"Contemporary Issues in Environmental Impact Assessment"

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Environmental impact assessment (EIA) developed in the latter half of the twentieth century as a response to growing concern about the impacts of human development on the environment and a recognition of the inadequacy of existing approaches to environmental management. Once an uncertain and new area, it is now ubiquitous in the approval process for projects across the world. It is trite law to say that the impacts of proposed activities should be considered in the process to determine whether the proposed activities should be permitted. However, environmental impact assessment is often understood broadly and leaves many issues unresolved. What is an impact of development? How far removed (how indirect) can the impacts be that an EIA can consider? What about the cumulative impacts of similar projects? When can these be taken into account? This paper identifies three contemporary issues in EIA, assessed in the context of climate change: the scope of EIA, cumulative impacts and temporal problems.

Once seen as a radical and revolutionary step in environmental law, environment impact assessment (EIA) has become an accepted feature of environmental governance across most of the world. Environmental impact assessment ("EIA") is "the official appraisal of the likely effects of a proposed policy, program, or project on the environment; alternatives to the proposal; and measures to be adopted to protect the environment".[1] EIA is usually used to refer to project-level decision-making and distinguished from strategic environmental assessment (SEA), which refers to environmental assessment at a broader strategic level. Requiring an assessment of the likely environmental impacts of a proposal allows the integration of environmental factors in development decisions and promotes ecologically sustainable development (ESD).

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[1] A Gilpin, *Environmental Impact Assessment (EIA): cutting edge for the twenty-first century* (Cambridge University Press, 1995) 4.

The first piece of legislation to require environmental impact assessment was passed nearly 50 years ago with the United States' *National Environmental Policy Act 1969* (NEPA).[2] Although not immune to some early criticism,[3] NEPA has been praised as one of the most significant developments in environmental law[4] and spurred the uptake of EIA in various forms across the world. A recent study found that at least 183 jurisdictions have adopted EIA as part of their environmental governance system, leading the author to conclude that EIA is a global legal norm and general principle of law.[5] In Australia, each state has its own requirements for EIA in legislation, in addition to a Federal Act, the *Environment Protection and Biodiversity Conservation Act 2000* (Cth) (EPBC Act) that applies in certain cases.

The underlying ideology of EIA is simple: where an activity or development could have environmental impacts, these must be identified and assessed before that activity or development can be permitted. However, this leaves a number of questions unanswered. What is the environment? Which impacts? How are these assessed? While the legislation applicable to the proposed activity will guide how environmental impact assessment is to be conducted, there remains scope for differing views of what should be assessed and how this assessment might influence the decision-making process.

This paper will identify three contemporary issues in EIA, particularly in the context of climate change. First, there is the issue of the scope of EIA for projects particularly in relation to indirect impacts. Many project approvals may relate to only one aspect of a bigger picture. When is it appropriate to consider indirect impacts in the EIA for a project? This issue arises particularly in the context of fossil fuel projects, with various outcomes across different courts. Secondly, there is the issue of cumulative impacts. EIA traditionally has struggled to deal with the problem of a "death by a thousand cuts", isolating and ignoring individually minor impacts that cumulatively have a devastating impact on the environment. Finally, there are two issues that I shall term the temporal issues of EIA. The first of these being that the EIA duty arises after a project has been selected and proposed. There is no requirement for EIA to occur in the scoping and selection phases of the project, meaning that EIA occurs as part of an ex post facto justification of the project already chosen. The second of these temporal problems is the failure of ongoing monitoring and assessment once a project has been approved. This paper is not intended to offer a comprehensive assessment of

[2] *National Environmental Policy Act 1969*, 42 USC § 4332(102)(2)(C) (1969).
[3] See for example, Joseph Sax, 'The (Unhappy) Truth About NEPA' (1973) 26 *Oklahoma Law Review* 239.
[4] William H Rodgers Jr, 'The Most Creative Moments in the History of Environmental Law: The What "Whats"' (2000) *University of Illinois Law Review* 1, 32.
[5] Tseming Yang, 'The Emergence of the Environmental Impact Assessment Duty as a Global Legal Norm and General Principle of Law' (2019) 70 *Hastings Law Journal* 525, 527.

environmental impact assessment, but by outlining some recent developments in EIA, this paper will provide some insight into the difficulties EIA encounters as a measure to promote environmental protection and ecologically sustainable development.

I. The Scope of EIA

EIA is a dynamic and ongoing process. It is the process by which information is collected about possible environmental impacts and the potential impacts of the project are assessed on the basis of this information.[6] The purpose of EIA is to equip the decision-maker with sufficient information to determine whether the project should be approved, and under what conditions. Although EIA has developed in different political and legal contexts across the world, the key features have remained remarkably similar.[7] There are six distinct stages:

> "1) a screening process that determines which activities will be subject to an environmental assessment;
> 2) a scoping process that identifies the specific environmental issues or concerns that will be included in the assessment, including determining the range of alternatives that will also be subject to assessment;
> 3) the preparation of the study itself;
> 4) consultation and participation with the public and other agencies;
> 5) the decision respecting the activity under assessment; and
> 6) follow-up measures that may be required such as monitoring of effects, after the project has been constructed."[8]

EIA does not prevent decisions being made that degrade the environment, as there is usually no prohibition on approving activities that cause significant adverse environmental impacts. Nevertheless, EIA is clearly intended to encourage environmentally positive outcomes. As Craik suggests, "the means to realise these objectives are largely self-regulatory and underlain by an assumption that adherence to procedural requirements respecting assessment and consultation will push decision-makers towards better outcomes".[9] The process of EIA increases agency sensitivity to environmental issues, enhances transparency in decision-making and may act as a deterrent to environmentally

[6] Elizabeth Fisher, Bettina Lange and Eloise Scotford (eds), *Environmental Law: Text, Cases, and Materials* (Oxford University Press, 2nd ed, 2019) 694.
[7] Neil Craik, 'The Assessment of Environmental Impact' in Emma Lees and Jorge Vinuales (eds) *The Oxford Handbook of Comparative Environmental Law* (Oxford University Press, 2019) 880.
[8] Ibid 880-881.
[9] Neil Craik, 'The Assessment of Environmental Impact' in Emma Lees and Jorge Vinuales (eds) *The Oxford Handbook of Comparative Environmental Law* (Oxford University Press, 2019) 881.

destructive projects that must face public scrutiny.[10] To facilitate environmental outcomes, the procedural requirements must adequately identify the relevant impacts to be assessed at appropriate times.

