The Growing Significance of Scientific Advice in Shaping EU Climate Policy

The Initial Activity of the European Scientific Advisory Board on Climate Change

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Abstract

A growing trend in the world has reached the EU: the establishment of national climate change science advisory councils. Since 2021, the EU has had such an advisory body, the European Scientific Advisory Board on Climate Change, which has been very active and has already had a significant impact on the development of EU climate policy. In the summer of 2023, the Board made its recommendation for the EU's 2040 GHG emissions reduction target, which states that the EU must strive for net emissions reductions of 90–95 % by 2040, relative to 1990 levels. The European Commission has used this recommendation as a reference for its proposal for the EU to reduce its emissions by 90 % by 2040. More such impactful proposals from the Board are expected in the future. This paper presents the work of the Advisory Board so far, analyzing its main recommendations and their impact. The analysis concludes that the European Scientific Advisory Board on Climate Change actively started its work within the framework of EU climate law and has already had a significant impact on policy-making. The importance of the Board's activity is expected to grow and is worth following in the future.

Keywords: scientific advisory councils, European Scientific Advisory Board on Climate Change, EU Climate Law, science policy cooperation, climate target setting

1. Introduction

Scientific advisory committees (SACs) represent a critical nexus between scientific research, policy development, and public awareness efforts worldwide. These entities serve as essential conduits for translating the latest sci-

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entific findings into actionable recommendations for policymakers, stakeholders, and the general public.[1] The genesis of SACs on climate change can be traced back to the emergence of scientific consensus on the reality and urgency of anthropogenic global warming.[2] These entities drew upon diverse disciplinary expertise, including climatology, atmospheric science, ecology, economics, and social sciences, to provide holistic insights into the complex dynamics of climate change and its implications for human societies and ecosystems. SACs on climate change typically operate within a defined legal or institutional framework, outlining their mandate, composition, and functions.[3] While specific mandates may vary across countries and organizations, common objectives include scientific assessment, policy advice, risk assessment, science communication, collaboration and networks. SACs conduct comprehensive assessments of the latest scientific research on climate change, synthesizing findings from peer-reviewed literature, observational data, and modelling studies. These assessments help policymakers and stakeholders understand the causes, impacts, and potential trajectories of climate change at global, regional, and local scales. SACs also provide independent, evidence-based advice to government agencies, international organizations, and other decision-makers on matters related to climate change mitigation, adaptation, and resilience. This advice may encompass the development and evaluation of climate policies, strategies, and initiatives aimed at reducing greenhouse gas emissions, enhancing climate resilience, and promoting sustainable development. SACs often assess the risks and vulnerabilities associated with the effects of climate change, such as extreme weather events, sea-level rise, biodiversity loss, and disruptions to food and water supplies. By quantifying these risks and identifying potential pathways for mitigation and adaptation, SACs help prioritize actions and allocate resources more effectively. SACs play a crucial role in communicating climate science to policymakers, stakeholders, and the general public, translating complex scientific concepts into accessible language and actionable insights. Through reports, briefings, public lectures, and media engagement, SACs raise awareness about the urgency of climate

1 Gaëlle M.N. Groux *et al*., 'A typology of scientific advisory committees', *Global Challenges*, Vol. 2, Issue 9, 2018, pp. 1–7.

2 Sally Weaver *et al*., 'Overview of national climate change advisory councils', *The Finnish Climate Change Report*, No. 3, 2019, at https://helda.helsinki.fi/server/api/core/bitstreams/7e78c5f3-6106-4d7d-8280-6e67e3ab4baf/content.

3 Id. p. 4.

action and empower individuals and communities to make informed decisions. Finally, SACs on climate change actively participate in international networks and partnerships, sharing data, methodologies, and best practices to enhance scientific understanding and policy coherence across borders.[4]

2. The Origins, Legal Mandate, and Composition of the European Scientific Advisory Board on Climate Change

In the EU, it was only in the European Green Deal[5] that the idea of setting up an independent scientific advisory body to make specific recommendations to the Commission when it makes policy proposals was seriously considered. It is worth mentioning that the Commission has a research institute, the Joint Research Centre (JRC).[6] The JRC provides scientific support to the Commission on a range of issues. It has recently had a significant impact on EU climate policy. Based on JRC analysis,[7] nuclear energy has been included in the category of eligible for EU financial support under the Taxonomy Regulation.[8] One might ask why a separate scientific advisory body on climate change was needed. First and foremost, the JRC can be seen as a background institution of the Commission. In other words, it cannot be said to be an institution independent from the Commission, either in terms of its organization or its mandate. Moreover, the JRC does not formulate policy proposals but carries out analyses based on the Commission's already adopted work program and policy agenda. Therefore, the JRC is more of a think-tank than an independent scientific advisory body.

