HIGH COURT OF AUSTRALIA

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IN THE HIGH COURT OF AUSTRALIA

SYDNEY REGISTRY **No. S174/2025**

BETWEEN:

MACH ENERGY AUSTRALIA PTY LTD

ABN 34608495441
Appellant

and

DENMAN ABERDEEN MUSWELLBROOK SCONE HEALTHY ENVIRONMENT GROUP INC
First Respondent

INDEPENDENT PLANNING COMMISSION OF NSW
Second Respondent

SUBMISSIONS OF THE CENTRE FOR CLIMATE ENGAGEMENT AND THE SABIN CENTER FOR CLIMATE CHANGE LAW SEEKING LEAVE TO APPEAR AS AMICI CURIAE

PART I: CERTIFICATION

1. These submissions are in a form suitable for publication on the internet.

PART II: BASIS OF APPLICATION TO APPEAR AS AMICI CURIAE

2. The Centre for Climate Engagement at Hughes Hall, University of Cambridge ('**CCE**') and the Sabin Center for Climate Change Law at Columbia Law School ('**Sabin Center**') (together, '**amici**') jointly seek leave to appear as amici curiae in this proceeding on the issues raised by Ground 3, namely, whether the impact of climate change is capable of being considered an environmental impact of a development 'in the locality' within the meaning of s 4.15(1)(b) of the *Environmental Planning and Assessment Act 1979* (NSW) ('**EPA Act**').

3. These submissions were prepared with the assistance of international counsel instructed by Vanessa Elizabeth Bleyer and the amici. The international Counsel are Frank Clarke SC, former Chief Justice of Ireland and president of the Supreme Court, and Harj Narulla

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Filed on behalf of: The Centre for Climate Engagement and The Sabin Center for Climate Change Law

of Doughty Street Chambers. Research was ably provided by Nicholas Young, Harrison Jones and Samuel Cass. The amici are grateful to Nick Scott, Başak Çalı and Ekaterina Aristova for reviewing these submissions. International counsel who assisted with these submissions have not signed these submissions because they have not signed the roll of the High Court of Australia. These submissions have been signed by the solicitor Vanessa Elizabeth Bleyer who has signed the roll of the High Court of Australia. Leave is sought for her to do so instead of international counsel.

PART III: WHY THE APPLICATION TO APPEAR AS AMICI CURIAE SHOULD BE GRANTED

4. The amici are internationally recognised for their research, scholarship and expertise on climate law and litigation. CCE was established to bring leading academic research and practitioner insights on climate law, policy and governance to senior decision makers. Through its 'Law for Climate Action Programme', CCE conducts interdisciplinary climate law research and collaborates with leading academic experts in the field to translate this research into targeted guidance and resources. CCE's analysis of climate-related legal issues is frequently used by networks of senior legal professionals, board directors and policymakers. This work is guided by Professor Harro van Asselt, Hatton Professor of Climate Law at Cambridge, who acts as Co-Chair of CCE's Advisory Group.

5. The Sabin Center was created in 2009 as a centre of expertise in climate law and litigation, with a clear focus on translating high quality academic research into practice. This includes a long history of research on the use of climate science in climate litigation and on the proper place of climate change in environmental impact assessment ('**EIA**'). The Sabin Center has created widely used resources such as The Climate Litigation Database, and specialised products related to climate change and EIA, including academic articles, survey reports and guidelines for EIA practitioners. The Center's work in this area is led by Professor Michael Gerrard, Faculty Director, Michael Burger, Executive Director, Dr Maria Antonia Tigre, Director of Global Climate Change Litigation, and Jessica Wentz, Non-Resident Senior Fellow.

6. Drawing on this expertise, CCE and the Sabin Center's submissions address matters and put arguments not directly addressed in the Appellant's or First Respondent's submissions.

PART IV: ARGUMENT

7. These submissions address Ground 3 only. The amici note that the First Respondent has argued (**RS [43]-[45]**) that the Appellant should not be permitted to proceed with Ground 3 on the basis that it constitutes a departure from the position that the Appellant adopted below. Nonetheless, if the Appellant were permitted to so depart, the amici submit that the impact of climate change is capable of being considered an environmental impact of a development 'in the locality' within the meaning of s 4.15(1)(b).

Background

8. The Appellant claims that the impact of climate change is not capable of being considered an environmental impact of a development in the locality within the meaning of s 4.15(1)(b): **AS [2.c], [61], [63]**. This is incorrect. Such impacts are capable of being considered likely impacts of a development in the locality within the meaning of s 4.15(1)(b).

9. The Appellant similarly submits that demonstrating that one source of emissions may be causative of climate changes in a particular locality is an 'impossibility': **AS [64]**. That argument is without basis in fact, scientific evidence or law.

10. These submissions focus on those two propositions and are structured as follows:

    a. The meaning of 'likely impacts' of a development: [12]-[19].

    b. Climate attribution science and Australian courts: [20]-[23].

    c. The climate impacts are 'likely impacts' of the Project in the locality: [24]-[26].

    d. The Appellant's 'impossibility' claim should be rejected: [27]-[30].

    e. The use of climate science to assess local impacts from GHG emissions in Australian courts: [31]-[38].

    f. The use of climate science to assess local impacts of GHG emissions in foreign and international jurisdictions: [39]-[52].