The scoping of impacts that must be assessed remains a contentious issue, particularly in a climate change context. The range of impacts to be assessed in EIA is usually determined by a combination of common requirements set by legislation and requirements, terms of reference or guidelines provided on a case by case basis.[11] For example, under NSW planning laws, before an environmental impact statement (EIS) is prepared the proponent must make a written application for environmental assessment requirements from the planning secretary.[12] The EIS must comply with these environmental assessment requirements,[13] which will specify the scope of the assessment. The EIS must also contain the general requirements set by the regulations, including: a description of the proposed development, a general description of the environment likely to be affected by the development, a detailed description of the environment likely to be significantly affected by the development, the likely impact of the development on the environment, a description of any measures proposed to mitigate the adverse effects and the reasons justifying the carrying out of the development, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development.[14] As the legislation sets out in broad terms a range of matters to be included in an EIA, individually determined requirements provide greater specificity of matters to be included that are responsive to the issues of concern for particular developments.[15] The EIA should reflect a general standard of reasonableness, that "the environmental effects in an EIA should be assessed with a degree of detail commensurate with their likely environmental significance".[16]

It is generally accepted that direct impacts must be considered in the EIA process, but there is much debate about the extent that indirect impacts may be taken into account. How far along the causal chain is appropriate to be assessed and considered for the EIA process? In

[10] Tseming Yang, 'The Emergence of the Environmental Impact Assessment Duty as a Global Legal Norm and General Principle of Law' (2019) 70 *Hastings Law Journal* 525, 533.
[11] Gerry Bates, *Environmental Law in Australia* (LexisNexis, 10th ed, 2019) 306.
[12] *Environmental Planning and Assessment Regulation 2000* (NSW) Sch 2.
[13] *Environmental Planning and Assessment Regulation 2000* (NSW) Sch 2 reg 3(8).
[14] *Environmental Planning and Assessment Regulation 2000* (NSW) Sch 2 reg 7.
[15] Neil Craik, 'The Assessment of Environmental Impact' in Lees and Vinuales (eds) *The Oxford Handbook of Comparative Environmental Law* (Oxford University Press, 2019) 887.
[16] UNEP, *Goals and Principles of Environmental Impact Assessment* (Preliminary Note, 16 January 1987) Principle 5; Neil Craik, 'The Assessment of Environmental Impact' in Lees and Vinuales (eds) *The Oxford Handbook of Comparative Environmental Law* (Oxford University Press, 2019) 887.

NSW, “impact” is not defined in the legislative scheme but has been held to include impacts that have a “real and sufficient” link to the project but occur by the actions of third parties not under the control of the project proponent.[17] At the Australian federal level, “impact” is now defined in s 527E of the *Environment Protection and Biodiversity Conservation Act 1999*. Before this definition of “impact” was inserted in 2007, “impact” had also been interpreted broadly. In *Minister for Environment and Heritage v Queensland Conservation Council*,[18] the Full Federal Court of Australia held that the impact of an action included the indirect influences or effects of the action:

> “’Impact’ in the relevant sense means the influence or effect of an action: Oxford English Dictionary, 2nd ed, vol VII, 694-695. As the respondents submitted, the word “impact” is often used with regard to ideas, concepts and ideologies: “impact” in its ordinary meaning can readily include the “indirect” consequences of an action and may include the results of acts done by persons other than the principal actor. Expressions such as “the impact of science on society” or “the impact of drought on the economy” serve to illustrate the point. Accordingly, we take s 75(2) to require the Minister to consider each way in which a proposed action will, or is likely to, adversely influence or affect the world heritage values of a declared World Heritage property or listed migratory species. As a matter of ordinary usage that influence or effect may be direct or indirect. “Impact” in this sense is not confined to direct physical effects of the action on the matter protected by the relevant provision of Pt 3 of Ch 2 of the EPBC Act. It includes effects which are sufficiently close to the action to allow it to be said, without straining the language, that they are, or would be, the consequences of the action on the protected matter.”[19]

The Court also held that “’all adverse impacts’ includes each consequence which can reasonably be imputed as within the contemplation of the proponent of the action, whether the consequences are within the control of the proponent or not.”[20] The Court thus held that the relevant impacts of a proposed dam were not limited to the construction and operation of the dam, but included the impacts of the use of water for irrigation downstream of the dam.

A common issue in the approval process relating to the extraction of fossil fuels is the extent to which the scope 3 emissions, meaning the indirect emissions arising as a consequence of the project but from sources not owned or controlled by the project, can be taken into account. Scope 3 emissions regularly account for the largest portion of a project’s emissions.

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[17] *Bell v Minister for Urban Affairs and Planning* (1997) 95 LGERA 86, 101; *Gray v Minister for Planning* (2006) 152 LGERA 258, 284-285.
[18] (2004) 139 FCR 24.
[19] Ibid at [53].
[20] Ibid at [57].

In the context of a fossil fuel project such as a coal mine, scope 1 emissions, which are direct emissions, occur from the project, such as in extracting the coal within the project site. Scope 2 emissions include emissions of purchased electricity generated from power sources outside the project site. These are indirect, upstream emissions. Scope 3 emissions include emissions from the extraction, production and transportation of purchased fossil fuels (such as diesel) used at the project site (indirect, upstream emissions) or from the transportation and combustion of sold fossil fuels extracted from the project site (indirect, downstream emissions). Scope 3 emissions may occur either inside or outside the country in which the project is proposed.

It is generally accepted that scope 1 and 2 emissions should be considered in the environmental assessment and decision-making processes, as these emissions are generated in the country that must account for the emissions, but it is contested whether scope 3 emissions should be considered if these emissions are generated in another country. Justification for considering scope 3 emissions can be found in the treaties on climate change and in case law.

Treaties on climate change require consideration of climate change. Article 4.2(a) of the United Nations Framework Convention on Climate Change (UNFCCC) requires Annex I parties to adopt national policies and take corresponding measures to mitigate climate change by limiting emissions and enhancing sinks and reservoirs to demonstrate that developed countries are taking the lead. All parties are required to "take climate change considerations into account" in their relevant policies and actions.[21] Climate change considerations include GHG emissions that would be generated from the approval and operation of new sources of GHG emissions, such as coal mines. Parties are required to develop and submit national inventories of emissions by sources and removals by sinks.[22] Annex I parties are to communicate detailed information on the policies and measures adopted to mitigate climate change as well as on their resulting projected anthropogenic emissions by sources and removals by sinks of GHGs.[23]

Similarly, under the Kyoto Protocol, Annex I parties are to implement and/or further elaborate policies and measures to achieve their emissions limitation or reduction commitment[24] and

[21] *United Nations Framework Convention on Climate Change*, opened for signature 9 May 1992, 1771 UNTS 107 (entered into force 21 March 1994) art 4.1(f).
[22] Ibid art 4.1(a).
[23] Ibid art 4.2(b)
[24] *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, opened for signature 16 March 1998, 2303 UNTS 162 (entered into force 16 February 2005) art 2.1(a).

implement policies and measures in such a way as to minimise adverse effects, including the adverse effects of climate change and the social, environmental and economic impacts on other Parties.[25] The effects of climate change generally and on other parties can include the impacts of scope 1, 2 and 3 emissions.

Under the Paris Agreement, parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of their Nationally Determined Contribution (NDC) to reduce emissions.[26] The NDC can include both direct (scope 1) and indirect (scope 2 and scope 3 in-country) emissions.

These international obligations under climate change treaties support consideration of both direct emissions (scope 1) and indirect emissions (scope 2 and 3).

Many courts have held that scope 3 emissions are a relevant consideration to take into account in determining applications for activities involving fossil fuel extraction or combustion or electricity generated by fossil fuel combustion.

In 2006 in NSW, in *Gray v Minister for Planning*, Pain J of the Land and Environment Court of NSW held that the scope 3 emissions of the proposed Anvil Hill coal mine were relevant to be assessed in the environmental assessment process. The environmental assessment requirements for the project required the inclusion of a "detailed greenhouse gas assessment". The environmental assessment submitted included an assessment of scope 1 and 2 emissions, and only briefly referred to the scope 3 emissions with an explanation to justify their non-inclusion. The Court found that the consent authority's decision to accept the environmental assessment was invalid. The Court held that there is:

> "a sufficiently proximate link between the mining of a very substantial reserve of thermal coal in NSW, the only purpose of which is for use as fuel in power stations, and the emission of GHG which contribute to climate change/global warming, which is impacting now and likely to continue to do so on the Australian and consequently NSW environment, to require assessment of that GHG contribution of the coal when burnt in an environmental assessment under Pt 3A."[27]

[25] Ibid art 2.3.
[26] *Paris Agreement*, opened for signature 16 February 2016, UNTS I-54113 (entered into force 4 November 2016) art 4.2.
[27] *Gray v Minister for Planning* (2006) 152 LGERA 258, [100].

