

CLIMATE ASSESSMENT AS AN EMERGING OBLIGATION UNDER CUSTOMARY INTERNATIONAL LAW

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Abstract Environmental assessment (EA) is established in most countries as a procedure to ensure that administrative authorities are aware of the environmental impacts likely to result from the activities they approve. Many jurisdictions have moved towards including consideration for climate change mitigation in EA. Through a review of the law and practice of various States, this article suggests that such Climate Assessment is now emerging as a norm of customary international law.

Keywords: public international law, climate assessment, environmental assessment, climate change mitigation, customary international law, greenhouse gas emissions.

I. INTRODUCTION

Numerous human activities such as the burning of fossil fuels for power generation or transportation result in the emission of greenhouse gases (GHGs) which interfere with our climate system.¹ This causes widespread and far-reaching adverse consequences on human societies and ecosystems, affecting future generations the most.² States have unanimously recognized the necessity of mitigating climate change and pledged to act accordingly. They did so by ratifying treaties such as the UN Framework Convention on Climate Change (UNFCCC),³ the Kyoto Protocol⁴ and the Paris Agreement,⁵ and by communicating unilateral declarations such as the Cancún Pledges and Nationally Determined Contributions (NDCs).⁶ States are also bound by

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¹ See generally Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC 2014) 39–55. ² *ibid* 56–74.

³ United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107, art 4.1.

⁴ Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 11 December 1997) 2303 UNTS 162, art 3.1.

⁵ Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) 55 ILM 743, art 4.2.

⁶ See the interim registry of NDCs, <<http://www4.unfccc.int/ndcregistry/Pages/Home.aspx>>. On the legal value of NDCs as unilateral declarations, see generally B Mayer, 'International Law Obligations Arising in Relation to Nationally Determined Contributions' TEL (forthcoming).

customary international law. In this regard, the due diligence obligation of a State within its territory⁷ has been analysed as including a broad obligation to prevent excessive greenhouse gas emissions.⁸

States have sought to comply with their obligations by adopting diverse measures. Most attention has focused on market-based mechanisms, implemented among others in the European Union,⁹ some Northern-American regions¹⁰ and China,¹¹ whereby public authorities issue a limited number of GHG emission allowances and regulate a secondary market. Elsewhere, economic incentives were imposed through taxes on GHG emissions and subsidies to alternative activities.¹² Yet, States have also used other tools, for instance their control over State-owned enterprises,¹³ to reduce GHG emissions within their jurisdiction or under their control. This article focuses on an oft-neglected¹⁴ tool for climate change mitigation, namely Environmental Assessment (EA) procedures.

EA procedures seek to ensure that decisions to authorize activities likely to have an impact on the environment are well-informed. EA procedures typically involve scientific documentation of foreseeable risks and public consultations. Since the 1970s, most countries have established mandatory EA frameworks. A vast range of potential environmental impacts are generally assessed, including for instance air, water and soil pollution affecting individuals, societies or ecosystems within the project's site and its vicinity. Beyond national borders, the International Court of Justice (ICJ) has held that the due diligence of a State within its territory entails that a State must conduct

⁷ *Corfu Channel Case (UK v Albania)* (Merits) [1949] ICJ Rep 4, 22. See also references (n 42).

⁸ See generally B Mayer, 'The Place of Customary Norms in Climate Law: A Reply to Zahar' (2018) 8(3-4) *Climate Law* (forthcoming); B Mayer, 'The Relevance of the No-Harm Principle to Climate Change Law and Politics' (2016) 19 *Asia-Pacific Journal of Environmental Law* 79. See also ILC, 'Draft Guidelines on the Protection of the Atmosphere' in *ILC Report at Its Seventieth Session*, UN Doc A/73/10 (2018) guideline 3. Greenhouse gas emissions are 'excessive' when they are not justified by necessity (eg human breathing or a minimal level of industrial development).

⁹ See Parliament and Council Directive 2003/87, 2003 OJ L275/32 (EC).

¹⁰ See in particular California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, Cal. Code Regs. tit. 17 sections 95800sq; Ontario Cap and Trade Program, Reg. 144/16; Quebec Regulation Respecting A Cap-and-Trade System for Greenhouse Gas Emission Allowances, ch. Q-2 r. 46.1.