11. In the context of this case, the relevant climate impacts include increases in average temperatures, extreme heat, aridity and drought; more frequent and severe bushfires; and

increases in extreme precipitation and associated flooding. These trends are already affecting NSW and the Hunter Valley with significant implications for environmental and human health: **RS [14], [39]**.

The meaning of 'likely impacts' of a development

12. Several cases have addressed the meaning of 'likely impacts' in the context of s 4.15(1)(b) of the EPA Act.[1] Building on and going beyond **AS [30.b]** and **RS [46]**, past judgments have established the following propositions:

    a. The impact must be 'one flowing from the development the subject of the development application'.[2]

    b. 'Likely' in this context has the meaning of a 'real chance or possibility' rather than more probable than not.[3]

    c. As such, it does not involve principles of causation derived from private law.[4] Consequently, a development need not have a causal relationship to local climate impacts sufficient to satisfy tort law requirements to permit analysis of climate change impacts in the locality.[5]

    d. 'The likely impacts of a development include both direct and indirect environmental impacts'.[6]

    e. 'The critical factor is that there is a connection between the likely impact and the proposed development'.[7]

    f. Determination of the issue requires an 'evaluative judgment which will often not involve any bright-line boundary'.[8]

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[1] See, for example, *Hoxton Park Residents Action Group Inc v Liverpool City Council* (2011) 81 NSWLR 638, [44] ('*Hoxton Park*'); *Ballina Shire Council v Palm Lake Works Pty Ltd* [2020] NSWLEC 41, [6]-[8] ('*Ballina Shire*').
[2] *Hoxton Park* (n 1) [44].
[3] Ibid [46]; citing *Randwick Municipal Council v Crawley* (1986) 60 LGRA 277, 279-281 and *Drummoyne Municipal Council v Maritime Services Board* (1991) 72 LGRA 186, 193.
[4] *Gray v Minister for Planning* (2006) 152 LGERA 258, [83] ('*Gray*').
[5] For example, see *Minister for the Environment v Sharma* (2022) 291 FCR 311 ('*Minister for the Environment v Sharma*'); *Pabai v Commonwealth (No 2)* (2025) 264 LGERA 230 ('*Pabai*').
[6] *Gloucester Resources Ltd v Minister for Planning* (2019) 234 LGERA 257, [494] ('*Gloucester Resources*').
[7] *Ballina Shire* (n 1) [7].
[8] *Hoxton Park* (n 1) [44].

13. Further, it may not be necessary for an impact to be accurately measured for there to be a connection between it and the proposed project.[9] As Pain J held in *Gray v Minister for Planning and Others* in the context of an environmental assessment of a coal mine under the EPA Act: '[t]hat the impact from burning the coal will be experienced globally as well as in NSW, but in a way that is currently not able to be accurately measured, does not suggest that the link to causation of an environmental impact is insufficient.'[10]

14. In *Pabai v Commonwealth (No 2)*,[11] Wigney J similarly recognised that, in the context of local climate impacts in the Torres Strait Islands caused by a single emitter (Australia), it does not 'necessarily follow from the fact that the impact cannot be scientifically measured that there was no such impact'.[12] Rather, his Honour accepted the expert evidence which was to the effect that 'every greenhouse gas emission contributes to global warming and associated climate impacts'.[13]

15. In particular, Wigney J quoted and accepted the scientific evidence of Professor Meinshausen, who his Honour quoted as stating:[14]

> It would be a misinterpretation to assume that the scientific consensus is that emissions below a certain threshold have zero effect, or that impacts are only caused above a certain threshold of emissions. There is a threshold below which we cannot detect or robustly separate out the effect of individual underlying causes to a particular climate impact because of limits to our modelling and observations, but this limit of our scientific capability should not be used to justify an assumption that there is no effect (particularly given that basic physics tells us the exact opposite: there will always be some effect).

16. Put differently, his Honour explained that the existence of local climate impacts in the Torres Strait Islands was conceptually distinct from the 'quantification or ability to measure the precise extent of the contribution', which was 'another matter'.[15]

17. In this context, it should be noted that at the time of the IPC's determination, the language of s 4.15(1)(b) imposed no express minimum threshold as to the magnitude of any 'likely impact'. While clearly not applicable to the present appeal, amendments were made to

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[9] *Gray* (n 4) [98]; see also, *Australian Conservation Foundation v Latrobe City Council* (2004) 140 LGERA 100, [47].
[10] *Gray* (n 4) [98].
[11] (2025) 264 LGERA 230.
[12] Ibid [1079].
[13] Ibid.
[14] Ibid [1080]-[1081].
[15] Ibid [1080].

the EPA Act in November 2025 to introduce the word 'significant' before 'likely impact'.[16] This amendment substantially addresses the Appellant's concerns about the 'far-reaching ramifications' of the approach taken by the NSWCA, namely, that it would transform 'each of the multifarious likely impacts of a development' into a mandatory consideration: **AS [55]**. It also provides a legislative means to address concerns, sometimes raised in related litigation in foreign courts,[17] about the need for a threshold to ensure that every *de minimis* source of greenhouse gas emission is not said to bear a causal relationship to a particular climate impact.