In 2007, the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (the Mining SEPP) was introduced imposing an express requirement to consider "downstream emissions", which is a term commonly used to described scope 3 emissions. Clause 14(1) requires the consent authority to consider whether or not the consent should be issued subject to conditions, including conditions to ensure that "that greenhouse gas emissions are minimised to the greatest extent practicable."[28] Clause 14(2) of the Mining SEPP requires the consent authority to consider "an assessment of the greenhouse gas emissions (including downstream emissions) of the development".

In *Wollar Property Progress Association Inc v Wilpinjong Coal Pty Ltd*,[29] Sheahan J accepted that the consent authority for a proposed open-cut coal mine was required to consider the scope 3 emissions of the proposed mine pursuant to cl 14(2). Sheahan J noted that: "The term 'downstream emissions' is not defined, but is commonly understood to denote the greenhouse gas emissions relating to sold goods and services and thus caused by end users' use of the product (e.g. coal) produced by a project".[30] On the facts of this case, Sheahan J found that the consent authority had done so.

In *Gloucester Resources v Minister for Planning*,[31] the applicant sought to develop, operate and rehabilitate an open-cut coal mine in NSW. The Minister's delegate, the Independent Planning Commission (IPC), refused the consent and the applicant appealed to the Land and Environment Court. The appeal was a full merit appeal, allowing the Court to exercise the functions of the original decision-maker to determine whether the project should be approved. A local community group opposed to the mine was joined as a party to the proceedings[32] and raised the impacts of the mine on climate change. The EIS prepared for the project included an assessment of the scope 1, 2 and 3 emissions from the project.

The Court held that both the direct and indirect emissions from the project should be considered. The Court provided a number of reasons for this approach. First, the Court was required to consider and determine the development application for the project, and the EIS that accompanied the development application. The EIS included a greenhouse gas

[28] State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 cl14(1)(c).
[29] [2018] NSWLEC 92.
[30] *Wollar Property Progress Association Inc v Wilpinjong Coal Pty Ltd* [2018] NSWLEC 92, [126].
[31] (2019) 234 LGERA 257; [2019] NSWLEC 7.
[32] *Gloucester Resources Limited v Minister for Planning and Environment (No 2)* [2018] NSWLEC 1200.

assessment assessing scope 1, 2 and 3 emissions.[33] Secondly, the Court was required, in determining the application, to take into consideration any environmental planning instruments. One relevant environmental planning instrument was the Mining SEPP. As noted, the Mining SEPP required downstream emissions to be considered. The local environmental planning instrument, the Gloucester Local Environmental Plan 2010, supported this approach, requiring consideration of the cumulative impacts of climate change.[34] Thirdly, the Court was required to consider the likely impacts of the development. The likely impacts of a development include both direct and indirect environmental impacts.[35] In the climate change context, direct impacts include scope 1 emissions and indirect impacts include scope 2 and scope 3 emissions. The statutory requirement to consider the likely impacts of the development therefore would include consideration of direct scope 1 emissions and indirect scope 2 and 3 emissions. Fourthly, the Court was required to consider the public interest, which has been held to include the principles of ecologically sustainable development (ESD).[36] The principles of ESD, particularly the precautionary principle and principle of inter-generational equity, have been held to require consideration of the impact of a development on climate change and the impact of climate change on a development.[37] The impacts of a development on climate change include both direct and indirect impacts.

The Court was fortified in its approach by the many decisions around the world that have held that indirect emissions are a relevant consideration to take into account in the EIA process.[38] In *Border Power Plant Working Group v Department of Energy*,[39] the environmental impact assessment for proposed electricity transmission lines was held to be inadequate for failure to discuss the upstream greenhouse gas emissions from new power plants in Mexico that would be connected by the proposed transmission lines with the power grid in Southern California.[40] In *Mid States Coalition for Progress v Surface Transportation Board,*[41] a proposed rail line would have provided a less expensive and more likely used route by which coal could reach power plants. The EIA was held to be inadequate for failure to consider the possible downstream effects of the likely increase in coal consumption by the

[33] *Gloucester Resources Limited v Minister for Planning* (2019) 234 LGERA 257; [2019] NSWLEC 7, [490].
[34] Ibid [493].
[35] Ibid [494]-[496].
[36] Ibid [498].
[37] Ibid.
[38] The cases are more fully explained in *Gloucester Resources Limited v Minister for Planning* (2019) 234 LGERA 257; [2019] NSWLEC 7 [500]-[512].
[39] 260 F Supp 2d 997 (SD Cal, 2003).
[40] Ibid [18], [42].
[41] 345 F 3d 520 (8th Cir, 2003).

power plants, including climate change.[42] In *Montana Environmental Information Centre v US Office of Mining*,[43] the environmental assessment of a proposed expansion of an underground coal mining operation was held to be inadequate for failing to take a hard look at the indirect and cumulative impacts of GHG emissions.[44] In *Sierra Club v Federal Energy Regulatory Commission*,[45] the US Court of Appeals held that the EIS for the construction and operation of three new interstate natural gas pipelines should have estimated the amount of downstream GHG emissions that would result from the burning of the gas transported by the pipelines.[46] In *San Juan Citizens Alliance v United States Bureau of Land Management*,[47] the US District Court set aside the Bureau of Land Management's finding of no significant impact in relation to a decision to lease parcels of federal mineral estate for oil and gas mining for failing to take a hard look at the impacts of the GHG emissions, including downstream emissions to be produced by the combustion of the oil and gas.[48]

The next question is how to take scope 3 emissions into account. How do they affect the decision making process for an application for approval of a fossil fuel project? To ensure that the preparation of an EIS and subsequent public consultation on the EIS is more than a mere procedural "tick the box" exercise, the EIS must remain relevant to the decision-making process. In the context of climate change, relevance is shown by relating the carbon emissions to their effect on climate change. An internationally agreed reference point is the internationally agreed temperature target in article 2 of the Paris Agreement, of holding the increase in global average temperatures to between 1.5'C to 2'C above pre-industrial levels. To achieve this temperature goal, future carbon emissions will need to be limited. This limit can be determined using a carbon budget approach. This approach determines the amount of carbon in the atmosphere that will be consistent with the temperature goal, deducts the amount of carbon that already exists in the atmosphere, leaving the remaining budget that can be emitted in the future.[49]

In *Gloucester Resources v Minister for Planning*, the objector community group submitted that in order to hold the increase in global average temperatures to between 1.5ºC and 2ºC above pre-industrial levels as required by the Paris Agreement, 90% of coal reserves in

[42] Ibid 550.
[43] 274 F. Supp 3d 1074 (D Mont, 2017).
[44] Ibid 1091, 1093, 1098, 1099.
[45] 867 F 3d 1357 (DC Cir, 2017).
[46] Ibid 1371.
[47] 326 F Supp 3d 1227 (D N M, 2018).
[48] Ibid 1248, 1250, 1256.
[49] *Gloucester Resources Limited v Minister for Planning* (2019) 234 LGERA 257; [2019] NSWLEC 7, [441]-[443].

