UNIVERSITÉ PARIS 1 – PANTHÉON-SORBONNE

MASTER ERASMUS MUNDUS STeDe

MEMOIRE DE MASTER en Développement Territorial Durable

MASTER THESIS in Sustainable Territorial Development

Evaluability of the French Low-Carbon Transition Strategy

Evaluabilité de la Stratégie Nationale Bas-Carbone française

Présenté et soutenu par / *Candidate* : **Hugo Vacus**

Directeur de mémoire / *Supervisor* : Thomas Delahais

Année académique 2021-22

L'Université Paris 1 – Panthéon-Sorbonne n'entend donner aucune approbation ni improbation aux opinions émises dans ce mémoire. Ces opinions doivent être considérées comme propres à leur auteur.

Table of content

Evaluability of the French Low-Carbon Transition Strategy

Abstract

National strategies for low-carbon transition are increasing in number and receiving more and more political attention. They constitute crucial public policies to plan climate change mitigation efforts worldwide. Therefore, evaluating their impacts is fundamental to informing public decisions. Because these public actions are noticeably complex and related to transversal transformations in society, their evaluations face specific problems of evaluability. This thesis develops an evaluability assessment (EA) of the French low-carbon strategy (SNBC) to discuss these issues by following the EA model of Davies. First, a theory of change is constructed and focused on SNBC's governance orientations. Then, an evaluability assessment framework is developed to make it transferrable to any SNBC's orientation. Applying this framework to governance orientations shows that they are affected by significant evaluability issues. Notably, the rationale of these orientations is ambivalent, decontextualised, depoliticised, and not supported by evidence from the scientific literature. Alignment and additionality of governance objectives in local climate plans are also poorly ensured, which is detrimental to their aggregation for evaluating the success of SNBC's governance orientations. Besides, information availability on governance orientation's impact is limited because of unconstructed indicators and a lack of baselines, particularly on territorial governance modes. Finally, changes in governance orientations and monitoring systems are not justified, which limits the assessment of stakeholders' quality of approach to learning. Based on this EA, recommendations are produced to improve the evaluability of SNBC's governance orientations and propose implementing specific evaluation methods and approaches on the SNBC in the future. These findings appear to be coherent with most evaluability issues identified in sustainability-related programmes or interventions. Some others seem related to the specific characteristics of the SNBC, and further research appears to be needed to consolidate these particular conclusions.

Resume in French

La transition bas-carbone est aujourd'hui un enjeu central de l'action publique et des politiques environnementales, notamment au regard des objectifs internationaux d'atténuation du changement climatique. Dans plusieurs pays, et conformément aux recommandations de

l'accord de Paris, cette préoccupation s'est traduite par l'élaboration d'une stratégie nationale pour réduire les émissions de gaz à effet de serre. *In fine*, ces stratégies visent à guider l'action publique, la plupart des secteurs économiques, ainsi que les comportements des individus. C'est le cas de la Stratégie Nationale Bas-Carbone (SNBC) en France établie en 2015. Etant données la diversité et la profondeur des changements visés, évaluer l'impact de ce type d'action publique présente certains problèmes spécifiques d'évaluabilité. Même si la littérature sur l'évaluation des politiques environnementales s'est beaucoup développée au cours des vingt dernières années, très peu de travaux de recherche se concentrent sur l'évaluabilité, c'est-à-dire la « mesure selon laquelle une activité ou un programme peut être évalué de façon fiable et crédible » (OECD DAC, 2022). Afin de mieux comprendre ces problèmes d'évaluabilité, ce mémoire de recherche présente la mise en œuvre d'une étude d'évaluabilité sur la SNBC. Cette recherche vise par la même à utiliser cet exemple pour discuter plus largement des problèmes d'évaluabilité de ce type de politique publique en général.

Ce mémoire de recherche utilise le modèle d'étude d'évaluabilité proposé par Davies (Davies, 2013) qui comprend six étapes : 1) Définir les bornes de l'étude, 2) Identifier les ressources disponibles, 3) Identifier et étudier les documents disponibles (ce qui inclut la construction d'une théorie du changement), 4) S'impliquer/collaborer avec les parties prenantes, 5) Développer des conclusions et faire des recommandations, et 6) Restituer les résultats et les conclusions aux parties prenantes.

Etant donné que la SNBC a déjà fait l'objet de nombreuses évaluations prévues par la réglementation, cette recherche a débutée par une phase exploratoire visant à cadrer de manière pertinente l'objet de l'étude d'évaluabilité, tout en fournissant une compréhension d'ensemble de la SNBC. Cela a conduit à identifier les orientations de gouvernance incluses dans la SNBC comme un objet d'étude particulièrement intéressant, notamment parce que ces orientations constituent une condition globale à la réalisation des autres orientations. Par ailleurs, une attention moindre leur est portée dans les évaluations de la SNBC déjà existantes. Dans la SNBC, les orientations de gouvernance ont plusieurs objectifs majeurs. Premièrement, elles assurent que les décideurs se conforment au scénario de référence sur lequel la stratégie se base. Deuxièmement elles visent à favoriser la production systématique de données homogènes et de qualité sur les impacts des actions menées par tout acteur public et privé vis-à-vis du scénario de référence. Troisièmement, elles assurent l'adaptation territoriale harmonisée de toutes les orientations de la SNBC dans les « plans climat » régionaux et locaux.

La phase de recherche documentaire a ensuite été poursuivie par l'élaboration d'une théorie du changement sur les orientations de gouvernance de la SNBC. Celle-ci consiste à décrire précisément, sous la forme d'hypothèses, les chaînes causales des changements visés par cette action publique, ainsi que les risques et conditions qui y sont associés. La théorie du changement incarne ainsi l'interprétation et les conjectures du chercheur/évaluateur sur la politique étudiée.

Par la suite, un cadre d'étude d'évaluabilité a été construit pour interroger ces conjectures. Ce cadre a l'ambition de définir des catégories, des critères et des questions d'évaluabilité transposables à toute orientation de la SNBC. Sa construction est également basée sur la littérature relative aux études d'évaluabilité. Il comprend quatre catégories d'évaluabilité : "logique de l'orientation", "alignement et additionnalité", "disponibilité de l'information" et "méthodes de suivi et d'évaluation, et apprentissage". Ces catégories sont associées à plusieurs critères d'évaluabilité et à des questions directrices. Ensuite, les sources et méthodes de collecte de données utilisées pour chaque critère sont présentées, ce qui inclut l'examen des documents de politique publique, la revue de la littérature scientifique, des entretiens avec les parties prenantes, et des études de cas sur certains plans climat locaux.

Le cadre d'étude d'évaluabilité est ensuite appliqué aux orientations de gouvernance et ses résultats sont présentés pour chaque catégorie et critère d'évaluabilité. En ce qui concerne la logique de l'orientation, il est montré que des hypothèses implicites et non débattues mettent en péril l'évaluabilité des orientations de gouvernance. En particulier, la gouvernance est uniquement envisagée dans une approche descendante (« top-down »), ce qui semble contrevenir à l'ambition de la SNBC de créer un cadre de gouvernance capable d'encourager l'adoption de mesures de plus en plus ambitieuses au fil du temps. De plus, les orientations de gouvernance semblent décontextualisées puisqu'elles ne présentent pas de vision stratégique sur la manière d'influencer et de réagir à de potentiels facteurs exogènes défavorables tels que des changements de la gouvernance climatique internationale. En outre, peu d'attention est accordée à la diversité des situations et des contextes de gouvernance locale dans lesquels les orientations de gouvernance de la SNBC doivent être adaptées. Un autre résultat important met en évidence le manque d'argumentation scientifique utilisé pour construire ces orientations de gouvernance par rapport aux autres orientations de la SNBC.

En ce qui concerne l'alignement et l'additionnalité, on constate que les orientations de gouvernance listées dans la SNBC ne sont pas transposées dans les plans et programmes

publics nationaux, ni dans les plans climatiques régionaux et locaux, comme cela est normalement requis pour toutes les autres orientations. En outre, il semble que les évaluations existantes tendent à aborder ce décalage de manière plus indirecte que pour les autres orientations. Les indicateurs et les systèmes de suivi des plans climatiques territoriaux sont également peu alignés. Dans les rares cas où des orientations liées à la gouvernance y sont définies, des indicateurs correspondants ne le sont pas. Par conséquent, l'impact des orientations de la SNBC en matière de gouvernance, notamment au niveau local, semble difficile à évaluer de manière agrégée.

En ce qui concerne la disponibilité de l'information, cette recherche constate que de nombreuses données qualitatives existent sur la gouvernance de la transition bas carbone à tous les niveaux. Cependant, en l'état actuel, les impacts des orientations de la SNBC en matière de gouvernance sont difficilement évaluables car la masse d'informations est dispersée et souvent non associée à une quelconque mesure de référence relative à la gouvernance qui permettrait la comparaison et l'observation du changement.

Enfin, même si aucun problème lié à la transparence des méthodes de suivi et d'évaluation n'est identifié, il apparaît que les changements entre les deux premières versions de la SNBC dans les orientations de gouvernance et leurs indicateurs ne sont pas justifiés. De plus, la qualité des processus de révision et leur capacité d'apprentissage semble difficile à évaluer, surtout si l'on considère le nombre limité de plans climat locaux ayant été révisés.

Sur la base de ces résultats, l'étude d'évaluabilité est complétée par des recommandations sur la façon d'améliorer l'évaluabilité des orientations de gouvernance de la SNBC, et sur la façon de les évaluer dans le futur via des propositions d'approches évaluatives particulières.

Dans l'ensemble, ce mémoire souligne les problèmes d'évaluabilité de la SNBC liés à ses orientations de gouvernance et invite à utiliser le cadre d'étude d'évaluabilité développé pendant cette recherche sur d'autres orientations de la SNBC. Certains problèmes d'évaluabilité liés aux caractéristiques spécifiques de la SNBC sont discutés et identifiés comme intrinsèques à ce type d'action publique. En particulier, il est souligné l'importance des dimensions d'alignement et d'additionnalité pour l'évaluation ou l'étude de l'évaluabilité des interventions publiques ou programmes visant à atténuer le changement climatique.

I. Introduction

Since the 1970s, evidence demonstrating the need for a low-carbon transition accumulated without any observable inflection point in the consumption of carbon-based energy, COVID crisis excepted. If "transition" refers to a change from one state of equilibrium to another in a system, low-carbon transition refers to the set of changes decarbonising human activities. Whereas this concept is often reduced to the energy transition, this thesis envisioned low-carbon transition as a much broader concept. Indeed, low-carbon transition also requires changes in social and economic behaviours, socio-political structures, imaginaries, and social norms. The diversity of transformations covered makes it a system transition, classically associated with three phases: emergence, diffusion, and reconfiguration (Victor *et al.*, 2019). All these changes are notably driven at the international level by the ambition of the Paris Agreement, recalled in article 2[1]. In particular, Article 4.1 explicitly introduces a greenhouse gas neutrality objective, consisting in achieving: "a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century" (UN, 2015). The agreement also suggests submitting national strategies to meet this goal (article 4.19). As such, greenhouse gas (GHG) neutrality, which tends to be referred to by the (not quite equivalent) term "carbon neutrality", is the subject of increasing scientific and political attention at the national level.

Several countries have adopted national strategies embodying the carbon neutrality target (Rankovic *et al.*, 2018), including France and its national low-carbon strategy (SNBC) in 2015. The adoption of this strategy is part of the long history of French energy-related public policies. During the 20th century, this policy area was characterised by the ongoing movement of territorialisation and decentralisation of public policies. Very early, these tendencies conflicted with the state's attempts to centralise and control the competencies of local authorities on these issues, notably with the nationalisation of energy production (Degrémont-dorville, 2018). More recently, significant changes occurred in French environmental policies. The period between 2007 and 2012 has been the subject of studies showing the fragility of environmental governance in the face of a logic of budgetary rationalisation (Halpern, 2012). Other analyses of the 2009-2013 period have also shown that the ambition to administer sustainable development, with the creation of a dedicated ministry in 2007, was maintained despite cost-cutting reforms (Lacousmes et al., 2014). Democratic mechanisms, such as the 2012-2013

---

[1] "Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels" (UN, 2015)

"National Debate on Energy Transition" (DNTE), also played an important role in recent developments of energy-related public action in France. Recapitulating the scientific work of the past few years on this topic, some note that the ecological emergency emerged on the political agenda with a high level of tension (Blatrix et al., 2021). The energy transition is the subject of profound controversies, for instance, between intermittent energies and nuclear power, "cornucopianism" and degrowth (Villalba, 2021a), and between supporters and critics of "collapsology" (Villalba, 2021b), thus revealing a competition of radically different political beliefs and worldviews.

In the context of international climate negotiations' acceleration and COP 21, the year 2015 can be identified as a turning point in the French low-carbon transition governance with the adoption of the SNBC and the Multi-Year Energy Programme (PPE). In 2017, the Climate Plan aimed at further accelerating this transition. And more recently, in 2020, the SNBC underwent its first revision. Over this period, governance bodies have multiplied (National Council for the Ecological Transition in 2013, Committee of Experts for the Ecological Transition in 2015, High Council for the Climate in 2018). Their competencies have changed with the creation of multiple thematic national strategies (low-carbon, development of clean mobility, transition to a circular economy, etc.). Producers of strategic knowledge (think tanks, research agencies, consulting firms) are also increasingly working on climate and ecological issues (Boucher, 2019). It is worth noting that this highly technocratic energy transition governance is subject to opposition and alternative narratives. The last decade had major local and national protest movements (carbon tax in 2010, eco-tax in 2014, taxation on the consumption of energy products in 2018). In this perspective, evaluating public policies' capacity to deliver low-carbon transition is essential to inform public debates and decision-makers.

Now that the first national strategies aiming at carbon neutrality have been implemented for several years, more and more evaluations of these public policies will be produced. More than just energy policies, SNBC-like public policies constitute strategic guidance for the entire action of states, for they provide orientation about most areas of public policies and most economic sectors. Therefore, they constitute a relatively new object for the field of evaluation. In France, different bodies assessed the SNBC and its reference scenario multiple times, using many approaches and methods. In particular, the revision process of the SNBC in 2020 evidenced the overtaking of national GHG emission targets. It also stated the relative failure of the SNBC to initiate a profound and structural transition. Yet, these analyses do not cover all the intended and unintended impacts of the SNBC. More importantly, these analyses uncovered

specific issues regarding their capacity to evaluate the SNBC, which can be studied more deeply.

Therefore, this thesis's central research question is, "What are the main evaluability issues of the French SNBC, and how could they be addressed?". Within the principles of action research, this thesis uses *evaluation of public policies* as a conceptual framework and *evaluability assessment* methods to answer this question by implementing an evaluability assessment (EA) of the SNBC. The principles of action research apply to this thesis because it also aims to reflect on EA methods of low-carbon transition policies by conducting an EA on the SNBC. As explained in section II, the EA literature is part of the literature on evaluation of public policies, which constitutes its conceptual foundation. The EA follows the method presented in section III, and the findings of each phase are presented in sections IV, VV, and VI. Results are then discussed in section VII with two goals: identifying lessons learned in EA methods through this research and discussing evaluability-specific issues of low-carbon transition governance by taking this thesis as an example. This thesis uses the 2020 revised version of the SNBC (sometimes called SNBC 2) as a basis but also considers changes between the first (sometimes called SNBC 1) and the revised version. SNBC is also referred to as "the strategy" in this research. Even if the SNBC is concretely a single document, this thesis studies the SNBC as a public policy. In other words, the SNBC is envisioned both as a set of documents framing a public action and as the very process of this public action, involving administrations, elected representatives, civil servants, citizens, associations, and enterprises. Moreover, the context in which this public action takes place is also considered a central component of the analysis.

II. Literature review and conceptual definitions

The subject of this thesis is situated at the intersection of several kinds of literature. Two of them relate to transition and change in public action: *sustainability transitions studies* and *sociology of public action* (section II.A). Besides, this thesis mainly consists of an evaluability assessment. Therefore, analytical concepts and methods implemented come from the literature on *evaluation of public policies* and *evaluability assessment* (section II.B).

A. Conceptual definitions from sustainability transitions and sociology of public action

This part aims at clarifying the meaning of certain concepts recurrently used in this thesis and constituting the conceptual background in which the SNBC is envisioned. It notably concerns transition, transformation, sustainability, governance, and change in public action.

1. <u>Conceptual approaches to sustainability transition in the literature</u>

Over the past two decades, new approaches and methods to explore the different aspects of sustainability transitions have been produced. The theory of "Transition Management" (Loorbach, 2007), as well as initiatives such as the "Earth System Governance Framework" (Bierman et al., 2009), contributed to defining the conceptual and methodological foundations for new fields of research on transitions toward sustainability (Patterson et al., 2017). By the early 2010s, most of the scientific approaches to sustainability transitions were categorised. Based on two reviews (Van den bergh, 2011; Markard, 2012), four main conceptual frameworks are briefly presented here to give an overview of the conceptual diversity existing in this field of research:

- "Technological innovation systems" or "Innovation system" focuses on the co-determination of institutional and technological systems to solve environmental problems through regulation (Jacobsson & Johnson, 2000; Hekkert *et al.*, 2007; Bergerk *et al.*, 2008; Jacobsson & Bergerk, 2011);
- "Multi-level perspective" focuses on describing the levels at which changes take place, i.e., landscape, regimes, and niches, and their interactions (Geels, 2002; 2011; 2012);
- "Strategic niche management" studies niches as pockets within a system where radical innovations can develop because they are not subject to the pressure of conformity exerted by the structure of the system (Kemp *et al.*, 1998; Smith, 2007),
- "Transition management" approaches the governance of transition in a holistic, systemic, and complex way to influence transitions towards greater sustainability (Loorbach, 2007; Kern & Smith, 2008; Loorbach, 2010).

Many other conceptual approaches or models exist in the literature on sustainability transition. However, the four described above correspond well to low-carbon transition, for they are singularly systemic. Approaches to sustainability transitions can also be categorised by their focus: the sociotechnical approach, the social-institutional approach, and the social-ecological approach (Loorbach et al., 2017). The review of these approaches can allow the definition of what is meant in this thesis by "sustainability", "transition", and "transformation", using mainly the "Transition Management" identified above.

In the Transition Management Framework, "transition" from one system to another is considered by a period of disruptive and non-linear changes. These changes occur within regimes that constitute stable orders or configurations – in other words, dominant features of

the system – and form a possible division of society into sub-systems. These regimes (institutions, cultures, practices, technologies) are also undergoing changes with their own inertia. Non-linear transformations of each regime thus form a transition, these transformations being complex phenomena influenced by pockets of internal innovations (niches) and external factors (landscape) that all together create a multi-level dynamic of transition (Loorbach et al., 2017).

In this research, "sustainability" is understood as designating societal change at all levels aiming to resolve major challenges threatening society today, notably ecological challenges. In this respect, a low-carbon transition corresponds to a "sustainable transition" aiming at solving the problem of GHG emissions and climate change.

In the literature, sustainability transitions are often associated with the concept of "transformation". K. Polanyi's forerunner work *The Great Transformation* laid down several foundations that subsequently applied to the themes of sustainability transitions. Often used as a metaphor for large-scale change, many authors contributed to defining more rigorously this concept, its analytical use, and its schools of thought. Two main approaches exist to use the idea of transformation. The first one is a descriptive and analytical approach aiming at objectivity in the tradition of "normal science". The second is a solution-oriented approach that is part of the "post-normal" school of thought and action research methods, which aims at providing solutions to a given problem (Feola, 2014). In the "sustainability transitions" field, this second approach to the concept of "transformation" appears more relevant and more widely employed. Among all conceptual frameworks of sustainability transitions reviewed above, "transformation" is noticeably used in the "multi-level perspective" and "Transition Management" (Patterson et al., 2017).

It is worth noting that this thesis uses these concepts by acknowledging specific characteristics of change in public action, which are treated in the next part.

2. <u>Governance and change in the sociology of public action</u>

This part presents how change in public action is envisioned in this thesis, using notably the sociology of public action and its core concepts on this matter.

First, it is considered that public action has undergone certain general transformations in recent decades, which are characterised by four trends. The first one is "*managerialisation* of the state". It results from a modernising desire expressed in the early 1990s by some researchers such as David Osborne and Charles Goodsel to rationalise public action. This trend is marked

by the idea of a "co-production" of public action by non-state actors and by the concept of "governance" derived from the companies' management (Pitseys, 2010). The second trend is the "*transnationalisation* of public policies", particularly noticeable in the case of climate policies. The third is the "competition of territorial public actions", and the last is the "intensification of scholarly activism" (Ihl, 2019). These four trends contextualise the transition planned by the SNBC.

Even if the SNBC intends to produce rapid and significant changes in society, it is also considered that public action is subject to strong inertia, often referred to with the notions of "inheritance" and "path dependency" (Roses & Davis, 1994; Pierson, 2000). The characterisation of change in public action was also developed in the theoretical field of "incremental and gradual change" (Lindblom, 1959; Lindblom, 1979; Hayes, 1992, Mahoney & Thelen, 2009, Howlett & Migone, 2011). These two schools of thought in the sociology of public action first defined change as a slow and linear process in public policies. The notion of "punctuated equilibrium" (Baumgartner & Jones, 1993; True et al., 1999; Baumgartner et al. 2018) was developed to address the non-linearity of certain changes in public actions. This concept allows considering contexts and catalyst elements in more or less stable configurations that potentially generate coevolution, non-linearity, and emergence. In this thesis, changes intended by the SNBC are considered as existing in between punctuated equilibriums where context, synergies, and timing matter.

The way the concept of "governance" is used in this thesis also acknowledges the importance of context and coevolution. It is assumed that the SNBC embodies a political model characterised in particular by the deliberative and consensual formulation of public action where the state is not defining norms unilaterally. The context of environmental policies is particularly conducive to the emergence of such a model, which situates power at the intersection of the state, the economic sphere, the public sphere, and the associative sphere (Pitseys, 2010). In the framework of the Earth System Governance Project, governance is defined as: "the interrelated and increasingly integrated system of formal and informal rules, rule-making systems, and actor-networks at all levels of human society (from local to global) that are set up to steer societies towards preventing, mitigating, and adapting to global and local environmental change and, in particular, earth system transformation, within the normative context of sustainable development" (Biermann et al., 2009). Therefore, in this thesis, governance is understood in a multi-level, multi-actor, and multi-phase perspective, in line with the schools of thought of post-normal science, complexity, and systemic thinking.

B. Evaluation literature review

After describing the core concepts associated with "transition" in this thesis, this part aims at providing the reader with a basic understanding of what evaluation is and how it has been applied to climate change-related policies. Theory-based evaluation is presented as it constitutes the evaluation approach used in this thesis. Afterwards, evaluability is defined as compared to evaluation, regarding its methods and uses. Finally, a review of evaluations of climate change mitigation policies is presented.

1. General considerations on evaluation

Evaluation refers to evaluation of public action or policies. It designates the field of professional practices and research aiming at assessing public actions and other programmes pursuing goals of common interest (Delahais *et al.* 2021), such as development aid programmes. After roughly fifty years of development, the term "evaluation" still resists a universal definition that would unify the diversity of theories and practices. Even the most recent articles testify of this difficulty, retracing the long history of this definition-giving effort (see Tabe 1) and calling for greater consensus (Wanzer, 2021).

Nevertheless, evaluation is often characterised by three core components: "the process, the product and its use" (Demarteau, 2002). In other words, these three essential ingredients are 1) methods to interrogate a programme and collect information, 2) conclusions in the form of value judgments, and 3) the usability and use of those conclusions in decision-making. Evaluation definitions generally focus more or less on one or several of those aspects (see Table 1). All these definitions are not opposed but complementary to grasp the essence of evaluative theories and practices (Delahais *et al.*, 2021).

The field of evaluation has been a fertile ground for developing numerous approaches, theories, frameworks, and perspectives. This fragmentation of definitions and theories in evaluation (Vaessen & Leeuw, 2010) can be compared to pseudo-pluralism in social sciences (Klima, 1972). Indeed, some theories called by different names hold tiny differences in substance (Leeuw & Donaldson, 2015). Even so, many attempts of clarification have improved the coherence of this literature with the identification of an "evaluation tree" composed of three main branches – evaluative methods, values in evaluation, and evaluation use (Christie *et al.*, 2012) – and many other, such as evaluation and social justice (Mertens & Wilson, 2012) or the intersections between science and evaluation (Delahais *et al.*, 2021, chapter 4).

Table 1: Various definitions of evaluation offered over the years in chronological order

Suchman (1968, pp. 2–3)	[Evaluation applies] the methods of science to action programs in order to obtain objective and valid measures of what such programs are accomplishing. . . . Evaluation research asks about the kinds of change desired, the means by which this change is to be brought about, and the signs by which such changes can be recognized.
Stufflebeam (1973, p. 129)	Evaluation is the process of delineating, obtaining, and providing useful information for judging decision alternatives.
Scriven (1991, p. 139)	Evaluation refers to the process of determining the merit, worth, or value of something, or the product of that process. Terms used to refer to this process or part of it include appraise, analyze, assess, critique, examine, grade, inspect, judge, rate, rank review, study, test. . . . The evaluation process normally involves some identification of relevant standards of merit, worth, or value; some investigation of the performance of evaluands on these standards; and some integration or synthesis of the results to achieve an overall evaluation or set of associated evaluations.
Patton (1997, p. 23)	Program evaluation is the systematic collection of information about the activities, characteristics, and outcomes of programs to make judgments about the program, improve program effectiveness, and/or inform decisions about future programming.
Vedung (1997)	Evaluation is a careful retrospective assessment of the merit, worth and value of administration, output and outcome of government intervention, which is intended to play a role in future practical situations.
Weiss (1997, pp. 3–4)	An evaluation is examining and weighing a phenomenon (a person, a thing, an idea) against some explicit or implicit yardstick. Formal evaluation is the systematic assessment of the operation and/or outcomes of a program or policy, compared to a set of explicit or implicit standards, as a means of contributing to the improvement of the program or policy.
Preskill and Torres (1999, pp. 1–2)	We envision evaluative inquiry as an ongoing process for investigating and understanding critical organization issues. It is an approach to learning that is fully integrated with an organization's work practices, and as such, it engenders (a) organization members' interest and ability in exploring critical issues using evaluation logic, (b) organization members' involvement in evaluative processes, and (c) the personal and professional growth of individuals within the organization.
Rossi et al. (2004, p. 28)	Program evaluation is the use of social research methods to systematically investigate the effectiveness of social intervention programs. It draws on the techniques and concepts of social science disciplines and is intended to be useful for improving programs and informing social action aimed at ameliorating social problems.
Donaldson and Christie (2006, p. 250)	Evaluation generates information for decision making, often answering the bottom-line question "does it work?" . . . Follow-up questions to this basic question, frequently asked by those evaluating, are, "Why does it work?" "For whom does it work best?" "Under what conditions does it work?" "How do we make it better?" Evaluators provide program stakeholders with defensible answers to these important questions.
Russ-Eft and Preskill (2009, p. 6)	Evaluation is a form of inquiry that seeks to address critical questions concerning how well a program, process, product, system, or organization is working. It is typically under-taken for decision-making purposes, and should lead to a use of findings by a variety of stakeholders.
Joint Committee on Standards for Educational Evaluation (Yarbrough et al., 2010, p. xxv)	Systematic investigation of the quality of programs, projects, and their subcomponents for purposes of decision-making, judgments, new knowledge in the response to the needs of identified stakeholders leading to improvements or accountability ultimately contributing to organizational or social value.
American Evaluation Association (2014)	Evaluation is a systematic process to determine merit, worth, value, or significance.
Chen (2015, p. 6)	Program evaluation is the process of systematically gathering empirical data and contextual information about an intervention program—specifically answers to what, who, how, whether, and why questions that will assist in assessing a program's planning, implementation, and/or effectiveness.

Source: Wanzer, 2021

This thesis adopts the perspective of a set of evaluation approaches called *theory-based/driven evaluations*, which were early identified as among the most advanced ones (Shadish *et al.* 1991; Weiss, 1997). Generally speaking, theory-based evaluations try to improve the understanding of complex objects. For instance, it is defined as: "the systematic use of substantive knowledge about the phenomena under investigation and scientific methods to improve, to produce knowledge and feedback about, and to determine the merit, worth, and significance of evaluands such as social, educational, health, community, and organizational programs" (Donaldson, 2007). In a systematic review of theory-driven evaluation practice from 1990 to 2009, this approach was defined as: "any evaluation strategy or approach that explicitly integrates and uses stakeholder, social science, some combination of, or other types of theories in conceptualizing, designing, conducting, interpreting, and applying an evaluation" (Coryn *et al.*, 2011). Theory-based evaluation gives importance to "credible and actionable evidence" (Donaldson, 2015). This effort to build knowledge on an intervention brings the issue of determining how this knowledge is constructed. In this regard, theory-based evaluations correspond to a certain epistemology rooted in critical realism (Brousselle & Buregeya, 2018). Theory-based evaluations are also characterised by: "the development of a plausible program theory, which is a primary product of the evaluation and upon which are based results, recommendations, and conclusions." (Brousselle & Buregeya, 2018)[2] This "program theory" is also called "theory of change". The construction of a theory of change makes explicit links between inputs, outputs, outcomes, impacts, and all the processes in between while identifying underlining conditions and risks for each of these elements. A theory of change is developed at the beginning of an evaluation. It is based on implicit and explicit assumptions about the intervention and the plausibility of its impacts (why, how, and in which cases). A theory of change allows considering an intervention in a long causal chain of changes ending with final intended impacts in long-time horizons. It also allows the possibility of observing parallel and competing pathways of change.