However, it was by no means a foregone conclusion that the European Scientific Advisory Board on Climate Change (ESABCC, or the Board) would eventually be established. The Commission tabled its proposal for

4 ld. p. 14.

5 *See* at https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en.

6 *See* at https://joint-research-centre.ec.europa.eu/index_en.

7 Said Abousahl *et al.*, *Technical assessment of nuclear energy with respect to the 'do no significant harm' criteria of Regulation (EU) 2020/852 ('Taxonomy Regulation')*, Publications Office of the European Union, Luxembourg, 2021.

8 Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088.

a so-called European Climate Law (ECL) in 2020.[9] The draft, which has since been adopted, is a genuine framework legislation that includes, among other things, the legally binding objective of achieving climate neutrality in the EU by 2050.[10] This means that no more GHGs can be emitted from the territory of the EU than can be sequestered by (natural or artificial) absorption capacity. It also provides for the establishment of the ESABCC and sets out the basic legal framework for its operation.[11] However, the Commission's first proposal did not include a provision to set up the body. It merely stated that

> "When setting a trajectory in accordance with paragraph 1, the Commission shall consider the following: [...] *j)* the best available and most recent scientific evidence, including the latest reports of the IPCC."[12]

Following the publication of the proposal, experts argued[13] that a major shortcoming thereof was that it did not include the establishment of a separate European Scientific Advisory Board. The main arguments were that such a body would facilitate an unbiased scientific evaluation of targets and policy initiatives, assess the implementation of the ECL, and offer a pan-European perspective on progress and policy coherence. The authors also argued that the introduction of an independent expert advisory mechanism on climate change would bolster the credibility of analyses and policy recommendations presented by the European Commission, rather than encroaching upon or duplicating the Commission's mandate. According to them, by furnishing impartial, highly qualified, and apolitical review and guidance, the independent mechanism would reinforce political sup-

9 Proposal for a regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law), COM(2020)0080 – C9–0077/2020 – 2020/0036(COD).

10 Article 2 of Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999.

11 Id. Article 3.

12 Proposal for a regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law), COM(2020)0080 – C9–0077/2020 – 2020/0036(COD).

13 Alina Averchenkova & Lara Lazaro, *The design of an independent expert advisory mechanism under the European Climate Law: What are the options?,* at www.lse.ac.uk/granthaminstitute/wp-content/uploads/2020/09/GRI_The-design-of-an-expert-advisory-mechanism-under-the-European-Climate-Law_What-are-the-options.pdf.

port for Commission proposals and enhance the overall legitimacy and public acceptance of the EU's transition to climate neutrality. The above cited publication also stated that the mandate of a European advisory mechanism on climate change would complement, rather than overlap with, or undermine, the role of the Intergovernmental Panel on Climate Change (IPCC). The main difference is that while the IPCC's mandate centers on assessing the state of scientific knowledge on climate change and identifying areas of consensus within the scientific community, it does not offer specific advice on targets or policy proposals, nor does it evaluate implementation progress within a specific geographical context. Failure to establish a credible independent advisory mechanism within the EU, the authors concluded, would expose the legislative implementation process to heightened political pressure. This would increase the likelihood of challenges to the analytical validity and legitimacy of assumptions and proposed policy options.

These arguments were heard and the ESABCC was finally set up in Article 3 of the adopted ECL. More specifically, the legislation reads "the European Scientific Advisory Board on Climate Change established under Article 10a of Regulation (EC) No 401/2009". This means that the body was finally created in the legislation establishing the European Environment Agency (EEA).[14] The relationship between the EEA and ESABCC is complementary. At the same time, the 2009 Regulation clarifies that the independence of the ESABCC "shall be beyond doubt" and complements the work of the EEA "while acting independently in discharging its tasks".[15] The same legislation provides for the composition of the board and how its members are selected. The Advisory Board comprises 15 senior scientific experts spanning various pertinent disciplines. No more than two members from the same Member State can serve on the Advisory Board. The Board members are elected for a four-year term, extendable once. The selection process considers scientific excellence, experience in conducting scientific assessments and providing relevant advice, broad expertise in climate and environmental sciences or other fields crucial for the Union's climate goals, and professional experience in interdisciplinary settings within an international context. Furthermore, Advisory Board members serve in their

14 Regulation (EC) No 401/2009 of the European Parliament and of the Council of 23 April 2009 on the European Environment Agency and the European Environment Information and Observation Network.