Australia would have to remain in the ground.[50] The small percentage of fossil fuel reserves that could still be mined and burned (10%) was accounted for by existing or approved coal mines.[51] Therefore, no new coal mines could be approved.

The Court did not accept the objector's submission that no new coal mines could ever be approved. The Court noted that while most coal reserves must remain in the ground unburned, this implicitly accepted that some coal reserves could still be mined and burned.[52] The question becomes which of the coal reserves should be allowed to be mined and burned. Priority should not necessarily be given to existing coal mines and approvals. These mines and approvals may not necessarily be exploited fully or at all, for a variety of reasons.[53] This might leave capacity for new mines. The next question is which new coal mines to exploit this remaining capacity should be approved and which ones should be refused.

The Court found that the better approach was for the consent authority to evaluate the particular merits of the fossil fuel development before it and consider whether the development as a whole should be approved.[54] The Court explained the approach:

> "Should this fossil fuel development be approved or refused? Answering this question involves consideration of the GHG emissions of the development and their likely contribution to climate change and its consequences, as well as the other impacts of the development. The consideration can be in absolute terms or relative terms.
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> In absolute terms, a particular fossil fuel development may itself be a sufficiently large source of GHG emissions that refusal of the development could be seen to make a meaningful contribution to remaining within the carbon budget and achieving the long term temperature goal… In relative terms, similar size fossil fuel developments, with similar GHG emissions, may have different environmental, social and economic impacts. Other things being equal, it would be rational to refuse fossil fuel developments with greater environmental, social and economic impacts."[55]

[50] Ibid [448].
[51] Ibid [447].
[52] Ibid [551].
[53] Ibid [552].
[54] Ibid [553].
[55] Ibid [553]-[555].

In the case of the proposed coal mine at Gloucester, the Court noted that although refusal of the consent would prevent a meaningful amount of GHG emissions, the better reason for refusal was "the Project's poor environmental and social performance in relative terms".[56]

This approach has been adopted in subsequent decisions made by the Independent Planning Commission in NSW (IPC), an independent statutory body that is often the relevant consent authority in large planning approval decisions. In August 2019, the IPC granted approval to an open-cut coal mine (the United Wambo Coal Project) subject to a condition of consent that requires the project proponent to use its best endeavours to limit the sale of coal to countries that have signed the Paris Agreement.[57] The reasons for decision refer to the findings in *Gloucester Resources v Minister for Planning* that scope 3 emissions must be considered. The foundation for the condition was to ensure that the scope 3 emissions of the project would be accounted for under the Paris Agreement: "Scope 3 emissions will be accounted for as Scope 1 emissions in countries that have clear commitments to reducing greenhouse gas emissions".[58] The IPC accepted that it was appropriate to assess and take into account the scope 3 emissions of the project, noting that the responsibility for Scope 3 emissions was not limited to the consumers of the coal, and was "arguably the responsibility of each party that operates in the relevant supply chain of the product coal."[59]

In September 2019, the IPC refused consent to the Bylong coal project, citing the impacts of the mine on climate change amongst the reasons for refusal. The IPC adopted the approach in *Gloucester Resources v Minister for Planning* to assess the project as a whole: "the Commission is of the view that the cumulative environmental impact of the Project and Recommended Revised Project needs to be considered when weighing the acceptability of GHG emissions associated with the mine."[60] The IPC accepted that the scope 3 emissions of the project were relevant to be assessed, as "all of the direct and indirect GHG emissions of the Project and the Recommended Revised Project, will adversely impact the NSW environment".[61] The IPC cited and adopted the reasoning in *Gloucester Resources v Minister for Planning* that "it would be rational to refuse fossil fuel developments with greater

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[56] Ibid [556].
[57] Ibid.
[58] IPC, 'United Wambo Open Cut Coal Mine Project (SSD 7142) and associated Modifications (DA 305-7-2003 MOD 16 & DA 177-8-2004 MOD 3)' (Statement of reasons for decision, 29 August 2019) <https://www.ipcn.nsw.gov.au/resources/pac/media/files/pac/projects/2018/11/united-wambo-open-cut-coal-mine-project-ssd-7142/determination/uwjv--sor--final.pdf> [310].
[59] Ibid [303].
[60] IPC, 'Bylong Coal Project SSD 6367' (Statement of reasons for decision, 18 September 2019) <https://www.ipcn.nsw.gov.au/resources/pac/media/files/pac/projects/2018/10/bylong-coal-project/determination/bylong-coal-project-ssd-6367--statement-of-reasons-for-decision.pdf> [692].
[61] Ibid [690].

environmental, social and economic impacts than fossil fuel developments with lesser environmental, social and economic impacts."[62]

These recent developments have been met with predictable controversy from mining industry groups. In October 2019, the NSW government announced an inquiry into the IPC and legislative changes that will affect how overseas scope 3 emissions can be assessed and taken into account in the EIA process. The NSW government also introduced the *Environmental Planning and Assessment (Territorial Limits) Bill 2019*. The bill proposes two significant changes.

First, the bill introduces a new provision, s 4.17A, which provides that a condition imposed for "the purpose of achieving outcomes or objectives relating to – (a) the impacts occurring outside Australia or an external Territory as a result of the development, or (b) the impacts occurring in the State as a result of any development carried out outside Australia or an external Territory" will be void and of no effect. The drafting of the proposed section has been criticised as vague and imprecise, as it may have implications for conditions regulating any greenhouse gas emissions that naturally have impacts outside Australia and conditions for developments more broadly.[63]

Secondly, the bill would amend cl 14(2) of the Mining SEPP to remove the express requirement for downstream emissions to be considered. Clause 14 would still require the consent authority to consider "an assessment of greenhouse gas emissions of the development" and to consider whether conditions should be proposed to ensure that "that greenhouse gas emissions are minimised to the greatest extent practicable."[64] However, conditions considering scope 3 emissions occurring overseas, such as the condition imposed by the IPC for the United Wambo coal project, would be prohibited by the proposed s 4.17A.

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[62] *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7, [555], cited in IPC, 'Bylong Coal Project SSD 6367' (Statement of reasons for decision, 18 September 2019) <https://www.ipcn.nsw.gov.au/resources/pac/media/files/pac/projects/2018/10/bylong-coal-project/determination/bylong-coal-project-ssd-6367--statement-of-reasons-for-decision.pdf> [692], [817].

[63] See for example, EDO NSW, '*Environmental Planning and Assessment (Territorial Limits) Bill 2019*' (Briefing Note, October 2019) <https://d3n8a8pro7vhmx.cloudfront.net/edonsw/pages/6561/attachments/original/1572495168/191031-_EDO_NSW_Briefing_Note_-_Environmental_Planning_and_Assessment_%28Territorial_Limits%29_Bill._FINALdocx.pdf?1572495168>.

[64] State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 cl14(1)(c).

Although the bill would remove the express requirement to consider downstream emissions, nothing in the bill prohibits scope 3 emissions from being considered as part of the likely impacts of the development and in "an assessment of the greenhouse gas emissions of the development". Commentators have noted that the bill does not go as far as to exclude the consideration of scope 3 emissions and if this is the intention, it should be explicitly stated.[65] The prohibition on conditions that are imposed for the purposes of outcomes or objectives relating to impacts occurring outside Australia also fails to deal with the complexity of the climate change problem which is caused not by a small number of significant actions but by the cumulative impacts of many individually insignificant actions from around the world.