Even if almost all theory-based evaluations share certain characteristics, such as the use of a theory of change, they can be differentiated into several branches. The two main ones are *contribution analysis,* and *realist evaluation*. Contribution analysis is an effect analysis approach to evaluation (Mayne, 2000; 2008) seeking to identify and assess plausible

---

[2] When talking about evaluation, "theory" should be understood as a polysemic word sometimes used to indicate the theory underlining a program in the context of an evaluation (program theory, theory of change etc.) and theory about evaluation practices (evaluation theory).

contributions in complex settings instead of attributions (Mayne, 2012; Delahais & Toulemonde, 2012; Befani & Mayne, 2014; Delahais & Toulemonde, 2017). Realist evaluation notably focuses on how public policies are implemented in CMO configurations (Context-Mechanism-Outcome) to generalise findings on these configurations across different evaluations. This thesis assumes that contribution analysis could be interestingly applied to the SNBC, as it will be discussed later in the EA and proposed in specific recommendations.

2. <u>Evaluation and evaluability</u>

While being rooted in the stream of theory-based evaluation literature, this thesis is about evaluability. The difference between evaluation and evaluability is discussed in this part.

Distinguishing evaluability from evaluation arises from the concrete reality of evaluators' professional practices. Agencies willing to evaluate a programme or a policy want good value for money. Hiring an evaluator for a complete evaluation may incur substantial costs without knowing how relevant, focused, and feasible the evaluation will be. As it will become apparent in the following paragraphs, several aspects of EAs are the usual initial steps of evaluations. Separating them is initially meant to ensure that an evaluation will be successful and feasible without engaging too important costs. Evaluability was first developed around 1970 to prevent the failure of governmental programmes' evaluations due to unimplemented measures and unrealistic objectives (Soura *et al.*, 2019). Joseph Wholey saw it as one of the core elements in "a sequential purchase of information" (Wholey, 1979), and this first technical use of evaluability was very much focused on ensuring the cost-efficiency of a future evaluation (MacPherson *et al.*, 2022).

Evaluability then developed and allowed for further clarification on its purpose and use, developing its interest beyond ensuring evaluation's cost-efficiency. The definition given by the Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD) has become the most commonly used. It describes evaluability as: "the extent to which an activity or a programme can be evaluated in a reliable and credible fashion" (OECD DAC, 2002). Consequently, the: "evaluability assessment calls for the early review of a proposed activity in order to ascertain whether its objectives are adequately defined and its results verifiable" (OECD DAC, 2002). However, the distinction between evaluability and evaluation can be fuzzy in practice. The risk of having an evaluability assessment (EA) taking the place of an actual evaluation was early noticed (Scriven, 1991), and already embodied in its first conceptualisation by Wholey as an "exploratory evaluation". In 2013, the UK Aid

Department for International Development (DFID) commissioned a literature review on evaluability assessment (Davies, 2013). This report aimed to grasp better the variety of evaluability assessments conducted across the organization. It set the primary aims of an EA: clarifying evaluation questions, framing the scope, the focus, and the boundaries of the evaluation, assessing the quality and availability of data, developing a theory of change, an indicative budget, and the timeframe for future evaluation.

It was also identified that an Evaluability Assessment is a "stage of the evaluation process", which could be conducted "at the project design stage", at the "M&E Framework stage" (M&E meaning Monitoring and Evaluation), "prior to evaluations" and "during evaluations" (Davies, 2013). In all these contexts, an EA can have various uses and benefits (Leviton *et al.*, 2010; Trevisan & Walser, 2014, Lam & Skinner, 2021). However, for an EA not to go over its original purpose, the definition of a clear scope in its ambitions is crucial (Davies & Payne, 2015). For that reason, using checklists and formal methods developed in the literature is very much recommended (Davies, 2013; Davies & Payne, 2015; Trevisan & Walser, 2014). This also constitutes a clear recommendation made in a review of graduates' dissertations on evaluability assessment (Walser & Trevisan, 2016).

3. Evaluation of climate change-related policies and their specific issues

After defining evaluation and evaluability, and after presenting the evaluation approach in which this thesis is rooted, it remains to discuss the existing literature on evaluation of climate change mitigation policies. These evaluations multiplied over the past decades and adopted a variety of evaluation approaches other than theory-based evaluation. They produced consolidated findings on those policies and identified recurrent issues that this thesis aims to discuss. This part presents this literature based on a few literature reviews and additional research.

First, it can be noted that a significant number of impact evaluations on climate change mitigation policies are quantitative. From the beginning, the impacts of local climate plans were observed. For example, this was the case in the United States with quantitative evaluations. Authors found that local authorities with climate plans performed better at reducing GHG emissions, but that climate plans were more a consequence of an existing engagement in these local authorities than a trigger of this engagement (Millard-Ball, 2012). Local initiatives in Spain aiming at reducing GHG emissions were also reviewed with

econometric techniques, showing the efficiency of certain governance modes on electricity consumption reduction (Pablo-Romero *et al.*, 2016).

Other studies aim at informing decision-makers in energy planning. They often perform ex-ante evaluations and comparisons between a business-as-usual scenario forecasting effects of current policies and a scenario envisioning the potential effects of additional policies (Comodi *et al.*, 2012; Morlet & Keirstead, 2013; Neves *et al.*, 2015). For instance, creating scenarios on energy transition in a sort of ex ante evaluation was performed early in this literature on the case of Chinese cities (Lin *et al.*, 2010). These studies face the specific challenge of uncertainty associated with predictions. In addition, they sometimes miss addressing effects resulting from the interactions between evaluated local actions, which can be even more complicated to model.

Similar critiques can be addressed to the assessment of specific national policy instruments. For instance, ex-post quantitative assessment methods were early developed to measure the performance of the EU emission trading scheme in several European countries (Konidari & Mavrakis, 2007). Although having the benefit of producing perfectly comparable assessments for different countries, these studies have a limited analytical capacity in explaining why countries performed more or less than others. Ex-ante evaluations also exist on national sectoral policies (e.g., de Melo, 2013).

Another part of this evaluation literature focuses on assessing sustainability and defining methods and indicators that capture the impacts of actions on sustainability locally (Jovanovic *et al.*, 2010; Fitzgerald *et al.*, 2012). These studies notably face the problem of effects attribution. They often limit the analysis to comparing the situation before and after the evaluated action's implementation. However, effects on climate change mitigation occur in configurations of impacts. Understanding the contribution of such interventions often requires exploring more causal links than those measurable through indicators.

Changes in local governance of climate change mitigation were also subject to several evaluations, often with a significant part of qualitative analysis of available public policy documentation. For instance, international comparisons between local governance modes allow evidencing the influence of some international factors on local authorities' ability to develop climate mitigation policies (Bulkeley & Kern, 2006). This literature also reflects on the central-local articulation of these policies. It evidences the recurrently observed ambivalence between ambitious goals and reluctant or insufficient actions, like in Sweden

(Granberg & Elander, 2007), in the United States (Wheeler, 2008; Tang *et al*., 2010), and in Denmark (Damsø *el al*., 2016). These studies focused on policy mechanisms often have findings limited to assessing an intervention's outputs. They do not evaluate the final impacts of local actions on climate change mitigation, mostly because there is no straightforward methodology to assess the impact of a governance mode on such complex phenomena. Attempts to fill this methodological gap existed (e.g., Gysen *et al*., 2006) without being followed massively.

Among all these studies, some issues are recurrently mentioned. The disparity in evaluation methods of climate change-related programmes is often reported as an adverse factor in the construction of comparable knowledge (Chistiansen *et al*., 2016; Tokle & Uitto, 2017; Van den Berg & Spearman, 2017, Azevedo & Leal, 2017, Egger Kissling & Windisch, 2017). It seems that no satisfying method exists today to assess impacts on climate change mitigation results, particularly in the long run (Cekan & Legro, 2022). Furthermore, evaluators' capacity to assess the diversity of technical aspects embodied in these policies is also noted as an intrinsic difficulty (Feinstein, 2017; Egger Kissling & Windisch, 2017). A general review of various approaches to evaluating impacts of local actions on climate change concluded that most of them were not assessing impacts and that there was a strong need to develop an evaluation methodology effectively allowing for assessing such contributions (Azevedo & Leal, 2017). This study identifies five main specific issues:

- Ex ante evaluations are often unable to deal with the uncertainties associated with impacts and causal chains in climate change
- Many evaluations are limited to assessing operational issues without quantifying local actions' effects on climate change
- Context around the observed changes is often insufficiently considered. Changes observed at local levels are hard to attribute to a local action since they are also shaped by local contexts, other autonomous changes (socioeconomic, technological), and other policies. As noted in a literature review: "the studies that present a systematic tool to identify the accountability of local actions usually do not consider the potential impact of local externalities nor the interaction with higher-level policies" (Avezedo & Leal, 2017, p. 683).

Other issues can also be identified in all these studies. Most of them stem from the central assumptions of variance-based reasoning, which stays predominant in both policies and

evaluations. This leads to a focus on measurable effects and key indicators, which are generally related to energy consumption and production, or GHG emissions. Ultimately, and as a consequence, these policies' social, ecological, and economic aspects are disregarded. And yet, the objective of sustainability in public policies implies ensuring the integrity of a combined human-ecological system or nexus (Kay & Boyle, 2008). Policies for transition are also subject to inherent high levels of uncertainty, shifting baselines, and long-time horizons. For that reason, assessing the attribution of an effect to a particular intervention is almost impossible in such a context (Miyaguchi, 2022). Impacts on ecological systems also pose the issue of spatial frames that often go over public interventions' spatial borders delimited administratively (Miyaguchi, 2022). In addition to other usual challenges faced by evaluation (like values in evaluation and evaluation use), evaluation of sustainability-related policies faces a micro-macro paradox (Vaessen & Todd, 2008; Uitto, 2014; Van den Berg & Cando-Noordhuizen, 2017). This paradox consists of the non-reductionistic nature of sustainability. In other words, attaining sustainability at a micro level in many places does not consolidate in globally achieving sustainability. "The shortcomings of reductionism are made especially apparent when we deal with complex systems for which the whole is more than the sum of the parts" (Miyaguchi, 2022). Given all this, it can be summarised that "program design rarely facilitates evaluation of climate change issues" (Tokle & Uitto, 2017).

III.   Methodological considerations and limits

This thesis is based on the implementation of an evaluability assessment. Conducting an EA consists in following specific steps described in the literature. Evaluators have developed numerous methods to conduct evaluability assessments with different aims and steps (Soura *et al.*, 2019). This is not particularly surprising because an EA should also be driven by the specific concerns relative to the evaluation's type following its completion and to the studied intervention or policy.

Based on a review of twelve examples, Davies developed a checklist of activities structured in 6 steps for an EA to take place: "1) Define the boundaries of the project", "2) Identify the resources available" "3) Identify and review documents" (which includes the development of a theory of change), "4) Engage with stakeholders", "5) Develop conclusions and make recommendations", "6) Feedback findings and conclusions to stakeholders" (Davies, 2013). One other EA model commonly used is the four-steps model of Trevisan and Walser (Trevisan & Walser, 2014), which is similar in essence.

The first phase of this thesis consisted of a desk-based research phase, corresponding to the first three steps of Davies' model mentioned above. The boundaries of the EA were defined at the end of an exploratory work which consisted in understanding the global functioning and institutional context of the SNBC (section IV.A). Most of the public policy documents related to the SNBC were reviewed (see Annex D), which allowed identifying SNBC's governance orientations as an interesting case to implement a feasible EA in the framework of this thesis (section IV.B). On this basis, a theory of change of SNBC's governance orientations was developed (section IV.C). In this thesis, the theory of change was constructed using documentation and research theories about the programme and its intended effects (Funnel & Rogers, 2011). This way of doing is the most commonly used in the evaluation literature (Coryn et al., 2011). It mainly consisted of what authors call "unpacking black boxes" (Astbury et al., 2010), which refers to explicating implicit assumptions and intermediate steps in causal chains of impact.

Based on this first research phase, an EA framework was developed (section V) to guide the assessment. The construction of this EA framework drew on the work of Davies and Payne (Davies, 2013; Davies & Payne, 2015) and got inspiration from another EA framework developed in recent work on a climate change adaptation portfolio of actions (MacPherson *et al.*, 2022). Since the EA conducted in this thesis focused on certain orientations inside the SNBC, the EA framework was built to be transferable to any orientation of the SNBC so that it could be used in future assessments. Then the framework was implemented on governance orientations. It should be noted that no EA of a comparable policy was found to feed the construction of the EA framework in this thesis. This explains several evaluability questions proposed in section V.B are very close to those listed by Davies. Still, the EA framework construction was oriented by available findings of the literature on evaluation of climate change mitigation programmes (section II.B.3). Another limit in the implementation of this evaluability assessment resides in the limited number of SNBC's orientations to which it was applied. Conclusions presented in section VI.E. and discussions in sections VII.A and VII.B could have been reinforced if they were fed by feedback from an evaluability assessment of more orientations. Even if the EA framework was implemented with success on governance orientations in this thesis, very little can be concluded on how to improve it with only one application case.

Several data collection methods were used in this research, including interviews, case studies on territorial climate plans, and a documentary review of SNBC-related public policy

documents (section V.C). Engaging with stakeholders was performed through twelve interviews with civil servants working either on the evaluation of the SNBC at the High Council for Climate (HCC) or its implementation in regional and local administrations. Through this fieldwork, seven local climate plans in the region "Ile-de-France" served as case studies. Among the interviews, two engaged with civil servants at the regional level in "Ile-de-France" and in "Nouvelle-Aquitaine". This data collection allowed for producing findings and recommendations (section VI). Yet, one limitation of this EA is its rather small fieldwork size. The twelve interviews carried out offered precious insights, but a broader engagement with stakeholders would surely have led to more detailed analyses. For instance, no interviews were conducted with civil servants from the DGEC (General Directorate for Energy and Climate), which coordinates the elaboration, revision, and implementation of the SNBC at the national level. Even if the study of Arnhold (Arnhold, 2022) that engaged with these stakeholders was widely used, leading interviews with them directly would have been profitable.

In the last part of this thesis, the results and implementation of this EA are discussed (section VII). Essentially, all the steps listed by Davies in his EA model were followed, although a small deviation from the method occurred. Indeed a crucial part of any evaluability assessment (and any evaluation) is to provide feedback to stakeholders with conclusions and recommendations. When writing this thesis, such feedback has not been delivered yet. Therefore, this thesis cannot discuss the utility of the EA implemented. However, this research will be presented afterwards to several civil servants in charge of local climate plans and to the secretariat of the institution in charge of evaluating the SNBC.

Finally, although it is often the case in EAs, this thesis did not produce rankings. It would have required much more time and stakeholder engagement to agree on a ranking method. Furthermore, since this EA was not ordered by any stakeholder, the utility of producing evaluability rankings seemed limited in practice.

IV. Scoping the evaluability assessment and constructing a theory of change

The first phase of this work consisted in understanding precisely the causal chains and the governance ecosystem ruling the low-carbon transition in France. Through a long phase of desk-based research, most of the documents related to the SNBC were reviewed (see Annex

D). First, the construction of a theory of change for the whole SNBC was attempted. However, it appeared that the subsequent EA would have been too long to carry out during the limited timeframe of this thesis. This preliminary work on the whole SNBC is presented anyway, for it allowed to justify the boundaries of a more focused EA on SNBC's governance orientations. It also allowed building a sufficiently holistic understanding of the SNBC to develop an EA framework transferable to any SNBC's orientation in the following.

A. Preliminary considerations to grasp the complexity of the SNBC

By its scope and its objectives, the SNBC is envisioned here as an attempt to coordinate the whole governance of the transition to a low-carbon society. This implies that (1) the SNBC is extremely connected in a complex legal framework, (2) involving a high number of stakeholders during all the steps of its elaboration, implementation, and revision, (3) in order to propose strategic orientations in all sectors of society.

1. The legal framework of the SNBC

Even if the SNBC provides guidance, it also complies with other regulations. The SNBC is one element included in a broader legal framework, starting from the international/European level and ending at the local level (see Figure 1).

In Figure 1, the "POPE" law constituted an initial effort on the housing sector's energy consumption. The Grenelle 1 and 2 were the first attempts to produce strategic guidance for France in order to reduce GHG emissions. The TECV law followed to better structure this effort by defining the SNBC and how it would be coherently elaborated and implemented with the PPE (Multi-Year Energy Programme). This TECV law also introduced other strategies (National Biomass Mobilization Strategy, Strategy for the Development of Clean Mobility, National Strategy for the Transition to a Circular Economy, etc.). The Climate Plan, the Energy-Climate law, and the Climate and Resilience law fixed more ambitious objectives on climate change attenuation, which were integrated into the SNBC during its revision. The objectives set in the first two are mainly derived from the Paris Agreement, which was adopted a few days later than the TECV law. In particular, they affirm the primary target for 2050 as attaining carbon neutrality. The Climate and resilience law essentially came from the Citizens Climate Convention implemented from April 2019 to June 2020. These three laws strengthened the role of the SNBC and certain objectives such as carbon neutrality in 2050. The PNACC is the National Plan for Climate Change Adaptation, which has to take into account the SNBC and to be taken into account by it.

Figure 1: Legal framework around the SNBC
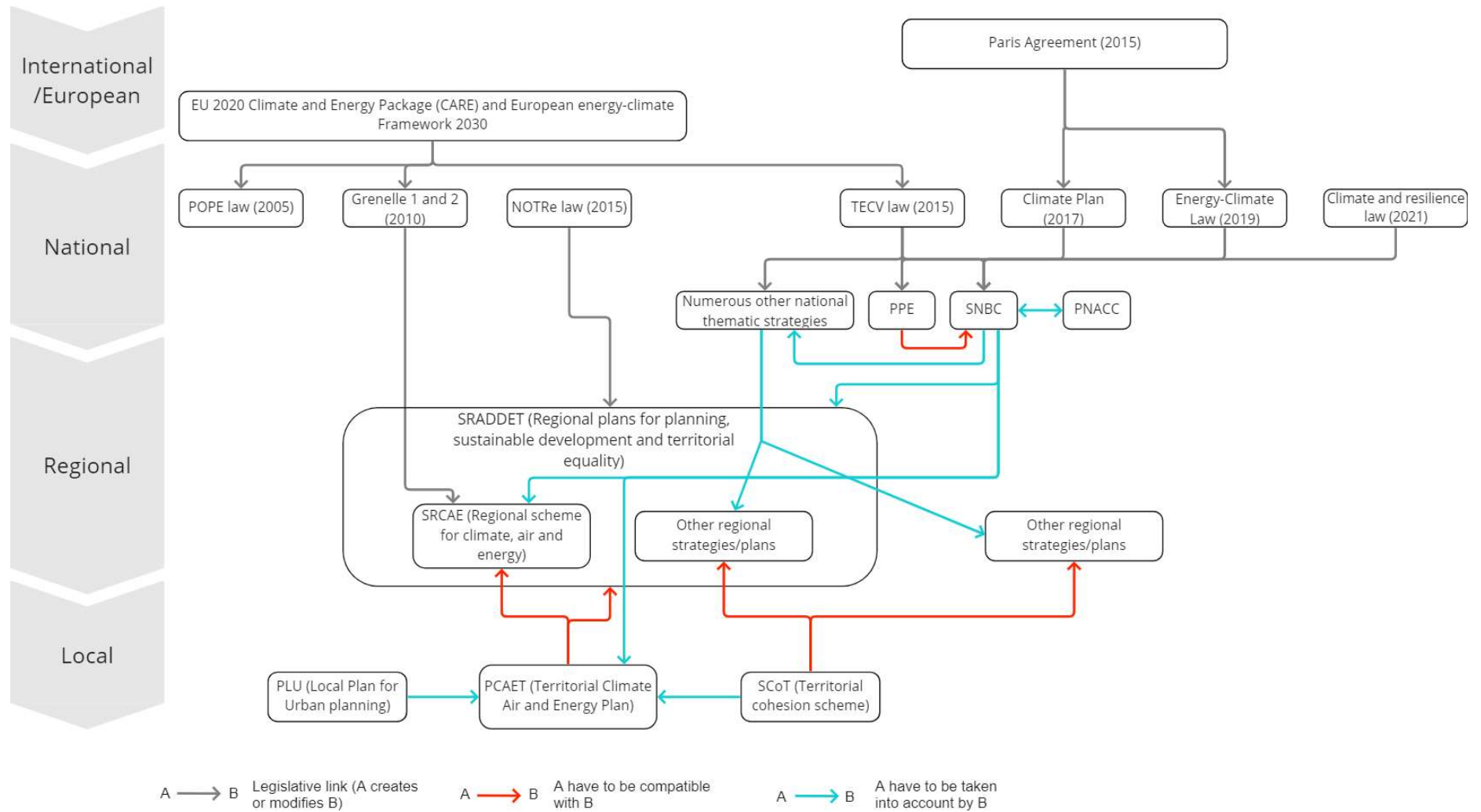
Sources: Ademe, 2016; 2022; AE, 2019a

The Regional Plans for Planning Sustainable Development and Territorial Equality (SRADDET) have to be implemented in almost all regions and regroup several strategies, including the Regional Scheme for Climate, Air and Energy (SRCAE). This SRCAE plays the role of a regional SNBC, by taking into account the more practical territorial reality of regions. This regional planning is further ranged locally through the Territorial Climate, Air and Energy Plans (PCAET), which are elaborated by inter-municipalities[3] to define a local version of regional objectives and actions to meet them. The Territorial Cohesion Scheme (SCoT) defines strategic orientations and priorities regarding local development in an inter-municipality for the next twenty years. For this reason, the PCAET operates the local adaptation of the regional plan while taking into account the SCoT, as well as other documents, like the PLU (Local Plan for Urban planning).

Figure 1 above is quite simplified. It hides much more intense connectivity between strategic documents, plans, and laws relative to various domains relevant to the ecological transition.

2. <u>A multitude of stakeholders involved</u>

Beyond this dense legal framework, the SNBC also involves a multitude of stakeholders. In general, public policies are gradually formed through multiple interactions between public, associative, and private actors. It is quite common in evaluation of public policy and public policy analysis to clarify stakeholders' interactions through the construction of a stakeholder triangle (Knoepfel et al., 2005; Knoepfel, 2015). This conceptual tool (see Figure 2) is handy for identifying all actors involved in a public policy and describing their interactions. It also aims at objectifying the coherence or contradictions that can be observed between the nature of the collective problem to be solved, the formulation of hypotheses on its causes, and the intervention of the state. It is achieved by identifying target groups, final beneficiaries, and the political-administrative authorities in charge of the policy.

For the case of the SNBC, describing a stakeholder triangle seems not straightforward. The SNBC concerns, by nature, whether directly or indirectly, every citizen and association, every enterprise and syndicate, every representative and administration. As discussed in the following part, the strategic orientations contained in the SNBC form a systematic approach to change. Furthermore, the final objectives of the SNBC aim at mitigating climate change, which is a

---

[3] Inter-municipalities are a level of the French territorial administration. They can correspond to different more specific categories, depending on the number of inhabitants, their localisation etc. All inter-municipalities are associated with certain prerogatives and can be regrouped under the terms "*intercommunalité*" or "*collectivités territoriales*", which are translated here as "inter-municipalities".

goal of global common interest. As such, it is hardly possible to identify distinctly final beneficiaries and target groups while considering the SNBC as a whole. It only becomes possible when envisioning the implementation of specific orientations or concrete actions deriving from the SNBC's orientations.

Figure 2: Stakeholder triangle
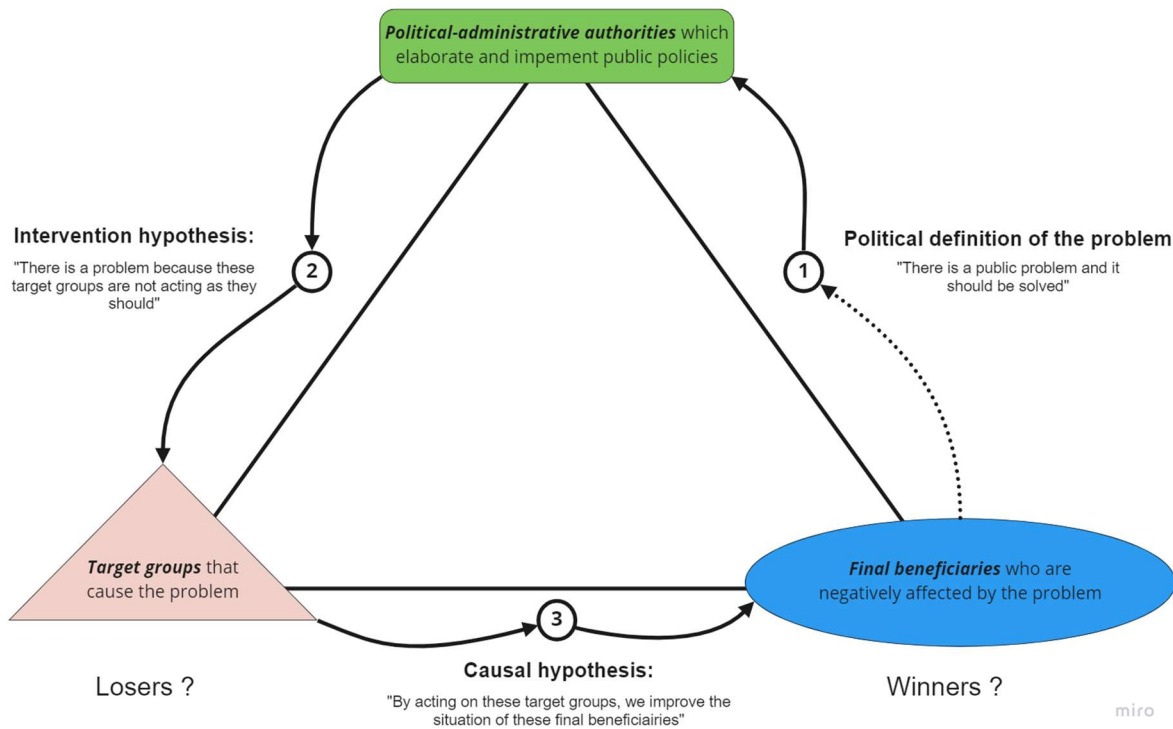
Sources: Knoepfel, P., Larrue, C.,Varone, F. (2005). Analyse et pilotage des politiques publiques. Somedia Buchverlag. p. 63. Also inspired from Quadrant Conseil, 2019. Le Logigramme. https://www.quadrant-conseil.fr/ressources/documents/Logigramme.pdf

On the side of political-administrative authorities, the configuration of actors involved with the SNBC is also quite luxuriant. It counts several ministries, all regions and local authorities, a great number of regional observatories in charge of producing relevant data, and independent agencies in charge of publishing formal opinions on several aspects of the strategy, such as the HCC and the National Council for the Energy Transition (CNTE). Other public bodies also support administrations at all levels in implementing the strategy, like the Agency for the Environment and Energy Management (ADEME). The SNBC and all its regional and local adaptations through the SRCAEs and PCAETs are also submitted to a strategic environmental evaluation performed by the Environmental Authority (AE) and its regional missions (MRAE). In addition, one could add that the elaboration of the SNBC was highly collaborative. Syndicates in all main economic sectors, citizens, scholars, and technical experts could participate in its elaboration. The Ecological Defense Council (CDE), the Economic, Social

and Environmental Council (CESE), and the National Council for Ecological Transition (CNTE) have complementary roles to play in accelerating and accompanying the low-carbon transition and ensuring that it is ambitious, effective, appropriate and fair. Moreover, the SNBC comes with strategic orientations on governance, which makes political-administrative authorities a potential target group of this public policy. This blurs even more the classical distinction of actors made through the stakeholder triangle.

Because this thesis does not aim to develop a complete evaluation of the SNBC, not all public bodies involved in elaborating and implementing this public policy are presented here. However, their roles were all reviewed during this research to develop the theory of change which is discussed later.