15 Id. Article 10a(5).

personal capacity, offering their opinions independently of Member States and Union institutions. It is a somewhat unusual solution that the rules regarding the composition and mandate of the institution are found in different legislation. This does not facilitate transparency and may provide an opportunity for "less conspicuous" changes to the rules related to the Board, given that while the ECL is a politically important piece of legislation, the EEA regulation is much less in the spotlight.

The legal mandate of the Board is stated in Article 3 ECL, foreseeing that it "shall serve as a point of reference for the Union on scientific knowledge relating to climate change by virtue of its independence and scientific and technical expertise." The Advisory Board's responsibilities encompass reviewing the most recent scientific findings from IPCC reports and climate data, particularly concerning information pertinent to the Union, providing scientific counsel, and generating reports on existing and proposed Union measures, climate targets, indicative greenhouse gas budgets, and their alignment with the objectives outlined in the ECL, and the Union's international obligations under the Paris Agreement. It shall contribute to the exchange of independent scientific insights in areas such as modelling, monitoring, promising research, and innovation aimed at emissions reduction or enhancing removal efforts. It will identify necessary actions and opportunities crucial for successfully achieving the Union's climate objectives. Finally, the ESABCC promotes awareness of climate change and its repercussions, as well as fostering dialogue and collaboration among scientific bodies within the Union, complementing ongoing initiatives and endeavors.

It should be noted that the legislation formulating the Board's mandate specifically indicates that the recommendations must be based not only on the documents of the IPCC but also on the documents of The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and other international bodies. IPBES is a body on biodiversity loss that produces reports that are similar to what the IPCC issues for governments.[16] This direction is particularly important in the sense that it should be an important element of the policies related to climate change to not restrict their focus on merely aspects of climate change. In many cases,

16 *See* at www.ipbes.net/.

what may seem favorable from a purely climate point of view, 'shifts' the negative impact onto other, important environmental aspects.[17]

The ECL also creates a relationship between the ESABCC and national climate advisory bodies by mentioning on the one hand that the ESABCC may take into account the work of national bodies, and on the other hand, it calls upon the Member States to establish national bodies and if they do so, report them to the EEA, and with it, to the ESABCC.[18]

3. The Work Programmes of the ESABCC

Each year, the ESABCC publishes a work programme setting out its tasks for the period. So far, the Board has drawn up a total of three work programmes, the first one is for the year 2022.[19] At the beginning of the first work programme (FWP), the ESABCC presented, among other things, the circumstances of its creation and its key baseline data. The names of the Board members and its budget were also included. The FWP also included a summary of policy developments related to climate change in the EU. The Board stated that they will start working on two major files in 2022. In chapter 3.3 of the FWP, the ESABCC set out in more detail the six areas in which it will start working and exactly how it plans to work in each of them. The main activities included *(i)* supporting the EU's input to the 2023 global stocktake;[20] *(ii)* supporting the setting of the EU's 2040 climate target and the 2030–2050 greenhouse gas budget; *(iii)* addressing policy responses to the energy crisis; *(iv)* exploring sectorial mitigation solutions, in particular for land use, forestry, and agriculture, and their links with adaptation; *(v)* pursuing the strategic and operational development of the ESABCC; and *(vi)* finally, the Board also stated that it will start to engage in a dialogue with key stakeholders, encompassing EU institutions, national climate change advisory bodies, EU science and research networks, and the civil society to gain deeper insights into expectations and perspectives.

17 Ram Lakhan Singh & Pradeep Kumar Singh, 'Global Environmental Problems' *in* Ram Lakhan Singh (ed.), *Principles and Applications of Environmental Biotechnology for a Sustainable Future*, Springer, Singapore, 2017, pp. 13–41.

18 Article 3(3)–(4) ECL.

19 European Scientific Advisory Board on Climate Change, Annual work programme 2022, Adopted on 28 June 2022, at https://climate-advisory-board.europa.eu/about/description-of-the-ecl-and-the-legal-mandate/2022-work-programme-of-the.pdf/@@display-file/file.

20 *See* at https://unfccc.int/topics/global-stocktake.