Following uproar from environmental groups and commentators, the *Territorial Limits* Bill was referred to a Parliamentary Committee, Portfolio Committee No. 7 – Planning and Environment, for inquiry and report. A public hearing is scheduled for 6 February 2020, with a report due by 17 March 2020.

II. Cumulative Impacts

Many environmental impacts do not result from one significant action, but the combined effect of many individually insignificant actions.[66] This is often referred to as the "death by a thousand cuts" problem, where no individual cut can be said to have caused the harm. This poses a challenge for EIA which occurs on a project-by-project basis and requires a causal link to be established between the project and the harm. EIA of a project deals poorly, if at all, with the cumulative impacts of the project with the impacts of other projects, including existing operations, approved but not operational projects, and yet to be approved projects. This is so, even where jurisdictions require cumulative impacts to be assessed. The need to consider cumulative impacts may arise in the screening process by determining which projects have environmental impacts that need to be assessed, the scoping process by determining which impacts should be assessed, and will be relevant in the decision-making process in determining how this must be taken into account.

There are a number of issues that prevent meaningful assessment of cumulative impacts. I will identify three. First, there is a definitional problem. Even where cumulative impacts are

[65] See for example, Claire Smith, Mark Geritz and Jasmin Singh, 'NSW Government excludes scope 3 emissions from mining assessment' (31 October 2019) <https://www.claytonutz.com/knowledge/2019/october/nsw-government-excludes-scope-3-emissions-from-mining-assessment>.

[66] Benoit Mayer, 'Climate Assessment as an Emerging Obligation Under Customary International Law (2019) 68 *International and Comparative Law Quarterly* 271, 295; Garrett Hardin, 'The Tragedy of the Commons' (1968) 162 *Science* 1243.

assessed, simplistic understandings of cumulative impacts prevent meaningful consideration and evaluation. Secondly, there is a fundamental difficulty in giving meaningful attention to cumulative impacts in proponent-led assessment, whereby a narrow approach is often favoured. Thirdly, there is a conceptual difficulty that arises in linking individually minor impacts to larger problems. In climate change litigation, for example, the argument that the GHG emissions of a project are merely a "drop in the ocean" is commonly raised. Most local projects will appear insignificant in the context of the global, national or state environment but the combined effect of many local projects may have devastating impacts. It is also suggested that reducing the impacts from only one source is incapable of making a difference to the cumulative problem. Decision-makers often lack the insight or understanding to give proper regard to cumulative impacts in the decision-making process. This is particularly the case in the context of the complex cumulative problem of climate change. I will elaborate on these three issues.

First, understandings of cumulative impacts vary. An early definition of cumulative impacts appears in the US Council for Environmental Quality regulations for implementing NEPA:

> "[t]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."[67]

This definition, which is common in international and domestic laws, has been criticised as being underpinned by a simplistic and reductive understanding of cause and effect for environmental impacts.[68] Cumulative effects are often non-linear and involve scientific complexity.[69] Environmental impacts not only aggregate to increase the overall impact, but interact in dynamic ways that may have additional consequences. Indeed, cumulative impacts can also arise from different types of impacts from the one proposed activity that collectively create further impacts or increase the severity of existing impacts. In many EIS',

[67] Council on Environmental Quality, *Regulations For Implementing the Procedural Provisions of the National Environmental Policy Act* §1508.7.
[68] Angus Morrison-Saunders, *Advanced Introduction to Environmental Impact Assessment* (Edward Elgar, 2018) 129.
[69] Cherie J. Westbrook and Bram F Noble, 'Science requisites for cumulative effects assessment for wetlands' (2013) 31 *Impact Assessment and Project Appraisal* 318, 321.

cumulative impacts are considered and evaluated as a different and separate class of impacts, instead of "simply derived from summing the total effect of individual stressors."[70]

Secondly, EIA is project based, inherently drawing focus to the project proposed and providing only passing consideration to other projects. Evidently, this is at odds with what is required for cumulative effects assessment, where the temporal and spatial context must be expanded. The proponent of the project prepares the EIA and has little interest in and lacks access to information on the impacts of other projects and their dynamic interactions with the proponent's project. Westbrook and Noble suggest that proponent led assessment is thus primarily concerned with identifying and mitigating impacts to a point of acceptability for approval, rather than "understanding the nature, processes and outcomes of cumulative effects."[71] Cumulative effects assessment may be seen by proponents as a purely procedural hurdle, a legal obligation with no practical purpose.[72] This approach leads to the conclusion that if any cumulative effects at all are expected, they will be insignificant and easily overlooked.[73] Sinclair et al suggest that many assessors deal with cumulative effects superficially, in the hope that decision-makers "will sympathize with their unease and agree that cumulative effects are just too difficult to grapple with in a meaningful way".[74] This contributes to simplistic approaches to cumulative cause and effect and often leads to disregarding cumulative impacts in the decision-making process.

Thirdly, our existing legal and social paradigms often frustrate meaningful approaches to cumulative impact assessment. Traditional approaches to causation and responsibility usually require an action to be the main or major cause of a consequence before legal liability arises. A corollary of this approach is that mitigating or preventing just one source of the cumulative problem is seen to have no bearing on the cumulative problem. Thus, it is suggested that there is no utility in considering these impacts. This can lead to a fatalistic assumption that the impacts are inevitable. A related paradigm relates to fairness. The law is unwilling to restrict the rights of individuals due to the unrelated actions of third parties. We see this thinking coming through in approaches to cumulative impact assessment.

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[70] Angus Morrison-Saunders, *Advanced Introduction to Environmental Impact Assessment* (Edward Elgar, 2018) 135.
[71] Cherie J. Westbrook and Bram F Noble, 'Science requisites for cumulative effects assessment for wetlands' (2013) 31 *Impact Assessment and Project Appraisal* 318, 319.
[72] A John Sinclair, Meinhard Doelle and Peter N Duinker, 'Looking up, down, and sideways: Reconceiving cumulative effects assessment as a mindset' (2017) 62 *Environmental Impact Assessment Review* 183, 183.
[73] Ibid.
[74] Ibid.

Under Australia's federal environment statute, the EPBC Act, cumulative impacts are neither mentioned nor defined. In 2014, a community group, Tarkine National, challenged the decision of the Minister for the Environment, Heritage and Water to grant approval to a Hematite mine in Tasmania.[75] The group alleged that the Minister was required to take into account the cumulative impact of all relevant projects or actions in the relevant area, the impact of which might accumulate with the proposed action. The group identified a number of existing mines and proposed projects in the area, noting 11 relevant projects that would cumulatively impact on threatened fauna species, the Tasmanian devil, wedge-tailed eagle and spotted-tailed quolls. The Federal Court held that the Minister "was not required, either expressly or by necessary implication, to have regard to the cumulative impact, actual or potential, of the projects and proposed projects nominated by [the applicant]."[76] On appeal to the Full Court of the Federal Court, the Court held that the Minister was under no obligation to take account of the consequences of any other action, whether present or anticipated. The Court took a narrow view of the meaning of environmental impact, suggesting that "use of the metaphor 'cumulative impacts' tended to mask what lay at the heart of the appellant's contention, namely, that the Minister was obliged to take account of circumstances which were not consequences of the proposal at all, but which presumptively came about by other actions".[77]