3. The systematic approach to change of the SNBC

The content of the SNBC holds a clear ambition of systematically addressing all regimes of society. The strategy does not comprise prescriptive actions but rather strategic orientations. Since its first revision in 2020, the new version of the SNBC includes 46 orientations. 3 of them relate to "Governance and Implementation", 15 are declared "Transversal", and the 28 others are said "Sectoral". Transversal orientations relate to certain areas of public policies considered as transversal across sectors. These transversal areas are: "Carbon Footprint", "Economical Policy", "Research and Innovation Policy", "Urban planning", "Education, awareness and ownership of the issues and solutions by citizens", "Employment, skills, qualifications and vocational training". Sectoral orientations are divided into the following sectors: "Transportation", "Buildings", "Agriculture", "Forest-Wood"[4], "Industry", "Energy Production", and "Wastes".

As illustrated above, the SNBC covers all domains of national public policies and most economic sectors directly or indirectly. For instance, "Industry" has its own set of dedicated orientations, but orientations on "Buildings" are mainly focused on tertiary buildings and housing, which covers an important part of GHG emissions from the tertiary sector. Similarly, even if international policies don't appear in these broad orientations, they are addressed inside "Governance" orientations.

This systematic approach to change in the SNBC is also embodied in its elaboration and revision processes. In fact, these orientations were collaboratively designed to follow a certain

---

[4] "Forest-Wood" is a direct translation from the French "Forêt-bois" which is understood as one coherent industry and economic sector managing forests and exploiting wood-based ressources.

scenario on which both the SNBC and the PPE are based. This scenario aims to model the whole country with its economic sectors, carbon sinks, and citizen behaviour. It proposes a path towards the achievement of carbon neutrality in 2050. The scenario is translated into "Carbon Budgets". Carbon Budgets are set by a decree from the Ministry of Ecological Transition and Solidarity to be in line with the SNBC. They set a reference threshold of GHG emissions for a five years-period, in line with the SNBC's scenario and France's commitments. Overstepping the threshold of GHG emissions is considered compromising for the implementation of the planned scenario. Carbon Budgets are broken down by major sectors, by greenhouse gas, and, for information purposes, in annual tranches. Given the diversity of factors integrated into the reference scenario and the scope of SNBC's orientations and carbon budgets, it should now appear clearly that the SNBC provides a systematic approach to change. This quick overview does not exhaustively describe the SNBC, its ramifications, its stakeholders, and its processes. Still, it should give a better understanding to the reader of what the SNBC is in practice as a public policy. All this information was used to develop an initial theory of change which is discussed in the following part.

B. A full theory of change of the SNBC

This part introduces the main findings of the first research phase consisting in working on a theory of change for the whole SNBC, using the orientations described in the document as a starting point. (1) First, this method is presented with more details. (2) Then, an analysis of the results demonstrates that the SNBC corresponds to a particular definition of complexity and complicatedness, which poses specific difficulties in implementing the EA on the whole SNBC. (3) Finally, the choice of narrowing the boundaries of the EA to SNBC's governance orientations is argued with the findings of this research phase.

1. <u>An attempt to build a full theory of change of the SNBC</u>

Usual methods to build a theory of change start with representing the actions undertaken in the framework of the public policy evaluated, and linking them to the final objectives. Developing a theory of change then involves questioning these links to uncover the "black boxes" they contain, which can be *inter alia* implicit assumptions, risks, conditions, or unmentioned intermediary actions. By construction, these black boxes are conjectures made by the evaluator. This process is supported by the available research on the conduct of change in public actions and by relevant analyses of the evaluated intervention. Since public policy instruments can have common patterns from one public policy to another, the evaluators' experience in assessing public policies is also considered a valid tool to identify these black boxes. In any

case, the theory of change is refined through interviews with stakeholders. Indeed, the value of the theory of change comes as the result of a common understanding between the evaluator and the stakeholders.

This part presents a first attempt to build a theory of change for the whole SNBC. It started with the 3 governance orientations and 15 transversal orientations of the SNBC's 2020 revised version (SNBC 2), as well as all the sub-orientations subsequently mentioned in the SNBC. Orientations were represented in a diagram and linked to intermediary objectives and final intended impacts. All information on causal chains of change explicitly mentioned in the SNBC was also represented, like the linkages between orientations and sub-orientations. Very few of these links were explicitly mentioned. Therefore, the first step towards a theory of change consisted of reflecting on each sub-orientation and orientation mentioned in the strategy to establish if it could contribute to another one. This complexified the theory of change drastically. A small part of this work is illustrated in Figure 3.

In this example, the only SNBC components represented are those linked with one single orientation (ECO1). The five sub-orientations listed more in detail in the top-left corner of this figure are presented as related to the orientation ECO 1 in the SNBC. On average, each orientation is associated with at least four or five sub-orientations in the official document. The only "black boxes" uncovered in this figure, as compared to what contains the official SNBC document, are the orange arrows. They are supported by the analysis of other documents related to the SNBC and relevant social science theories on public policy instruments.

The figure below illustrates a tiny part of the theory of change construction. In order to grasp how immense this work was, one could imagine multiplying the figure above 15 times to simply represent the content of the SNBC in terms of transversal orientations. It should also be noticed that, at this stage, no implicit assumptions nor implicit intermediary actions in the causal chains leading to final impacts were represented, but solely the explicit elements of the SNBC and eventually implicit links between them. As can be seen in Annex B, the whole figure developed at this stage of the research was almost unreadable considering its size and density. As figuratively noted by certain authors: "Any attempt to represent all causal pathways that connect contexts, interventions and outcomes in a multi-country portfolio of projects is likely to look like a bowl of spaghetti" (Davies & Payne, 2015). The same result was observed with the SNBC. However, this work was far from being worthless and led to fruitful conclusions in many regards.

Figure 3: Sample of the first attempt to build a theory of change for the entire SNBC

33
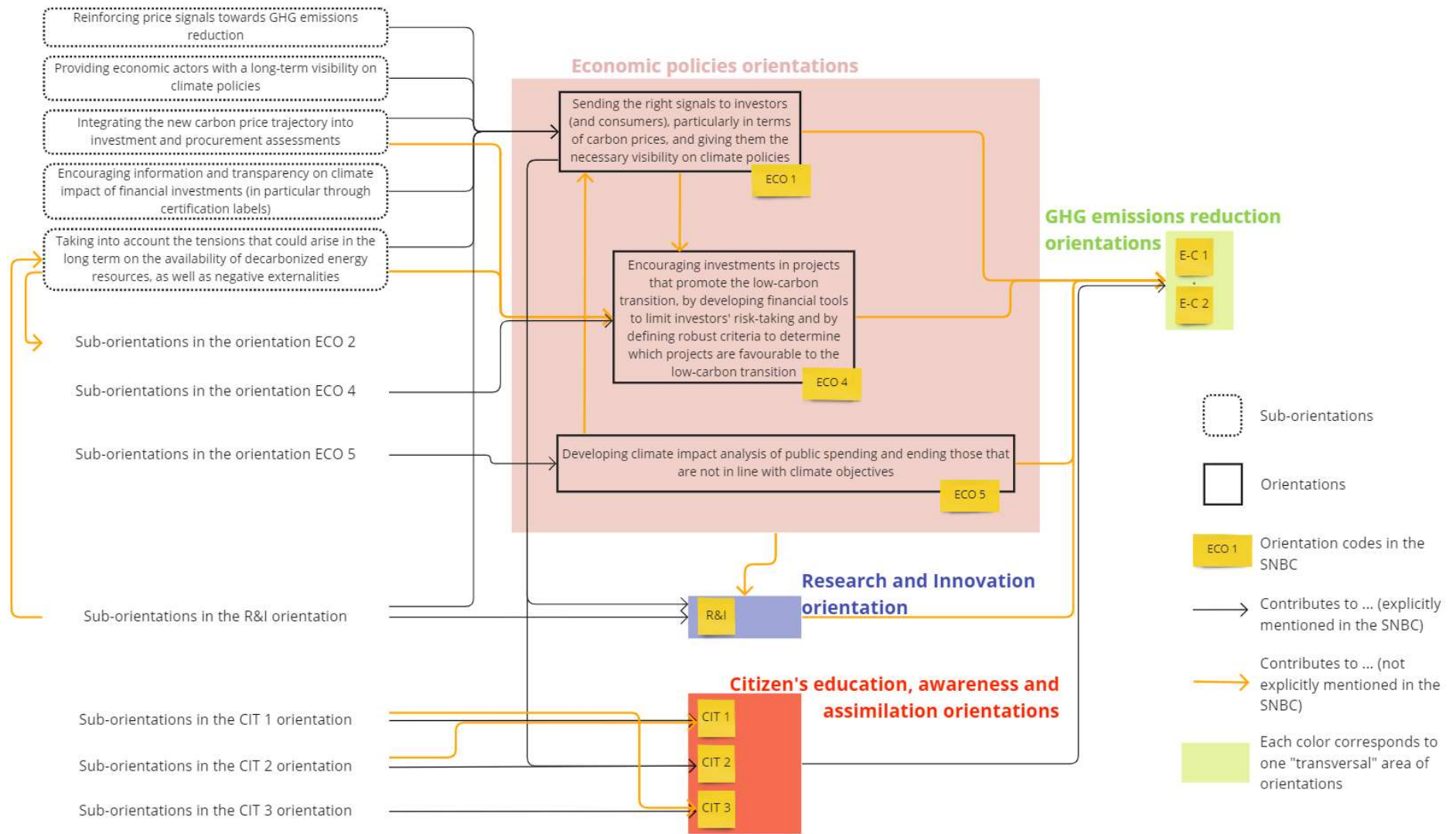
2. <u>The challenge of complicatedness and complexity</u>

First, developing this visual representation (Annex B) had the merit of making clear that the SNBC was characterised by a high number of elements interacting together in many undescribed ways. Furthermore, it was also noticed that final impacts were triggered by the simultaneous realisation of all orientations and sub-orientations. The final objectives of the SNBC can be identified as reaching carbon neutrality in 2050, and implementing a new model of growth described as "a sustainable growth model that creates jobs, wealth and well-being, as well as an up-and-coming economy that is more circular and resilient to climate change"[5]. These two final intended objectives are both uncertain and emergent consequences, resulting from a complex configuration of actions and factors. In this perspective, the SNBC can be described as a complicated (many interrelated elements) and complex (emergent and uncertain consequences) intervention (Glouberman & Zimmerman, 2002).

Another vision of complexity, in the perspective of Pawson (Pawson, 2013, p.33-46) also fits the SNBC to a certain extent. Pawson considers that complexity in public action stem from:

1) Volitions: individuals will make the public action work or not through their behaviour, and these behaviours will not necessarily be motivated by the public action itself,

2) Implementation: the public action is composed of long causal chains involving numerous stakeholders,

3) Contexts: the public action is embodied in several layers of contexts and social structures,

4) Time: the history of this public action influences its process,

5) Outcomes: measuring and interpreting its results is difficult,

6) Rivalry: other interventions aiming at similar results can blur findings

7) Emergence: a public action change actors' behaviour and the system in which it takes place, thus transforming the initial conditions that allowed the public action to produce change.

Except for rivalry, it could seriously be assumed that the SNBC possesses these characteristics. For instance, the SNBC aims at changing behaviours that are influenced by many other factors than the SNBC itself. As seen in the previous part, its implementation is composed of long chains of actions in which context and simultaneity matter. The SNBC being revised every five years, its history is moving, and its past successes or failure influence its revision. Like any

---

[5] As translated from French in the SNBC's 2020 revised version

other sustainability-related policies, some of its outcomes face measurability issues (see section II.B.3). The SNBC aims to produce structural changes transforming societal systems or regimes, including governance itself, which typically falls under the emergence aspect of complexity in public action presented above. Therefore, the SNBC can also be described as a complex intervention in the perspective of Pawson.

Issues in drafting a theory of change and evaluating complicated or complex interventions have been discussed in the evaluation literature for approximately twenty years (Patton, 2003). Table 2 summarises some of them.

Table 2: Complicated and complex aspects of interventions

Aspect	Simple version	Not-simple version	Challenges for evaluation	Suggested label
1. Governance and implementation	Single organization	Multiple agencies, often interdisciplinary and cross-jurisdictional	More work required to negotiate agreement about evaluation parameters and to achieve effective data and collection analysis	Complicated
2. Simultaneous causal strands	Single causal strand	Multiple simultaneous causal strands	Effective programs may need to optimize several causal paths, not just one; evaluation should both document and support this	Complicated
3. Alternative causal strands	Universal mechanism	Different causal mechanisms operating in different contexts	Replication of an effective programme may depend on understanding the context that supports it. The counter-factual argument may be inappropriate when there are alternative ways to achieve the outcome	Complicated
4. Non-linearity and dis-proportionate outcomes	Linear causality, proportional impact	Recursive, with feedback loops	A small initial effect may lead to a large ultimate effect through a reinforcing loop or critical tipping point	Complex
5. Emergent outcomes	Pre-identified outcomes	Emergent outcomes	Specific measures may not be able to be developed in advance, making pre- and post-comparisons difficult	Complex

Source: Rogers, 2008

The SNBC accumulates all the challenges listed above. Its governance and implementation involve a great diversity of actors (see section IV.A). The simultaneity of causal chains is an

essential aspect of SNBC's theory of change (see section IV.B.1). Besides, just like for most public policies related to climate change, changes induced by the SNBC are also very likely to be non-linear and sometimes emergent. Thus, the SNBC faces evaluation-related issues of complexity and complicatedness. This double difficulty was discussed in the context of other evaluated interventions (Douthwaite & Schulz, 2001; Barnes *et al.*, 2003; Douthwaite *et al.*, 2003; Kankare, 2004) and was subject to a more thorough conceptual development of theory of change, such as "complex program theory" (Riggan, 2005) and "network theory" (Davies, 2004, 2005). In this matter, some authors note that: "the implications of such complexity are at the very least that multiple theories need to be articulated in respect of the multiple processes and relationships involved in delivering change." (Barnes *et al.*, 2004).

In fact, in the case of this thesis and the SNBC, the construction of the theory of change discussed above evidenced two important elements. On the one hand, almost every orientation of the SNBC could have its own theory of change; on the other hand, they should all be envisioned as deeply interconnected. This corresponds with the framework more recently developed by Patton to evaluate transformative change and interventions, being called "theory of transformation". According to him, a "theory of transformation incorporates and integrates multiple theories of change operating at many levels that, knitted together, explain how major systems transformation occurs" (Patton, 2020, p. 154).

Given the variety of orientations contained in the SNBC, drawing plausible assumptions and quality theories of change on those orientations appeared to require a collaborative research process involving specialists from other fields. Furthermore, the construction of a theory of change was not supposed to occupy this whole thesis as it was planned to be one among the other steps of an EA. Beyond the challenges encountered, this first research phase also allowed to prioritise orientations. As advised when using programme theories in complicated and complex settings (Rogers, 2008), the next step consisted in identifying the elements of complexity that required more attention, being also a purposeful task in the context of an EA.

3. The special role of SNBC's governance orientations

After working on the whole SNBC, it was possible to define the boundaries of a feasible and relevant EA to be implemented in this thesis, according to the first step in Davies' EA model (see section III).

From the graphic representation in Annex D, even unreadable, it is possible to see that some orientations are more central than others. For instance, the orientations on Carbon Footprint (in

green) appear to be an intermediary passage of most causal chains between the other transversal orientations and the final impacts (in yellow).

Governance orientations (in light blue) are graphically quite disconnected from the rest. Very few links are formally identified between them and other transversal orientations. Yet, they are central in the sense that they are guiding the effectiveness and coherence of the other orientations' implementation. For that reason, governance orientations in the SNBC someway play the role of a global condition in achieving intended final impacts. Given this particular role of governance orientations in the SNBC, the research was refocused on them to produce a narrowed theory of change and evaluability assessment.

C. A theory of change narrowed to governance orientations

This second phase in drafting the theory of change essentially followed the same process as the one previously described in section IV.B.1. The result of this process is further discussed in this part, with a presentation of (1) the governance orientations' theory of change and a presentation of the (2) main risks and conditions underlying causal chains of impacts. (3) Important global implicit assumptions behind these governance orientations are then briefly discussed.

1. A theory of change for SNBC's governance orientations

The SNBC contains three distinct Governance orientations. One relates to the national level (NAT 1), the other to the territorial level (TER 1 and TER 2). Figure 4 presents a theory of change of these three orientations. All boxes in Figure 4 represent steps inside assumed causal pathways linking the SNBC and final intended impacts. They were sometimes explicitly mentioned in the SNBC, and sometimes added in the context of this research after identifying them as intermediary steps. Risks and conditions associated with each step of the theory of change are described in Table 3 in the next part. Numbers associated with risks and conditions do not refer to any chronology but are just here to help read the graphic representation.

Figure 4: A theory of change of the governance orientations included in the SNBC 2
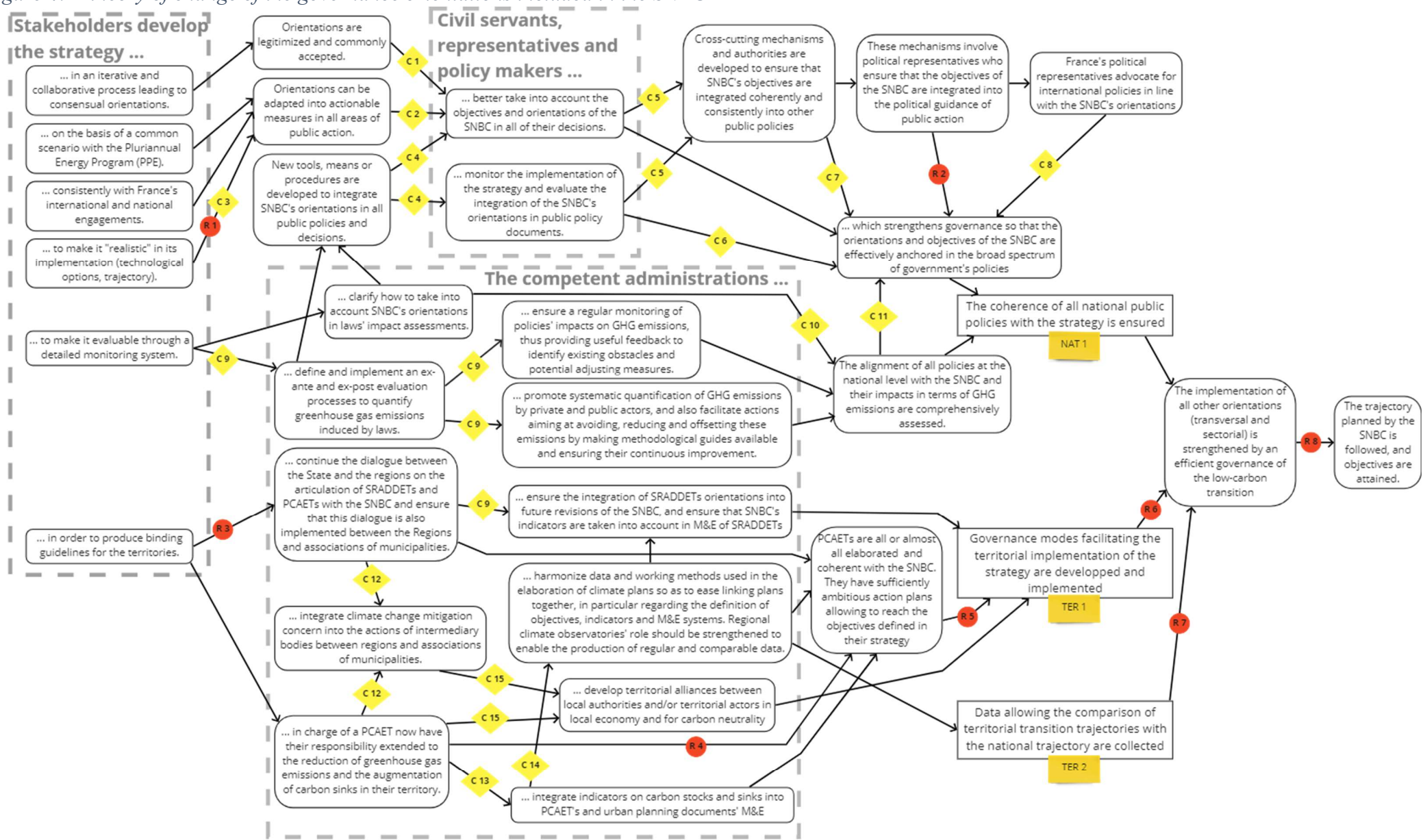
Table 3: Risks and conditions associated with the theory of change

Condition 1 (C1)	Decision-makers recognize the legitimacy of the SNBC's orientations.
Condition 2 (C2)	The appropriate regulatory and legal constraints ensure that the SNBC is taken into account.
Condition 3 (C3)	The orientations are sufficiently guiding without being too prescriptive so that stakeholders can adapt them in real and concrete situations.
Condition 4 (C4)	These measures are operational and are sufficiently disseminated to the actors who must implement them.
Condition 5 (C5)	Enough decision-makers effectively take the strategy into account so that cross-cutting mechanisms are relevant and can be made possible.
Condition 6 (C6)	When M&E concludes that an orientation is not followed, appropriate and adequate corrections are made.
Condition 7 (C7)	Cross-cutting mechanisms have sufficient authority to re-establish coherence between public actions concerning the strategy if needed.
Condition 8 (C8)	International advocacy from France indeed contributes to the implementation of international policies consistent and compatible with the objectives and orientations of the SNBC.
Condition 9 (C9)	The competent administrations receive sufficient means (funds and assistance) to carry out this work.
Condition 10 (C10)	Impact assessment of laws regarding SNBC's orientations is systematically performed when relevant.
Condition 11 (C11)	Assessments of the alignment of national policies and measures with the orientations of the SNBC inform governance in practice.
Condition 12 (C12)	The integration of climate change mitigation concerns is sufficiently harmonized among the inter-municipalities to be effective between the region and the inter-municipalities.
Condition 13 (C13)	The administrations in charge of the PCAETs can organize the monitoring of indicators on carbon stocks and sinks or have access to these data and control over their source and quality.
Condition 14 (C14)	Local authorities with a PCAET implement a process to harmonize M&E systems at the regional level, taking into account indicators of the SNBC. Inter-municipalities that do not yet have a PCAET are integrating this concern into the development of their PCAET.
Condition 15 (C15)	There is sufficient political backing and interests of various territorial actors across territories and local authorities to create territorial collaborations and alliances out of the new competencies and expertise acquired on carbon neutrality trajectories.
Risk 1 (R1)	If not discussed and if impossible to be revised, implicit assumptions nested in the word "realistic" may constitute a gap in the relevance and effectiveness of the SNBC (e.g., decoupling growth and GHG emissions).
Risk 2 (R2)	Political reasons may hinder the proper implementation of certain orientations, particularly in their implementation or articulation at regional or local levels.
Risk 3 (R3)	French regions being of different sizes and having different capacities, they may not all be equally capable of assisting inter-municipalities

	with the PCAET. Therefore, the objectives and orientations of the SNBC may not be applied uniformly across the country.
Risk 4 (R4)	PCAETs may be affected by a lack of political support at local levels or even face adverse political wills.
Risk 5 (R5)	The new competencies acquired by inter-municipalities to assimilate and master the elaboration and implementation of PCAETs may not last in case of turnover or of extensive use of external competencies through consultancies.
Risk 6 (R6)	The emergence of effective governance of the low-carbon transition at the national level may be compromised by the unequal involvement of certain local authorities.
Risk 7 (R7)	A too uniform application of the national trajectory to the different territories may conflict with some territories' needs and practical realities.
Risk 8 (R8)	The other orientations of the SNBC may not allow the achievement of the desired objectives. Besides, some unforeseen exogenous factors may prevent the proper implementation of certain orientations and the achievement of intermediate objectives per the trajectory.

Two main branches can be identified in Figure 4. The first one leads to the orientation NAT 1 with half of the boxes concerning principally decision-makers, whether they are civil servants or politically elected representatives, at the national level. Territorial orientations are included in a second branch mainly constituted of actions or changes at the level of administration. This can be surprising because decision-makers exist at territorial levels and at the national level. It clearly highlights the fact that the SNBC is a technocratic and top-down public action where guidance for decision-makers is mainly mentioned at the national level and where territorial levels of governance are targeted by changes related to administrations' roles and activities. In other words, the shape of this theory of change shows that local governance levels are considered executants, adapting decisions taken at the national level.

In Figure 4, dotted boxes contain elements explicitly mentioned in the SNBC or in related official documents. On the left side are represented concerns and noticeable aspects of the SNBC's elaboration. They constitute the first steps in the sequences of changes expected to be triggered by the elaboration and implementation of the SNBC. Two main types of actors are then identified as the targets of governance orientations, namely decision-makers and administrations, which are sometimes coinciding in reality. In the top part of Figure 4, changes concern national instances and actors aiming at harmonizing the governance of the low-carbon transition across sectors and "silos" of national administrations. Some boxes are also supporting coherent international advocacy with SNBC's orientations. In the mid-part of Figure 4, several steps of change target public administrations in order to make them support the shift in national governance at the level of decision-makers. In the rest of the figure,

intended changes are more focused on regional and territorial administrations towards territorial adaptation of SNBC's objectives and homogenization of local actions and M&E (Monitoring and Evaluation) systems. Specific steps indirectly target local decision-makers and political representatives, notably through the creation of territorial alliances for carbon neutrality and the mainstreaming of climate change mitigation preoccupation in intermediary bodies between regions and inter-municipalities. These two steps of change also target territorial actors implicated in these local governance mechanisms in a broader sense, such as economic actors and associations' representatives. At local levels, the implications for political representatives are embodied in risks and conditions, as can be seen in Table 3. In the end, all these steps contribute to strengthening the overall governance and implementation of all other SNBC's orientations and, therefore, to achieving SNBC's intermediary and final objectives. In this perspective, and as noted above, governance orientations form a sort of global condition for other orientations' realization.

It is also worth noting that the end of the theory of change in Figure 4 is highly imprecise. It is the point where other SNBC's orientations join the causal chain towards the achievement of SNBC's objectives and of the goodness of fit with the planned trajectory. As a complex and complicated policy (see section IV.B.2), the SNBC is also marked by the need for simultaneous changes to reach final impacts, which are emergent properties of this system of changes. As such, the realization of all the steps of this theory of change before the last two does not guarantee the attainment of carbon neutrality. Obtaining carbon neutrality is indeed dependent on numerous other changes encouraged by the SNBC and numerous exogenous factors playing at different stages in the theory of change of the other orientations. Many uncertainties are already associated with changes in governance described in this section. For example, impacts of advocacy at the international level remain blurry, whereas it is an essential condition for the implementation of ambitious economic regulations enabling to reduce imported emissions as planned by the SNBC. Furthermore, the scenario constituting the baseline of the SNBC explicitly makes the hypothesis that all the other countries respect their commitments in terms of GHG emissions abatement, which is, by all means, an uncertain exogenous factor conditioning the achievement of SNBC's objectives.

2. Risks and conditions associated with the theory of change of SNBC's governance orientations

This theory of change is also associated with inner risks and conditions presented in Table 3. The first crucial area of conditions and risks for the implementation of these causal chains is

the enforcement of the SNBC with appropriate regulations, legal constraints, and binding mechanisms (C2, C6, C7, C11). The SNBC holds this ambivalent position of being a guiding document fixing binding objectives but simply suggesting a path towards their achievement. Therefore, at several levels of governance, the chance of observing a lack in the SNBC's operationalization is materialized by risks and conditions about potential adverse behaviours from decision-makers and stakeholders (C1, C5 C15, R2, R4).

Table 3 also presents structural risks and conditions associated with certain characteristics of the SNBC. This refers for instance to the ability of the SNBC to serve as a guide while leaving space for territorial and situational adaptations of its orientations (C3, C4, R7). It also refers to the administration's competencies and capacity development with elaborating and implementing climate plans at all levels (C9, C13, R5). Another structural difficulty is identified with the risk of avoiding discussing core implicit assumptions of the SNBC, which could seriously limit its evaluability (R1).

Some other conditions and risks are relative to the harmonization of climate mitigation governance across levels of governance. In a way, they refer to one of the classical evaluation dimensions/criteria: coherence. Some of them are about decision-makers' behaviours in cross-cutting instances/mechanisms ensuring policies' coherence (C7, C11). Some other target more specifically the coherence and harmonization of public policy documents and their related M&E systems (C10, C12, C13, C14). Finally, two of them address the issue of the aggregation of local successes in wider objectives' achievements. In other words, they consider the risks of unequal engagements and support given to local authorities in their climate mitigation approach across the French territory (R3, R6).

As for R8 and C8, they envision external factors to the SNBC (e.g., international legal framework, exogenous factors impeding the simultaneous realisation of all SNBC's orientations).