The FWP noted that the main framing elements of the document were the EU policy developments and the expectation "to guide and advise on existing and proposed policies having an impact on the achievement of EU's long-term climate goals." The first work programme referred to the fact that the functioning of the Board in 2022 was still hampered by several factors, e.g. that the Secretariat had only been fully staffed from the second half of the year. However, it is apparent that the panel wanted to focus on numerous aspects from the very beginning of its work. Thus, it set itself tasks related to the relevant issues for the short term and for the long term, and it has also started its work on specific GHG-emitting sectors as well as on building institutional relationships.

The second work programme (SWP)[21] for 2023 follows a similar structure to the first. One new element has been added: a chapter reporting on the first work programme for 2022. The latter chapter reports that the ESABCC has added a seventh action point to the six identified in the FWP, as it considered the point particularly relevant to achieving the EU's climate objectives (more on this in the next chapter). In 2022 the Board carried out mainly preparatory activities in the areas identified. It adopted some internal operational documents. It is worth highlighting that it issued its first recommendation on a specific matter, precisely the one mentioned above, which was not originally included in the FWP: Guidance on the implementation of the TEN-E regulation.[22] Also noteworthy is that the Board decided to become a member of the International Climate Councils Network (ICCN),[23] and participate in its meetings. Another important development is that the ESABCC has stated that it will link its work programme to the EU's expected policy agenda for the given year, to make its work as relevant as possible. Importantly, the SWP notes that EU climate policy is already shifting from policy development to policy implementation. This will also have implications for the Board's work, as it will have to put more emphasis

21 European Scientific Advisory Board on Climate Change, Annual work programme 2023, Adopted on 20 December 2022, at https://climate-advisory-board.europa.eu/about/description-of-the-ecl-and-the-legal-mandate/2023-work-programme-of-the.pdf/@@display-file/file.

22 European Scientific Advisory Board on Climate Change: Towards a climate-neutral and climate-resilient EU energy infrastructure: Advice on scenario guidelines for trans-European networks for energy, adopted on 14 November 2022, at https://climate-advisory-board.europa.eu/reports-and-publications/towards-a-climate-neutral-and-climate-resilient-eu-energy-infrastructure-recommendations-to-acer/20221114-lettertoacer_adviceonten-e_scenarioguidelines.pdf/@@display-file/file.

23 *See* at https://climatecouncilsnetwork.org/.

on monitoring progress. The SWP has not only defined specific activities but also outlined four axes along which it defines its activities. These are to *(i)* provide input and advice to ensure effective implementation of agreed policies; *(ii)* work on mitigation options; *(iii)* scope further activities on adaptation; and to *(iv)* continue engaging with experts and stakeholders. The 8 activities specifically identified were located along these axes.

The third work programme (TWP)[24] for 2024 is the longest of the three documents so far and follows the established structure. The Panel has already issued several recommendations and other publications (five in number)[25] in 2023, which are described in more detail in the next chapter. The previously defined focus areas have not changed for 2024, these include *(i)* the EU 2040 target; *(ii)* policy gaps and opportunities regarding the progress towards EU climate neutrality; *(iii)* carbon dioxide removals in the EU; *(iv)* strengthening climate mitigation and resilience of EU agriculture; *(v)* climate adaptation and resilience; *(vi)* scenarios for the planning and development of the EU's energy-system wide infrastructure; *(vii)* expert and stakeholder engagement.

It is clear that by the third year, the Board's work programme has been broadly outlined and has started to follow a similar pattern year after year. Most of its work follows EU climate policy activities, but the Board also has initiatives of its own (*e.g.* on carbon removals or agriculture or climate adaptation). Perhaps the least attention in the work so far has been given to stakeholder dialogue, which deserves more emphasis. It is encouraging that the 2024 work programme includes a specific mention of the Central and Eastern European region, with whose scientific community the Panel plans to engage in a dialogue.[26] The growing number of national SACs in the EU does not yet include any from this region. As mentioned earlier, the ECL currently merely calls upon Member States to establish such national bodies, but this is not yet a legal obligation. However, the ESABCC has already proposed[27] that this should become an EU legal requirement in the future.

24 European Scientific Advisory Board on Climate Change: Annual work programme 2024, Published on 5 January 2024.

25 *See* at https://climate-advisory-board.europa.eu/reports-and-publications.

26 ld. p. 6.