¹¹ China National Development and Reform Commission, 全国碳排放权交易市场建设方案 (发电行业) (Construction Plan of the National Carbon Emission Trading Scheme (Power Sector)) 19 December 2017.

¹² See eg World Bank Group, *State and Trends of Carbon Pricing 2017* (November 2017); A Baranzini, 'Carbon Pricing in Climate Policy: Seven Reasons, Complementary Instruments, and Political Economy Considerations' (2017) 8 *WIREs Climate Change* e462.

¹³ See eg B Mayer, M Rajavuori and Fang Meng, 'The Contribution of State-Owned Enterprises to Climate Change Mitigation in China' (2017) 7(2-3) *Climate Law* 97.

¹⁴ For instance, CR Sunstein's review of the achievements of the Obama administration on the climate front does not mention important developments with regard to the extension of NEPA review to GHG emissions. See CR Sunstein, 'Changing Climate Change, 2009–2016' (2018) 42 *Harvard Journal of Environmental Law* 231. On the developments in question, see references nn 108 and 109 and accompanying text.

an EA before authorizing an activity likely to cause significant transboundary environmental harm.¹⁵

Debates have emerged in various countries about the potential contribution of EA to climate change mitigation. In many instances, EAs have been extended to include an assessment of the impact that a proposed activity would have on the climate system, or ‘Climate Assessment’ (CA).¹⁶ In 2017 alone, national courts quashed the administrative approvals to the construction of a pipeline (United States),¹⁷ a coal-fired power plant (South Africa)¹⁸ and an airport (Austria)¹⁹ on the ground that the relevant EA documentations had failed to include a CA. The same year, EU Member States were required to ensure that their domestic EA legislation involved a CA reflecting ‘for example the nature and magnitude of greenhouse gas emissions’.²⁰ The importance of the topic was also recognized by the community of EA consultants, as the 37th Annual Meeting of the International Association for Impact Assessment (IAIA), held in April 2017 in Montreal, was placed under the theme: ‘impact assessment’s contribution to the global efforts in addressing climate change’.²¹

This article assesses whether conducting a CA is an obligation under customary international law. The question has not been previously addressed in any authoritative way. Unlike cases previously settled by the ICJ,²² GHG emissions do not constitute ‘transboundary’ environmental harm—they do not affect any particular area, but rather the entire climate system. As the contribution of any given activity to climate change is always marginal and unlikely to have a measurable impact on any particular areas, populations or States, the relevance of EA as a tool for climate change mitigation is less obvious than in relation to transboundary environmental harm. For instance, the Draft Conclusions on the protection of the atmosphere adopted by the International Law Commission (ILC) in first reading in August 2018 provided only a passing and equivocal treatment to the question of an

¹⁵ See *Pulp Mills on the River Uruguay (Argentina v Uruguay)*, 2010 ICJ Rep 14, paras 203–210; *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v Costa Rica)*, merits, 2015 ICJ Rep 665, paras 101–105 and 142–162. See also *Responsibilities and obligations of States with respect to activities in the Area*, Case No 17, Advisory Opinion (ITLOS Seabed Disputes Chamber, 1 February 2011) 50 ILM 458 (2011), paras 141–150.

¹⁶ This article does not address the question of the integration of climate change adaptation in EAs. The two questions are often treated together in official documents, but they are conceptually distinct.

¹⁷ *Sierra Club v Federal Energy Regulatory Commission*, 867 F.3d 1357 (D.C. Cir.) (22 August).

¹⁸ *Earthlife Africa Johannesburg v Minister of Environmental Affairs* (case 65662/2016) [2017] ZAGPPHC 58, [2017] 2 All SA 519 (GP) (8 March).

¹⁹ Bundesverwaltungsgericht [Federal Administrative Court] (W109 2000179-1/291E) (2 February). This decision was overturned in *Verfassungsgerichtshof* [Constitutional Court], E 875/2017 and E 886/2017 (2 August 2017).

²⁰ See Parliament and Council Directive 2014/52, 2014 OJ L124/1, Annex IV para 4.

²¹ See information on the website of the 37th Annual Conference of the IAIA, <<http://conferences.iaia.org/2017/index.php>>.