3. Implicit assumptions of SNBC's governance orientations

The theory of change presented in Figure 4 also illustrates certain implicit assumptions on which SNBC's governance orientations are based. These assumptions are not necessarily visible in the graphic representation of the theory of change, but they represent stakeholders' views on how the transition is supposed to take place. These assumptions would merit their own investigation in a complete impact evaluation.

The first one is the exemplarity of public bodies. This underlining idea has two main components. On the one hand, it implies that public administrations should apply transversal and sectoral orientations of the SNBC when relevant, just like any other actor in society. On the other hand, this exemplarity means that, in the view of SNBC's stakeholders, low-carbon transition can only be implemented under the impetus of public bodies. In other words, the SNBC manifests the idea that public bodies are responsible for actively framing the path towards a low-carbon society.

This assumption connects with another implicit approach of the SNBC related to the mode of governance chosen to lead low-carbon transition. As outlined above, the SNBC is indubitably a top-down approach to transitioning. This is illustrated in two ways; first, by considering the top as public authorities imposing orientations and objectives on the rest of society; secondly by considering the top as the centralised national administrations framing the path to follow for all territorial authorities and administrations.

This comes with a third implicit assumption about these governance orientations. The SNBC is essentially based on experts' knowledge and views. It is a technical document based on the belief that technicians of sustainability (national experts, top national administrations, and specialised civil servants of territorial administrations) are the more competent stakeholders in defining a strategy for a low-carbon society. The side-effect of this assumption is that social acceptance and assimilation of such policy can be challenging to reach. This holds a certain ambivalence with the SNBC's orientations dedicated to citizens' engagement and sensitisation. As it will be further discussed in section VI, the theory of change supporting governance orientations and the SNBC as a whole lacks social understanding. It could be noted that the SNBC corresponds more to "espoused theories" than "theory-in-use" according to the distinction of Argyris and Schon (Argyris & Schon, 1974). "Espoused theory refers to the worldview and values that people believe guide their behaviors. Theory-in-use refers to the worldview and values reflected in the behaviors that actually drive their actions" (Savaya & Gardner, 2012).

D. Partial conclusion

This first phase of the research framed the institutional context and functioning of the SNBC. The SNBC is part of a dense multi-level legal framework, including numerous stakeholders of various natures and embodying a systematic approach to change. By working on a full theory of change of the SNBC, this thesis demonstrated that this public policy corresponds to a certain

framework of complexity and complicatedness, which comes with specific issues in carrying an evaluative work. Besides, working on the entire SNBC served the definition of boundaries for the EA, with the identification of governance orientations as a relevant focus. Then, a theory of change narrowed to governance orientations was drafted and presented with its assumed causal pathways of change, risks, and conditions. Finally, general implicit assumptions on governance orientations were presented, including the exemplarity of public services, the top-down approach to transitioning, and the prevalence of technocratic knowledge.

V.   Developing an evaluability assessment framework

This section describes the construction of an evaluability assessment framework for SNBC's governance orientations. This is a direct application of the method presented in section III about methodological considerations. After having narrowed the theory of change to focus on governance orientations, (1) a redefinition of the scope and ambition of the EA was needed. Then, (2) an EA framework was constructed based on the theory of change and relevant literature. Finally, (3) appropriate data sources and collection methods were defined to apply the EA framework on governance orientations.

A. Redefining the scope and ambition of the evaluability assessment in accordance with the narrowed theory of change

The scope of an EA is usually the result of a common understanding between the evaluator and the institution asking for the EA. It should indeed be part of the terms of reference associated with an evaluability assessment (Davies, 2013, p. 47-48) and includes the time and budget allocated for the EA, the planning of each step, the agreement on an EA method, etc. In this research, the EA does not result from any stakeholder's request but rather from a research interest. Defining the scope and ambition of the EA corresponds to what Walser and Trevisan call "Focusing the EA" (Trevisan & Walser, 2014, p. 31) and what Davies calls "Define the boundaries of the project" (Davies, 2013, p.16) as the first step of their EA model.

In the case of this thesis, the EA has several goals: assessing or contributing to assessing the evaluability of the SNBC, producing recommendations on how to make the SNBC more evaluable, and discussing potential evaluation designs' feasibility. Since this EA started with an ambition to assess the entire SNBC, the development of a reduced theory of change on governance orientations led to refocusing the EA scope. This scope still envisions the SNBC both as a process and a document, considering the evaluability of the SNBC as a public intervention, starting from its elaboration before 2015, including its implementation and

revision until today, and ending with its outcomes and impacts. After refocusing the EA on governance orientations, this understanding of the SNBC was simply restrained to those orientations. Since they were identified as global conditions for the realisation of other orientations (section IV.B.3), the EA scope also concerned governance orientations in their interactions with other orientations. This is reflected in the development of the evaluability assessment framework in the next pages.

The EA's ambitions listed above were not affected in nature by the reduction of the EA scope from the entire SNBC to SNBC's governance orientations. In fact, they were simply narrowed to governance orientations as well, as illustrated in Table 4. Another ambition of the EA appeared with this change in scope. This ambition consists in developing an Evaluability Assessment Framework adaptable to any SNBC's orientation. Starting an EA on the whole SNBC set a baseline attempt for further work on clarifying SNBC's theory of change. As such, conducting an EA on SNBC's governance orientations appeared as a useful opportunity to reflect on assessing the evaluability of other orientations in a standardised way.

Table 4: Evolution of the evaluability assessment's scope and ambition during this research

Initial ambitions of the EA **on the whole SNBC**	Ambitions of the EA **on SNBC's governance orientations**
Assessing or contributing to assessing the evaluability of the SNBC	*Assessing or contributing to assessing the evaluability of SNBC's governance orientations*
*Producing recommendations **on how to make the SNBC more evaluable***	*Producing recommendations **on how to make the SNBC's governance orientations more evaluable***
Discussing potential evaluation designs' feasibility	*Discussing potential evaluation designs' feasibility*
	Reflecting on an Evaluability Assessment Framework usable for all SNBC's orientations

It was therefore decided to develop an Evaluability Assessment Framework for SNBC's orientations in general, which could be tested on governance orientations.

B. Developing the SNBC evaluability assessment framework

This part introduces the construction of an EA framework transferable to any SNBC's orientation, based on the desk-research phase and its results presented in section IV. As mentioned in section III, the literature on EA recommends the use of formalised models about evaluability dimensions and evaluability question checklists. In the case of this thesis, three checklists were used, aggregated, and adapted to the SNBC. The EA framework developed thereby is presented in Table 5.

Its structure is based on the identification of three main dimensions of evaluability by Davies (Davies, 2013), namely evaluability in theory, evaluability in practice, and institutional context. Each of these areas is then associated with numerous criteria and evaluability questions. Davies identifies evaluability in theory as an issue of "Project design" (Davies, 2013, p. 20), evaluability in practice as an issue of "information availability" (Davies, 2013, p. 22), and institutional context as an issue of "Practicalities" and "Demands" (Davies, 2013, p. 23). These three main dimensions (or issues) of evaluability are presented as interrelated components informing evaluation design.

Figure 5: Evaluability dimensions, their relationships, and their connection to evaluation design
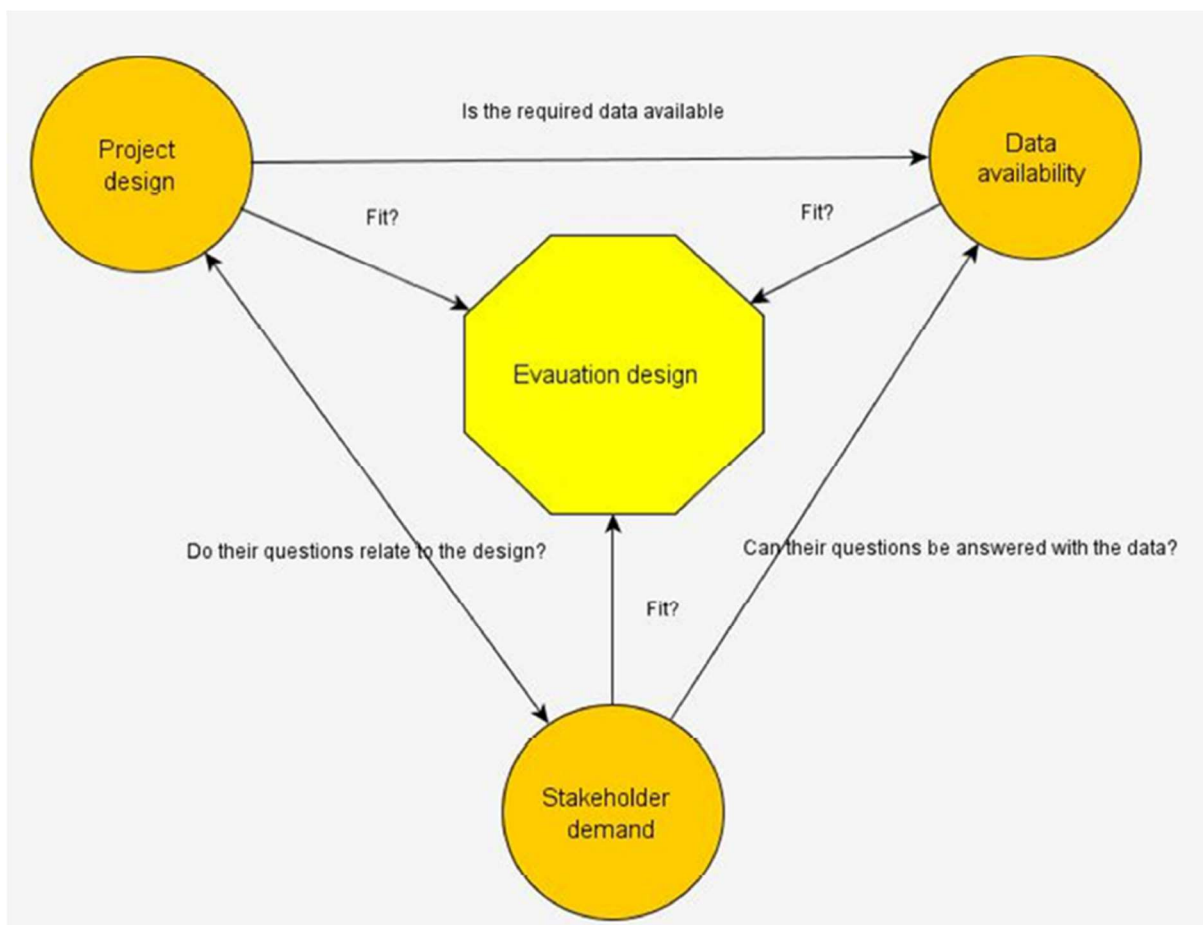
Source: Davies, 2013, p. 24

By contrast, other authors identify different evaluability issues and related categories of evaluability questions (Trevisan & Walser, 2014, p. 94), namely: programme perspectives, programme context, programme implementation, research logic, and methodological scoping. This other way of organising evaluability questions was reviewed as a complement to the formulation of evaluability questions in this thesis. It was found that these two different models

– which are among the most cited – were very much intersecting. For instance, evaluability questions related to methodological scoping in the work of Trevisan and Walser clearly combine questions associated with information availability and practicalities in the work of Davies. Besides, in the model of Trevisan and Walser, the: "five categories of questions are not mutually exclusive" (Trevisan & Walser, 2014, p. 94). In the end, the structure of evaluability issues proposed by Davies was more used in this thesis for its simplicity.

The construction of the EA framework for SNBC's orientations (see Table 5) is also inspired by very recent work on developing an EA Framework for a Climate Adaptation Funds' portfolio (MacPherson *et al.*, 2022). This study has the interest of conducting a work similar in many aspects to the one of this thesis. On the one hand, just like for climate change mitigation programmes, the study faces the problem of a lack of specialised literature on climate change adaptation programmes' evaluability, although evaluations of climate change adaptation programmes and their challenges are well documented (Bours *et al.*, 2014 ; Uitto *et al.*, 2017). On the other hand, the work of MacPherson and its colleagues on the evaluability of a portfolio of actions poses specific evaluability challenges, mainly related to the alignment and additionality of evaluability of all actions composing the portfolio. This is a quite close pattern to the sectoral, transversal, and territorial ranging of SNBC through various strategies, climate plans, and action plans. For all these reasons, this particular case of EA was noticeably useful in the construction of the EA Framework presented below.

The EA Framework presented in Table 5 intends to be usable on any orientation (or set of orientation of the SNBC). It has four evaluation categories: "orientation's rationale", "additionality and alignment", "information availability" and "M&E methods and learnings".

Table 5: Evaluability assessment framework for SNBC's orientations

Evaluability category	Orientation's rationale		
Evaluability criteria	**Quality of orientation's rationale**	*Sub-criterion*	Clarity of orientation's rationale
		Guiding question	To what extent the steps towards achieving objectives and outcomes linked with this orientation are clearly identifiable? To what extent the contribution of these objectives and outcomes to the achievement of the general SNBC's objectives is clearly identifiable?
		Sub-criterion	Contextualised orientation's rationale

		Guiding question	Does the orientation's rationale take into account constraining or adverse external factors seriously (including interactions with other orientations)? With plans and/or options to monitor them to the extent possible?
		Sub-criterion	Complexity of orientation's rationale
		Guiding question	How clearly are the interactions between the orientations considered described? Between the orientations considered and the rest of the SNBC?
		Sub-criterion	Agreement on orientation's rationale
		Guiding question	How visible are the views of stakeholders (taking part in the elaboration, implementation, and revision of the SNBC) who might hold different positions on the orientation and/or its implementation at different levels?
	Quality of evidence base	*Sub-criterion*	Plausibility of orientation's rationale
		Guiding question	Are there identifiable gaps in the causal chains linking measures taken, the orientation, and the final intended impacts? Is there evidence from elsewhere (comparable scenarios in other countries, scientific literature) that this orientation and its associated objectives could be achieved?
		Sub-criterion	Validity and reliability of orientation's rationale
		Guiding question	Are there valid indicators for each expected output, outcome, and impact associated with this orientation? Are they reliable (will different observers find the same thing)?
		Sub-criterion	Testable orientation's rationale
		Guiding question	Are the most critical steps in the implementation of the orientation easily identifiable?
Description	Project design (Davies, 2013) is a classical appellation referring to any programme, project, or intervention design, principally described through its theory of change. In the case of the SNBC, and in the case of this evaluability assessment framework, what is usually called "project design" is adapted into "Orientation's rationale". This evaluability category is central, as it refers to the justification for an orientation of the SNBC and for the set of measures envisioned within its scope. The orientation's rationale gathered from all relevant public policy documents serves to draft the theory of change of an orientation or a set of orientations, as it was earlier done in this thesis for the case of governance orientations. This theory of change identifies assumptions, risks, and conditions associated with each step of change. In a nutshell, this evaluability category is about all or almost all evaluability aspects of the theory of change developed for an orientation or a set of orientations. This is the main component of what is called "evaluability in theory" in the literature.		

Evaluability category	Alignment and additionality		
Evaluability criteria	**Depth of alignment**	*Sub-criterion*	Consistency of objectives
		Guiding question	To what extent the objectives associated with the orientation are consistently reported in all relevant public policy documents at the different levels of implementation?
		Sub-criterion	Justification of objectives' variation
		Guiding question	To what extent variations in objectives definition as compared to the SNBC is justified with regard to sectoral and/or territorial concerns?
	Quality of monitoring and reporting against SNBC results	*Sub-criterion*	Alignment and additionality of monitoring and reporting
		Guiding question	To what extent the indicators and M&E systems for each plan/strategy/action implemented within the scope of the orientation are aligned with the M&E system of the orientation in the SNBC? To what extent M&E systems of plans/strategies/actions within the scope of the orientation can be aggregated?
		Sub-criterion	Alignment in revision and learning
		Guiding question	To what extent the revisions of each plan/strategy/action within the scope of the orientation can produce learnings that effectively inform the revision of the SNBC and vice versa?
Description	An intervention can only be evaluable if its contributions to expected outcomes are identifiable. This implies a clear comprehension of the role of each component in the intervention, as well as a clear idea of how it will be measured. In this respect, consistency and alignment are specifically useful to the evaluability of complex interventions encompassing numerous smaller interventions with their own evaluability issues. In the case of the SNBC and of any other intervention related to climate change adaptation or mitigation, the addition of successes at smaller levels may or may not produce emergent intended impacts such as carbon neutrality. Therefore, alignment of objectives and additionality of M&E systems and revision processes of all sub-components of the orientation examined is a crucial issue of evaluability.		

Evaluability category	Information availability		
Evaluability criteria	**Measurability of outcomes and impacts**	*Sub-criterion*	Availability of data
		Guiding question	Are all the data necessary to construct relevant indicators available? Are there possibilities and plans to collect them if not?

		Sub-criterion	Quality of baselines
		Guiding question	Are there sufficiently qualitative and comparable baseline measures to assess the effects of the orientation at the various levels of implementation?
		Sub-criterion	Availability of indicators
		Guiding question	Are all the indicators, at all levels of actions, effectively produced and used?
Description	The evaluability of an intervention is directly dependent on the quality and availability of data, whether qualitative or quantitative. Quality and relevance of indicators fall under the quality of project design and evaluability in theory. By contrast, the questions asked in this evaluability category relate to the practical possibility of constructing these indicators and making them usable. Beyond data and indicators, the existence of baseline measures against which a change can be measured is crucial. It is the sine qua non of analysing the intervention's contributions to the observed change.		

Evaluability category	M&E methods and learnings		
Evaluability criteria	**Transparency of reviews and evaluations**	Guiding question	Are the M&E methods designed for each action within the scope of the orientation and for the orientation itself fully transparent and explicitly detailed?
	Justified and documented changes to M&E approach	Guiding question	Are changes to M&E approach and systems for the SNBC's orientation considered or for the actions taken within its scope documented and justified?
	Quality of approach to learning	Guiding question	Are there processes allowing feedback from the field and stakeholders, informally or formally through evaluations and reviews, to effectively inform changes in the definition of orientations?
Description	The SNBC and all the actions and documents produced within its scope are often subject to evaluations, formal opinions from independent authorities, and revisions. The review of evaluation documentation can be particularly useful in understanding how the M&E strategies have performed and which limitations were faced in practice. M&E systems of public interventions are often adjusted after the intervention starts being implemented. Observing these changes, if they are properly justified, can be remarkably insightful in identifying evaluability issues.		

The proportion of attention given to each evaluability dimension is usually timing-dependent, "with design being the main focus at a quality assessment stage and information availability

and conduciveness becoming relatively more important during implementation and immediately prior to an evaluation" (Davies, 2013, p. 19). These phases are not clearly identifiable in the context of the SNBC since the document is revised every five years through a long process beginning around two years before the publication of SNBC's revised version. This revision process is based on several evaluations and is itself an elaboration process for the new SNBC. In this regard, programme design and information availability, or interchangeably evaluability in theory and in practice, are both equally relevant for SNBC's revision conduciveness. Therefore, the same attention was given to these two evaluability dimensions.

C. Adapting the evaluability assessment framework to governance orientations

Adapting this Framework to governance orientations was quite straightforward. It mainly consisted in defining data sources through which each evaluability question and criteria could be addressed. This is summarised in Table 6.

Table 6: Data sources by evaluability criteria

	SNBC-related public policy documents	SNBC-related assessment reports or similar	Literature review	Interviews	Case studies
Quality of orientation's rationale	✓	✓	✓	✓	✓
Quality of evidence base	✓	✓	✓		
Depth of alignment	✓	✓		✓	✓
Quality of monitoring and reporting against SNBC results		✓		✓	✓
Measurability of outcomes and impacts	✓	✓		✓	✓
Transparency of reviews and evaluations		✓		✓	✓
Justified and documented changes to M&E approach	✓	✓		✓	✓

Quality of approach to learning	✓	✓		✓	✓

In table 6, "SNBC-related public policy documents" refer mainly to:

- The current version of the SNBC and its accompanying report
- Various documents related to the elaboration of the SNBC (public consultation, scenario presentations)
- The current version of the PPE
- The current version of the PNACC

"SNBC-related assessment reports or similar" refer mainly to:

- The various formal opinions produced during the revision of the first SNBC
- The strategic environmental evaluation of the first SNBC
- The macroeconomic evaluation of the SNBC
- The annual reports of the HCC
- Other reports assessing certain aspects of SNBC's impacts, or reports on the overall governance of energy transition or climate change mitigation

Besides, "case studies" refer to seven local climate plans reviewed, as well as their mid-term evaluation report when they were already published. All these documents are listed in Annex D.

The evaluability questions presented in table 5 were rephrased to focus on governance orientations listed in SNBC 2. Using the data sources presented above, an analysis of the evaluability of governance orientations was performed. This evaluability assessment gave serious attention to the regional and local adaption of the SNBC in local plans. They constitute the materialisation of the two territorial governance orientations in the SNBC. Findings are presented in the next section.

VI. Applying the evaluability assessment framework to governance orientations: findings and recommendations

In addition to the review of all documents mentioned in Annex D, 12 interviews were conducted in this EA (see section III). Globally, this fieldwork was more focused on the two territorial governance orientations of the SNBC than on the national one. This is partly due to difficulties encountered in obtaining interviews with civil servants from central administrations

in charge of the SNBC. This being said, several studies and reports produced recently engaged with these stakeholders. As such, second-hand data was available for this area of the EA through desk research and literature review.

This section answers the evaluability questions adapted from table 5 to governance orientations. Recommendations on how to improve the evaluability of SNBC's governance orientations are presented along with these findings. A repository of these recommendations can be found in Annex C.

A. Evaluability issues in the rationale of SNBC's governance orientations

Evaluability category under review: Orientation's rationale (see Table 5)

This part aims to discuss the evaluability of the rationale supporting SNBC's governance orientations. This rationale is basically the theory of change constructed in section IV.C. This rationale is composed of the aggregated views of stakeholders on what good governance of low-carbon transition is. They are inferred from the documentation associated with the SNBC, its elaboration and revision, its territorial and sectoral adaptation, and the interviews conducted during this evaluability assessment. The rationale of governance orientations is what explains and supports their design and their theoretical implementation. In order to assess the evaluability of this rationale, two evaluability criteria are used 1) "quality of orientation's rationale" and 2) "quality of evidence-based".

1. An ambivalent, decontextualised, and depoliticised rationale

Evaluability criteria under review: Quality of orientation's rationale (see Table 5)

As identified in section IV.B.3, governance orientations' implementation appears as a global condition for the realisation of the entire SNBC. These orientations are designed to ensure what is usually called "internal coherence" and "external coherence" in evaluation methods. In the case of the SNBC, they also materialise the exemplarity of public administrations and authorities, which is seen as an essential driver of wider changes in society. Since climate plans existed before the first SNBC with SRCAEs and PCETs, the SNBC's governance orientations also hold the ambition of integrating and coordinating existing climate-related planning efforts. Governance orientations are explicitly assigned to creating the space for an acceleration of changes happening within the scope of the SNBC. The scenario on which the SNBC is based also relies on the progressive implementation of increasingly ambitious public policies, not all of which are explicitly described. It is, therefore, necessary to have a fine governance framework allowing for the implementation of additional measures over time. As mentioned

in the revised version of the SNBC: "The scenario takes a realistic approach by modulating the effort over time. It identifies the conditions necessary for the realisation and the optimised economic valorisation of this effort. In the short term, it integrates the sectoral policies implemented until July 2017. These are extended and completed in order to expand the target groups affected and the intensity of the measures. Over time, measures that break with current trends are integrated." [6] (MTES, 2020a, p. 21). This rationale is confirmed by the multitude of formal opinions on the revised version of the SNBC (provided notably by Ae, CNTE, and CETE before it was replaced by the HCC). The introduction of the revised SNBC also recalls that strategic orientations are primarily addressed to public decision-makers, in particular at the national, regional, and inter-municipal levels, including public establishments, in metropolitan France and in the overseas territories to which the strategy applies (MTES, 2020a, p. 4). Even though this rationale seems rather clear and the theory of change presented in section IV.C more or less actionable, recurrent issues have been outlined in most evaluation reports and formal opinions on the SNBC.

i.   Ambivalence and implicit assumptions of governance orientations

The first one refers to undiscussed implicit assumptions in the rationale behind governance orientations. Some of them are identified in section IV.C.3. SNBC's governance orientations are deeply rooted in assumptions that are kept out of elaboration and revision processes, although SNBC's evaluation and revision procedures can appear satisfyingly complete. This problem was early identified in the entire SNBC, including other orientations than those on governance. Indeed, undiscussed implicit assumptions principally lay in models, which are extensively used to justify the realism and evidence-baseness of the SNBC scenario, see Box 1.

Box 1: The problem of undebated global implicit assumptions in the SNBC reference scenario

Several actors participating in SNBC revision processes (HCC, CNTE, AE, among others) have already pointed out global undiscussed implicit assumptions. This analysis was lastly reported in the 2022 HCC annual report (HCC, 2022), based on a sociological study on the SNBC elaboration and revision (Arnhold, 2022) ordered by the HCC.

---

[6] As translated from: « Le scénario adopte une approche qui se veut réaliste en modulant l'effort au cours du temps. Il identifie les conditions nécessaires à la réalisation et à la valorisation économique optimisée de cet effort. À court terme, il intègre les politiques sectorielles mises en oeuvre jusqu'en juillet 2017. Celles-ci sont prolongées et complétées afin d'étendre l'assiette touchée et l'intensité des mesures. Avec le temps, des mesures plus en rupture avec les tendances actuelles sont intégrées. » (SNBC, 2020, p.21)

In order to reduce GHG emissions, the SNBC mentions three levers: decarbonisation of energy factors, energy efficiency, and conservation. It is worth noting that they appear in this order, as it reveals a certain vision of low-carbon transition governance also materialised in the construction of the SNBC scenario. As noted in the synthesis report of the 2020 joint SNBC-PPE's reference scenario (DGEC, 2020): "The scenario is intended to be reasonable in the way it achieves carbon neutrality. It is based on a balanced use of sobriety levers, with a slight decrease in the population's needs in all sectors, combined with a significant change in consumption patterns without loss of comfort."[7] (DGEC, 2020, p.3). This avoidance of the debate on sobriety leads to other assumptions putting into question the realism of the scenario, such as considering that energy efficiency will be improved to the maximum extent possible in accordance with our current knowledge. Such hypotheses, for example, constitute the basis of a scenario and a vision for governance that is automatically considered commonly accepted without discussing options or debating its probability. Beyond posing evaluability challenges in terms of an evidence-based theory of change, it also represents an evaluability challenge in terms of clarity and agreement for the theory of change. In contrast to what is asserted in the SNBC, the reference scenario is not allowing to put into debate societal choices.

The only factors mentioned as constraining the SNBC's reference scenario are technical, socioeconomic, and environmental constraints (MTES, 2020c). Political constraints are, in fact, undiscussed. However, political framing is present at all stages of the elaboration and revision of the SNBC, in the use of consultative mechanisms, economic simulations, and implicit assumptions inside models (HCC, 2022; Arnhold, 2022). As discussed in section VI.C about information availability, access to potential controversies during the elaboration and revision processes is not easy. The existence of one unique reference scenario also fades away eventual rival visions on the governance of low-carbon transition, although the use of a unique scenario is justified by feasibility considerations:

> One hesitation was one or several scenarios. In the end, there has to be one scenario, because we have only one carbon budget and it is the state that sets the objective. We can't set a lot of them. Afterwards, to discuss with the stakeholders, it is probably simpler to propose several trajectories. It's just that we don't have a push-button model, but many tools and many models by different teams, and an integration that we do by hand, it's very complex. [8] (Arnhold, 2022).

More generally, it reveals an institutional refusal of certain questions, contributing to depoliticising the rationale supporting SNBC's governance orientations. The example of green growth, as one of the baseline assumptions in the SNBC, was evoked during an interview:

> Green growth, it is unimaginable to think otherwise in most of the upper echelons of the French administration. [9]

---

[7] As translated from: "Le scénario se veut raisonnable dans la façon d'atteindre la neutralité carbone. Il repose sur une sollicitation équilibrée des leviers de sobriété avec des besoins de la population en légère diminution dans l'ensemble des secteurs, associés à un changement important des modes de consommation sans perte de confort." (MTES, 2020a, p.21)

[8] As translated from a quote in Arnhold, 2022 extracted from an interview conducted with a person who worked on the SNBC revision in the framework of the study conducted by Arnhold.

[9] As translated from an interview conducted with secretariat members of the HCC in August 2022.

Social impacts of the SNBC have also been noticed as poorly understood (Arnhold, 2022). In a general perspective, models and expertise are intrinsically linked to frameworks and theories on the social world that convey normative models of public action (Armatte, 2007). Undiscussed implicit assumptions induce evaluability problems for the whole SNBC, which should therefore be taken into consideration in any future impact evaluation of the SNBC.