27 European Scientific Advisory Board on Climate Change: Towards EU climate neutrality Progress, policy gaps and opportunities, Assessment Report 2024, at https://climate-advisory-board.europa.eu/reports-and-publications/towards-eu-climate-neutra

4. Reports and Other Publications of the ESABCC

Among the activities of the ESABCC, the recommendations published in writing are the most influential in terms of policymaking. As can be seen from the chapter above, the ESABCC already issued such a document in the year of its formation. However, in the course of its operation until April 2024, the ESABCC issued a total of six reports and publications to the various bodies of the EU.

The first recommendation came in an interesting form. The Board made recommendations to the EU Agency for the Cooperation of Energy Regulators (ACER) in the framework of a public consultation.[28] The Board has made this recommendation under its statutory power. Namely, Article 12 of Regulation 2022/869 of the European Parliament and of the Council of 30 May 2022 on guidelines for trans-European energy infrastructure provides that the ESABCC "may, on its own initiative, provide input on how to ensure compliance of scenarios with the Union's 2030 targets for energy and climate and its 2050 climate neutrality objective." This language also appears in other EU legislative acts.[29] In other words, EU law does not establish the formulation of recommendations as an obligation, but as an opportunity for the Board, leaving it to the discretion of the ESABCC to issue them. The legislation also requires that ACER "shall take duly into account that input [...] and shall provide reasons where it has not, or has only partly, taken into account the recommendations". This is a key element in the effectiveness of scientific advisory councils. If and when there is no follow-up of recommendations, their enforcement is much more doubtful. Nevertheless, it is not the topic of this study to analyze the recommendations in detail, but at the same time, every 'first document' deserves special attention from a newly established body. The recommendation was created in a very special, but important area from the point of view of climate

lity-progress-policy-gaps-and-opportunities/esabcc_report_towards-eu-climate-neutrality.pdf/@@download/file.

28 *See* at www.acer.europa.eu/sites/default/files/documents/Official_documents/Public_consultations/PC_2022_EG_09/ScenariosGL_20221006_DRAFT_for_PC_0.pdf

29 Article 35(7) of Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 on fluorinated greenhouse gases, amending Directive (EU) 2019/1937 and repealing Regulation (EU) No 517/2014 or Article 30 (2) of Regulation (EU) 2024/590 of the European Parliament and of the Council of 7 February 2024 on substances that deplete the ozone layer, and repealing Regulation (EC) No 1005/2009.

change, the area of energy, more specifically the energy infrastructure of the EU. Energy supply and use are responsible for more than 75 % of the EU's total greenhouse gas emissions,[30] so without the transformation of this sector, there is no chance of achieving the climate neutrality goal. In addition, the energy infrastructure is a so-called critical infrastructure, that is essential for maintaining normal social functioning. Nevertheless, its operation faces significant challenges due to the increasingly negative effects of climate change (*e.g.* increasingly frequent and stronger storms, extreme temperatures, *etc.*).[31] Among the recommendations given by the Board, three key ones should be highlighted: compliance with climate targets at all times, adaptation to a complex and constantly changing world, and conducting a transparent and inclusive process. These three key recommendations can be said to be the cornerstones of EU climate policymaking. The first recommendation is to restate what is included in the ECL, that is, that EU policies must be in line with, and cannot conflict with climate change goals. The second emphasizes the importance of another major area of climate change policies: adaptation. The third refers to the transparency of processes, which can also be interpreted generally and broadly. In the finally adopted guideline,[32] ACER does not explicitly refer to the recommendations made by the ESABCC. However, the document does include the importance of consistency with climate objectives. The second recommendation may be linked to the point in the document that in order for "scenarios [to] remain meaningful despite an unpredictable alteration of assumptions, a quick-update process shall be established". Moreover, the text provides the opportunity for the ESABCC to "propose the activation of the quick-update process". Finally, the ACER guideline also contains a section for "Criteria for a transparent, inclusive and streamlined development process" where, in line with the ESABCC recommendation, it is stated, inter alia, that "the development of scenarios shall follow as much as possible an open process to involve stakeholders, enabling a broad participation". "To ensure key stakeholders are appropri-

30 *See* at https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/energy-and-green-deal_en.

31 Roberto Schaeffer *et al.*, 'Energy sector vulnerability to climate change: A review', *Energy*, Vol. 38, Issue 1, 2012, pp. 1–12.