18. Two further observations may be made about the application of s 4.15(1)(b) in the particular context of climate change. First, many decisions discussing the meaning of s 4.15(1)(b) have concerned 'impacts' of a kind that are ongoing, readily identifiable and consistent over time such as direct damage to the natural environment from construction,[18] or disruption to visual amenity.[19] However, many of the climate impacts in issue in this appeal, namely, extreme temperature events, bushfires and heavy rainfall, can also be characterised as episodic in nature and naturally occur with some frequency. In these circumstances, it is submitted that the 'impact' of a development should be evaluated by reference to changes in the frequency, duration or severity of an event.

19. Second, and relatedly, central to the concept of 'likely impact' of a development in s 4.15(1)(b) is some manner of causal relationship between the proposed development and a relevant impact. As is clear from the summary of principles above, the statutory test in s 4.15(1)(b) is much more permissive than the causal threshold demanded by private law principles of causation.[20] Nonetheless, the existence and nature of the causal relationship remain the focus of the Court's enquiry. In the context of climate change, this enquiry naturally focuses on the body of scientific principles concerned with the

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[16] See *Environmental Planning and Assessment Amendment (Planning System Reforms) Act 2025* (NSW), sch 1 para 63.
[17] See eg *Smith v Fonterra Co-operative Group Ltd* [2024] 1 NZLR 134, [168] ('*Smith*'); *Asmania v Holcim AG*, Cantonal Court of Zug, Division 1, Case No A1 2023 9, 17 December 2025, [5.5.6] ('*Holcim*'); *Lliuya v RWE AG*, Higher Regional Court of Hamm, Case No 2 O 285/15, 28 May 2025, 46. [English translation available at: <https://cdn.climatepolicyradar.org/navigator/DEU/2015/luciano-lliuya-v-rwe-ag_e585fec2553b5e2374b8a576e43d07ce.pdf>] ('*Lliuya*').
[18] See eg *Hoxton Park* (n 1) [38]–[40]; *Ballina Shire* (n 1) [10].
[19] *Gloucester Resources* (n 6) [8], [213], [221]–[222].
[20] *Gray* (n 4) [83]. See generally [10] above.

identification and measurement of causal relationships in climate systems. That discipline is climate attribution science, to which these submissions now turn.

Climate attribution science and Australian courts

20. The IPCC defines climate attribution science as the branch of science which 'concerns the identification of causes for changes in characteristics of the climate system (e.g., trends, single extreme events)'.[21] Anthropogenic greenhouse gas emissions have been judicially recognised in Australia as the dominant cause of increased global surface temperatures since the beginning of the Industrial Revolution.[22]

21. As the Federal Court held in *Pabai v Commonwealth (No 2)*,[23] '[i]t can be said, with a high degree of confidence, that there is a near linear relationship between cumulative anthropogenic CO2 emissions and the global warming that they cause'.[24] The existence of that near linear relationship is 'scientifically clear and unequivocal'.[25] Other domestic courts have consistently made similar statements, affirming that same near linear relationship.[26] See also **RS [49]**.

22. Moreover, the Federal Court stated in *Pabai v Commonwealth (No 2)*,[27] as a 'general proposition',[28] that there is a 'near or approximately linear relationship between temperature increases and most climate impacts at both the global and local or regional

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[21] Intergovernmental Panel on Climate Change, 'Weather and Climate Extreme Events in a Changing Climate' in Valérie Masson-Delmotte et al (eds), *Climate Change 2021: The Physical Science Basis: Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2021) ch 11, s 11.2.3.
[22] *Pabai* (n 5) [273]; *Sharma by her litigation representative Sister Marie Brigid Arthur v Minister for the Environment* (2021) 391 ALR 1, [198] ('*Sharma*'); see also *Obligations of States in respect of Climate Change* (Advisory Opinion) (International Court of Justice, General List No 187, 23 July 2025), [438] ('*ICJ AO*'); *Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law* (Advisory Opinion) (International Tribunal for the Law of the Sea, 2025/36, 21 May 2024), [51] ('*ITLOS AO*'); *Climate Emergency and Human Rights* (Advisory Opinion) (Inter-American Court of Human Rights, Advisory Opinion OC-32/25, 29 May 2025), [46] ('*IACHR AO*'); *Verein KlimaSeniorinnen and Others v Switzerland* (European Court of Human Rights, Grand Chamber, Application No 53600/20, 9 April 2024), [415]-[417] ('*KlimaSeniorinnen*').
[23] *Pabai* (n 5).
[24] Ibid [231].
[25] Ibid [24].
[26] For example, see, *Gloucester Resources* (n 6) [441]; *Minister for the Environment v Sharma* (n 5) [280], [331].
[27] *Pabai* (n 5).
[28] Ibid [287].

level, though the scale of the linearity may vary between different geographical locations'.[29]