This evaluability assessment being focused on SNBC's governance orientations, it focuses on implicit assumptions specifically related to them. First, even if decision-makers are identified as the main users of the strategy, their inclusion in the orientations' rationale and their place in the theory of change is one of the executants. At the same time, the lack of political use and assimilation of the SNBC as a guide is highlighted in various documents (HCC, 2019a, 2020a, 2021a, 2022a; Arnhold, 2022, Leguet *et al.*, 2021). In addition, all the case studies produced in this thesis reported political support as a determinant factor for the success of local climate plans. Along the interviews conducted for this research, the examples of ambitious climate plans led by proactive local authorities, or on the contrary, delayed and minimalist plans due to adverse political support, were profuse.

> *Then there are those who simply do not feel concerned. I am exaggerating a bit, they are either very rural territories that consider that they have other urgencies, that they do not have the means to do, which is a reality. And there are also territories a little more equipped in terms of engineering and financial means but which, by political choice, have something else to do, and which have ... I would not say that they do not do anything, but they act reluctantly and by doing the minimum guaranteed service. Little by little, we manage to get the procedures started, and I know that these territories will do the minimum and will not do much. It's a report* [the PCAET] *that will go into a closet and that's it.* [10]

Decision-makers in charge of adapting and implementing SNBC's orientations are present at all levels of governance. As a reason for the lack of political assimilation, the territorial adaptation of the SNBC in climate plans is sometimes perceived as top-down guidance leading to an additional administrative burden. Though unofficially, certain local authorities have clearly let regional administrations know they would not produce a PCAET in spite of their legal obligation to do so. At the minimum, this seems ambivalent with the ambition of governance orientations' rationale to create a governance framework allowing for an acceleration of measures taken over time. Indeed, governance orientations' rationale aims at creating Beyond the tendency of the SNBC to produce a depoliticised vision of low-carbon

---

[10] As translated from an interview conducted in August 2022 with a civil servant in charge of coordinating PCAETs for the Regional Directorate for the Environment, Planning and Housing (DREAL) of the French region "Nouvelle Aquitaine".

transition governance (see Box 1), the role of local and regional decision-makers seems therefore ambivalent in the theory of change.

ii.   A decontextualised vision of low-carbon transition governance

The rationale of governance orientations also faces the evaluability issue of being decontextualised. This more or less applies to the rest of the SNBC as well. SNBC's intended impacts are generally envisioned in a decontextualised manner. For instance, the reference scenario of the SNBC 2 is based on exogenous parameters like the price of fossil fuels or the price of carbon quotas. However, significant gaps between the scenario and real measured data have been noted throughout the years. In the event of significant deviations of exogenous variables from the anticipated trajectories, the SNBC is underequipped with methods for measuring and steering public policies (Carbone 4, 2022). The same pattern can arise in governance. Change in governance follows a system of change with its own inertia. Administrations and decision-makers often have their own agenda. Changes in governance initiated by the SNBC must therefore be understood as an interaction between an intervention and a system of changes composed of a multitude of factors that tend to oppose or accentuate each other. Concerning SNBC's governance orientations, the international context is simply supposed to evolve in accordance with what is planned by international agreements on climate (MTES, 2020a; MTES, 2020c). Reinforcing advocacy in favour of carbon neutrality in international instances is indeed mentioned in the SNBC, but no real strategic vision of the international context of climate governance is defined. As for the territorial level, interviews and case studies allowed to identify that SRADDETs and PCAETs were sometimes developed or monitored in a context of intense internal restructuration of administrative services, like in the region Nouvelle Aquitaine:

> *We* [in the DREAL Nouvelle-Aquitaine] *have a somewhat particular organization. It is the result of the reorganization that took place following the merger of the regions. We merged the state's services of the three pre-existing regions. And in this rather complicated operation, it was decided to create a transversal mission which is now called the "ecological transition mission". Based on the observation that there are professional services that often work in silos, the director who made this merger thought it would be interesting to have a small service that would be more transversal, especially on issues related to climate and energy.* [11]

At the level of inter-municipalities, the example of the inter-municipality "Plaines et Monts de France" in the region "Ile-de-France" is insightful:

---

[11] *Ibid*

Until 2016, the inter-municipality was much larger and had many more resources. In particular, it was very comfortable financially thanks to the Charles de Gaulle airport, which was located on its territory. Following a decision from the state, the inter-municipality was split in two. Our new inter-municipality lost 90% of its revenues as compared to when the airport was on the territory. There was not much money left, but there were still many agents in the administrative services. Knowing that a PCAET elaboration had been started before the separation of the inter-municipality, it was decided to continue this process on the new one "Plaines et Monts de France", even if we were no longer obliged to do so in terms of population threshold. [12]

In these two cases, one can see how an administrative restructuring of local authorities can fundamentally impact their ability to implement climate plans, for the better or the worse. Especially at the inter-municipality level, governance systems take many forms in practice, and minor concern seems to be given to this fact in governance orientations. This should also mobilise specific attention from evaluators in the perspective of assessing causal chains of impacts to which the SNBC's governance orientations are supposed to contribute. Depending on territorial contexts, the SNBC might have an unequal impact. Analysing these differences could also improve the understanding of how governance of systemic change can be enhanced.

Recommendation 1: A comprehensive impact evaluation of SNBC's governance orientation should give particular attention to what is expected from regional and local political representatives and decision-makers, as their role in the theory of change of these orientations seems ambivalent. The impact of the territorial context of changes in which governance orientations are adapted should also be considered to enhance the identification of opposing and accentuating factors to systemic change.

---

2. A rationale based on limited evidence

Evaluability criteria under review: Quality of evidence-base (see Table 5)

i. A governance model insufficiently based on scientific literature

By construction, the plausibility of the SNBC as a whole is very well documented through numerous procedures, scenarios, and models. But here again, the lack of discussion on implicit assumptions discussed in the previous section is not only an evaluability issue in terms of intervention design but also in terms of evidence base quality. From what is visible in public policy documents constituting the SNBC 2 (MTES, 2020a; MTES, 2020c) and related documentation, the plausibility of seeing governance orientations and sub-orientations implemented is not supported by references to the literature as is the case for other strategic

---

[12] As translated from an interview conducted in July 2022 with two civil servants in charge of the PCAET of the inter-municipality "Plaines et Monts de France"

orientations. For instance, legal bounds between the different levels of planning are not subject to any transparent argument, as noted by an observer: "How and by whom are determined the documents that must 'be compatible', those that must 'take into account', and those that may coexist without any relationship to each other remains mysterious" [13] (Deprès, 2019). Indeed, some documents "must be compatible with" (i.e., "not contradict the fundamental options") or take into account (i.e., "not ignore or deviate from the objectives and fundamental orientations") certain other documents of the same level and those of the higher level. For instance, local climate plans (PCAETs) have to consider the SNBC and be compatible with the SRADDETs (ADEME, 2016a, p.30).

One could argue that, since energy transition[14] never took place in human history (Fressoz, 2014, 2020, 2021), and since very few countries have more experience than France in trying to implement it, scientific evidence supporting the development of an operational governance framework is rare. However, numerous studies have observed the governance of French environmental policies over the past years (Halpern, 2012 ; Lacousmes et al., 2014 ; Aykut & Evrard, 2017 ; Baronne *et al.*, 2018 ; Aykut & Nadaï, 2019, Blatrix *et al.*, 2021) and their socio-historical construction (Aykut, 2019). The advocacy coalition framework (Sabatier & Jenkins-Smith, 1993 ; Sabatier, 2019 ; Sabatier & Weible, 2019) – a scientific framework designed to analyse the conduct of change in political systems – has been applied to energy policies in several European states (Markard *et al.*, 2016 ; Blake *et al.*, 2020 ; Nohrstedt, 2010). Generally speaking, developed literature exists on the conduct of change in public action, and more in particular in sustainability-related and transition-related policies (see section II.A). The political sociology of expertise (Delmas, 2011) has highlighted the major influence of the "framing" of a public problem on the imagination of solutions (Gusfield, 1981). However, the construction of the climate problem, particularly in France, has been carried out by actors sharing the same set of beliefs on the importance of obtaining a scientific consensus to define and legitimize public action (Aykut et al., 2012). The SNBC is a typical example of this tendency. Contrarily to the model of governance embodied in SNBC's governance orientations, certain authors advocate in favour of re-politicizing ecological issues, opening up the climate issue, and, in particular, reopening the possibilities in the constitution of energy scenarios in

---

[13] As translated from "Comment et par qui sont déterminés les documents qui doivent « être compatibles », ceux qui doivent « prendre en compte » et ceux qui peuvent coexister sans aucun rapport entre eux reste mystérieux." in Deprès, 2019

[14] In the sense of replacing an energy source by another. Historians like Fressoz show how, in a macroscopic and worldwide perspective, energy sources have been accumulated along history instead of being replaced by one another as it is commonly said for petrol which would have replaced coal.

terms of production and consumption (Aykut & Dahan, 2015, chap 9). As such, SNBC's governance orientations fit how environmental policies are still overwhelmingly envisioned, following the "linear model" (Roqueplo, 1997; Miller, 2004) of a political decision informed by a sociologically decontextualized scientific consensus.

Besides, and as briefly mentioned in Box 1, the social impacts of the SNBC are poorly understood (Arnhold, 2022), whereas tools and comparable examples in other countries could form the basis of a dedicated reflection. "There are well-informed tools (e.g., the Prometheus model of the French General Commission for Sustainable Development - CGDD -, which simulates the social impact of energy taxation), but their results are not well known or shared by the stakeholder community. This fosters mistrust and divergent views on the extent of social problems. Moreover, it is not enough to know in advance the winners and losers of the next climate policies; the obstacles to their implementation must also be removed. [15] (Leguet *et al.,* 2021). A recent report produced by France Stratégie brings useful insights on how public action can become sustainable in France. It notably mentions the development of a shared culture of sustainability, the democratisation of long-term public policies, the enhancement of political support in planning, the clarification of controversies, improved participation from civil society and citizens, more consistent and recurrent evaluations and monitoring, a better reflection on the territorial and sectoral adaptation of plans (France Stratégie, 2022). Reports on how to improve low-carbon transition governance are now prolific. The model of governance they promote seems quite far from the implicit assumptions identified in the case of SNBC's governance orientations. They argue for more transparency and coproduction in the elaboration, steering, and monitoring of public actions through the development of a "deliberative continuum" (France Stratégie, 2022, chapter 7).

In this perspective, SNBC's governance orientations would gain in evaluability if they were produced in a challenging manner, with the same level of scientific exigence expected for other orientations, like orientations on economic policies and GHG emission reduction measures.

---

[15] As translated from: "Par ailleurs, les impacts sociaux des politiques climat sont encore mal pris en compte dans la conception de la stratégie. Il existe des outils bien informés (par exemple le modèle -Prometheus du Commissariat général au développement durable – CGDD –, qui simule l'impact social de la fiscalité énergétique) mais leurs résultats sont trop peu connus et partagés par la communauté d'acteurs. Cela entretient la méfiance et les divergences de vue sur l'ampleur des problèmes sociaux. De plus, il ne suffit pas de connaître à l'avance les gagnants et les perdants des prochaines politiques climat mais il faut aussi lever les obstacles à leur mise en œuvre." (Leguet *et al.*, 2021)

Recommendation 2: The evaluability of SNBC's governance orientations should be significantly enhanced by the implementation of more scientific studies on various aspects of the French energy transition's governance. For example, studies on advocacy coalitions and controversies in the French energy transition could serve this purpose. More generally, SNBC's governance orientations should be elaborated with the same exigence of evidence-based and scientific justification as any other strategic orientation in the SNBC.

ii.   A globally measurable governance rationale

Beyond the plausibility issues discussed above, governance orientations seem globally reliable since they can, in theory, be measured to a certain extent through indicators. Certain indicators are proposed directly in the SNBC (MTES, 2020a, p. 49, 50-51) and presented in table 7.

Table 7: Indicators of SNBC's governance orientations

Monitoring indicators of the orientation NAT 1	Indicators for taking into account the SNBC's orientations in public policies
	The proportion of plans, programmes, bills, and laws that have been assessed for their impact on greenhouse gas emissions
Monitoring indicator of the orientation TER 1	A qualitative indicator of the integration of climate change mitigation into the activity of inter-municipalities
Monitoring indicator of the orientation TER 2	A qualitative indicator on the convergence of methods for the elaboration of greenhouse gas emissions calculation

Source: As translated from MTES, 2020a, p. 49-51

These indicators, though vague, cover the most critical issues of the theory of change presented in section IV.C, which are: alignment of national public policies, evaluation and assessment of public policies, alignment of territorial climate plans, and additionality of territorial climate plans. Once again, and as reported before in this evaluability assessment, most of the challenges associated with SNBC's governance orientation have already been identified in the past (CNTE, 2015; Rüdinger, 2018; DGEC, 2019; CESE, 2019; Ae, 2019a; HCC 2020a, 2021a, 2022). Yet, two evaluability challenges come with indicators listed in table 7: their construction (discussed later in section VI.C) and the agreement on and justification of the way they are constructed. A general consideration on that matter is that the elaboration process of the SNBC was globally quite disconnected from the definition of indicators (Arnhold, 2022). No trace of

discussion among stakeholders on the choice of these indicators was found. Therefore, the issue of indicators' quality cannot be discussed much further.

It can still be noticed that a comparison of SNBC's indicators with those of other plans and strategies exists (MTES, 2020c, p. 82-83). Although this comparison is simply descriptive, it could inform the construction of indicators mentioned in table 7 and their potential enhancement. Furthermore, these indicators demonstrate once again the existence of undiscussed implicit assumptions in the SNBC's governance orientations. Indeed, one could regret the absence of indicators of context, as these types of indicators are defined for other orientations of the SNBC. The reference scenario considers explicitly, as an assumption, that international regulation will evolve in accordance with the Paris agreement. However, no indicator is planned to monitor the actual realisation of this assumption. Besides, other lacks can be identified, such as indicators on the creation of public services planned by the TECV law (CESE, 2019, p. 16), indicators on the fairness (HCC, 2021a) or acceptation of SNBC's orientations, or even indicators on the effective monitoring of other SNBC's indicators. Governance indicators were extremely limited in the first version of the SNBC, which creates de facto a problem of long-term monitoring of governance orientations.

It should finally be noted that certain steps in the causal chains of changes envisioned by SNBC's governance orientations can probably not be monitored for practical reasons. For instance, this is the case with creating new territorial alliances on the occasion of the elaboration and implementation of climate plans at the local level. The case studies developed in this thesis can bring insights on this point, as they allow to identify that local climate plans contributed more to the creation of informal networks of actors than formal territorial alliances. As phrased by several interviewees:

> *Having discussed this with other local authorities, but also with ADEME, there is a strong and general need to be integrated into networks. It is true that the SNBC really encourages the development of projects between communities, but we are still very far from it.* [16]

---

[16] As translated from an interview conducted in July 2022 with the person in charge of the PCAET for the inter-municipality Boucle Nord de Seine

Almost all the PCAETs see themselves as islands, the inter-municipalities do not see what is around them. So, the new territorial alliances around the PCAET are not something that ... well, it is not really a reality today. It creates, on the other hand, much greater interaction between administrative services, that's true. [17]

It seems plausible to consider that the SNBC contributes to developing competent networks of technical and administrative actors across the territory through its territorial adaptation. Being unformal, the development of these networks cannot be captured through indicators. This example illustrates certain difficulties of supporting governance orientation's rationale with indicators and measurable evidence. This reflection on governance orientations' indicators should occupy the next revision of the SNBC, as governance orientation ensures spatial, temporal, internal, and external coherence of the SNBC.

Recommendation 3: The next revision of the SNBC should develop a much deeper reflection on governance indicators in order to

1) **fill the gaps identified in governance orientations' monitoring system, especially in terms of indicators of context**
2) **propose a coherent set of indicators for governance orientations across the SNBC revisions that are to come**
3) **discuss among stakeholders on what counts, what is valued, what is expected, and what is actually measured in terms of governance**

---

3. Main findings

- Undiscussed implicit assumptions in the rationale of SNBC's governance orientations threaten their evaluability. Governance is solely envisioned in a top-down approach, which seems ambivalent with the ambition of the SNBC to create a governance framework able to encourage the adoption of more and more ambitious measures over time. The lack of political support for climate plans, particularly at the level of inter-municipalities, should be given major attention in future evaluations.

- Governance orientations are decontextualised in two ways. First, no strategic vision is defined on how to influence and how to react to changes in international climate governance. Secondly, governance orientations give little attention to the diversity of local governance situations and contexts in which they have to be adapted.

---

[17] As translated from an interview conducted in August 2022 with a civil servant in charge of coordinating PCAETs for the Regional and Interdepartmental Directorate for the Environment, Planning and Transport (DRIEAT) of the French region "Ile-de-France".

- Governance orientations are surprisingly less supported by references to the literature than other SNBC's orientations. They propose a traditional vision of governance and political decisions that does not take into account the latest developments in the scientific literature in climate change governance.

- In theory, governance orientations can be measured. Indicators presented in the SNBC cover the most critical issues of the rationale supporting governance orientations. However, the choice of these indicators is not justified. It should also be noted that certain intended changes described in governance orientations' rationale are impossible to measure through indicators.

B. The well-known and unaddressed obstacles of alignment and additionality: an evaluability predicament

Evaluability category under review: Alignment and additionality (see Table 5)

Considering how crucial additionality and alignment of climate plans are for SNBC's evaluability, a section of this evaluability assessment is dedicated to them. This section is subdivided into two aspects of alignment and additionality, one focused on objectives and design, and the other on monitoring and reporting. Besides, this part of the evaluability assessment turned out to be the most delicate to write. Assessing the alignment of public policies with the SNBC is one of HCC's missions. Therefore, several evaluations discussing the alignment of public policies with the SNBC already exist. As a consequence, discussing this evaluability category could therefore seem useless. However, the adaptation of governance orientations in other plans' objectives and monitoring appears to be unaddressed inside these evaluations. In order to evidence this finding, existing assessments and evaluations of alignment with the SNBC are reviewed to show they miss addressing the adaptation and alignment of SNBC's indicators and objectives related to governance orientations.

1. <u>A lack of objectives' alignment already assessed that could be better understood</u>

Evaluability criteria under review: Depth of alignment (see Table 5)

The depth of alignment between public actions at all levels and the SNBC has globally already been assessed as weak, notably by the HCC. This section discusses this assessment and uses the fieldwork conducted for this thesis as a way to identify potential room for improvement in understanding the reasons for this failure. In particular, it considers an evaluability problem the absence of explicit attention given to the development of governance-related orientations

(aligned with those of the SNBC) in public policy documents and regional and local pans. On this basis, evaluability recommendations for future evaluations are produced.

i. Alignment with governance orientations: a blind spot in national policies

The structure of chapter 2 "Planning (Articles L222-1 to L222-9)" of title 2 in the French environmental code shows the governance instruments' structure deployed alongside the SNBC. Together, these public policy instruments aim to mitigate climate change and control air and atmosphere effects. This part of the environmental code defines that SNBC's objectives are supposed to be adapted into several national plans. The PPE is the only plan legally required to be compatible with the SNBC. For the rest, public policy documents are either supposed to "take into account" the SNBC or either not bound to it in any way. And, the notion of "taking into account" is weak in practice:

> From a legal point of view, it is a rather weak notion. That is to say that you can decide not to care about it if you have good reasons to do so. [18]

Since alignment with the SNBC is not legally guaranteed, the evaluability of additionality and alignment principally lies in the evaluability of how this alignment takes place practically.

In the SNBC, governance orientations provide objectives and guidance to develop a governance framework supporting the attainment of other objectives defined by more thematic orientations, either transversal (GHG emissions, economic policies…) or sectoral (industry, wastes …). During this evaluability assessment, it appeared that alignment with transversal and sectoral orientations is discussed, whereas governance orientations are often unmentioned. First, the SNBC often does not associate objectives with its governance orientations, whereas measurable objectives are set for all other orientations. Secondly, evaluations discussing the alignment with the SNBC do not seem to recommend the definition of quantified objectives corresponding to governance orientations.

For example, carbon budgets are progressively segmented in terms of ministerial responsibility with ministerial roadmaps. But this planning effort was assessed as relatively unsuccessful (HCC, 2021b). Consequently, the HCC produced recommendations that, if they were implemented in the future, could ensure the adaptation and alignment of ministerial climate roadmaps with the SNBC's governance orientations. For instance, the HCC recommended: "Ensure that all relevant public actors have received a mission letter [to elaborate a climate

---

[18] As translated from an interview conducted in August 2022 with a civil servant in charge of coordinating PCAETs for the Regional Directorate for the Environment, Planning and Housing (DREAL) of the French region "Nouvelle Aquitaine".

roadmap] and that the orientations, actions, and indicators of the SNBC and PNACC are all covered; explain, if necessary, the deviations from the SNBC and PNACC."[19] (HCC, 2021b, p. 5). This being said, the report does not mention the fact that governance orientations' objectives are not covered or adapted in the perimeter of the ministries considered. Several other sectoral roadmaps – notably in the industry – should also be aligned with SNBC's objectives[20]. The last annual report of the HCC provides more elements on their depth of alignment. It concludes that this alignment is insufficient and suffers from the lack of steering mechanisms to properly ensure that the objectives are achieved and that sufficient capacity for mobilizing economic actors is developed (HCC, 2022). Here again, this statement is not associated with the explicit mention of SNBC's governance orientations and objectives.

In addition, coordination mechanisms listed in the SNBC2 (MTES, 2020a, p. 47-48) and mentioned in the theory of change constructed in section IV.C, also seem insufficiently performative. One of the most important of these mechanisms is the Ecological Defense Council, a body chaired by the French President, bringing together all government members concerned with climate and environmental issues, setting priorities for ecological transition, and ensuring they are taken into account in all policies. As noted by the HCC, the irregular occurrence of the Ecological Defence Council's meetings – the last one took place in December 2020 – and the large number of topics covered have not allowed effective monitoring of public action (HCC, 2022, p. 11).

The evaluability assessment conducted in this thesis can therefore build on the general conclusion that:

1) SNBC's governance orientations have already been evaluated for the most part,
2) These evaluations demonstrate the underperformance of coordination mechanisms to use the SNBC as a steering document for public action.
3) This poses evaluability issues for other strategic orientations of the SNBC as they may not be coherently implemented.

---

[19] As translated from "S'assurer que l'ensemble des acteurs public pertinents a été destinataire d'une lettre de mission, et que les orientations, actions et indicateurs de la SNBC et du PNACC sont tous couverts ; expliciter, le cas échéant, les écarts par rapport à la SNBC et au PNACC." In (HCC, 2021b, p.5)

[20] The first roadmaps have been published for the cement, mining and metallurgy, steel, chemical and paper-cardboard industries. According to the MTES, in total, nearly 80% of French industrial emissions are now subject to a detailed strategy for reducing their carbon footprint.

Yet, in spite of these evaluations and their conclusions, several things can be remarked at this stage:

1) Certain coordination mechanisms at the national level presented in the SNBC have not been assessed, as is the case of senior officials for sustainable development (HFDD[21]), which are responsible for contributing to the coordination and evaluation of public policies on sustainable development within each ministry (MTES, 2020a, p. 47).

2) The translation of SNBC's governance orientations and their objectives in other plans or public policy documents often seems absent and indirectly discussed in evaluations.

3) The reasons and obstacles explaining the failure of SNBC's governance orientations to allow for an alignment of other strategic orientations between plannings are not subject to detailed evaluations. In particular, no sociological analysis of how administrative stakeholders approach the alignment with the SNBC in the context of their professional practice was found.

The second remark is further discussed with a focus on regional and local levels of plannings in the next part. The third remark is further elaborated afterwards.

ii. Alignment with governance orientations in regions and inter-municipalities: two levels of misalignment

After having reviewed several PCAETs, the SRADDET of "Nouvelle-Aquitaine", and the SRCAE of "Ile-de-France", it appears that territorial adaptation of governance orientations is not systematic. The SRADDET of "Nouvelle-Aquitaine", for instance, does not identify governance orientations or governance objectives in its "detailed air, climate and energy strategy", which constitutes the main SRADDET's component stemming from the SNBC (Nouvelle-Aquitaine, 2019d). The strategic vision of low-carbon transition governance supported by the SRADDET seems rather dissolved in numerous thematic or sectoral orientations and objectives. In this perspective, it seems very unlikely that local authorities in the region "Nouvelle-Aquitaine" have aligned and summable governance orientations inside climate plans.

In another region, the SRCAE of "Ile-de-France" defines one orientation and four sub-orientations on "implementation" (Ile-de-France, 2012, p. 378-387). They mainly aim at harmonising the implementation of the regional plan across the territory through, among other

---

[21] From the French "Haut Fonctionnaire au Développement Durable"

things, administrative-territorial reorganisation, accentuation of the acquisition of specific competence in local authorities, and creation of monitoring instances and systems. These orientations could be assimilated into a translation of SNBC's governance orientations at the regional level. However, it is untrue in practice because the SRCAE was published in 2012, before the first SNBC. From a general point of view, SRADDETs have the same issue of temporal desynchronisation since they were elaborated at the same time as the first version of the SNBC and PCAETs:

> *More precisely, the TECV law, which established the PCAETs* and the SNBC*, came out at the same time as the NOTRe law, which established the SRADDETs, so there were parallel works globally ignoring each other.* [22]

About PCAETs, an analysis of inter-municipalities' contribution to the energy transition recently recommended better structuring of local governance of climate plans, thus indicating a clear lack of adaptation of SNBC's governance orientations at the local level (ADCF, 2021a). As for the seven case studies on PCAETs of the region "Ile-de-France" developed in this evaluability assessment, their adaptation of SNBC's governance orientations to the local context follows a similar operational logic to the one of the SRCAE. Furthermore, it appears that PCAETs rarely define orientations and objectives regarding governance or implementation in their strategy. Although some actions relating to governance are often present in the action plan of PCAETs, they are more often mentioned in "public services exemplarity" and "sensitisation" orientations. The example of the inter-municipality "Paris-Saclay" is a rather representative one. With eight planned actions relating to "public services exemplarity", three strategic axes are set: integrating the climate-air-energy dimension into the operations and competence of the inter-municipality and the municipalities, informing inhabitants and promoting actions undertaken, raising awareness and mobilizing public sector workers (Paris-Saclay, 2019a). Most of the time, PCAETs' strategy contains recommendations on good governance that are incorporated into all strategic axes. In the end, PCAETs seem far from defining a strategic vision of governance for climate, air, and energy, as the SNBC invites them to do. In addition to that, none of the governance orientations listed in the SNBC, regional plans, or local plans are associated with quantitative objectives, which is not helping the alignment of these orientations. More than that, one could argue that it also reduces the ambition of these orientations at all levels. Besides, orientations that could be considered

---

[22] As translated from an interview conducted in August 2022 with a civil servant in charge of coordinating PCAETs for the Regional Directorate for the Environment, Planning and Housing (DREAL) of the French region "Nouvelle Aquitaine".

governance-related, when they exist, never tackle the issue of creating synergies with other territories and other plans.

In addition, a recently published detailed report on the contribution of SRADDETs and PCAETs to the energy transition (MTES, 2022b) failed to address this lack. It only addressed the alignment and additionality of transversal and sectoral objectives in SRADDETs and PCAETs, without considering the alignment of governance orientations among these plans.

Three main conclusions can be drawn from this part of the evaluability assessment:

1) In the sample reviewed, regional and local plans stemming from the SNBC never define governance orientations aiming at ensuring, or at least simply considering, the coherence of their plan with other plans at the same level. For instance, the reviewed PCAETs never define governance orientations encouraging to look at other PCAETs to find synergies in actions undertaken. In this respect, regional and local plans are not aligned with the ambition defined in SNBC's governance orientations of harmonising climate planning.

2) While SNBC's governance orientations define a governance framework, "governance" orientations or equivalents in regional and local plans are more operational. At the regional level, these orientations are inconsistent and often refer to "implementation", while they often refer to "public service exemplarity" at the local level and are dissolved in other strategic orientations. This inconsistency in the formulation of governance orientations is an obstacle to ensuring the consistency of governance objectives across plans.

3) Since SNBC's governance orientations are not associated with quantitative and intermediary objectives, regional and local plans also do not do so. Apart from the somewhat distant goal of establishing good governance of the low-carbon transition, it is therefore difficult to say whether the different levels of planning are producing governance changes that are all aligned.