32 Framework Guidelines for the joint TYNDP scenarios to be developed by ENTSO for Electricity and ENTSO for Gas "TYNDP Scenarios Guidelines", at www.acer.europa.eu/sites/default/files/documents/Official_documents/Acts_of_the_Agency/Framework_Guidelines/Framework%20Guidelines/FG_For_Joint_TYNDP_Scenarios.pdf.

ately consulted and have the opportunity to interact among themselves" the guideline invites ENTSO to "create a Stakeholder Reference Group" and the ESABCC can become an observer to this group. Given that the document does not explicitly refer to the recommendations made by the ESABCC, it cannot be unequivocally confirmed that the above points were included on the basis of the recommendations, but they do not contradict them.

In the FWP, the ESABCC already indicated that it intends to follow a two-step approach concerning its recommendations regarding the determination of the EU's 2040 climate target. In their second publication from January 2023,[33] the ESABCC wanted to put on the table statements of principle importance as the first step, which are more general, and only later add the detailed, numerical recommendations. The recommendation's main message was that the European Commission should follow an approach that is "systematic, transparent, and guided by EU values". This general recommendation was followed by five more detailed recommendations that the European Commission should take into account: *(i)* the scientific and legal context; *(ii)* the physical limits to global emissions and the EU's 'fair share'; *(iii)* the transformation scenarios towards net zero greenhouse gas emissions by 2050 for the EU; *(iv)* the implications of different pathways in terms of side effects, co-benefits, resilience, and feasibility; and *(v)* the use of value judgments.

The most interesting of the five recommendations concerns value judgment. The document explains the above points in more detail. The ESABCC draws attention to the fact that, in connection with the four other points, value judgments are necessarily made during climate target setting, however, this should be communicated transparently and should be guided by "the foundational values and principles of EU law". The Board also explains in detail what it thinks in this regard. They note that the ECL explicitly cites various principles in its recitals, encompassing those of the EU as well as those outlined in the Charter on Fundamental Rights of the EU: principles related to sustainable development, the precautionary principle, the 'polluter pays' concept, the 'do no significant harm' principle

33 European Scientific Advisory Board on Climate Change: Setting climate targets based on scientific evidence and EU values: Initial advice to the European Commission on an EU-wide 2040 climate target and a greenhouse gas budget for the 2030–2050 period, adopted on 16 January 2023, at https://climate-advisory-board.europa.eu/reports-and-publications/setting-climate-targets-based-on-scientific-evidence-and-eu-values-initial-recommendations-to-the-european-commission/initial-advice-to-the-european.pdf/@@display-file/file.

of the European Green Deal, the 'energy efficiency first' principle of the Energy Union, as well as principles of proportionality, subsidiarity, and the Commission's dedication to better law-making principles. They also note that Article 4.5 of the ECL "provides a more specific list of issues that the European Commission is to consider when proposing its 2040 target." These include the best available scientific evidence, just and fair transition, as well as environmental effectiveness. The main reason why it is important to talk about these principles is that decisions about climate goals (but in a broader sense also during other climate policy decisions) may cause conflicts between, for example, cost-effectiveness and social aspects. In the face of such contradictions, the decisions made necessarily take one aspect into account at the expense of the other. The Board draws attention to the fact that the Commission must always present and justify these transparently.

The Board's third[34] and fourth[35] recommendations focused primarily on the energy sector. The third recommendation specifically focused on the solution to the energy crisis that was at its peak at the time. Meanwhile, general recommendations have also been made in this area, the observance of which also serves to achieve the goal of climate change mitigation, not only in times of crisis. An example is the recommendation that the EU and its Member States

> "should pursue further reductions in energy demand, both through technical (energy efficiency, in particular through an accelerated renovation of the building stock) and non-technical (behavioral changes) approaches."

The fourth recommendation is the most technical of the six published. In this context, the panel provided recommendations on methodologies for a harmonized energy system-wide cost-benefit analysis at EU level. This doc-

34 European Scientific Advisory Board on Climate Change: Aligning policy responses to rising energy prices with the long-term climate neutrality objective, adopted on 7 February 2023, at https://climate-advisory-board.europa.eu/reports-and-publications/addressing-the-energy-crisis-while-delivering-on-eus-climate-objectives-recommendations-to-policy-makers/2023-02-07-recommendationspolicyresponsesenergycrisisclimateneutrality.pdf/@@display-file/file.