23. Similar observations have been made in other contexts. The Queensland Land Court stated that '[a]ny extraction, and consumption, of fossil fuel will add to the climate change risks'.[30] Relatedly, Allsop CJ observed in *Minister for the Environment v Sharma*,[31] that the 'frequency and severity of bushfires and heatwaves … increases as global average surface temperature increases'.[32] That accords with the scientific evidence which was before the IPC in this case, including evidence from the IPCC which explained that: '[m]any changes in the climate system become larger in direct relation to increasing global warming. They include increases in the frequency and intensity of hot extremes, marine heatwaves, heavy precipitation, and, in some regions, agricultural and ecological droughts …'. [33]

The climate impacts are 'likely impacts' of the Project in the locality

24. Climate impacts in the locality of the Hunter Valley and NSW are capable of being characterised as likely impacts of the Appellant's Project due to the GHG emissions that the Project will produce. In the interests of brevity, these submissions focus on the specific climate impacts of temperature rises and heavy rainfall events in NSW and the Hunter Valley: **RS [39]**.

25. Due to the 'basic physics'[34] of climate change and the existence of the 'near linear relationship'[35] between anthropogenic carbon dioxide emissions and global surface temperatures, there is a 'real chance or possibility'[36] that the Project will contribute to an increase in temperature in a way that establishes a 'connection between the likely impact

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[29] Ibid.
[30] *BHP Coal Pty Ltd v Chief Executive, Department of Environment, Science and Innovation* [2024] QLC 7, [18].
[31] (2022) 291 FCR 311.
[32] Ibid [331].
[33] Intergovernmental Panel on Climate Change, 'Summary for Policymakers' in Valérie Masson-Delmotte et al (eds), *Climate Change 2021: The Physical Science Basis: Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2023) 15 [B.2] ('IPCC, "Summary for Policymakers"').
[34] *Pabai* (n 5) [1080].
[35] Ibid [24], [231]; *Gloucester Resources* (n 6) [441]; *Minister for the Environment v Sharma* (n 5) [280], [331].
[36] *Hoxton Park* (n 1) [46]; citing *Randwick Municipal Council v Crawley* (1986) 60 LGRA 277, 279-281 and *Drummoyne Municipal Council v Maritime Services Board* (1991) 72 LGRA 186, 193.

and the proposed development'.[37] As such, the increased temperatures in the locality caused by the Appellant's Project are capable of being considered a 'likely impact' within the meaning of s 4.15(1)(b).

26. Moreover, there is a 'real chance or possibility'[38] that the Project will contribute to an increase in the frequency and intensity of 'heavy precipitation' in that locality due to what the IPCC has labelled a 'direct relation' between increased global temperatures and those specific consequences.[39] Similarly, as recognised in *Pabai*,[40] the IPCC stated in the same report that 'it is *very likely* that heavy precipitation events will intensify and become more frequent in most regions with additional global warming'.[41] Accordingly, the increased frequency and intensity of heavy precipitation in the locality is capable of being considered a 'likely impact' within the meaning of s 4.15(1)(b). That conclusion is only stronger given that the relevant inquiry encompasses 'both direct and indirect environmental impacts'.[42]

The Appellant's 'impossibility' claim should be rejected

27. However, even if those climate impacts in the locality are not capable of being considered 'likely impacts' within the meaning of s 4.15(1)(b), this Court should reject the Appellant's claim that demonstrating that one source of emissions is causative of climate change impacts in a locality is an 'impossibility': **AS [64]**.

28. Accepting the Appellant's 'impossibility' claim would contradict the Federal Court's view of the state of climate attribution science in *Sharma by her litigation representative Sister Marie Brigid Arthur v Minister for the Environment*.[43] In that case, the Court noted that 'the wealth of scientific knowledge demonstrated by the evidence' suggested that 'science is likely capable' of demonstrating what an increase in temperature produced by

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[37] *Ballina Shire* (n 1) [7].
[38] *Hoxton Park* (n 1) [46]; citing *Randwick Municipal Council v Crawley* (1986) 60 LGRA 277, 279-281 and *Drummoyne Municipal Council v Maritime Services Board* (1991) 72 LGRA 186, 193.
[39] IPCC, 'Summary for Policymakers' (n 33) 15 [B.2].
[40] (2025) 264 LGERA 230.
[41] Ibid [288] (italics in original). See also, *Bushfire Survivors for Climate Action Incorporated v Environment Protection Authority* (2021) 250 LGERA 1, [76] in which it was an agreed fact between the parties that '[a]nthropogenic greenhouse gas emissions have caused intensification of the hydrological cycle'.
[42] *Gloucester Resources* (n 6) [494].
[43] (2021) 391 ALR 1.

an additional 100 Mt of CO2 'meant in terms of measurable risk'.[44] That finding was not disturbed on appeal.