Recommendation 4: SNBC's governance orientations should be translated and adapted inside relevant other public policy documents, just like it is required for any other orientation of the SNBC. Especially in the case of regional (SRADDETs) and local (PCAETs) planning, a deeper reflection should be brought upon drafting governance orientations in order to create a coherent and summable territorial governance framework for low-carbon transition in each territory. Coordination mechanisms

---

mentioned at the national level in the SNBC's governance orientations should be systematically assessed, especially those which were not evaluated in the past. Such assessments should fruitfully complement the already existing evaluations of public policies' alignment with the SNBC.

iii. The sociological approach to assessing the alignment of public policies with the SNBC: a promising idea

At the regional level, articles L222-1, L222-2, L222-3, and L222-3-1 of the environmental code introduce several regional plans taking into account SNBC's objectives. As already mentioned, the legal bounds between these plans are thin. The misalignment of the SNBC, SRADDETs and PCAETs in terms of strategic objectives and actions have been repeatedly identified (Cerema, 2017, p. 88-89 ; CNTE, 2019, p. 25 ; HCC, 2020a, p 94-97 ; HCC, 2021a, p. 58-63 ; HCC, 2022, p. 139-145 ; MTES, 2022b). Translating the SNBC into regional objectives is indeed not straightforward. It must take into account issues of territorial equity. The objective of carbon neutrality may be unsustainable for some territories. In the absence of a given distribution of carbon budgets between regions, a dialogue involving the state and all regions is necessary to speciate the effort required from each of them. As an example, some territories have to go beyond carbon neutrality to compensate for the actions of those that cannot. In its formal opinion on SNBC 2, the CESE noted explicitly that the articulation of national and regional planning was still at the starting point and that no indication was given on how national objectives could be coherently implemented in regions (CESE, 2019). Furthermore, practical difficulties in aligning territorial plans due to desynchronised revisions were reported in the SNBC 2 (MTES, 2020a, p. 49). Even identified, this lack of alignment has still not been studied sociologically (Arnhold, 2022, p. 39). This thesis aimed at conducting interviews and developing case studies at the local level to improve the understanding of this misalignment and propose ideas for feeding the enhancement of governance orientations' evaluability and future evaluations.

First, beyond the weak legal constraints on local climate plans, this research found that the coordination capacities of regions were not fully exploited:

> *"Taking into account" is already a rather weak relationship. And when we go down to the level below, the PCAET must also take into account the objectives of the SRADDETs, but it is a little stronger, it must be "compatible with" the rules of the SRADDET relating to the field of competence of the PCAET, which means on climate, air and energy topics. But the problem*

is that there still have to be rules in this area. And in fact, when we look at different regions, there are few specific rules on climate, air, and energy in the SRADDETs. So, in the end, the PCAET is not bound by many things. [23]

It appears that the evaluability of SNBC's governance orientations could be improved if regional plans were, in practice, more guiding for PCAETs. In its 2020 annual report, the HCC accordingly noted that with the development of SRADDETs, regions also have the potential to build resilient low-carbon development trajectories by integrating adaptation, mitigation, and regional economic policies. The report advised that SRADDETs should guide the actions of sub-regional actors (HCC, 2020a). To some extent, even not strictly tied to the SNBC, regions are not taking the role of territorial leaders they are demanded to embody.

In addition to that, a set of more general issues impact the alignment of PCAETs as a whole with the SNBC. First, a methodological and scientific problem is identified for aligning territorial plans with the SNBC:

So, already in principle, on the regulatory architecture, there is a problem, it is that this coherence has not been thought out. Even if one was interested in doing so, no one knows the method, we don't have a method. For example, when we set the objective of carbon neutrality at the national level, how do we apply it at the regional and territorial levels? We don't know how to do it, or at least we don't have the tools to do it. [24]

To this problem, the HCC recommended establishing more consultations among stakeholders and finding inspiration in the objectives' adaptation exercise operated at the European level between member countries. However, this comparison may seem rapidly limited. Therefore, dedicated scientific studies on developing an evidence-based method for objectives' adaptation could find their utility in improving the evaluability of the SNBC.

Issues in the way PCAETs are constructed were also identified during this research. Because their elaboration is segmented in time, competence, and stakeholders' involvement, these plans face a general problem of internal coherence. PCAETs are composed of a territorial diagnosis identifying GHG emission reduction potentials, a strategy adapting the objectives of national and regional climate plans, and an action plan listing actions to be consequently implemented. These three very different exercises often seem difficult to articulate:

I have noted that there is a systematic gap between the diagnosis and the strategy, and between the strategy and the action plan [in the PCAET]. *So it's not an accident, it's not a coincidence.*

---

[23] As translated from an interview conducted in August 2022 with a civil servant in charge of coordinating PCAETs for the Regional Directorate for the Environment, Planning and Housing (DREAL) of the French region "Nouvelle Aquitaine".

[24] *Ibid*

[...] The standard case is that inter-municipalities hire a consulting firm to do the territorial diagnosis, which is done more or less well, but in general, it is correctly done. Afterwards, a strategy is developed based on the regional and national objectives, saying, for instance, "we will be a 'positive energy territory' in 2050". In general, the strategy is very ambitious, and at this stage, the technical work is presented to the elected officials. The elected officials are interested in the short term, and they say: "this can be done and this cannot be done, we want to go there, on that there are only setbacks to get, let it go", and the action programme is built like that. That is to say that very often, a rather vague and ambitious strategy is debated, and afterwards, when it is a question of committing to operational actions that require the mobilization of the inter-municipality's resources, we pick and choose what is the easiest and most profitable politically and what seems to be within the reach of the inter-municipality's resources and we leave the rest. So I think that behind these three parts of the PCAET, diagnosis, strategy and action plan, there are very different approaches and an inconsistency between these three approaches. [25]

The inconsistency described here is the result of going from technical and administrative work imposed in a top-down approach to the assimilation of a PCAET by local decision-makers in the elaboration of an action plan. The general issue of political support and assimilation was early identified (ADCF, 2016). Indeed, climate and energy transitions require perfect coordination of local public policies, and the climate-air-energy challenges call for greater political ownership. As reviewed in section VI.A, this political ownership is ambivalently addressed in the rationale of governance orientations since local decision-makers are envisioned more as executants. This lack of assimilation by local stakeholders is intensified by the absence of coherence or evaluability requirements between the action plan and the strategy formulated inside PCAETs. This was highlighted in several interviews at the level of inter-municipalities and regions.

In the formal opinions we give on the PCAETs, [...] We ask them to draw up an action plan that should make it possible to achieve these objectives. But we don't even ask them to close the loop, that is to say, to know if these actions will allow reaching these objectives. [...] We say to them: "there is no obligation to take the national objectives as they are. But, on the other hand, we want you to take them as work base on your territory, to say what can be done and what cannot. If you can go over these objectives, so much the better, if you cannot, explain to us why". In a way, they actually take the national objectives as they are, but without really questioning whether they are achievable or not in their territory. [26]

The mid-term synthesis of PCAETs produced by the DREAL "Nouvelle-Aquitaine" highlights the fact that constructing a governance framework for low-carbon transition on the basis of the

---

[25] *Ibid*

[26] As translated from an interview conducted in August 2022 with a civil servant in charge of coordinating PCAETs for the Regional and Interdepartmental Directorate for the Environment, Planning and Transport (DRIEAT) of the French region "Ile-de-France".

PCAET requires several conditions, the main one being having a coherent "territorial project"[27] (DREAL, 2021). Some actions in PCAETs are cross-cutting and involve other policies, such as urban planning-related actions, and therefore other actors. Good governance also requires coherence and dialogue between these various policies. With a formalised territorial project, the local authority can ask itself if urban planning documents promote the implementation of the strategy of its PCAET, or, conversely, if the PCAET proposes guidelines to be translated into future urban planning documents. In practice, not all inter-municipalities have an equal capacity to effectively act as a federation between municipalities, and many of them don't have a formal "territorial project". In the seven PCAET case studies conducted, all interviewees reported that the PCAET had been the occasion to define a strategic vision for environmental policies, and sometimes for the territory itself, since this plan encourages thinking in the long-term. But here again, placing such ambitions in PCAETs requires profound political support, which is rarely observed.

This feedback from the field briefly introduces a path towards a sociological understanding of how misalignment between PCAETs and the SNBC arises. Consequently, evaluability issues in terms of alignment of climate plans cannot simply be addressed by an adjustment of their legal articulation. The main solution to tackle this issue of inconsistency inside PCAETs resides in stimulating political support and early consultation among territorial stakeholders.

Recommendation 5: Future evaluations tackling the alignment of public policies at the national, regional, and local level with the SNBC should give particular attention to analysing sociologically the reasons and obstacles explaining the success or failure in this alignment. The evaluability assessment demonstrated the utility of this approach through case studies on PCAETs, for instance, highlighting risks of internal incoherence due to the particular conditions of elaboration for each part of the PCAETs.

---

    2. <u>The absence of monitoring for governance changes at all levels</u>

Evaluability criteria under review: Quality of monitoring and reporting against SNBC results (see Table 5)

---

[27] The territorial project is both a document and a guide for local public action. It aims to conduct a diagnosis of the territory by mobilizing its stakeholders (economic, associative, citizens) and institutional partners (State, Region, Department), and to determine a territorial strategy by identifying and prioritizing strategic orientations.

Just like for any other sustainability-related policy, evaluations of the SNBC face the micro/macro paradox, according to which the sum of local successes does not necessarily aggregate in a local success (see section II.B). Having monitoring systems that can be added is the first condition for being in the capacity to assess such emergent impacts. As importantly, the development of harmonised monitoring systems is an explicit goal of SNBC's governance orientations and a crucial part of the corresponding theory of change. This harmonisation of monitoring and evaluation also applies to governance orientations themselves. This section, therefore, addresses the issue of having comparable and summable indicators on governance among plans at the same territorial level.

The previous part shows that alignment and additionality of SNBC's governance orientations and objectives are rarely translated into other plans. The same logic applies to governance-related indicators. Existing assessments of the additionality and alignment of indicators and monitoring systems essentially stem from the same documentation as the one reviewed in the previous part (section VI.B.1.). The lack of legal constraints in coordinating climate plans' monitoring efforts is identified as an adverse factor to the evaluability of SNBC's orientations in general, and, a fortiori, to the evaluability of SNBC's governance orientations. Numerous attempts, at different levels, have tried to aggregate monitoring systems and impacts of climate plans. The most noticeable are the following:

- Various regional works, such as the one of the DRIEAT in the region "Ile-de-France" on the aggregation of Territorial Climate Energy Plans' (PCETs) impacts on housing in the region (DRIEAT, 2016a).
- A national synthesis of SRCAEs, the SRADDETs' predecessors, was performed in 2017 (Cerema, 2017).
- A work on a repository of shared indicators, incorporating main indicators of the SNBC, and allowing climate planning exercises at different scales to benefit from a common monitoring repository was planned for late 2019. This work also aimed at defining the methodologies for developing objectives on the different targets to allow their comparison and aggregation more easily vis-à-vis the national trajectory (DGEC, 2019, p. 4). French regions have adopted a reference system of common energy-climate indicators for SRADDETs in 2021 (Régions de France, 2021; HCC, 2022, p. 143) on the basis of a work of ADEME (ADEME, 2021a, 2021b).
- Working groups on "territorial ecology" working specifically on this issue (MTES, 2020a, p. 49).

In addition to that, the last annual HCC report outlined the great opportunity of treating this problem through ongoing consultations on the future SFEC (French Strategy for Energy and Climate), which is intended to bring coherence in climate change mitigation and adaption policies (HCC, 2022, p. 143).

General problems reported on the alignment of climate plans' indicators and monitoring are incompatible methodologies and indicators impossible to add, problems of synchronicity in plans' revisions, a lack of guidance from superior plannings, and a lack of resources to perform detailed monitoring. These well-known findings were corroborated by the fieldwork conducted in this thesis. Since these findings from existing assessments on the SNBC concern alignment of monitoring systems for the whole SNBC, they also concern the alignment of monitoring systems for governance orientations. Inside local administrations, more concrete preoccupations may also drive stakeholders away from considerations on monitoring and alignment between plans:

> *Everything that is going to be monitored, evaluated, etc. I say to myself, well... The ADEME asks a lot, we have obligations on it, and we even considered being helped by a consultancy on the questions of monitoring. In fact, we are in a rather pragmatic logic, we throw ourselves into action. Everything that is related to monitoring and evaluation comes later. I understand that the state and the ADEME need this monitoring system to measure the effectiveness of their budgetary allocation policy on this or that project. But in the end, the local authorities are really into the action.* [28]

It is also true that articulation between planning in public action is always an incremental and long process that is never straightforward. In this regard, the recommendation of the HCC's 2021 annual report to synchronise the revision of planning documents in order to reinforce their alignment with the SNBC and the SRADDETs (HCC, 2021a, p. 61) seems unrealistic. As noted by an interviewee:

> *Plans' revision and alignment is always an organic process. It is never decided that local plans will be revised in even-numbered years and regional plans in odd-numbered years. It is important to realize that the revision of a plan is a long process, which can take several years, and which often arrives with less than perfect timing. So this alignment of revisions between plans is really done as we go along. But that's true for all sorts of planning.* [29]

For this reason, it seems crucial that regional administrations produce guidance on the mid-term assessment of PCAETs, since an important number of them are forthcoming. As noted in

---

[28] As translated from an interview conducted in July 2022 with the person in charge of the PCAET for the inter-municipality Boucle Nord de Seine

[29] As translated from an interview conducted in August 2022 with a civil servant in charge of coordinating PCAETs for the Regional and Interdepartmental Directorate for the Environment, Planning and Transport (DRIEAT) of the French region "Ile-de-France".

the guidance provided by the region "Nouvelle-Aquitaine" (DREAL, 2021), these assessments are an opportunity to strengthen the synergies between documents feeding the territorial project, particularly during the revision of the PLU (Local Plan for Urban planning), PLUi (Local Plan for Inter-municipal Urban planning), PDU (Urban Travel Plan), PLH (Local Housing Programme) or SCoT (Territorial Cohesion Scheme). This integrated vision is all the more desirable as the legal links between the PCAET and the PLU/PLUi have recently been strengthened (compatibility relationship since April 1, 2021), and the SCoT-PCAET has been created.

Recommendation 6: Regional administrative departments in charge of energy transition should produce guidance on PCAET's mid-term assessment. This could be a great opportunity for developing an initial strategic approach to the good governance of low-carbon transition in inter-municipalities, as well as a dedicated set of indicators. Such guidance would significantly reinforce the evaluability of SNBC's governance orientations from the perspective of additionality and alignment.

---

3. <u>Main findings</u>

- Generally speaking, at all levels, governance orientations listed in the SNBC 2 are not translated in national public plans and programmes, nor in regional and local climate plans. A formal exercise of translating SNBC's orientations and objectives about governance – just like it is done for other orientations – could oblige territorial authorities to look at other territories in order to find synergies in actions. Considering the lack of consideration on governance alignment among plans, developing a detailed impact evaluation of SNBC's governance orientations does not seem fully useful in the present state.

- Moreover, it seems that existing assessments tend to address this misalignment more indirectly than it is addressed for other orientations.

- The evaluability of the alignment and additionality of monitoring systems for governance orientations is even more problematic. When governance-related orientations are defined, corresponding indicators are not. Therefore, the impact of SNBC's governance orientations, notably at local levels, seems, for now, impossible to assess in an aggregated manner. The upcoming mid-term assessments of PCAETs represent a good opportunity to address this issue.

C. A two-tiered information availability

This section discusses the availability of information allowing to evaluate the impacts of SNBC's governance orientations. This includes qualitative and quantitative data, the effective construction of indicators, and the identification of baselines.

1. <u>An abundance of qualitative analysis and a lack of quantitative information</u>

Evaluability criteria under review: Measurability of outcomes and impacts (see Table 5)

Information on governance orientations' implementation is generally accessible, notably at the national level. The number of bills and laws evaluated with regard to their impact on the environment or the national trajectory planned by the SNBC is public. The HCC reports also compile much information on SNBC's governance orientations implementation, discuss the role of regions, evaluate ministerial climate roadmaps, and assess the absence of meetings of the Ecological Defence Council. Although certain mechanisms of national coordination have not been evaluated, as mentioned in section VI.B.1, they could theoretically be evaluated. In terms of qualitative information on the elaboration process of the SNBC, the sociological study ordered by the HCC (Arnhold, 2022) proves that interviews can provide comprehensive insights on elements that are not written in public policy documents. Similarly, interviews on regional and local climate plans, like those conducted in this evaluability assessment, can provide more information than what is contained in official documents. In this respect, stakeholders' availability for interviews did not pose major problems. In a general manner, every action implemented in the framework of the SNBC, a SRADDET, or a PCAET is reported somewhere and publicly accessible. Certain actions are easily documented and come straightforwardly with available information on the implementation of SNBC's governance orientation. For instance, the SNBC mentions the production of guidance for the elaboration of PCAET, and the ADEME has produced this guide (ADEME, 2016a). This sort of information is simple to find and verify. However, understanding how methodological guides are used by local authorities requires wide fieldwork. In the end, publicly available documents and interviews with stakeholders can provide almost all the information necessary for an impact evaluation of SNBC's governance orientations.

The important issue of information availability for SNBC's governance orientations is an issue of gathering scattered information at regional and local levels. As previously noted, regional

and local plans do not systematically define governance orientations (see section V.B). Identifying them may suppose a tedious and long analysis of numerous plans. Furthermore, several incomplete databases are gathering information on regional and local plans. The ADEME has developed a repository of actions listed in PCAETs. However, it seems that actions undertaken in regional climate plans are not centralised. Moreover, regional administrations sometimes build their own database:

> *At the level of the Nouvelle Aquitaine region, what has been done on the action plans is a database of action plans that covers about fifty PCAETs, which allows for data extractions, by theme of actions for example.* [30]

Local authorities also develop their own database on actions implemented:

> *We are currently working on a platform to list all the actions that are in line with the PCAET, to create a kind of PCAET directory. Municipalities are very demanding on this matter because they also have their own actions and interventions but the information is very abundant, it is necessary to integrate that into the same tool.* [31]

Ensuring consistency across these databases would surely be extremely time-consuming and might be impossible. Moreover, they could be useless to evaluate the impact of SNBC's governance orientations, knowing that they might ignore transformations in their governance as actions undertaken in the framework of their PCAETs if those actions were not listed in the action plan.

Another critical issue concerns the identification of changes in governance at all levels that can be attributable to the SNBC. This supposes the identification of baselines in each governance context (each region and each local authority), i.e., questioning how was the situation of governance mechanisms before the adoption of the climate plan. Even if it is possible, it requires a long process of data collection through establishing contacts with stakeholders, obtaining interviews, and structuring the data collected this way. This was, for instance, done for PCAETs reviewed in this evaluability assessment on the subject of new territorial alliances. These alliances, often informal or out of the record, are difficult to identify without engaging with stakeholders in sociological interviews:

> *Regarding territorial alliances within the inter-municipality with the municipalities, there are communal charters. The PACET steering committee is also there for the municipalities to communicate with each other. It is half formal because they are not obliged to participate, but*

---

[30] As translated from an interview conducted in August 2022 with a civil servant in charge of coordinating PCAETs for the Regional Directorate for the Environment, Planning and Housing (DREAL) of the French region "Nouvelle Aquitaine".

[31] As translated from an interview conducted in July 2022 with the person in charge of the PCAET for the inter-municipality Grand-Paris Seine Ouest.

it is an instance of good practices. In terms of alliances between inter-municipalities, it works a lot through projects. [32]

For this reason, the mass of information that is still to be collected in order to lead an exhaustive impact evaluation of SNBC's governance orientations is enormous.

National and territorial observatories analyse most of the changes intended by SNBC's orientations. The SNBC explicitly relies on using regional climate observatories to inform the monitoring, evaluation, and learning of regional and local climate plans (MTES, 2020a, p. 50). However, it seems that no observatory is conducting dedicated work to index transformations in the governance of climate change mitigation as they occur.

Similar preoccupations can be formulated on climate change adaptation, which is observed by ONERC (National Observatory on the Effects of climate change). In its reports, ONERC summarises general analyses on territorial governance transformation and its evaluation (ONERC, 2009, p. 101-108; ONERC, 2010, p. 52-63, 74-79, 91-94; ONERC, 2016; ONERC, 2017 p. 23-28). These conclusions and recommendations are quite similar to what the HCC and the Environmental Authority produce on assessed and desirable governance changes in climate change mitigation policies. For example, ONERC identified the need to focus on a few indicators that can assess the successful implementation of adaptation policies in sectoral policies, taking care not to limit this work to process indicators and to develop impact indicators (ONERC, 2016, p. 106). From a general perspective, whether on climate change mitigation or adaptation, general conclusions on difficulties encountered in territorial governance are reported and subject to recommendations. However, this research thesis could not find a monitoring system or a common set of context/process/impact indicators monitoring the effective implementation of desired transformations in governance inside territories.

If effectively inexistent, such work could be led by the Observatory of Territories (OT) included in the ANCT (National Agency for Territorial Cohesion). This observatory has a long expertise in benchmarking French territories and producing data on territorial governance and sustainable development (OT, 2008; n.d.). It could develop a methodological approach to observing changes in governance favouring low-carbon transition, which regional observatories could then implement. This work could also be developed with the ADCF (Association of inter-municipalities of France), which has produced several recommendations and analyses on the territorial governance of PCAETs (ADCF, 2020, 2021a, 2021b, 2022). The

---

[32] As translated from an interview conducted in July 2022 with the person in charge of the PCAET for the inter-municipality Paris-Saclay.

ADEME also has a furnished open data portal which could feed the construction of process and impacts indicators on transformations in territorial governance within the scope of the SNBC's governance orientations (ADEME, n.d.). Certain local authorities have developed local observatories on their governance of climate change mitigation (ADCF, 2021b). However, this does not seem like a transferable idea since a great number of them already lack the resources to elaborate their PCAET (ADCF, 2020; HCC, 2021a, p. 59).

Recommendation 7: Competent bodies (e.g., ADEME, Observatory of Territories, and ADCF) should identify and index in a dedicated repository the transformations in governance at the regional and local level occurring as a consequence of actions undertaken within the scope of SRADDETs and PCAETs. Local authorities could be harnessed in this effort on the occasion of the PCAET mid-term assessment. This would greatly improve information availability on the territorial impacts of SNBC's governance orientations.

Finally, even existent indicators on SNBC's governance orientations face the problem of not being constructed and followed up. Issues with the general monitoring system of the SNBC were identified at the earliest stages of its first revision in 2018 (Rüdinger, 2018). As shown by the HCC in its 2021 annual report, indicators of the SNBC were insufficiently followed-up as compared to what was originally planned in the regulation (see table 8).

Table 8: Indicators of the SNBC 2 and their monitoring by the government

Indicators from SNBC 2	Monitoring by the government	
	Expected	**Achieved**
Outcome/performance indicators (16) (comparable to national objectives)	Annual follow-up	One report (2018) Two on-line updates (2019, 2021)
Indicators of context (24) (putting results in perspective)	Biannual follow-up	One report (2018) Two on-line updates (2021)
Pilot indicators (104) (orientations' implementation)	Biannual follow-up	
Indicators of the level of orientations' mainstreaming in public policies (45)	Biannual follow-up	One report (2018)

Source: HCC, 2021, p. 37

Indicators of governance planned by the SNBC are still not available (MTES, n.d.). In the end, information availability for an impact evaluation of SNBC's governance orientations seem

compromised in terms of indicators but abundant in terms of qualitative analysis in the multitude of reports produced on their implementation at all levels.

2. Main findings

- A lot of data exists on the governance of low-carbon transition at all levels. The implementation of SNBC's governance orientations is discussed qualitatively in numerous reports and assessments at the national level.

- However, it appears that in the present state, the impacts of SNBC's governance orientations are hardly evaluable because this mass of information is scattered and often not associated with any baseline relating to governance, especially at the local level.

D. M&E methods and learnings

Evaluability category under review: M&E methods and learnings (see Table 5)

This part explores more specifically the extent to which current evaluations performed on the SNBC could inform a future detailed impact evaluation of SNBC's governance orientations. A lot of documentation consisting in assessing the SNBC's implementation has already been reviewed in this evaluability assessment (formal opinions on the SNBC, HCC reports). This literature regroups transparent reviews and evaluations in terms of findings and methods. The same applies to SRADDETs and PCAETs. Therefore, this section of the evaluability assessment is more focused on identifying revision processes whose content is not publicly available. It also discusses the extent to which changes in evaluation and monitoring methods are justified. Besides, this part of the evaluability assessment discusses how evaluation and learning are approached for governance at all levels of climate planning.

1. Great transparency of reviews and evaluations

Evaluability criteria under review: Transparency of reviews and evaluations (see Table 5)

A full revision cycle of the SNBC lasts five years and is composed of four stages. First, the law provided for in Article L. 100-1 A of the Energy Code is adopted. This law determines the objectives and sets the priorities for action of the energy policy to respond to the ecological and climate emergency. Then, the reference scenario of the SNBC is revised by following regular steps: an ex-post assessment of the previous SNBC, a formal opinion of the HCC, macro-economic analyses, ensuring consistency with eventual new international agreements and national plans of a superior order, ensuring consistency with latest scientific data, technological innovations, and sociological studies on the acceptability of the transition, a

consultation with stakeholders to feed the revision by seeking consensus on the assumptions of the scenario, identifying a possible and realistic pathway to achieve the long-term objectives defined in the scenario.

Revision procedures of the SNBC are extremely transparent, as is expected of any transversal national planning of this sort. Detailed memorandums answering formal opinions are available. Public consultations conducted during the review of the SNBC are also analysed in detail, and their integration in the SNBC is documented. One minor issue of transparency is that none of the meeting summary records of working groups involved in the revision of the SNBC and its reference scenario are published. The sociological study conducted on the SNBC in early 2022 showed that sociological interviews could reveal more insights about these processes (Arnhold, 2022).

At the regional level, the same comments apply. At the local level, evaluation methods are not always defined in the PCAET and sometimes constructed on the occasion of the mid-term assessment, three years after the adoption of each PCAET.

In general, no major issues concerning transparency of reviews and evaluations of the SNBC's governance orientations were found.

2. Undocumented changes to M&E approach

Evaluability criteria under review: Justified and documented changes to M&E approach (see Table 5)

The justification of M&E approaches and the justification of changes to these approaches in climate plans poses several general issues. Prior to the publication of the SNBC 2, the Environmental Authority noted in its formal opinion that:

- the exhaustiveness of the set of indicators in the SNBC 2 contrasts with the total absence of baseline values and identified trajectory for each of them,
- the transition from the 2015 SNBC indicators to the new set of indicators has not been established; even when the indicators are identical, there is no reminder of the value achieved in 2015 or the target associated with the indicator,
- therefore, it is impossible at this stage to assess any potential deviations from the trajectory and propose corrective measures accordingly (Ae, 2019a, p. 34).

More specifically, about SNBC's governance orientations, the first version of the SNBC contained two pilot indicators on the territorial implementation of the strategy. These indicators

were extremely limited. Besides, the choice of the indicators proposed for governance orientations in the revised version of the SNBC is not explained. As previously noted, the elaboration of SNBC's indicators was globally quite disconnected from the elaboration of the strategy itself. Furthermore, as explained in section VI.C., governance indicators of the SNBC 2 are still not constructed, and therefore their choice is still not explained.

The same problems are faced at the local level. Monitoring and evaluation approaches are not justified or challenged. Regions could play this role when they give a formal opinion on PCAETs at the moment of their elaboration. However, in practice, more important considerations than evaluability take the lead.

> *We are not going to refuse a PCAET because of evaluability problems. It is already a challenging exercise for inter-municipalities. And we have to look first at the consistency and coherence of objectives and actions, and the quality of the territorial diagnosis.* [33]

The definition of monitoring and evaluation approaches in SRADDETs and PCAETs can also be influenced by local political considerations, which are not reported in the official documents.

> *In a way, this is similar to what I was saying about the relationship between the SRCAE and the SNBC. There are two main types of objectives, strategic objectives, and operational objectives. The SRCAE provides for a renovation rate of 2.5% of the building stock per year to renovate the entire stock by 2050. In reality, if the subject is not forgotten by the PCAETs, the operational rates correspond more to what is already happening than to a real desire for change. I'll give you an example, the operational objectives are always a little vague. Typically for renewable energies, we often have a more or less well-done evaluation of the development potential of renewable energies. Afterwards, the operational objectives are either quite vague, very indicative, or variable. Typically, we have inter-municipalities that have very significant wind energy development potential, which honestly state it in their PCAET, but which have operational objectives that are at 0, because there are political problems or things of this type that are not openly stated.* [34]

In addition to that, as noted in section VI.C., local plans often don't have governance orientations, even more rarely governance objectives, and rarely governance-related indicators. In the rare case when there are some, pilot indicators do not allow for impact assessment. In this perspective, the next revision of climate planning should focus on developing a monitoring and evaluation approach better articulated with the objectives defined, with an argumentation effort to justify the relevance, as indicated in recommendation 4.