The Full Court of the Federal Court's view, that cumulative impacts come about by 'other actions' and are therefore not impacts of the proposed action, reflects the law's approach to responsibility and causation. The law is reticent to impose obligations or restrictions on individuals as a response to harm caused by others.[78] To reject a project with individually insignificant impacts due to the combined effect of the project with other environmental stressors appears unfair or unreasonable. However, as Schuijers points out, "in other areas of law, such as tort and criminal law, a perpetrator must take their victim 'as they find them' – fragility and all".[79] To enable EIA to contribute to positive environmental outcomes and ecologically sustainable development, it is necessary for cumulative impacts to be taken into account and have some bearing on the decision-making process. It may be that the existing vulnerability of an area, species or ecosystem means that seemingly minor impacts become unacceptable. That this state of the environment was caused by many actors with no

[75] *Tarkine v Minister for Environment* (2014) 202 LGERA 244.
[76] *Tarkine v Minister for Environment* (2014) 202 LGERA 244, 272.
[77] *Tarkine National Coalition Inc v Minister for the Environment* (2015) 233 FCR 254, 269.
[78] Laura Schuijers, 'Environmental decision-making in the anthropocene: Challenges for ecologically sustainable development and the case for systems thinking' (2017) 34 *Environmental and Planning Law Journal* 179, 196.
[79] Ibid.

individual project having individual responsibility should not prevent further actions from being rejected or adapted to ensure environmental sustainability.

This issue arises acutely in relation to climate change impact assessment. As noted, the climate change problem is caused not by a small number of significant actions but by the cumulative impacts of many individually insignificant actions from around the world. The argument that a state, corporation or project's emissions are only "a drop in the ocean" is often raised in response to climate change litigation and can frustrate attempts to connect a relatively small amount of emissions to the global problem of climate change.[80] As the individual emissions of any particular source are so minor, it is argued that these are not properly viewed as impacts of the project and it cannot be said that the project has caused the impact. Additionally, it is often suggested that there would be no utility in reducing such a small amount of emissions.

A review of US federal environmental impact assessments and environmental assessments completed in 2017-2018 for projects related to fossil fuel production, processing and transport, found that there were no instances in which agencies determined that the impact of fossil fuel leasing on greenhouse gas emissions would be "significant".[81] Agencies rarely quantified or addressed the cumulative emissions of the proposed actions when added to other recent or anticipated fossil fuel leases. However, the projects found to have "insignificant" environmental effects collectively contributed to substantial greenhouse gas emissions. Ten projects in this period alone, all determined by the relevant agencies to have no significant impact on greenhouse gas emissions, cumulatively represented approximately 10% of the annual GHG emissions of the entire United States.[82]

Many courts, however, have recognised that the cumulative nature of climate change requires the abatement and reduction of the myriad sources of GHG emissions. In *Gloucester Resources v Minister,* the local community group used a carbon budget approach to explain the cumulative significance of the project's GHG emissions to global climate change. The project proponent did not contest the science of climate change or the

[80] See, for example, Jacqueline Peel, 'Issues in Climate Change Litigation' (2011) 1 Carbon and Climate Law Review 15, 16; Justine Bell-James and Sean Ryan, 'Climate change litigation in Queensland: a case study in incrementalism' (2016) 33 *Environmental and Planning Law Journal* 515.
[81] Madeleine Siegel and Alexander Loznak, 'Survey of Greenhouse Gas Considerations in Federal Environmental Impact Statements and Environmental Assessments for Fossil Fuel-Related Projects, 2017-2018' (White Paper, Sabin Centre for Climate Change Law, November 2019) <https://climate.law.columbia.edu/sites/default/files/content/docs/2019.11.12%20NEPA%20Survey%20Report%20Final%20%28Loznak%20and%20Siegel%29_FINAL.pdf>.
[82] Ibid 3.

need to rapidly reduce GHG emissions, however argued that the economic and social benefits outweighed the "uncertain long-term impacts of carbon emissions produced by the mine".[83] The Court noted that the total emissions from the proposed mine were only a small source of global emissions, however, this did not mean that they should not be addressed and considered in the EIA process. The Court held:

> The direct and indirect GHG emissions of the Rocky Hill Coal Project will contribute cumulatively to the global total GHG emissions... It matters not that this aggregate of the Project's GHG emissions may represent a small fraction of the global total of GHG emissions. The global problem of climate change needs to be addressed by multiple local actions to mitigate emissions by sources and remove GHGs by sinks. As Professor Steffen [Climate Expert for the community group] pointed out, "global greenhouse gas emissions are made up of millions, and probably hundreds of millions, of individual emissions around the globe. All emissions are important because cumulatively they constitute the global total of greenhouse gas emissions, which are destabilising the global climate system at a rapid rate. Just as many emitters are contributing to the problem, so many emission reduction activities are required to solve the problem".[84]

Thus, it is appropriate to consider the cumulative impacts of the project on climate change in the EIA process.

In other areas of the law, courts have also recognised the cumulative nature of the climate change problem and the need to reduce emissions from a variety of smaller sources. This supports recognising the cumulative impact of GHG emissions in EIA. In *Massachusetts v Environmental Protection Agency* (EPA),[85] the State of Massachusetts, together with various other state and local governments and non-government groups sought review of the EPA's denial of a petition to regulate the emissions of new motor vehicles. The US Supreme Court rejected the EPA's argument that its decision not to regulate these emissions contributed so insignificantly to the petitioners' injuries that it failed the test for causation.[86] The Court noted that incremental responses to large problems may be appropriate as "agencies, like legislatures, do not generally resolve massive problems in one fell regulatory swoop…They instead whittle away at them over time."[87]

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[83] *Gloucester Resources Limited v Minister for Planning* (2019) 234 LGERA 257; [2019] NSWLEC 7, [484].
[84] Ibid [515].
[85] 549 US 497 (2007).
[86] Ibid [523]-[524].
[87] Ibid [524].

In *Urgenda Foundation v Netherlands*,[88] the plaintiffs submitted that the Netherlands acted negligently and in breach of their human rights by failing to commit to a higher emissions reduction target. The State of the Netherlands argued that whether the Paris Agreement target would be achieved largely depended on other countries with higher emissions.[89] The Netherlands' emissions represented only 0.5% of global emissions. Even if the higher emissions reduction target that the plaintiffs sought was achieved by the State, this would only result in a reduction of 0.04-0.09% of global emissions.[90] Thus, the State argued, Urgenda had "no interest in an allowance of its claim for additional reduction".[91] This was emphatically rejected by The Hague District Court:

> "It is an established fact that climate change is a global problem and therefore requires global accountability… it has been established that any anthropogenic greenhouse gas emission, no matter how minor, contributes to an increase of CO_2 levels in the atmosphere and therefore to hazardous climate change… the single circumstance that the Dutch emissions only constitute a minor contribution to global emissions does not alter the State's obligation to exercise care towards third parties."[92]

On appeal, The Hague Court of Appeal in *Netherlands v Urgenda Foundation,*[93] again dismissed the State's argument that ambitious action was not required at the domestic level as Dutch emissions were comparatively small. The Court recognised that climate change is a global problem which cannot be solved by the Netherlands alone. However, this did not release the State from its obligation to take measures which, in conjunction with the efforts of other states, could provide some protection from the impacts of dangerous climate change.[94] Similarly, the Supreme Court of the Netherlands on appeal held that the Netherlands was required to take domestic measures to mitigate climate change.[95] The Court acknowledged that climate change is a global problem. However, this did not mean that the Netherlands was exempt from taking action.[96] The Court referred to the UNFCCC and Paris Agreement to demonstrate that every country has a responsibility to take measures to prevent climate change in accordance with the specific responsibilities and circumstances of the country. For the Netherlands, the obligation for the state to take measures relative to its circumstances