29. The International Court of Justice ('**ICJ**') in its recent advisory opinion on climate change directly commented on this point and expressed the opposite view to the Appellant's argument: **AS [64]**. The Court observed that establishing such a causal link between wrongful actions or omissions and harms arising from climate change is 'not impossible in the climate change context'.[45]

30. The Appellant's 'impossibility' argument is also inconsistent with the acceptance of climate science by courts in Australia and other jurisdictions to recognise the existence of: (a) causal relationships between climate change and particular local climate impacts, as well as (b) causal relationships between particular sources of emissions and particular local climate impacts. Illustrative examples from these cases are set out directly below.

The use of climate science to assess local impacts from GHG emissions in Australian courts

31. The existence of local impacts from GHG emissions has been accepted in several Australian courts. Central to these decisions, and the ultimate success or failure of a claim, is the legal test that must be established.

32. In *Pabai v Commonwealth (No 2)*,[46] Wigney J accepted a causal link between increased GHG emissions (resulting from the failure to meet the claimed duty of care) and climate impacts in the Torres Strait Islands.[47]

33. In *Sharma*, the court was similarly required to assess climate attribution science in the context of negligence principles. As noted above ([28]), Bromberg J remarked that the evidence suggested that 'science is likely capable' of demonstrating what an increase in temperature produced by an additional 100 Mt of CO2 'meant in terms of measurable risk'.[48]

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[44] Ibid [82]-[83].
[45] *ICJ AO* (n 22) [438].
[46] (2025) 264 LGERA 230.
[47] Ibid.
[48] *Sharma* (n 22) [82]-[83].

34. On appeal, Allsop CJ found that harm to Australian children was reasonably foreseeable from the release of the GHG emissions caused by the combustion of the coal mined that was made available from the impugned decision.[49] This was based on the conclusions from the evidence that 'there is an approximately linear relationship between CO2 emissions and increases in the Earth's global average surface temperature in the absence of non-linear feedback effects ...'. [50]

35. Importantly, in *Waratah Coal*, Kingham P clarified that, unlike the circumstances that arose in *Sharma*, the court was not required to find that granting a mining application 'would in fact cause a given level of GHG emissions that causes harm and limits the human rights relied upon'.[51] The causal inquiry is different under the statutory framework governing administrative decision making.[52] Relevantly, Kingham P accepted 'the logical and rational connection ... drawn between the act of authorising the application and the harm that will be caused by the emission of GHGs when the mined coal is burned'.[53] This was enough to establish a 'sufficient causal relationship to find the act has the capacity to limit a human right'.[54]

36. Moreover, when discussing the location of the combustion of the coal, Kingham P noted that the applications are made and will be decided in Queensland, about the mining of coal in Queensland, the combustion of which will cause harm to the environment in and the people of Queensland, wherever the combustion occurs'.[55]

37. In *Gloucester,* Preston CJ rejected any suggestion that the 37.8 Mt CO2-e of emissions from the relevant project represented only 'a small fraction of the global total of GHG emissions'.[56] Relying on evidence from Professor Steffen and the approach of other courts, he found that there was 'a causal link between the Project's cumulative GHG emissions and climate change and its consequences'.[57] The result was that the Project

[49] *Minister for the Environment v Sharma* (n 5) [332].
[50] Ibid [331].
[51] *Waratah Coal Pty Ltd v Youth Verdict Ltd & Ors (No 6)* [2022] QLC 21, [1322] ('*Waratah Coal*') referring to *Sharma* (n 5).
[52] *Waratah Coal* (n 51) [1334].
[53] Ibid [1352].
[54] Ibid [1352].
[55] Ibid [1371].
[56] *Gloucester Resources* (n 6) [515].
[57] Ibid [525].

was considered 'likely to have indirect impacts on the environment, including the climate system, the oceanic and terrestrial environment, and people'.[58]

38. In *Bushfire Survivors for Climate Action Incorporated v Environment Protection Authority*,[59] Preston CJ found that the Environment Protection Authority was required to develop environmental quality objectives, guidelines and policies to ensure environmental protection from climate change. In that case, the uncontested expert evidence of Professor Sackett included attribution claims that the 2019/20 bushfires were 30% more likely because of anthropogenic climate change, and that widespread coral bleaching of the Great Barrier Reef during 2016 was 175 times more likely.[60] Moreover, the agreed statement of facts accepted that '[d]irect and indirect greenhouse gas emissions from activities in New South Wales impact on the environment'.[61]

The use of climate science to assess local impacts of GHG emissions in foreign and international jurisdictions

39. Contrary to **AS [64]**, a number of foreign domestic and international courts have accepted that, as a matter of factual inference, climate attribution science can support causal relationships between specific local climate harms and specific emitters. These courts have 'confronted the difficulty' (**AS [64]**) of attributing local climate harms to particular emitters and overcome it through ordinary judicial evaluation of scientific evidence.

40. There is a wide spectrum of legal contexts in which foreign courts have considered the causal relationship between sources of greenhouse gas emissions, global temperatures and particular local climate impacts. In the context of civil liability, courts are required to determine – typically by reference to the demanding standards of private law factual causation – whether a particular emitter caused harm or loss to a plaintiff.[62] Beyond civil liability, there is a larger body of decisions in which the resolution of a public law, planning, or human rights dispute requires a court to determine whether a causal relationship of some kind exists between a source of emissions and an environmental

[58] Ibid.
[59] (2021) 250 LGERA 1.
[60] Ibid [73].
[61] Ibid [76].
[62] See eg *Lliuya* (n 17); *Holcim* (n 17); *Smith* (n 17).

hazard.[63] This case is in the latter category and therefore raises none of the issues confronting civil liability claims such as proportional attribution, indeterminate liability and stringent factual causation.