²² See (n 15).

obligation of States to conduct an EA in relation to activities likely to have an unintended impact on the global environment.²³

This article identifies an emerging norm of customary international law requiring States to conduct a CA concerning activities carried out within a State's jurisdiction or control that risk causing excessive greenhouse gas emissions. This obligation cannot directly be deducted from the well-recognized obligation to conduct an EA in a transboundary context (or from the due diligence obligation of a State within its territory from which the latter obligation derives) because unique questions arise with regard to the relevance of EA to address incremental contributions to global environmental impacts. Therefore, in addition to retracing the recognition of EA in a transboundary context, this article reviews the general practice of States and its acceptance as law, as well as conceptual hurdles specific to CA. It thus intends to demonstrate that States' support to the conduct of CA is nearly sufficient for the formation of a norm of customary international law.

The article is organized as follows. As a background, Section II describes the global recognition of EAs as a tool for environmental protection. Section III retraces the emergence of CAs as a norm of customary international law. Lastly, Section IV discusses common concerns relating to certain modalities of implementation of CA.

II. THE GLOBAL RECOGNITION OF EA PROCEDURES AS A TOOL FOR ENVIRONMENTAL PROTECTION

As a background, this section shows the global recognition of EA procedures as a tool for environmental protection. The first subsection identifies EA procedures as a general trend in State practice. The second subsection retraces its recognition as an international law obligation in a transboundary context. The third subsection concludes on the relevance of these developments in relation to climate change mitigation.

A. EA Procedures as a General Practice

EA, as defined by the IAIA, is 'the process of identifying, predicting, evaluating and mitigating the bio-physical, social and other relevant effects of development proposals prior to major decisions being taken and commitments made'.²⁴ The UN Environment Programme (UNEP) describes EA as involving 'an examination, analysis and assessment of planned activities with a view to ensuring environmentally sound and sustainable development'.²⁵ EA typically involves

²³ 'Draft Guidelines on the Protection of the Atmosphere' (n 8) guideline 4.

²⁴ J de Jesus, *What Is Impact Assessment?* (IAIA October 2009) <http://www.iaia.org/uploads/pdf/What_is_IA_web.pdf> 1.

²⁵ UNEP, *Goals and Principles of Environmental Impact Assessment* (16 January 1987) preamble, endorsed by decision 14/25 of the Governing Council of UNEP (17 June 1987) in *Report of the Governing Council*, UN Doc A/42/25, 77, para 1.

an expert assessment and public consultations before a decision to authorize the proposed activity can be made, possibly with conditions.

The origins of this tool are often traced back to the US National Environmental Policy Act (NEPA) of 1969, which directs federal agencies proposing any ‘major Federal actions’ capable of having a significant impact on the environment to conduct public consultation based on a ‘detailed statement’²⁶ of this possible impact. This statement documents the likelihood and the nature of the impact, but also possible alterations or alternatives to the proposed activity which could mitigate the impact. The NEPA review is an ‘ostensibly procedural commitment’,²⁷ which, as Judge Stevens noted, ‘merely prohibits uninformed – rather than unwise – agency action’.²⁸ Its rationale is that a clear scientific assessment of the proposed activity and public scrutiny could permit balanced consideration for environmental concerns in sensitive activities.

In the half century since the adoption of NEPA, the idea that an EA should be carried out before a project is approved spread to US states²⁹ and, beyond, to most countries, often in the form of a statutory procedure.³⁰ Although the trend is clearer in developed countries,³¹ most developing countries have also established EA laws,³² although implementation is sometimes incomplete.³³ The relevance of EA was recognized in the World Charter for Nature of 1982³⁴ and in the Rio Declaration on Environment and Development of

²⁶ NEPA 1969 section 102, 42 USC section 4332(C) (2018).

²⁷ N Craik, *The International Law of Environmental Impact Assessment: Process, Substance and Integration* (Cambridge University Press 2008) 5.

²⁸ *Robertson v Methow Valley Citizens Council*, 490 U.S. 332, 351 (1989).

²⁹ See for instance *California Environmental Quality Act*, Cal. Pub. Res. Code sections 21000-21189.57 (2017); Massachusetts Environmental Protection Act, Mass. Gen. Law chapter 30, section 61 (2016).

