of an expansion of lifestyles
- Overcoming barriers to multidisciplinary approaches
- Promoting new methodologies for pathway design

Assessing these changes and better integrating lifestyles into the scenarios would bring four benefits to policy discussions based on foresight studies:

- Overcoming the limits of current techno-economic pathways in understanding and implementing the transition
- Exploring new types of transformative decarbonisation pathways that better combine techno-economic changes and social evolution
- Making these pathways more concrete for citizens
- Better integrating of social sciences and social dimensions (inequality, SDGs) into climate change expertise, discussions and policies

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