41. Recent decisions of foreign courts demonstrate a broad judicial acceptance that modern climate attribution science can, as a matter of factual inference, permit the identification of various kinds of causal relationships between sources of emissions and localised environmental impacts. Below we first analyse the relevant public law, planning and human rights cases before turning to private law examples.

42. In *Verein KlimaSeniorinnen and Others v Switzerland,*[64] the European Court of Human Rights was satisfied that a causal relationship existed between Swiss national climate policy and the increased risks of heat-related mortality from heatwaves in Switzerland. Despite acknowledging that causation was necessarily more complex and unpredictable in the context of climate change than in local pollution contexts,[65] the Court nonetheless considered there was a 'causal relationship between State actions and/or omissions relating to climate change and the harm, or risk of harm, affecting individuals'.[66]

43. The same recognition of causal relationships to local climate risks can be seen in constitutional law decisions in Belgium and Germany. In *VZW Klimaatzaak v Kingdom of Belgium and Others,*[67] the Brussels Court of Appeal accepted that there was a 'causal link' between the conduct of Belgian government bodies and increased risks of heatwaves, droughts and extreme rainfall within Belgium.[68] Although the Court

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[63] See eg *KlimaSeniorinnen* (n 22); *VZW Klimaatzaak v Kingdom of Belgium and Others*, Brussels Court of Appeal, Case No 2021/AR/1589, 30 November 2023 [English translation available at: <https://cdn.climatepolicyradar.org/navigator/BEL/2014/vzw-klimaatzaak-v-kingdom-of-belgium-others_028850d8c6e43fa4c3515a6a0e3d7630.pdf>.] ('*Klimaatzaak*'); *Neubauer v Germany*, Federal Constitutional Court of Germany, 1 BvR 2656/18, 24 March 2021 [English translation available at: <https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/EN/2021/03/rs20210324_1bvr265618en.html>] ('*Neubauer*'); *Friends of the Irish Environment v Government of Ireland* [2020] IESC 49 ('*Friends of the Irish Environment*'); *Netherlands v Urgenda Foundation*, Supreme Court of the Netherlands, ECLI:NL:HR:2019:2006, 20 December 2019 [English translation available at: <https://www.urgenda.nl/wp-content/uploads/ENG-Dutch-Supreme-Court-Urgenda-v-Netherlands-20-12-2019.pdf>] ('*Urgenda*'); *Leghari v Federation of Pakistan*, Lahore High Court, Writ Petition No 25501/2015, 25 January 2018 ('*Leghari*').

[64] (European Court of Human Rights, Grand Chamber, Application No 53600/20, 9 April 2024).

[65] Ibid [415]-[417], cited in *Environment Council of Central Queensland Inc v Minister for the Environment and Water* [2024] FCAFC 56; 304 FCR 91, [141] (Mortimer CJ).

[66] *KlimaSeniorinnen* (n 22) [519].

[67] Brussels Court of Appeal, Case No 2021/AR/1589, 30 November 2023. [English translation available at: <https://cdn.climatepolicyradar.org/navigator/BEL/2014/vzw-klimaatzaak-v-kingdom-of-belgium-others_028850d8c6e43fa4c3515a6a0e3d7630.pdf>.]

[68] Ibid [268], [257].

recognised that Belgium's emissions were 'minimal... compared to the rest of the world', it nonetheless considered that the 'harmful effects of each additional [greenhouse gas] emission ... are certain'.[69] Similarly, in *Neubauer v Germany,*[70] the German Federal Constitutional Court recognised that greenhouse gas emissions would increase the risk and frequency of heatwaves, flooding, drought and agricultural damage in various parts of Germany.[71] While acknowledging that Germany's emissions were 'clearly not the only causal factor' responsible for these risks,[72] the Court considered that 'emissions from every state contribute to climate change'.[73]

44. To similar effect, in *Future Generations v Ministry of the Environment,* the Supreme Court of Colombia accepted that the government's failure to prevent deforestation of the Amazon rainforest was 'causing… imminent and serious damage' to the Colombian claimants, as the consequent greenhouse gases were 'fragment[ing] ecosystems, altering water sources and the water supply for population centers and [causing] land degradation.'[74]

45. In *Massachusetts v Environmental Protection Agency*,[75] the Supreme Court of the United States held that greenhouse gas emissions met the definition of 'air pollutants' under the *Clean Air Act,*[76] and required the EPA to make a scientific determination as to whether they 'cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare'.[77] In finding that states had standing to challenge the EPA's decision not to regulate motor vehicle emissions, the Court held that '[a]t a minimum … EPA's refusal to regulate such emissions "contributes" to Massachusetts' injuries', namely, the potential loss of coastal land through inundation, flooding and storm surges.[78] The Court also rejected the EPA's argument that its contribution to the injury was so marginal that regulatory action could not possibly mitigate the alleged