³⁰ See eg UNEP, *Assessing Environmental Impacts: A Global Review of Legislation* (2018); R Morgan, ‘Environmental Impact Assessment: The State of the Art’ (2012) 30 *Impact Assessment & Project Appraisal* 5; H Abaza *et al.*, *Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach* (2004). See generally N Craik, ‘Environmental Assessment: A Comparative Legal Analysis’ in JE Viñuales and E Lees (eds), *Oxford Handbook of Comparative Environmental Law* (Oxford University Press forthcoming).

³¹ See eg NEPA 1969 section 102, 42 USC section 4332(C) (2018); Council Directive 85/337, 1985 OJ L175/40, replaced by Parliament and Council Directive 2011/92, 2012 OJ L26/1; Canadian Environmental Assessment Act 2012 section 52, S.C. 2012, c. 19.

³² See eg 环境影响评价法 (Environmental Assessment Act) 28 October 2002; Ministry of Environment and Forests, ‘Environmental Impact Assessment Notification’ 28 January 1994, revised 14 September 2006 (India).

³³ See for instance A Clausen, ‘An Evaluation of the Environmental Impact Assessment System in Vietnam: The Gap between Theory and Practice’ (2011) 31 *Environmental Impact Assessment Review* 136.

³⁴ See UNGA Res 37/7, ‘World Charter for Nature’ (1982) para 11(c) and 16. EAs were also included in early drafts of the Stockholm Declaration on the Human Environment but withdrawn from the final version due to objections by developing States. See W Rowland, *The Plot to Save the World: The Life and Times of the Stockholm Conference on the Human Environment* (Clarke 1973) 54.

1992;³⁵ it is also affirmed in the draft of a Global Compact for the Environment currently under negotiations.³⁶

A distinction has been made between project-based EA, also called 'Environmental Impact Assessment' (EIA), and 'Strategic Environmental Assessment' (SEA) conducted in relation to policies, plans and programmes well before particular projects are developed. While NEPA applies the same EA procedure to projects and strategies, distinct procedures have been established in some jurisdictions. In the EU, for instance, SEA procedure is established under a different directive,³⁷ while China's EA Law establishes EIA and SE procedures in two different chapters.³⁸

B. The Recognition of EAs in a Transboundary Context

With public consultations as a central feature,³⁹ EA procedures were first conceived of within the boundaries of a political community and did not originally apply to transboundary environmental impacts.⁴⁰ On the other hand, both the Stockholm Declaration on the Human Environment and the Rio Declaration on Environment and Development restated that States have 'the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction'.⁴¹ International courts and tribunals recognized the so-called 'no-harm principle' as customary international law.⁴²

The no-harm principle requires States to implement reasonably appropriate measures or 'due diligence'.⁴³ At the very least, this due diligence obligation requires that a State does no less effort to avoid transboundary environmental harm than it does to avoid environmental harm within its own territory.⁴⁴ This means that, if a State has a statutory EA procedure that seeks to avoid

³⁵ 'Rio Declaration on Environment and Development' (1992) principle 17.

³⁶ See the draft of a Global Pact for the Environment proposed by an informal group of environmental lawyers <<http://pactenvironment.org/>> (2017) art 5(3). See also UNGA Res 72/277 (2018).

³⁷ Parliament and Council Directive 2001/42, 2001 OJ L197/30 (SEA).
³⁸ China, EA Act (n 32) arts 7–15. The modalities of application of SEA were adopted by the State Council in 规划环境影响评价条例 (Regulation on Strategic Environmental Assessment), Order No 559 (17 August 2009).

³⁹ Craik, *The International Law of EIA* (n 27) 4.
⁴⁰ On NEPA, see for instance JH Knox, 'The Myth and Reality of Transboundary Environmental Impact Assessment' (2002) 96 AJIL 291, 298.

⁴¹ See 'Stockholm Declaration on the Human Environment' (1972) 11 ILM 1416, principle 21; 'Rio Declaration' (n 35) principle 2.

⁴² See eg *Trail smelter (United States v Canada)*, III RIAA 1905, 1965 (Perm. Ct. Arb. 1941); *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, 1996 ICJ Rep 226, para 29.