---

[33] As translated from an interview conducted in August 2022 with a civil servant in charge of coordinating PCAETs for the Regional and Interdepartmental Directorate for the Environment, Planning and Transport (DRIEAT) of the French region "Ile-de-France".
[34] *Ibid*

3. <u>A learning capacity that still is to be determined</u>

Evaluability criteria under review: Quality of approach to learning (see Table 5)

SNBC's revision is, by construction, a complicated and complex process. The number of formal opinions and reports produced regularly by the HCC and other bodies is the translation of a certain approach to learning. Considering governance orientations in the SNBC, the drastic difference between their formulation in the two first versions of the SNBC is a clear demonstration of lessons learned. As highlighted in this evaluability assessment, recommendations formulated by diverse actors are still numerous to be implemented. The fieldwork conducted in regions and inter-municipalities also showed that stakeholders are experiencing and gaining skills.

> *When we had the PCAETs to do in 2015, the first thing we said to ourselves was that we had to develop skills and that these skills be lasting within inter-municipalities. I think that this was the main objective, unspoken in the law, but which had to be a success factor. In that, I think, we have more or less succeeded. In my opinion, all the inter-municipalities now have internal competencies that allow them to do this and that are lasting.* [35]

However, knowing whether or not regional and local administrations have gained lasting competencies is not self-evident (lack of resources, significant turnover in PCAET-related positions).

The quality of approach to learning could be further improved if evaluation methods were better assessing the impacts of SNBC's governance orientations on local authorities. Admittedly, the very existence of PCAETs is a direct outcome of the SNBC, and its articulation with other plans is a direct outcome of SNBC's governance orientations. But, more precisely, evaluating the impacts of SNBC's governance orientations is also a matter of identifying which new measures have been planned in a territory as a consequence of the guidance provided by the SNBC. Such attribution seems impossible a priori. Using sociological interviews and the contribution analysis framework presented briefly in section II.B could be fruitful in understanding the configuration in which SNBC's governance orientations have an impact on local governance. The interviews conducted for this evaluability assessment envisioned multiple examples of impacts induced by SNBC's governance orientations, such as the development of new technical competence in local authorities, the development of informal networks between local authorities and actors, the sensitisation of elected representatives to sustainability issues, the mainstreaming of climate mitigation preoccupations among

---

[35] *Ibid*

administrative departments. Certain of these impacts can probably not be measured as they don't appear in official documentation but rather contribute to transforming the way governance is implemented in practice through unofficial/informal networks. In this perspective, using a contribution analysis in future impact evaluation of SNBC's governance orientations is recommended.

Recommendation 8: Future evaluation should try to implement a contribution analysis approach to understand alignment with and impacts of governance orientations more holistically. This approach could bring new insights into configurations in which impacts take place or not. In particular, contributions like developing new competencies, raising awareness, and creating networks of stakeholders could be investigated.

Now that several assessments and studies corroborated the failure of the SNBC to become effective steering guidance for public action (HCC, 2022; Arnhold, 2022), the ongoing elaboration of the future SFEC will be a promising occasion to implement the recommendations formulated since the last revision in 2020. Similarly, mid-term evaluations of PCAETs and revisions of SRADDETs will be important steps in structuring this approach to learning in the evaluation of climate plans in general and a fortiori of governance orientations they can contain. For now, the SNBC was revised once, and most of the climate plans never went through a revision process. Therefore, it is difficult to state whether or not the approach to learning in the governance of climate plans is efficient.

4. <u>Main findings</u>

- The evaluability assessment did not find issues relating to transparency of evaluations and evaluation methods.
- Even more than for the rest of the SNBC, changes to the monitoring and evaluation approach to governance orientations are not justified.
- Considering that a limited number of climate plans have been revised, the quality of approach to learning is difficult to assess.

E. Conclusion of the evaluability assessment

Findings of this evaluability assessment suggest that the impacts of SNBC's governance orientations on climate change governance at all levels cannot be evaluated in detail. Important

evaluability issues were found, such as the fragility of the rationale supporting these orientations. Additionally, the lack of information and baselines on certain aspects of governance orientations' impacts is significant. Certain evaluation approaches could still produce interesting findings, as highlighted in the recommendations (see Annex C). More generally, this evaluability assessment corroborated numerous evaluability issues reported in existing reports and discussed some others. It also proposed slightly different recommendations and ideas on how to address these problems in the future.

This evaluability assessment on governance orientations was also a pilot test for the evaluability assessment framework developed in Table 5. Its use seems promising, as it encourages focusing on evaluability questions supported by the literature, an exercise that was not performed before on the SNBC. For instance, it revealed that stakeholders sometimes overlooked governance orientations as compared to other orientations, especially regarding their adaptation to other plans (see section V.B).

Governance orientations hold a very specific spot in the set of orientations contained in the SNBC. Therefore, assessing their evaluability separately may be more relevant for them than it is for other orientations. The utility of the EA framework developed in this thesis – which adopts an orientation-focused approach to the evaluability of the SNBC – is still to be determined through an additional application to other orientations.

As for the development of a theory of change on a restrained and coherent group of orientations inside the SNBC (see section IV), it was retrospectively an insightful exercise allowing to define more explicitly the rationale supporting these orientations and their flaws.

VII.   Discussion and conclusion

A. This research and the literature on evaluability assessment

In this thesis, a great level of attention was given to justifying the method used and the approach to EA (see section III). As noted in section II, evaluations of climate change mitigation and adaptation actions exist, but evaluability assessments of those actions are less frequent. Developing an evaluability assessment framework for a portfolio of actions is even rarer. Therefore, no existing EA of transversal public policies aiming at mitigating climate change, like the SNBC, was found. Consequently, the construction of the EA framework used in this thesis should be taken as a first step, mostly based on lessons learned from quite different EAs.

In their review of research theses based on EAs, Trevisan and Walser note that "most of the authors did not adhere to the EA model they specified, nor did they describe modifications or provide a rationale for not implementing the model as intended" (Walser & Trevisan, 2016). Thus, it seems important to discuss here why this thesis did not implement the EA exactly accordingly to the EA model used as a reference in section III. In this thesis, conducting an EA came with different issues and constraints than those of a professional evaluator. In particular, this refers to defining a research question, envisioning what can be done in the available time for a research thesis, and framing how the EA can be used to answer the research question. During this research, the three first steps of Davies' EA model (Davies, 2013, p. 43-44) were jointly conducted in an exploratory desk-based research phase (section IV). Because many evaluations or assessments of the SNBC already existed, it was important to develop a global understanding of this policy and its assessments to focus the EA usefully. As shown in sections IV and V, starting with a phase of desk-based research to develop a theory of change also allowed to:

1) Get familiar with the public policy studied,
2) Identify the practical impossibility of conducting an EA on the entire SNBC in this thesis,
3) Identify SNBC's governance orientations as an interesting case to implement an EA,
4) Coherently develop a detailed theory of change for only a part of the SNBC (on governance orientations),

Only afterwards, the EA was refocused, and its scope was defined as something feasible and usable in the context of this thesis (see section IV.A). Since this EA was not ordered by a client, the scope of the EA was to be determined accordingly to the constraints of this research. In such a situation, using the theory of change as an exploratory work to adjust the scope of the EA was beneficial, and this approach to EA could be considered useful in future academic theses.

In developing an EA framework, this thesis took inspiration from EAs performed on the Adaptation Fund's portfolio (MacPherson *et al.*, 2022). Using an EA framework, the authors were able to evidence recurrent evaluability issues. Although the SNBC is very different from a fund's portfolio by construction, it could also be envisioned as a kind of portfolio with its multiple orientations and associated objectives and actions. Therefore, it was decided to define an evaluability grid with criteria and questions that could be transferable to study other

orientations, just like an EA framework could serve as the basis of multiple EAs in a portfolio. Even if all EAs might not be conducive to elaborating an EA framework, it seems interesting to try doing so in research to address wider issues than the specific evaluability flaws of one programme or intervention. Considering that evaluation literature still lacks a common methodology to assess local actions' impacts on climate change, constructing an EA framework adaptable to a set of programmes, actions or situations seems to be a good practice that would allow more comparisons between case studies.

B. This research and evaluability-specific issues of low-carbon transition

Since the EA performed in this thesis focused on the governance of low-carbon transition, not all evaluability issues presented in section II.B are discussed.

First, the characteristic uncertainty that comes with assessing the impact of climate change mitigation policies was clearly identified in the case of SNBC's governance orientations. More than that, section VI.B on alignment and additionality demonstrates how this uncertainty grows in SNBC's adaptation to local contexts. Generally speaking, the level of uncertainty increases from global to regional climate models, to regional scenarios, and then to local impacts on human and natural systems (Wilby & Dessai, 2010). In the case of the SNBC, it also seems true for governance transformations. The issues reported about the "alignment and additionality" of governance objectives and impacts (see section V.B) are also detrimental to the evaluability of the rest of the SNBC. Indeed, as noted in section VI, these orientations are a global condition for the achievement of other orientations. SNBC-like policies' design and evaluations should pay attention to the "alignment and additionality" of governance objectives and monitoring systems. Moreover, this evaluability category of the EA framework was a fruitful analytical tool, which should probably be implemented in future EAs of sustainability transition policies. Indeed, in this field, policies and their impacts have to be aligned with superior objectives and trajectories, be summable at their own level, and guide for eventual lower levels. Even if studied programmes or policies are not part of a coherent superior policy such as the SNBC, considering the evaluability from the perspective of alignment and additionality is likely to be of great relevance.

Uncertainties in evaluating impacts of governance orientations could be reduced with more resources and better methodologies, which seems compromised given the lack of resources often reported to develop climate plans. In France, local authorities are experiencing a

reduction in access to public engineering, described as a "degraded mode of operation"[36] of local administrations (Dedieu, 2021).

Furthermore, as noted in section II.B, evaluation methodologies allowing for impact assessment of local actions on climate change mitigation are still not satisfying. It seems unlikely that one evaluation method could one day become consensual and allow for evaluating the impacts of any local action on climate change mitigation. First, even on closely related topics, public policies' design can vary a lot from one country/local area to the other. The EA conducted in this thesis highlighted the lack of baseline data on governance at the regional and local levels. More generally, it showed numerous problems regarding information availability (see section V.C). It echoes another evaluability-specific issue of climate change-related policies: shifting baselines and lack of information on specific changes. Several recommendations (see Annex C) partly try to assess this problem, notably by proposing different approaches and tools (sociological studies, contribution analysis) to fill the gaps. In essence, as advised by other authors (Picciotto, 2017), making full use of the evaluation toolkit and potentially several evaluation conceptual approaches is likely to improve an evaluation design and address evaluability issues of such complex policies.

Besides, programme design is also identified as one of the main issues for the evaluability of the SNBC. The EA noticeably evidenced the lack of support from scientific literature in the rationale of SNBC's governance orientations. This corroborates the idea that governance of low-carbon transition could often be better designed (Tokle & Uitto, 2017). Considering that this finding was repeatedly reported in the literature over the past years (see section II.B.3), it suggests that "evaluation use" in the field of climate change mitigation policies is still largely ineffective. Future research could focus on this problem.

In the case of SNBC's governance orientations, it was also found that their evidence base is overlooked in existing evaluations planned by the regulation. Although not advised directly in the recommendations formulated in section VI, using scientific conceptual frameworks from sustainability transitions studies in evaluations of SNBC-like policies has already been done successfully (Moore, *et al.*, 2014). The authors used the Transition Management Framework (see section II.A.) from Loorbach to build their evaluation approach. One could argue that

---

[36] As translated from "focntionnement en mode degradé" in Dedieu, 2021

using such tools during the development phase of low-carbon transition policies would greatly increase their design and improve evaluation design afterwards.

Finally, focusing on governance orientations in the EA was not only a choice supported by the first phase of this research but also made easier because of a better personal background in political science than in other disciplines supporting other orientations. This is a clear example of how the technical knowledge of an evaluator can influence the focus of evaluative work when assessing such a broad policy. This problem has been reported in the literature several times (e.g., Feinstein, 2017; Egger Kissling & Windisch, 2017) and constitutes an evaluability issue rather specific to climate change-related policies, although it can concern any transversal policy or programme. Therefore, this thesis could be complemented by other EAs, using the EA framework developed in section V on other SNBC's orientations, or even adapting it to other national cases. It would consolidate findings on evaluability issues encountered by sustainability transition policies in our societies.

VIII.   Annexes

A. List of acronyms

ADCF	Association of French inter-municipalities
ADEME	Agency for the Environment and Energy Management
AE	Environmental Authority
CDE	Ecological Defense Council
CESE	Economic, Social and Environmental Council
CETE	Committee of Experts for the Ecological Transition
CGDD	General Commission for Sustainable Development
CNTE	National Council for the Ecological Transition
DAC	Development Assistance Committee
DGEC	General Directorate for Energy and Climate
DFID	Department for International Development
DNTE	National Debate on Energy Transition
DREAL	Regional Directorate for the Environment, Planning and Housing
DRIEAT	Regional and Interdepartmental Directorate for the Environment, Planning and Transport
EA	Evaluability Assessment

GHG	Greenhouse Gas
HCC	High Council for the Climate
HFDD	Senior Officials for Sustainable Development
M&E	Monitoring and Evaluation
MRAE	Regional Mission of the Environmental Authority
MTES	Ministry of Ecological and Solidarity Transition
OECD	Organisation for Economic Co-opreation and Development
PCAET	Territorial Climate, Air and Energy Plan
PDU	Urban Travel Plan
PLH	Local Housing Programme
PLU	Local Plan for Urban planning
PLUi	Local Plan for Inter-municipal Urban planning
PNACC	National Plan for Climate Change Adaptation
PPE	Multi-Year Energy Programme
SFEC	French Strategy for Energy and Climate
SNBC	National Low-Carbon Strategy
SRADDET	Regional Plan for Planning Sustainable Development and Territorial Equality
SRCAE	Regional Scheme for Climate, Air and Energy
TECV law	Law for Ecological Transition and Green Growth
SCoT	Territorial Cohesion Scheme

B. Visual representation of the first attempt to build a theory of change

The figure presented in this Annex is not meant to be read, but rather to show by its aspect how complex the SNBC is, and to show the particular spot of governance orientations in the entire SNBC's intervention logic.

The light blue square corresponds to governance orientations, the pink one to economic policies, the dark blue one to research and innovation orientations, the purple one to urban planning orientation, the red one to citizens' awareness and assimilation orientations, the dark green one to jobs and skills orientations, the light green one to GHG emission reduction orientation, and the yellow one to final intended impacts. On the left side, sectoral orientations are listed and their links to other orientations are materialised with tags that are not visible here.

Sectoral intended effects　　　Governance intended effects　　　Intended end-results
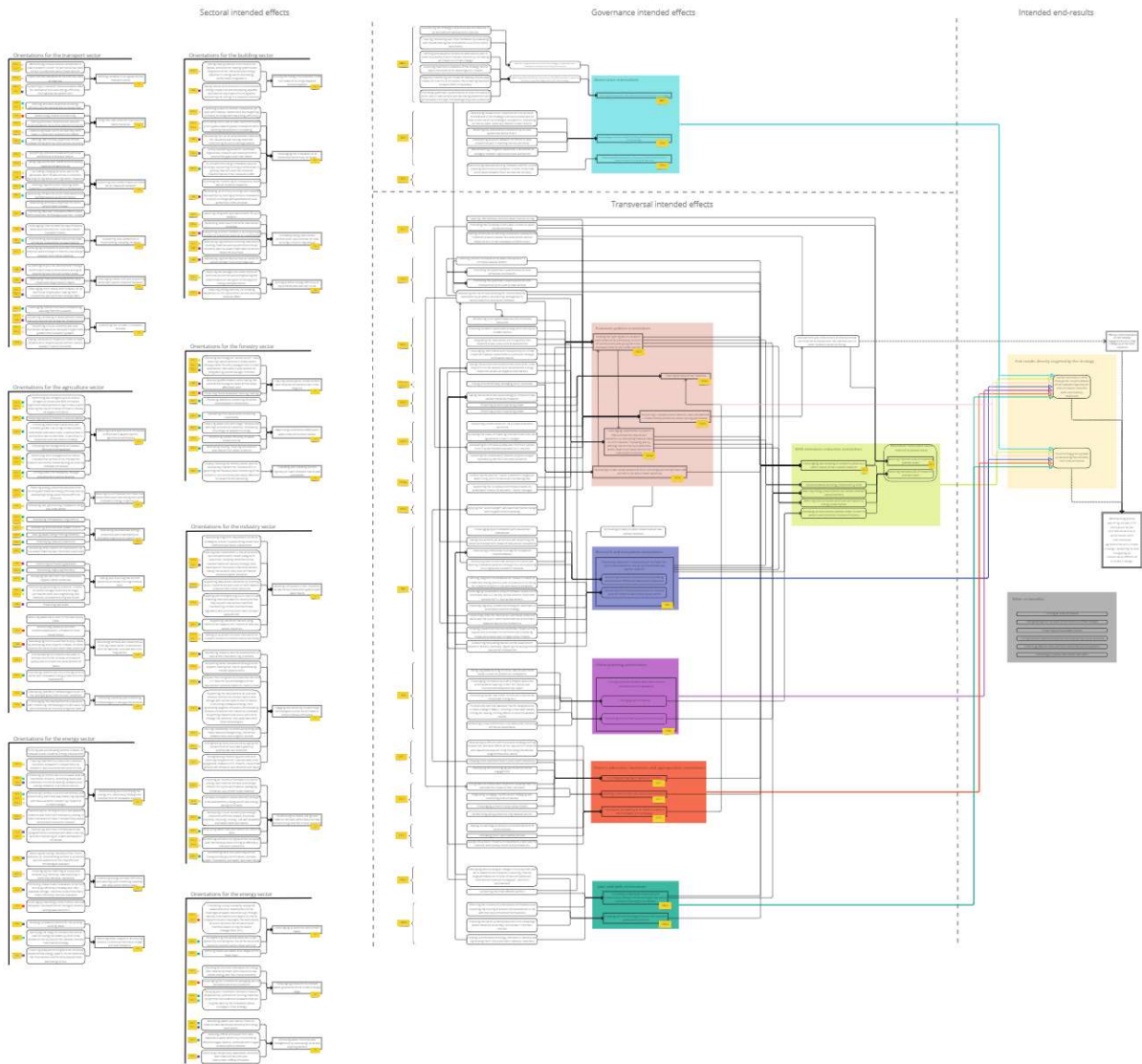
C. Recommendations repository

Recommendation 1: A comprehensive impact evaluation of SNBC's governance orientation should give particular attention to what is expected from regional and local political representatives and decision-makers, as their role in the theory of change of these orientations seems ambivalent. The impact of the territorial context of changes in which governance orientations are adapted should also be considered to enhance the identification of opposing and accentuating factors.
Recommendation 2: The evaluability of SNBC's governance orientations should be significantly enhanced by the implementation of more scientific studies on various aspects of the French energy transition's governance. For example, studies on advocacy coalitions and controversies in the French energy transition could serve this purpose. More generally,

SNBC's governance orientations should be elaborated with the same exigence of evidence-based and scientific justification as any other strategic orientation in the SNBC.
Recommendation 3: The next revision of the SNBC should develop a much deeper reflection on governance indicators in order to fill the gaps identified in governance orientations' monitoring system, especially in terms of indicators of context propose a coherent set of indicators for governance orientations across the SNBC revisions that are to come   1) discuss among stakeholders on what counts, what is valued, what is expected, and what is actually measured in terms of governance
Recommendation 4: SNBC's governance orientations should be translated and adapted inside relevant other public policy documents, just like it is required for any other orientation of the SNBC. Especially in the case of regional (SRADDETs) and local (PCAETs) planning, a deeper reflection should be brought upon drafting governance orientations in order to create a coherent and summable territorial governance framework for low-carbon transition in each territory. Coordination mechanisms mentioned at the national level in the SNBC's governance orientations should be systematically assessed, especially those which were not evaluated in the past. Such assessments should fruitfully complement the already existing evaluations of public policies' alignment with the SNBC.
Recommendation 5: Future evaluations tackling the alignment of public policies at the national, regional and local level with the SNBC should give particular attention to analysing sociologically the reasons and obstacles explaining the success or failure in this alignment. The evaluability assessment demonstrated the utility of this approach through case studies on PCAETs, for instance highlighting risks of internal incoherence due to the particular conditions of elaboration for each part of the PCAETs.
Recommendation 6: Regional administrative departments in charge of energy transition should produce guidance on PCAET's mid-term assessment. This could be a great opportunity for developing an initial strategic approach to the good governance of low-carbon transition in inter-municipalities, as well as a dedicated set of indicators. Such guidance would significantly reinforce the evaluability of SNBC's governance orientations from the perspective of additionality and alignment.
Recommendation 7: Competent bodies (e.g., ADEME, Observatory of Territories, and ADCF) should identify and index in a dedicated repository the transformations in

governance at the regional and local level occurring as a consequence of actions undertaken within the scope of SRADDETs and PCAETs. Local authorities could be harnessed in this effort on the occasion of the PCAET mid-term assessment. This would greatly improve information availability on the territorial impacts of SNBC's governance orientations.

Recommendation 8: Future evaluation should try to implement a contribution analysis approach to understand alignment with and impacts of governance orientations more holistically. This approach could bring new insights on configurations in which impacts takes place or not. In particular, contributions like developing new competences, raising awareness, and creating networks of stakeholders could be investigated for the case of governance orientations' impacts.

D. List of documents reviewed during the evaluability assessment

AE (Autorité Environnementale). (2019a). Avis délibéré de l'Autorité environnementale sur la deuxième stratégie nationale bas-carbone

AE (Autorité Environnementale). (2019b). Avis délibéré de l'Autorité environnementale sur la programmation pluriannuelle de l'énergie

ADCF (Association des Intercommunalités de France). (2016). Du bilan des PCET à l'élaboration des PCAET: Outils et pratiques des communautés en faveur de la transition énergétique

ADCF (Association des Intercommunalités de France). (2020). « Mise en oeuvre des PCAET. État des lieux ». Focus environnement, décembre. https://www.adcf.org/files/THEME-Environnement/FOCUS-PCAET.pdf

ADCF (Association des Intercommunalités de France). (2021a). La contribution des intercommunalités à la transition énergétique: analyse des PCAET approuvés

ADCF (Association des Intercommunalités de France). (2021b). PCAET : focus sur 5 retours d'expérience.

ADCF (Association des Intercommunalités de France). (2022). Changement climatique : un focus sur l'impact sur les compétences intercommunales

ADEME. (2015). Scénarios prospectifs Energie - Climat - Air pour la France à l'horizon 2035

ADEME. (2016a). Le Plan climat-air-énergie territorial. Comprendre, construire et mettre en œuvre

ADEME. (2016b). Elus, l'essentiel à connaître sur les PCAET

ADEME. (2018). Collectivités franciliennes, réalisez votre Plan Climat-Air-Energie Territorial

ADEME. (2021a). Démarche d'analyse des trajectoires climat régionales: Contributions des politiques climatiques régionales à la SNBC. Rapport final.

ADEME. (2021b). Démarche d'analyse des trajectoires climat régionales: Contributions des politiques climatiques régionales à la SNBC. Méthodologie complète.

ADEME. (2021c). Guide d'aide à la sélection des méthodes d'évaluation environnementale

ADEME. (2022). Une diversité de démarches pour une diversité de territoires. https://www.territoires-climat.ademe.fr/ressource/30-9

ADEME. n.d. Portail open data de l'ADEME. https://data.ademe.fr/datasets

Association NegaWatt. (2019). Cadre harmonisé pour le volet énergie des SRADDET. Méthodologie

Boucle Nord de Seine. (2021). Plan Climat-Air-Energie Territorial. Bilan de concertation préalable

Boucle Nord de Seine. (2022a). Plan Climat-Air-Energie Territorial. Diagnostic

Boucle Nord de Seine. (2022b). Plan Climat-Air-Energie Territorial. Stratégie

Boucle Nord de Seine. (2022c). Plan Climat-Air-Energie Territorial. Plan d'actions

Boucle Nord de Seine. (2022d). Plan Climat-Air-Energie Territorial. Etat initial de environnement

Boucle Nord de Seine. (2022e). Plan Climat-Air-Energie Territorial. Evaluation environnementale stratégique

Boucle Nord de Seine. (2022f). Plan Climat-Air-Energie Territorial. Résumé non technique

Cerema. (2017). Bilan national des SRCAE - rapport pour la DGEC

CESE. (2019). Avis sur les projets de Stratégie nationale bas-carbone et de Programmation pluriannuelle de l'énergie

CETE. (2016). Avis du comité d'experts pour la transition énergétique sur la programmation pluriannuelle de l'énergie

CETE. (2018). Respect des budgets carbone. Rapport sur la mise en oeuvre de la SNBC pour le premier budget carbone 2015-2018

Conseil supérieur de la construction et de l'efficacité énergétique. (2019). Avis sur les projets de Stratégie Nationale Bas Carbone (SNBC) et de Programmation Pluriannuelle de l'Energie (PPE)

CNTE. (2015). Avis 2015

CNTE. (2016). Avis 2016

CNTE. (2017). Avis 2017

CNTE. (2018). Avis 2018

CNTE. (2019). Avis 2019

CNTE. (2020). Avis 2020

CNTE. (2021). Avis 2021

CNTE. (2022). Avis 2022

CNTE. n.d. Vision de la France neutre en carbone et respectueuse du vivant en 2050

DGEC (Direction Générale de l'Energie et du Climat). (2019). Mémoire en réponse à l'avis de l'Autorité environnementale du 06 mars 2019.

DGEC (Direction Générale de l'Energie et du Climat). (2020). Synthèse du scénario de référence de la stratégie française pour l'énergie et le climat. https://www.ecologie.gouv.fr/sites/default/files/Synth%C3%A8se%20sc%C3%A9nario%20de%20r%C3%A9f%C3%A9rence%20SNBC-PPE.pdf

DREAL (Direction Régionale de l'Energie, de l'Aménagement et du logement) Nouvelle Aquitaine. (2021a). Le bilan à mi-parcours des PCAET

DREAL (Direction Régionale de l'Energie, de l'Aménagement et du logement) Nouvelle Aquitaine. n.d. Fiche éolien

DREAL (Direction Régionale de l'Energie, de l'Aménagement et du logement) Nouvelle Aquitaine. n.d. Fiche adaptation au changement climatique

DREAL (Direction Régionale de l'Energie, de l'Aménagement et du logement) Nouvelle Aquitaine. n.d. Fiche méthanisation

DREAL (Direction Régionale de l'Energie, de l'Aménagement et du logement) Nouvelle Aquitaine. n.d. Fiche réseaux de chaleur

DREAL (Direction Régionale de l'Energie, de l'Aménagement et du logement) Nouvelle Aquitaine. n.d. Fiche mobilisation des acteurs

DREAL (Direction Régionale de l'Energie, de l'Aménagement et du logement) Nouvelle Aquitaine. n.d. Fiche stockage carbone

DREAL (Direction Régionale de l'Energie, de l'Aménagement et du logement) Nouvelle Aquitaine. n.d. Fiche report modal

DRIEAT (Direction Régionale et Interdépartementale de l'Energie, de l'Aménagement et des Transports) d'Ile de France.(2014). SRCAE: Bilan 2014

DRIEAT (Direction Régionale et Interdépartementale de l'Energie, de l'Aménagement et des Transports) d'Ile de France. (2016a). Plans climat énergie territoriaux et efficacité énergétique dans le bâtiment en Ile-de-France.

DRIEAT (Direction Régionale et Interdépartementale de l'Energie, de l'Aménagement et des Transports) d'Ile de France. (2016b). Plans climat énergie territoriaux et efficacité énergétique dans le bâtiment en Ile-de-France. Synthèse de l'étude

DRIEAT (Direction Régionale et Interdépartementale de l'Energie, de l'Aménagement et des Transports) d'Ile de France. (2021). Guide francilien relatif à la réalisation du plan de réduction des émissions de polluants atmosphériques du PCAET

DRIEAT & ADEME. (2022). Feuille de route pour la transition énergétique en Ile-de-France

DRIEAT. (Direction Régionale et Interdépartementale de l'Energie, de l'Aménagement et des Transports) d'Ile de France. n.d. PCAET Francilien: l'essentiel du guide pratique

Grand Paris Seine Ouest. (2020). Plan Climat. Rapport de diagnostic

Grand Paris Seine Ouest. (2020). Plan Climat. Rapport de stratégie

Grand Paris Seine Ouest. (2020). Plan Climat. Plan d'actions

Grand Paris Seine Ouest. (2020). Plan Climat. Evaluation environnemental stratégique

Grand Paris Seine Ouest. (2020). Plan Climat. Synthèse

France Stratégie. (2019). La valeur de l'action pour le climat. Rapport de la commission présidée par Alain Quinet.