[69] Ibid [257].
[70] Federal Constitutional Court of Germany, 1 BvR 2656/18, 24 March 2021. [English translation available at: <https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/EN/2021/03/rs20210324_1bvr265618en.html>].
[71] Ibid [24]–[27].
[72] Ibid [202].
[73] Ibid [200].
[74] *Future Generations v Ministry of the Environment*, Supreme Court of Colombia, Civil Chamber, STC4360-2018, 5 April 2018. [English translation available at: <https://www.climatecasechart.com/documents/future-generations-v-ministry-of-the-environment-and-others-decision_7592>].
[75] 549 US 497 (2007) ('*Massachusetts*').
[76] 42 U.S.C. §§ 7401–7671q.
[77] *Massachusetts* (n 75). See *Clean Air Act* 42 U.S.C. §7521(a)(1).
[78] *Massachusetts* (n 75) 523.

injury, considering that '[this] argument rests on the erroneous assumption that a small incremental step, because it is incremental, can never be attacked in a … judicial forum.'[79]

46. A number of foreign public law decisions have also addressed the causal relationship between greenhouse gas emissions and local climate impacts generally, without expressly drawing a causal link to a specific source of emissions. In this vein, foreign courts have found causal links between anthropogenic emissions and local impacts including, for example, aridification and glacial melt in Montana;[80] extreme storm activity in Ireland;[81] droughts and food insecurity in Pakistan;[82] typhoons and heavy snowfalls in South Korea;[83] the risk of low-lying areas becoming uninhabitable in the Netherlands;[84] sea level rise, increased temperatures and drought in Bonaire;[85] and more rainfall, shrinking glaciers and higher sea levels in Norway.[86]

47. Turning to private law cases, a number of jurisdictions have recognised that a causal link can be established between greenhouse gas emissions and local impacts even in the context of a more stringent standard of civil liability. In the recent German decision of *Lliuya v RWE*,[87] it was held that a fossil fuel producer could, in principle, be held civilly liable, in proportion to its share of historical global emissions, for harm caused by climate-related glacial flooding to private property in Peru. The Higher Regional Court of Hamm relevantly accepted that modern climate attribution science was capable of

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[79] Ibid 524. That holding is undisturbed by the EPA's February 2026 rescission of the 2009 Endangerment Finding, which concerns the EPA's current s 202(a) regulatory position rather than the Supreme Court's reasoning.
[80] *Held v Montana,* No CDV-2020-307 (Mont 1st Dist Ct, 14 August 2023), [29].
[81] *Friends of the Irish Environment* (n 63) [3.6].
[82] *Leghari* (n 63) [11].
[83] *Do-Hyun Kim et al v South Korea*, Constitutional Court of Korea (Republic of Korea), 2020HunMa389, 29 August 2024. [English translation available at: <https://cdn.climatepolicyradar.org/navigator/KOR/2020/do-hyun-kim-et-al-v-south-korea_c0880b011659713734d224c66dad24d0.pdf>].
[84] *Urgenda* (n 63) [5.6.2].
[85] *Greenpeace Netherlands v Netherlands*, Hague District Court, Case No C/09/659832, ECLI:NL:RBDHA:2026:1347, 28 January 2026, [4.15]. [English translation available at: <https://cdn.climatepolicyradar.org/navigator/NLD/2024/greenpeace-netherlands-and-8-citizens-of-bonaire-v-the-netherlands_46a3674695428a2784f489b29a532140.pdf>].
[86] *Nature and Youth Norway v The State represented by the Ministry of Petroleum and Energy*, Norwegian Supreme Court, Plenary, Case No 20-051052SIV-HRET, 22 December 2020, [54]. [English translation available at: <https://admin.climatecasechart.com/wp-content/uploads/non-us-case-documents/2020/20201222_HR-2020-846-J_judgment.pdf>].
[87] Higher Regional Court of Hamm, Case No 2 O 285/15, 28 May 2025, 46. [English translation available at: <https://cdn.climatepolicyradar.org/navigator/DEU/2015/luciano-lliuya-v-rwe-ag_e585fec2553b5e2374b8a576e43d07ce.pdf>].

establishing a relationship of causation between the defendant's emissions and the particular climate risk alleged (although the claim was ultimately dismissed on other grounds). In reaching this view, the Court emphasised (a) that the chain of causation was 'almost linear' and 'physically calculable',[88] and (b) that the defendant's contribution of greenhouse gas emissions, while small as a percentage of the global total, was significant in relation to the size of other causal contributions.[89] This approach – of assessing significance in relative rather than absolute terms – could be adopted in the present proceedings.