[88] (The Hague District Court, C/09/456689/HA ZA 13-1396, 24 June 2015).
[89] Ibid [4.78].
[90] Ibid.
[91] Ibid.
[92] Ibid [4.79].
[93] (The Hague Court of Appeal, 200.178.245/01, 9 October 2018).
[94] Ibid [62].
[95] *Netherlands v Urgenda Foundation* (The Supreme Court of the Netherlands, 19/00135, 20 December 2019).
[96] Ibid [5.7.1]-[5.8].

required considering internationally accepted standards and science.[97] The Court referred to the reports of the IPCC and meetings of the UNFCCC as demonstrating the widespread consensus that developed country parties, such as the Netherlands, must reduce emissions by at least 25-40% by 2020.[98] This obligation also applied to the Netherlands individually.[99]

A perversion of the "drop in the ocean" argument is the fatalistic assertion that as there are so many small contributions to climate change, the consequences are inevitable, because of market substitution and carbon leakage. Lessening or assessing the impacts of an individual project is futile, as there is no certainty that it will lessen the climate change problem. The market substitution argument presumes that due to fixed demand for fossil fuels, if one fossil fuel project is not approved in the country proposed, a similar project will inevitably be approved in another country to meet market demand.[100] There will therefore be at least the same amount of GHG emissions caused.[101] The carbon leakage argument is a variant of the market substitution argument. It suggests that as a result of more stringent climate policies or more stringent application of climate policies in a country, businesses will move their projects from that country to other countries with less ambitious climate policies or less ambitious application of climate policies.[102] Carrying out projects in these other countries with lesser environmental safeguards, will lead to an increase in global GHG emissions. Under either argument, there is no utility in considering, assessing or mitigating the emissions of any individual source, such as a new fossil fuel project, as the same or greater amount of emissions will occur in any event.

In *Gloucester Resources v Minister for Planning*, this approach was rejected. The Court found, firstly, that Gloucester Resources had failed to prove, on the evidence before the Court, that market substitution or carbon leakage would actually occur.[103] The onus is on a proponent of a project that will cause unacceptable emissions to establish that other projects in other countries will in fact be carried out in substitution for the proposed project. No assumption should be made that there will be market substitution or carbon leakage without proof. Similarly, in the *Netherlands v Urgenda Foundation*, the Hague Court of Appeal held

[97] Ibid [5.7.2]-[5.7.5].
[98] Ibid [7.2.11].
[99] Ibid [7.3.6].
[100] *Gloucester Resources v Minister for Planning* (2019) 234 LGERA 257; [2019] NSWLEC 7, [534].
[101] Ibid.
[102] Ibid [535].
[103] Ibid [536].

that the State had failed to substantiate that the risk of carbon leakage will actually occur if the State were to increase its efforts to reduce greenhouse gas emissions before 2020.[104]

Secondly, the Court found that there was no certainty that there will be market substitution or carbon leakage by new coal mines being approved in other countries in order to supply the coal that would have been produced by the proposed project in Australia. The evidence was that other countries are increasingly taking action to reduce their emissions in their countries, not only to meet their nationally determined contributions but also to reduce air pollution. There was no certainty that these countries would approve a new source of emissions, a new coal mine, that would not assist such action to reduce emissions in their countries.[105] Indeed, refusal of a new coal mine in the developed country of Australia might encourage developing countries to do likewise. Australia, as a developed country, has the responsibility to take the lead in pursuing mitigation measures to reduce GHG emissions.[106] If developing countries take the lead in not approving new development for the mining or burning of fossil fuel reserves, developing countries may be encouraged to follow that lead.[107]

Thirdly, the ability of a new coal mine in another country to substitute any coal lost by refusal of the proposed project in Australia will depend on the market, including the demand and supply of substitute sources of coal and any difference in price between coal from the project and other substitute sources, which price difference might affect substitutability.[108]

Similarly in *WildEarth Guardians v US Bureau of Land Management*,[109] the US Bureau of Land Management (BLM) applied the market substitution argument in the EIA process for coal leases that would expand coal mines. BLM concluded that approving the leases would have no impact on GHG emissions because if the leases were not approved, the same amount of coal would be sourced from elsewhere. The US Court of Appeals held that this substitution assumption was "arbitrary and capricious".[110] The BLM, amongst other deficiencies, did not analyse the specific difference in price between coal from the leased areas and from other sources, even though such a price difference would affect

[104] *Netherlands v Urgenda Foundation* (The Hague Court of Appeal, 200.178.245/01, 9 October 2018) [57].
[105] *Gloucester Resources v Minister for Planning* (2019) 234 LGERA 257; [2019] NSWLEC 7, [538].
[106] See, for example, art 4(4) of the Paris Agreement.
[107] *Gloucester Resources v Minister for Planning* (2019) 234 LGERA 257; [2019] NSWLEC 7, [540].
[108] Ibid [541].
[109] 870 F 3d 1222 (10th Cir, 2017).
[110] Ibid 1235.

substitutability.[111] It was an abuse of discretion to rely on the irrational substitution assumption.[112]

Fourthly, there was logical flaw in the market substitution argument:

> If a development will cause an environmental impact that is found to be unacceptable, the environmental impact does not become acceptable because a hypothetical and uncertain alternative development might also cause the same unacceptable environmental impact. The environmental impact remains unacceptable regardless of where it is caused. The potential for a hypothetical but uncertain alternative development to cause the same unacceptable environmental impact is not a reason to approve a definite development that will certainly cause the unacceptable environmental impacts. In this case, the potential that if the Project were not to be approved and therefore not cause the unacceptable GHG emissions and climate change impacts, some other coal mine would do so, is not a reason for approving the Project and its unacceptable GHG emissions and climate change impacts.[113]

III. Temporal Issues

Environmental law struggles with the temporal dimensions of environmental governance. This results in numerous issues, including in EIA. First, the statutory requirement to conduct an EIA occurs only once, after a project has been selected. There is no requirement for EIA to occur in the scoping and selection phases of the project. Although there is often a need to undertake assessment of alternatives to the project, this occurs as part of an ex post facto justification of the project already chosen. Secondly, there is the failure of ongoing assessment. Once approved, there may be monitoring and assessment requirements, but this stage is often neglected. Indeed, as I observed more than 30 years ago, the common perception of environmental impact assessment is that it is limited to the planning and pre-approval phase, culminating in the EIS.[114] While greater emphasis is now given to the approval and decision-making phase, post-approval monitoring continues to be left by the wayside.