HCC. (2019a). Agir en cohérence avec les ambitions. Premier rapport annuel du Haut Conseil pour le Climat

HCC. (2019b). Evaluer les lois en cohérence avec les ambitions

HCC. (2020a). Redresser le cap, relancer la transition. Rapport annuel 2020 du Haut Conseil pour le Climat

HCC. (2020b). "France Relance": Quelle contribution à la transition bas-carbone

HCC. (2020c). Maîtriser l'empreinte carbone de la France

HCC. (2021a). Renforcer l'atténuation, engager l'adaptation. Rapport annuel 2021 du Haut Conseil pour le Climat

HCC. (2021b). Avis portant sur les plans climat des ministères.

HCC. (2021c). Avis portant sur le projet de loi climat et résilience

HCC. (2022). Dépasser les constats, mettre en œuvre les solutions. Rapport annuel 2022 du Haut Conseil pour le Climat

I Care & Consult. (2019a). Rapport environnemental de la stratégie nationale bas-carbone

I Care & Consult. (2019b). Evaluation environnementale stratégique de la Stratégie Nationale Bas-Carbone. Résumé non technique

Ile-de-France. (2012). Schéma Régional du Climat, de l'Air et de l'Energie de lle-de-France

Ministère de l'Agriculture de l'Agroalimentaire et de la Forêt. (2016). Des scénarios prospectifs au service de l'élaboration d'une stratégie nationale: l'exemple du volet agricole des scénarios Energie-Climat-Air

Moret Seine & Loing. (2019a). Plan Climat-Air-Energie Territorial. Evaluation environnementale stratégique. Diagnostic

Moret Seine & Loing. (2019b). Plan Climat-Air-Energie Territorial. Evaluation environnementale stratégique. COPIL n°2: Stratégie territoriale climat-air-énergie. Version de travail

Moret Seine & Loing. (2019c). Plan Climat-Air-Energie Territorial. Evaluation environnementale stratégique. Fiches actions détaillées

Moret Seine & Loing. (2019d). Bilan concertation

Moret Seine & Loing. (2021a). Plan Climat-Air-Energie Territorial. Evaluation environnementale stratégique. Rapport environnemental

Moret Seine & Loing. (2021b). Plan Climat-Air-Energie Territorial. Evaluation environnementale stratégique. Plan Air Renforcé

Moret Seine & Loing. (2021c). Plan Climat-Air-Energie Territorial. Evaluation environnementale stratégique. Mémoire en réponse aux avis du préfet de région et de l'Autorité Environnementale sur le projet de PCAET

Moret Seine & Loing. (2022). Compte rendu du COPIL PCAET du 23 juin 2022

MTES. (2015). Stratégie nationale bas-carbone

MTES. (2020a). Stratégie nationale bas-carbone

MTES. (2020b). Stratégie nationale bas-carbone. Synthèse

MTES. (2020c). Stratégie nationale bas-carbone. Rapport d'accompagnement

MTES. (2020d). Décret n°2020-457 du 21 avril 2020 relatif aux budgets carbone nationaux et à la stratégie nationale bas-carbone

MTES. (2020e). Motif de la décision suite aux observations reçues lors de la consultation publique du 20 janvier au 19 février 2020 concernant le projet de décret relatif à la stratégie bas-carbone et aux budgets carbones

MTES. (2020f). Synthèse de la consultation du public sur la stratégie nationale bas-carbone

MTES. (2021a). Synthèse du scénario "Avec mesures existantes" 2021 (AME 2021): Projections climat et énergie à 2050

MTES. (2021b). Stratégie française pour l'énergie et le climat : lancement de la consultation publique

MTES. (2022a). Le scot modernisé

MTES. (2022b). Rapport concernant la contribution des plans climat-air-énergie territoriaux et des schémas régionaux d'aménagement, de développement durable et d'égalité des territoires aux politiques de la transition écologique et énergétique.

MTES. (2022c). Evaluation macroéconomique de la Stratégie nationale bas-carbone (SNBC2) avec le modèle ThreeME

MTES. n.d. Suivi des indicateurs de la stratégie nationale bas-carbone http://indicateurs-snbc.developpement-durable.gouv.fr/

Nouvelle-Aquitaine. (2019a). Schéma Régional d'Aménagement, de Développement Durable et d'Egalité des Territoires. Enquête Publique

Nouvelle-Aquitaine. (2019b). Schéma Régional d'Aménagement, de Développement Durable et d'Egalité des Territoires. Bilan de la concertation

Nouvelle-Aquitaine. (2019c). Schéma Régional d'Aménagement, de Développement Durable et d'Egalité des Territoires. Rapport d'objectifs du SRADDET

Nouvelle-Aquitaine. (2019d). Schéma Régional d'Aménagement, de Développement Durable et d'Egalité des Territoires. Enquête Publique

Nouvelle-Aquitaine. (2019d). Schéma Régional d'Aménagement, de Développement Durable et d'Egalité des Territoires. Diagnostic Climat-Air-Energie

ONERC (Observatoire National sur les effets du Changement Climatique). (2009). Changement climatique Coûts des impacts et pistes d'adaptation.

ONERC (Observatoire National sur les effets du Changement Climatique). (2010).Villes et adaptation au changement climatique.

ONERC (Observatoire National sur les effets du Changement Climatique). (2016). Adaptation au changement climatique Évaluation de la démarche nationale et recommandations.

ONERC (Observatoire National sur les effets du Changement Climatique). (2017).Vers un 2e plan d'adaptation au changement climatique pour la France Enjeux et recommandations

OT (Observatoire des territoires). (2008). Dynamiques et développement durable des territoires

OT (Observatoire des territoires). n.d. Données ouvertes ou en open data. https://www.observatoire-des-territoires.gouv.fr/donnees_ouvertes

Paris Saclay. (2019a). Plan Climat Air-Energie-Territorial.

Paris Saclay. (2019b). Plan Climat de Paris-Saclay. Synthèse.

Paris Saclay. (2022). Plan Climat-Air-Energie Territorial Communauté d'agglomération Paris-Saclay. Bilan à mi-parcours

Plaine Vallée. (2021). Plan Climat-Air-Energie Territorial. Présentation du Diagnostic Territorial.

Plaines & Monts de France. (2020a). Plan climat-Air-Energie Territorial. Diagnostic

Plaines & Monts de France. (2020b). Plan climat-Air-Energie Territorial. Stratégie

Plaines & Monts de France. (2020c). Plan climat-Air-Energie Territorial. Plan d'actions

Plaines & Monts de France. (2020d). Plan climat-Air-Energie Territorial. Evaluation environnementale

Plaines & Monts de France. (2020e). Plan climat-Air-Energie Territorial. Résumé non technique

Plaines & Monts de France. (2020f). Plan climat-Air-Energie Territorial. Note de prise en compte des avis

Régions de France. (2021). Transition Ecologique: adoption du socle commun d'indicateur énergie-climat de suivi des objectifs régionaux

UN (United Nations). (2015). Paris Agreement

Versailles Grand Parc. (2018). Délibération du 20-06-2018. Extrait du registre des délibérations du conseil communautaire

Versailles Grand Parc. (2019). Conseil communautaire du 2 avril 2019

Versailles Grand Parc. (2021). Plan Climat-Air-Energie Territorial. Réunion publique du 14 octobre 2021

IX.   References

Argyris, C., & Schon, D. A. (1974). Theory in practice: Increasing professional effectiveness. Jossey-bass.

Armatte, M. (2007). Les économistes face au long terme: l'ascension de la notion de scénario. In Les modèles du futur (pp. 63-90). La Découverte.

Astbury, B., & Leeuw, F. L. (2010). Unpacking black boxes: mechanisms and theory building in evaluation. American journal of evaluation, 31(3), 363-381.

Aykut, S., Comby, J.-B., Guillemot, H. (2012). Climate change controversies in French mass media 1990-2010, Journalism Studies, 13, 2, 157-174.

Aykut, S., Dahan, A. (2015). Gouverner le climat ? 20 ans de négociations internationales. Presses de Sciences Po

Aykut, S. C., Evrard, A. (2017). Une transition pour que rien ne change ? Changement institutionnel et dépendance au sentier dans les "transitions énergétiques" en Allemagne et en France. Revue internationale de politique comparée, 24, 17-49.

Aykut, S. C., & Nadaï, A. (2019). Le calcul et le politique. Revue d'anthropologie des connaissances, 13(4), 1009-1034.

Aykut, S. C. (2019). Reassembling energy policy: Models, forecasts, and policy change in Germany and France. Science & Technology Studies, 32(4), 13-35.

Azevedo, I., & Leal, V. M. (2017). Methodologies for the evaluation of local climate change mitigation actions: A review. Renewable and Sustainable Energy Reviews, 79, 681-690.

Barone, S., Mayaux, P.-L., Guerrin, J. (2018), « Que fait le New Public Managementaux politiques environnementales ? » (Introduction), Pôle Sud no 48, p. 5.

Barnes, M., E. Matka and H. Sullivan (2003) 'Evidence, Understanding and Complexity: Evaluation in Non-Linear Systems', Evaluation 9(3): 265–84.

Baumgartner, F.R., Jones, B.D., 1993. Agendas and Instability in American Politics. University of Chicago Press, Chicago, USA.

Baumgartner, F. R., Jones, B. D., & Mortensen, P. B. (2018). Punctuated equilibrium theory: Explaining stability and change in public policymaking. Theories of the policy process, 55-101.

Befani, B., & Mayne, J. (2014). Process tracing and contribution analysis: A combined approach to generative causal inference for impact evaluation. IDS bulletin, 45(6), 17-36.

Bergek, A., Jacobsson, S., Carlsson, B., Lindmark, S., & Rickne, A. (2008). Analyzing the functional dynamics of technological innovation systems: A scheme of analysis. Research policy, 37(3), 407-429.

Biermann, F., Betsill, M., Gupta, J., Kani, N., Lebel, L., Liverman, D., ... & Siebenhüner, B. (2009). Earth System Governance: People, Places and the Planet. Science and Implementation Plan of the Earth System Governance Project.

Blake, K., Nahrath, S., & Ingold, K. (2020). Combining the Institutional Resource Regime (IRR) framework with the Advocacy Coalition Framework (ACF) for a better understanding of environmental governance processes: The case of Swiss wind power policy. Environmental science & policy, 112, 141-154.

Blatrix, C., Edel, F., & Ledenvic, P. (2021). Quelle action publique face à l'urgence écologique ? Revue française d'administration publique, 179(3), 521-535.

Bours, D., McGinn, C., & Pringle, P. (2014). Monitoring & evaluation for climate change adaptation and resilience: A synthesis of tools, frameworks and approaches. SEA Change Community of Practice, and UK Climate Impacts Programme.

Brousselle, A., & Buregeya, J. M. (2018). Theory-based evaluations: Framing the existence of a new theory in evaluation and the rise of the 5th generation. Evaluation, 24(2), 153-168.

Bulkeley, H., & Kern, K. (2006). Local government and the governing of climate change in Germany and the UK. Urban studies, 43(12), 2237-2259.

Carbone 4. (2022). « L'État français se donne-t-il les moyens de son ambition climat ? »

Christie, Christina A., et Marvin C. Alkin. 2012. « An evaluation theory tree ». in Evaluation Roots, édité par C. A. Christie et M. C. Alkin. London: Sage Publications.

Comodi, G., Cioccolanti, L., Polonara, F., & Brandoni, C. (2012). Local authorities in the context of energy and climate policy. Energy policy, 51, 737-748.

Coryn, C. L., Noakes, L. A., Westine, C. D., & Schröter, D. C. (2011). A systematic review of theory-driven evaluation practice from 1990 to 2009. American journal of Evaluation, 32(2), 199-226.

Damsø, T., Kjær, T., & Christensen, T. B. (2016). Local climate action plans in climate change mitigation– examining the case of Denmark. Energy Policy, 89, 74-83.

Davies, R. (2004) 'Scale, Complexity and the Representation of Theories of Change
(Part I)', Evaluation 10: 101–21.

Davies, R. (2005) 'Scale, Complexity and the Representation of Theories of Change
(Part II)', Evaluation 11: 133–49.

Davies, R. (2013). Planning Evaluability Assessments. A Synthesis of the Literature with Recommendations. Department for International Development.

Davies, R., & Payne, L. (2015). Evaluability Assessments: Reflections on a review of the literature. Evaluation, 21(2), 216-231.

Dégremont-Dorville, M. (2018). Transitions énergétiques et politiques à l'orée du XXIe siècle: l'émergence en France d'un modèle territorial de transition énergétique (Doctoral dissertation, Institut d'études politiques de paris-Sciences Po).

Delahais, T., & Toulemonde, J. (2012). Applying contribution analysis: Lessons from five years of practice. Evaluation, 18(3), 281-293.

Delahais, T., & Toulemonde, J. (2017). Making rigorous causal claims in a real-life context: Has research contributed to sustainable forest management?. Evaluation, 23(4), 370-388.

Delahais, T., Devaux-Spatarakis, A., Revillard, A., & Ridde, V. (2021). Evaluation: fondements, controverses, perspectives.

Delmas, C. (2011). Sociologie politique de l'expertise. La Découverte.

Demarteau, M. (2002). A theoretical framework and grid for analysis of programme-evaluation practices. Evaluation, 8(4), 454-473.

de Melo, C. A., de Martino Jannuzzi, G., & Tripodi, A. F. (2013). Evaluating public policy mechanisms for climate change mitigation in Brazilian buildings sector. Energy Policy, 61, 1200-1211.

Després, L. (2019). Une planification écologique et sociale: un impératif!. Actuel Marx, (1), 103-118.

Donaldson, S. I. (2007). Program theory-driven evaluation science: Strategies and applications. Routledge.

Donaldson SI, Christie CA and Mark M (eds) (2015) Credible and Actionable Evidence: The Foundation of Rigorous and Influential Evaluations. Thousand Oaks, CA: SAGE.

Douthwaite, B. and S. Schulz (2001) 'Spanning the Attribution Gap: The Use of Program Theory to Link Project Outcomes to Ultimate Goals in Integrated Natural Resource Management and Integrated Pest Management', paper presented at the INRM Workshop, 2001, Cali, Colombia. Available at http://www.ciat.cgiar.org/inrm/workshop2001/docs/titles/4–1APaperBDouthwaite.pdf.

Douthwaite, B., R. Delve, J. Ekboir and S. Twomlow (2003) 'Contending with Complexity: The Role of Evaluation in Implementing Sustainable Natural Resource Management', International Journal of Agricultural Sustainability 1(1): 51–66.

Famoso, F., Lanzafame, R., Monforte, P., & Scandura, P. F. (2015). Analysis of the covenant of mayors initiative in sicily. Energy Procedia, 81, 482-492.

Feola, G. (2014). Societal transformation in response to global environmental change: a review of emerging concepts. Ambio, 44(5), 376-390.

France Stratégie. (2022). Soutenabilités ! Orchestrer et planifier l'action publique.

Fressoz, J. B. (2014). Pour une histoire désorientée de l'énergie. In 25èmes Journées Scientifiques de l'Environnement-L'économie verte en question (No. 04).

Fressoz, J. B. (2020). 2. L'anthropocène est un «accumulocène». Regards croises sur l'economie, 26(1), 31-40.

Fressoz, J. B. (2021). Pour une histoire des symbioses énergétiques et matérielles. In Annales des Mines-Responsabilite et environnement (Vol. 101, No. 1, pp. 7-11). FFE.

Funnell, S. C., & Rogers, P. J. (2011). Purposeful program theory: Effective use of theories of change and logic models (Vol. 31). John Wiley & Sons.

Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study. Research policy, 31(8-9), 1257-1274.

Geels, F. W. (2010). Ontologies, socio-technical transitions (to sustainability), and the multi-level perspective. Research policy, 39(4), 495-510.

Geels, F. W. (2011). The multi-level perspective on sustainability transitions: Responses to seven criticisms. Environmental innovation and societal transitions, 1(1), 24-40.

Glouberman, S., & Zimmerman, B. (2002). Complicated and complex systems: what would successful reform of Medicare look like? (Vol. 8, pp. 21-53). Toronto: Commission on the future of health care in Canada.

Granberg, M., & Elander, I. (2007). Local governance and climate change: reflections on the Swedish experience. Local environment, 12(5), 537-548.

Gusfield, J. (1981). The Culture of Public Problems: Drinkingdriving and the Symbolic Order, Chicago, Chicago University Press.

Gysen, J., Bruyninckx, H., & Bachus, K. (2006). The modus narrandi: a methodology for evaluating effects of environmental policy. Evaluation, 12(1), 95-118.

Halpern, C. (2012). « L'écologie est-elle une variable d'ajustement ? L'environnement et le développement durable sous Sarkozy » in Jacques de Maillard, Yves Surel (dir.), Politiques publiques, 3. Les politiques publiques sous Sarkozy, Paris, Presses de Sciences-Po, p. 381-402

Hayes, M. T. (1992). Incrementalism and public policy (Vol. 25, pp. 134-137). New York: Longman.

Hekkert, M. P., Suurs, R. A., Negro, S. O., Kuhlmann, S., & Smits, R. E. (2007). Functions of innovation systems: A new approach for analysing technological change. Technological forecasting and social change, 74(4), 413-432.

Howlett, M., & Migone, A. (2011). Charles Lindblom is alive and well and living in punctuated equilibrium land. Policy and Society, 30(1), 53-62.

Ihl, O. (2019). Sciences de gouvernement. Dans : Boussaguet, L., Jacquot, S., & Ravinet, P. (2019). Dictionnaire des politiques publiques (pp. 563-568). Paris : Presses de Sciences po.

Jacobsson, S., & Johnson, A. (2000). The diffusion of renewable energy technology: an analytical framework and key issues for research. Energy policy, 28(9), 625-640.

Jacobsson, S., & Bergek, A. (2011). Innovation system analyses and sustainability transitions: Contributions and suggestions for research. Environmental Innovation and Societal Transitions, 1(1), 41-57.

Jovanovic, M., Afgan, N., & Bakic, V. (2010). An analytical method for the measurement of energy system sustainability in urban areas. Energy, 35(9), 3909-3920.

Kankare, I. (2004) 'Treading on Fuzzy Grounds: Evaluation Practices in Managing
Complexities', paper presented at the European Evaluation Society conference, Berlin.

Kay, J. J., & Boyle, M. (2008). Self-organizing, holarchic, open systems (SOHOs). Columbia University

Kemp, R., Schot, J., & Hoogma, R. (1998). Regime shifts to sustainability through processes of niche formation: the approach of strategic niche management. Technology analysis & strategic management, 10(2), 175-198.

Kern, F., & Smith, A. (2008). Restructuring energy systems for sustainability? Energy transition policy in the Netherlands. Energy policy, 36(11), 4093-4103.

Klima, R. (1972). Theoretical pluralism, methodological dissension and the role of the sociologist: The West German case. Social Science Information 11(3–4): 69–108.

Konidari, P., & Mavrakis, D. (2007). A multi-criteria evaluation method for climate change mitigation policy instruments. Energy Policy, 35(12), 6235-6257.

Knoepfel, P., Larrue, C.,Varone, F. (2005). Analyse et pilotage des politiques publiques. Somedia Buchverlag.

Knoepfel, P. (2015). Histoire d'un triangle: leçon d'adieu du 5 mars 2015.

Lascoumes, P., Bonnaud, L., Le Bourhis, J-P., Martinais, E. (2014). Le développement durable. Une nouvelle affaire d'État, Paris, PUF, coll. « L'écologie en questions », 2014, 200 p.

Lam, S., & Skinner, K. (2021). The Use of Evaluability Assessments in Improving Future Evaluations: A Scoping Review of 10 Years of Literature (2008–2018). American Journal of Evaluation, 42(4), 523-540.

Leeuw, F. L., & Donaldson, S. I. (2015). Theory in evaluation: Reducing confusion and encouraging debate. Evaluation, 21(4), 467-480.

Leguet, B., Moatti, S., & Timbeau, X. (2021). Neutralité carbone: il manque un projet politique. L'Economie politique, 89(1), 49-61.

Leviton, L. C., Khan, L. K., Rog, D., Dawkins, N., & Cotton, D. (2010). Evaluability assessment to improve public health policies, programs, and practices. Annual review of public health, 31(1), 213-233.

Lin, J., Cao, B., Cui, S., Wang, W., & Bai, X. (2010). Evaluating the effectiveness of urban energy conservation and GHG mitigation measures: The case of Xiamen city, China. Energy Policy, 38(9), 5123-5132.

Lindblom, C. E. (1959). The science of" muddling through". Public administration review, 79-88.

Lindblom, C. E. (1979). Still muddling, not yet through. Public administration review, 39(6), 517-526.

Loorbach, D. (2007). Transition management. New mode of governance for sustainable development. Utrecht: International Books.

Loorbach, D. (2010). Transition management for sustainable development: a prescriptive, complexity-based governance framework. Governance, 23(1), 161-183.

Loorbach, D., Frantzeskaki, N., & Avelino, F. (2017). Sustainability transitions research: transforming science and practice for societal change. Annual Review of Environment and Resources, 42, 599-626.

MacPherson, R., Jersild, A., Bours, D., & Holo, C. (2022). Assessing the Evaluability of Adaptation-Focused Interventions: Lessons from the Adaptation Fund. In Transformational Change for People and the Planet (pp. 173-186). Springer, Cham.

Mahoney, J., & Thelen, K. (Eds.). (2009). Explaining institutional change: Ambiguity, agency, and power. Cambridge University Press.

Markard, J., Raven, R., & Truffer, B. (2012). Sustainability transitions: An emerging field of research and its prospects. Research policy, 41(6), 955-967.

Markard, J., Suter, M., & Ingold, K. (2016). Socio-technical transitions and policy change–Advocacy coalitions in Swiss energy policy. Environmental Innovation and Societal Transitions, 18, 215-237.

Mayne, J. (2001). Addressing attribution through contribution analysis: using performance measures sensibly. Canadian journal of program evaluation, 16(1), 1-24.

Mayne, J. (2008). Contribution analysis: An approach to exploring cause and effect. ILAC brief.

Mayne, J. (2012). Contribution analysis: Coming of age?. Evaluation, 18(3), 270-280.

Mertens, D., & Wilson, A. T. (2012). Program Evaluation Theory and Practice. A Comprehensive Guide. New York: Guilford Press

Millard-Ball, A. (2012). Do city climate plans reduce emissions?. Journal of Urban Economics, 71(3), 289-311.

Miyaguchi, T. (2022). Importance and Utilization of Theory-Based Evaluations in the Context of Sustainable Development and Social-Ecological Systems. In Transformational Change for People and the Planet (pp. 223-235). Springer, Cham.

Morlet, C., & Keirstead, J. (2013). A comparative analysis of urban energy governance in four European cities. Energy policy, 61, 852-863.

Neves, A. R., Leal, V., & Lourenco, J. C. (2015). A methodology for sustainable and inclusive local energy planning. Sustainable cities and society, 17, 110-121.

Nohrstedt, D. (2010). Do advocacy coalitions matter? Crisis and change in Swedish nuclear energy policy. Journal of public administration research and theory, 20(2), 309-333.

OECD (Organisation for Economic Co-operation and Development), DAC (Development Assistance Committee). (2002). Glossary of key terms in evaluation and results based management. Author. https://www.oecd.org/dac/2754804.pdf

Pablo-Romero, M. D. P., Pozo-Barajas, R., & Sánchez-Braza, A. (2016). Analyzing the effects of Energy Action Plans on electricity consumption in Covenant of Mayors signatory municipalities in Andalusia. Energy Policy, 99, 12-26.

Patterson, J., Schulz, K., Vervoort, J., Van Der Hel, S., Widerberg, O., Adler, C., ... & Barau, A. (2017). Exploring the governance and politics of transformations towards sustainability. Environmental Innovation and Societal Transitions, 24, 1-16.

Patton, M. Q. (2003) 'New Dimensions and Meanings of Useful Evaluation', paper presented at the 2003 conference of the Australasian Evaluation Society, Auckland.

Patton, M. Q. (2019). Blue marble evaluation: Premises and principles. Guilford Publications.

Pawson, R. (2013). The science of evaluation: a realist manifesto. sage.

Pierson, P. (2000). Increasing returns, path dependence, and the study of politics. American political science review, 94(2), 251-267.

Pitseys, J. (2010). Le concept de gouvernance. Revue interdisciplinaire d'études juridiques, 65(2), 207-228.

Rankovic, A., Colombier, M., Rüdinger, A., Schwoob, M. H., Sartor, O., Treyer, S., ... & Waisman, H. (2018). La neutralité carbone, défis d'une ambition planétaire. IDDRI Study, 10, 18.

Rogers, P. J. (2008). Using programme theory to evaluate complicated and complex aspects of interventions. Evaluation, 14(1), 29-48.

Rose, R., & Davies, P. L. (1994). Inheritance in public policy: Change without choice in Britain. Yale University Press.

Rüdinger, A. (2018). Le suivi et l'évaluation de la transition bas-carbone en France. Enjeux méthodologiques et recommandations.

Sabatier, P. A., & Jenkins-Smith, H. C. (Eds.). (1993). Policy change and learning: An advocacy coalition approach. Westview press.

Sabatier, P. A. (2019). Advocacy Coalition Framework. Dans : Boussaguet, L., Jacquot, S., & Ravinet, P. (2019). Dictionnaire des politiques publiques (pp. 563-568). Paris : Presses de Sciences po.

Sabatier, P. A., & Weible, C. M. (2019). The advocacy coalition framework: Innovations and clarifications. In Theories of the policy process (pp. 189-220). Routledge.

Savaya, R., & Gardner, F. (2012). Critical reflection to identify gaps between espoused theory and theory-in-use. Social work, 57(2), 145-154.

Scriven, M. l. (1991). Evaluation thesaurus (4th ed.). Sage.

Shadish, W. R., Cook, T. D., & Leviton, L. C. (1991). Foundations of program evaluation: Theories of practice. Sage.

Smith, A. (2007). Translating sustainabilities between green niches and socio-technical regimes. Technology analysis & strategic management, 19(4), 427-450.

Soura, B. D., Fallu, J. S., Bastien, R., & Brière, F. N. (2019). L'étude d'évaluabilité. Évaluation des interventions de santé mondiale.

Tang, Z., Brody, S. D., Quinn, C., Chang, L., & Wei, T. (2010). Moving from agenda to action: evaluating local climate change action plans. Journal of environmental planning and management, 53(1), 41-62.

Tokle, S., & Uitto, J. I. (2017). Overview of Climate Change Mitigation Evaluations: What Do We Know?. In Evaluating climate change and development (pp. 141-150). Routledge.

Trevisan, M. S., & Walser, T. M. (2014). Evaluability assessment: Improving evaluation quality and use. Sage Publications.

True, J. L., Jones, B. D., & Baumgartner, F. R. (1999). Punctuated equilibrium theory. Theories of the policy process, 175-202.

Uitto, J. I. (2014). Evaluating environment and development: Lessons from international cooperation. Evaluation, 20(1), 44-57.

Uitto, J. I., Puri, J., & Van den Berg, R. D. (2017). Evaluating climate change action for sustainable development. Springer Nature.

Uitto, J. I., & Batra, G. (2022). Transformational Change for People and the Planet: Evaluating Environment and Development.

Vaessen, J., & Todd, D. (2008). Methodological challenges of evaluating the impact of the Global Environment Facility's biodiversity program. Evaluation and Program Planning, 31(3), 231-240.

Vaessen, J., & Leeuw, F. L., (eds). (2010). Mind the Gap. Perspectives on Policy Evaluation and the Social Sciences. New Brunswick, NJ: Transaction Publishers

Van den Bergh, J. C., Truffer, B., & Kallis, G. (2011). Environmental innovation and societal transitions: Introduction and overview. Environmental innovation and societal transitions, 1(1), 1-23.

Van den Berg, R. D., & Cando-Noordhuizen, L. (2017). Action on climate change: what does it mean and where does it lead to?. Evaluating climate change action for sustainable development, 13.

Victor, D. G., Geels, F., & Sharpe, S. (2019). Accelerating the low carbon transition. The Case for Stronger, More Targeted and Coordinated International Action. Brookings Institution. Available online at: https://www. brookings. edu/wp-content/uploads/2019/12/Coordinatedactionreport. pdf (accessed January 24, 2021).

Walser, T. M., & Trevisan, M. S. (2016). Evaluability assessment thesis and dissertation studies in graduate professional degree programs: review and recommendations. American Journal of Evaluation, 37(1), 118-138.

Wanzer, D. L. (2021). What Is Evaluation?: Perspectives of How Evaluation Differs (or Not) From Research. American Journal of Evaluation, 42(1), 28–46. https://doi.org/10.1177/1098214020920710

Weiss, C. H. (1997). Theory-based evaluation: past, present, and future. New directions for evaluation, 76, 41-55.

Wheeler, S. M. (2008). State and municipal climate change plans: The first generation. Journal of the American planning association, 74(4), 481-496.

Wholey, J. S. (1979). Evaluation: Promise and performance.. Urban Institute

Wilby, R. L., & Dessai, S. (2010). Robust adaptation to climate change. Weather, 65(7), 180–185. https://doi. Org/10.1002/wea.543