48. A similar approach has been taken by courts in ongoing litigation in Switzerland[90] and New Zealand.[91] In *Asmania et al v Holcim,* a Swiss cantonal court upheld the admissibility of a civil liability claim against a major Swiss industrial emitter, also in proportion to its share of historical emissions, for localised climate harms in Indonesia (including flooding, coastal erosion and declining fish stocks).[92] In ruling that the matter should proceed to trial, the Court rejected the defendant's submission that the multi-causal nature of the alleged harms rendered the claims legally defective,[93] and acknowledged that modern climate science was capable of establishing 'known differences in causal contribution among emitters'.[94] Similarly, in *Smith v Fonterra*,[95] the Supreme Court of New Zealand declined to strike out a public nuisance claim against several companies for damage to coastal Māori land caused by rising sea levels. In doing so, it held that the Court of Appeal had erred in finding that establishing causation was not reasonably arguable in the context of climate harm,[96] and contemplated that trial evidence would likely address 'the scientific attribution of climate change to the respondents' activities'.[97]

49. A number of common propositions may be identified among these cases. First, there is a near-universal acceptance that, as a consequence of the 'linear relationship' between greenhouse gas emissions and climate change, every incremental contribution of

[88] Ibid 49.
[89] Ibid 46.
[90] *Holcim* (n 17).
[91] *Smith* (n 17).
[92] *Holcim* (n 17) [5.5.3].
[93] Ibid [5.7.1].
[94] Ibid [5.5.6].
[95] [2024] 1 NZLR 134.
[96] Ibid [154].
[97] Ibid [167].

emissions has the effect of increasing the risks posed by global climate change, including risks of local climate impacts.[98] Second, even relatively small increases in the risk, frequency or severity of local climate phenomena are often treated as material consequences of a particular source of emissions, particularly in public law contexts.[99] Third, courts have frequently accepted that, as climate change is a multi-causal phenomenon, a causal relationship may exist between a particular source and a local climate impact, notwithstanding that the impact may have existed to some extent if not for the source.[100]

50. These propositions are reflected in the approach taken to causation in three recent advisory opinions of the ICJ, the International Tribunal on the Law of the Sea ('**ITLOS**') and the Inter-American Court of Human Rights ('**IACHR**'). Each of those opinions, accepting the authoritative status of IPCC reports as a source of the best available climate science,[101] affirmed that the hazards and losses from climate change escalate with every increment of greenhouse emissions and climate change.[102]

51. The ICJ relevantly observed that while the causal link between the wrongful acts or omissions of a State and the harm arising from climate change is 'more tenuous than in the case of local sources of pollution, *this does not mean that the identification of a causal link is impossible in the climate change context'*.[103] After noting the cumulative nature of causation of climate risks, the Court held that individual sources of emissions can engage the obligation to prevent significant transboundary harm 'even if such activity is environmentally insignificant in isolation'.[104] In a similar vein, the ITLOS considered that 'activities may not be environmentally significant if taken in isolation, [but] they may produce significant effects if evaluated in interaction with other activities'.[105] Additionally, the IACHR proposed that in light of the best available science, it may be possible to 'presum[e] the causal link between GHG emissions and the degradation of

[98] See eg *Lliuya* (n 17) 49; *Klimaatzaak* (n 63) [233], [257]; *Neubauer* (n 63) [32].
[99] See eg *Massachusetts* (n 75) *524*; *Klimaatzaak* (n 63) [257].
[100] See eg *Lliuya* (n 17) 46; *Neubauer* (n 63) [202].
[101] *ICJ AO* (n 22) [74], [284]; *ITLOS AO* (n 22) [208]; *IACHR AO* (n 22) [33].
[102] *ICJ AO* (n 22) [254]; *ITLOS AO* (n 22) [241]; *IACHR AO* (n 22) [195], [197].
[103] *ICJ AO* (n 22) [438] (emphasis added).
[104] Ibid [277].
[105] *ITLOS AO* (n 22) [365], cited with approval in *ICJ AO* (n 22) [276].

the climate system, as well as the one that exists between this degradation and the resulting risks for natural systems and people'.[106]

52. As such, multiple courts at the foreign domestic, regional and international levels have accepted that climate attribution science can support causal relationships between specific local climate harms and particular emitters. The impact of climate change is therefore capable of being considered a 'likely impact' of a development 'in the locality' within the meaning of s 4.15(1)(b).

PART V: ESTIMATE OF THE TIM

53. The CCE and the Sabin Center rely on their written submissions. They do not seek to make oral submissions unless required by the Court.

Dated: 19 March 2026

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[106] *IACHR AO* (n 22) [533].

ANNEXURE TO THE SUBMISSIONS OF THE CENTRE FOR CLIMATE ENGAGEMENT AND THE SABIN CENTER FOR CLIMATE CHANGE LAW SEEKING LEAVE TO APPEAR AS AMICI CURIAE

No	Description	Version	Provision(s)	Reason for providing this version	Applicable date
1.	*Environmental Planning and Assessment Act 1979* (NSW)	29 Jul 2022 to 27 Nov 2022	s 4.15	Version in force at the time of the decision of the Second Respondent	6 Sep 2022
2.	*Environmental Planning and Assessment Amendment (Planning System Reforms) Act 2025* (NSW)	Current	sch 1 para 63	Illustrative purposes	
3.	*Clean Air Act* 42 U.S.C.	Current	§7521(a)(1)	Illustrative purposes	