Turning to the first point, EIA is part of a front-end approval process. The project proponent will consider where to purchase or lease land in pursuit of a particular project. This will

[111] Ibid 1234.
[112] Ibid 1237-1238.
[113] Ibid [545]. See also, Kane Bennett, 'Australian climate change litigation: Assessing the impact of carbon emissions' (2016) 33 EPLJ 538, 546-548; Justine Bell-James and Sean Ryan, 'Climate change litigation in Queensland: A case study in incrementalism' (2016) 33 EPLJ 515, 535.
[114] Brian J Preston, 'Adequacy of Environmental Impact Statements in NSW' (1986) 3 *Environmental and Planning Law Journal* 194, 194.

depend on a number of factors that are relevant to the company or individual seeking to undertake the project, but are meaningless from a strategic environmental viewpoint. A company may already own land in a location that is convenient for the company to conduct the project. It may, for a variety of reasons, be unable to acquire a more suitable site. As Malone notes, "the search for the most environmentally suitable site is not rigorously undertaken".[115]

For example, there are many coal reserves in New South Wales. We know that to meet the Paris Agreement target and Australia's NDC, not all of these coal reserves can be exploited. The question becomes, which reserves should be exploited? As identified in part 1, it was held in *Gloucester Resources v Minister for Planning* that in choosing between similarly sized fossil fuel projects, it would be rational to refuse those projects with greater social, environmental and economic impacts than those with lesser social, environmental and economic impacts. However, the project proponent will have other considerations in choosing where to propose their project, including where the proponent has been able to secure a mining title or rights of access. As was the case in *Gloucester*, this leads to the EIS being prepared after the project site has been chosen, with little consideration provided to other alternatives. Consideration of alternatives may be required by legislation. However, in practice it is often done quickly and used to demonstrate that the proposed project is the best option. This is so even where a project is inappropriate for the location chosen, and indeed should never have been proposed. Morrison-Saunders suggests that consideration of alternatives is "perhaps the most contentious and poorly executed component" of EIA.[116] The project proponent led approach orients the process to the goals of the project proponent, and rarely meaningfully engages with comparing the relative impacts of different alternatives.[117]

A second temporal issue is that the EIA process is frequently viewed as complete once project approval has been granted. Ongoing monitoring and evaluation is often ignored and the possibility to adapt to new circumstances and information is shut off. Two problems may arise: first, the project may be carried out in breach of the approval and secondly, the impact of the project may be different to the impacts predicted in the EIS.

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[115] Nicole Malone, 'Environmental Impact Monitoring' (1997) 14 *Environmental and Planning Law Journal* 222, 224.
[116] Angus Morrison-Saunders, *Advanced Introduction to Environmental Impact Assessment* (Edward Elgar, 2018) 89.
[117] Ibid.

Once a project has been approved, it must be carried out in accordance with the terms of the approval. The project should reflect what has been approved and comply with any conditions imposed, such as quantities of a mineral permitted to be extracted or the area of extraction. However, in many cases projects may begin to operate outside of the consent granted or conditions imposed. Regulatory bodies may be unable or unwilling to pursue civil or criminal enforcement action to remedy such a breach. For example, in *Blue Mountains Conservation Society Inc v Delta Electricity,*[118] a local environmental initiative conducting water quality testing in the Blue Mountains, Streamwatch, brought attention to the existence of harmful pollutants in the Cox's River, believed to be caused by discharged waters from the nearby Wallerawang Power Station.[119] While the power station had consent to operate, its licence did not permit the discharge of the pollutants found. The Blue Mountains Conservation Society (BMCS), an environmental community organisation, engaged an independent water expert to undertake water quality testing, which confirmed the presence of the chemicals.[120] BMCS alerted the Sydney Catchment Authority, the Minister for the Environment and the Department of Environment and Climate Change (DECC). DECC advised the group in 2008 that it did not intend to prosecute Delta Electricity, the owner and operator of the power station, for water pollution offences.[121] In 2009, BMCS commenced civil enforcement proceedings against Delta Electricity.[122] The parties agreed to discontinue the legal action on the condition that Delta released a statement admitting that it had breached its licence by polluting waters contrary to s 120 of the *Protection of the Environment Operations Act 1997*, and agreed to submit an application to the Environment Protection Authority to vary its licence to specify maximum concentrations of each of the pollutants in the waste water discharged and include a condition requiring a water treatment program to reduce pollution.[123] While the community group in this instance was able to achieve an environmentally positive outcome, in many cases communities do not have the resources required to bring an action.

The actual impacts of a project operating within the terms of the consent may be greater, or different, than the impacts predicted in the EIS. The mitigation measures proposed to respond to the predicted impacts may be ineffective or insufficient. However, approvals to

[118] [2011] NSWLEC 145.
[119] Elaine Johnson, 'Blue Mountains Conservation Society v Delta Electricity' (2011) 3 *National Environmental Law Review* 35.
[120] Ibid.
[121] Ibid.
[122] *Blue Mountains Conservation Society v Delta Electricity* (2009) 170 LGERA 1, 4. (BMCS (No 1)).
[123] Delta Electricity and Blue Mountains Conservation Society, 'Positive steps in protecting the Coxs River' (Media Release, 17 October 2011).

carry out development on land run with the land and are rarely time limited.[124] The law values certainty, which can impede the flexibility required to deal with environmental problems. Science evolves, community expectations and needs evolve, and environmental problems evolve. Nature does not stand still. Yet project approvals remain static, involving "a once-and-for-all determination of the application with no opportunity to reconsider or impose new conditions of consent in response to evolving information or changes in circumstances".[125] By this time, the specialist consultants who prepare the EIS may no longer be involved in the project.[126]

This calls for an adaptive management approach, "a concept frequently invoked but less often implemented in practice."[127] Adaptive management requires defined goals and testing towards the achievement of these goals. Explicit performance standards or outcomes should be included in the conditions of the consent, providing opportunities to respond to changes in circumstances.[128] The project proponent may develop their own solutions to achieve these performance standards. Another approach is to impose conditions that cause the consent to expire or require additional conditions when certain time limits or environmental triggers are reached.[129]

Conclusion

Environmental impact assessment is an important aspect of environmental governance. It increases the salience of environmental issues in decisions to approve or reject projects and actions that will impact on the environment. This creates opportunities to avoid or minimise these impacts at the project level. However, environmental impact assessment struggles in a number of ways. I have identified three particular issues, relating to direct and indirect impacts (scope), cumulative impacts and the timing of EIA. These problems are of course not exhaustive. In the context of climate change in particular, agencies and courts have struggled to address climate change impacts in EIA. Climate change is a multiscalar problem.[130] The climate change problem will not be solved in one "fell swoop",[131] but by a

[124] Brian J Preston, 'Adapting to the impacts of climate change – limits and opportunities of law in conserving biodiversity' (2013) 30 *Environmental and Planning Law Journal* 375, 386.
[125] Ibid.
[126] Nicole Malone, 'Environmental Impact Monitoring' (1997) 14 *Environmental and Planning Law Journal* 222, 224.
[127] *Newcastle & Hunter Valley Speleological Society Inc v Upper Hunter Shire Council and Stoneco Pty Limited* (2010) 210 LGERA 126; [2010] NSWLEC 48, [184].
[128] Ibid; see also, *Sustain Our Sounds Inc v New Zealand Salmon Company Ltd* [2014] 1 NZLR 673; [2014] NZSC 40, [104]-[140].
[129] Brian J Preston, 'Adapting to the impacts of climate change – limits and opportunities of law in conserving biodiversity' (2013) 30 *Environmental and Planning Law Journal* 375, 386.
[130] See Hari M. Osofsky, 'Is Climate Change 'International'? Litigation's Diagonal Regulatory Role,' (2009) 49 *Virginia Journal of International Law* 3.

series of small, incremental responses across all scales. This highlights the importance of including climate change impacts in EIA and appropriately minimising these impacts at the project level. Addressing the reasons why EIA struggles with indirect impacts, cumulative impacts and timing will assist in improving the capacity of EIA to respond to environmental problems, including climate change.

[131] *Massachusetts v Environmental Protection Agency* (EPA) 549 US 497 (2007) [524].