35 European Scientific Advisory Board on Climate Change: Towards a decarbonised and climate-resilient EU energy infrastructure: recommendations on a harmonised EU energy system-wide cost–benefit analysis, adopted on 15 March 2023, at https://climate-advisory-board.europa.eu/reports-and-publications/towards-a-decarbonised-and-climate-resilient-eu-energy-infrastructure-recommendations-on-an-energy-system-wide-cost-benefit-analysis/advice-on-a-harmonised-eu.pdf/@@display-file/file.

ument can be interpreted as a continuation of the first recommendation, which also focuses on energy, but fewer general conclusions can be drawn from it. However, the recommendations are largely similar to those of the first recommendation, emphasizing *e.g.* consistency with climate objectives, transparency, and the importance of stakeholder involvement.

The fifth recommendation[36] issued by the Board is discussed in detail in the next chapter. The sixth recommendation already cited above again brought a new color to the Board's work compared with the previously issued documents. In this document, for the first time, the ESABCC recommended a series of concrete policies "to put the EU on track towards climate neutrality". The 359-page long document is by far the longest published by the Board. The recommendation is divided into two major parts, one on the actions to be taken up to 2030 and the other on the policies needed after 2030. The recommendation is addressed not only to EU institutions or the Commission but also directly to Member States. This is another novelty in the work of the Board. Follow-up on most of the recommendations will be possible in the next period, given that the document is recent (January 2024) and most of it is aimed at proposing or completing legislation, which takes time. However, references to this recommendation are expected to appear in the legislative proposals published by the Commission. In addition, it is expected that the ESABCC recommendations may be invoked as arguments by stakeholders in the legislative, co-decision process e.g. in the discussions on the phasing out of fossil fuel subsidies or the extension of the EU carbon pricing mechanism. As mentioned above, among the recommendations, it is worth highlighting that the ESABCC proposes that the ECL should make it mandatory for Member States to set up national climate advisory bodies. This proposal, if implemented, would raise the importance of scientific input in climate legislation in EU Member States to a new level.

36 European Scientific Advisory Board on Climate Change: Scientific advice for the determination of an EU-wide 2040 climate target and a greenhouse gas budget for 2030–2050, Published on 15 June 2023.

5. Scientific Advice for the Determination of an EU-Wide 2040 Climate Target and a Greenhouse Gas Budget for 2030–2050, as well as its Effect on the EU Commission's Proposal

In June 2023, the Panel issued its most eagerly awaited recommendation yet on setting the EUs' 2040 climate target.[37] This recommendation to the Commission is based on the latest scientific knowledge, regarding which target number to propose to the Member States for adoption. The proposal is based on a detailed analysis of more than 1000 EU scenarios, for which a separate database has been created by ESABCC.[38] The proposal builds on the 'initial' recommendation previously published by the Board and presented above. The context of the recommendation is that the ECL requires the EU to adopt an intermediate greenhouse gas target for 2040.[39] This legislation mandates the European Commission to propose such a target, accompanied by a projected indicative EU greenhouse gas budget for the 2030–2050 period. These should be based on the best available science and take into account the advice of the ESABCC. The report suggests maintaining the EU's cumulative greenhouse gas emissions budget between 2030 and 2050 at a range of 11–14 Gt CO2eq. This aligns with constraining global warming to 1.5°C, with minimal or temporary deviations from that target. To reach this objective, the ESABCC recommends that the EU aim for substantial net emissions reductions of 90–95 % by 2040, compared to 1990 levels. The document confirms that the current EU target of at least 55 % reduction compared to 1990 "enables reaching the recommended 2040 target range and climate neutrality by 2050". This also means that the Board does not recommend any changes to the 2030 climate goal.

The EU Commission tabled its proposal on the EU's 2040 climate target in February 2024.[40] In this communication, it recommended reducing

37 European Scientific Advisory Board on Climate Change: Scientific advice for the determination of an EU-wide 2040 climate target and a greenhouse gas budget for 2030–2050, Published on 15 June, at: https://climate-advisory-board.europa.eu/reports-and-publications/scientific-advice-for-the-determination-of-an-eu-wide-2040/scientific-advice-for-the-determination-of-an-eu-wide-2040-climate-target-and-a-greenhouse-gas-budget-for-2030-2050.pdf/@@display-file/file.

38 Emissions scenario database of the European Scientific Advisory Board on Climate Change, hosted by IIASA European Scientific Advisory Board on Climate Change, 2023, at https://data.ece.iiasa.ac.at/eu-climate-advisory-board.

39 Article 4(3) ECL.

40 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, and the Committee of the Regions

the EU's net greenhouse gas emissions by 90 % by 2040 relative to 1990. It is apparent that the Commission's recommendation falls within the ESABCC's recommendation range, but at the same time it represents the least ambitious target. The suggested objective stems from a detailed impact assessment,[41] which thoroughly examined the consequences of three target alternatives for 2040: a reduction of up to 80 % compared with 1990 levels, maintaining a linear trajectory from 2030 to 2050, a reduction of 85–90 %, and a reduction of 90–95 %. As the Commission notes the latter is "the only option that corresponds to the advice of the ESABCC". It is important to note that the communication released does not impose legally binding duties at this point. Instead, it initiates a discussion that will lead to a legislative proposal following the European elections in June 2024. The reception of the proposal was mixed on the part of the Member States. Many supported it, although several of them expressed reservations.[42] So far, there is no sign of the ESABCC's recommendation being referred to – for or against – in the political debates among the Member States. This may change during the discussion of the legislative proposal. As regards the consideration of the ESABCC's recommendations, the Commission's communication only indicates that its recommendation is "in line with the scientific advice by the ESABCC". The detailed impact assessment however makes many more references to the ESABCC document. First, it notes that the ESABCC's advice is "reflected throughout the Impact Assessment and comparisons with the ESABCC's analysis are made where appropriate." That is, it looks at the ESABCC study as a kind of reference point, and it also explains where there are differences between the two. It is mentioned as a prominent reference in the impact assessment that, based on the material of the ESABCC, the Commission rejected scenarios above a 95 % reduction from its analysis. When the impact assessment talks about why the 90 % goal is the preferred option, it starts with pointing

Securing our future Europe's 2040 Climate Target and Path to Climate Neutrality by 2050 Building a Sustainable, Just and Prosperous Society {SEC(2024) 64 final} – {SWD(2024) 63 final} – {SWD(2024) 64 final}.

41 Commission Staff Working Document Impact Assessment Report Part 1 Accompanying The Document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Securing our Future Europe's 2040 climate target and Path to Climate Neutrality by 2050 Building a Sustainable, Just and Prosperous Society {COM(2024) 63 final} – {SEC(2024) 64 final} – {SWD(2024) 64 final}.

42 *See* at www.euractiv.com/section/energy-environment/news/eu-countries-express-conditional-support-for-2040-climate-target/.

out that it is the only target that matches the ESABCC recommendation. Nevertheless, there are many other arguments why the Commission picked that goal, but its consistency with the scientifically proven recommendation is listed first. Consequently, there is a direct link between the Commission's communication and the ESABCC recommendation, perhaps the strongest so far in EU policymaking, but certainly not the last.

6. Conclusions

I have shown above that the ESABCC started its operation with full steam ahead based on its mandate in the ECL. It has already started to operate within all the mandates it was given. In this context, the Board made specific policy recommendations, both to the European Commission, the EU agencies, and directly to the Member States. The ESABCC actively contacted the scientific community and national scientific climate advisory bodies both in Europe and worldwide. In its longest publication to date, it critically analysed the EU's current policies and identified gaps in terms of achieving the 2030 and 2050 climate goals. I have demonstrated on several points that during policymaking, the ESABCC's recommendations were referenced and accepted in multiple ways. The EU Commission's communication on the 2040 EU climate target specifically referred to the fact that the proposed climate target is in line with the ESABCC recommendation. The detailed impact assessment drew on many points from the Board's study during the technical analysis. So far, in the case of specific legislative proposals, no evidence has been found that any text referred to the opinion of the ESABCC. However, it is more than likely that this will happen in the future. It is expected that – following the EU elections – the new Commission will submit its legislative proposal on the EU's 2040 climate goal for adoption. There is little chance that the proposal will be contrary to the previous communication. If this is the case, a reference to the opinion of the ESABCC will probably also be included in the proposal. This is all the more likely to be the case because the ECL stipulates that the opinion of the ESABCC must be taken into account when defining climate goals. This obligation is also included in other EU legislation, and seeing the Board's activity so far, it will certainly use this opportunity to form an opinion. Legislative proposals are also expected based on documents related to the steps necessary to achieve the 2030 climate goals. These may not necessarily be created solely because of ESABCC's proposal, but they will certainly be

taken into account. In summary, the ESABCC has already become a visible part of EU policymaking. In addition to the national climate advisory bodies, their scientific input becomes more significant in the EU climate policy legislation. The extent to which this input helps the social acceptance of individual policies, or how politics will receive them, and the extent to which non-scientific aspects appear in the ESABCC's activities, may be evaluated with time.