⁴³ B Mayer, 'Obligations of Conduct in the International Law on Climate Change: A Defence' (2018) 27(2) Review of European, Comparative and International Environmental Law 130.

⁴⁴ See in particular OECD Council Recommendation C(77) 28(Final), 'Implementation of a Regime of Equal Right of Access and Non-Discrimination in Relation to Transfrontier Pollution' (1977) annex, principle 3(a), noting that 'each country should ensure that its regime of environmental protection does not discriminate between pollution originating from it which affects or is likely to affect the area under its national jurisdiction and pollution originating from it which affects or is likely to affect an exposed country'.

or reduce harm, this procedure should apply equally whether the harm would occur within its territory or beyond its borders. More broadly, EA could be approached as a general requirement implied by the due diligence obligation of States to ensure that activities carried out within their jurisdiction do not cause transboundary environmental harm, whether or not a State has such a requirement to avoid or reduce environmental harm within its own territory.⁴⁵

UNEP has actively promoted the application of EA procedures to activities likely to cause transboundary environmental harms. In 1978, the agency adopted a guidance on the conservation and harmonious utilization of shared natural resources where it suggested that ‘States should make environmental assessment before engaging in any activity with respect to a shared natural resource which may create a risk of significantly affecting the environment of another State or States sharing that resource.’⁴⁶ In 1987, the Goals and Principles of Environmental Impact Assessment called upon States to:

conclude bilateral, regional or multilateral arrangements, as appropriate, so as to provide, on the basis of reciprocity, notification, exchange of information, and agreed-upon consultation on the potential environmental effects of activities under their control or jurisdiction which are likely to significantly affect other States or areas beyond national jurisdiction.⁴⁷

Since the 1980s, provisions were included in issue-specific treaties which reflected the growing recognition of the obligation of State to conduct EAs in relation to activities likely to cause transboundary environmental harm. In particular, the UN Convention on the Law of the Sea (UNCLOS) requires States, when planning activities which could cause significant harm to the marine environment, to ‘assess the potential effects of such activities on the marine environment’ and to ‘communicate reports of the results of such assessments’ to other States via competent international organizations.⁴⁸ The Protocol on Environmental Protection to the Antarctic Treaty of 1991 contains detailed provisions on the EA which is to be conducted before any impactful activity can be undertaken in the Antarctic Treaty Area, including the circulation of information to all Parties and to a Committee for Environmental Protection.⁴⁹ A year later, a provision was also inserted in the Convention on Biological Diversity, calling upon States, ‘as far as possible

⁴⁵ See *Pulp Mills* (n 15) para 204; *Certain Activities* (n 15) para 104.

⁴⁶ UNEP, ‘Draft Principles of Conduct in the Field of the Environment for the Guidance of States in the Conservation and Harmonious Utilization of Natural Resources Shared by Two or More States’ (1978), 17 ILM 1094 (1978), principle 4.

⁴⁷ UNEP, *Goals and Principles* (n 25) principle 11.

⁴⁸ UN Convention on the Law of the Sea (adopted on 10 December 1982, entered into force 16 November 1994) 1833 UNTS 397, art 206.

⁴⁹ Protocol on Environmental Protection to the Antarctic Treaty (adopted 4 October 1991, entered into force 14 January 1998) 30 ILM 1455 (1991).

and as appropriate', to introduce EIA procedures for projects likely to have significant adverse effects on biological diversity.⁵⁰

Furthermore, in 1991, the Member States of the UN Economic Commission for Europe (UNECE) adopted a dedicated treaty on EIAs in a transboundary context in Espoo, Finland.⁵¹ The Espoo Convention provides that the 'Party of origin' of certain projects must notify the 'affected Party' if the project is likely to cause a significant adverse transboundary impact, leaving to the latter the option to participate in an EIA procedure that the former must conduct before authorizing the project.⁵² The procedure must consist in the preparation of the EIA documentation, where the affected Party may be requested to provide information, followed by a phase of consultations, leading to a decision by the Party of origin.⁵³ While the Espoo Convention was originally limited to the Member of the UNECE, steps have been taken towards allowing accession by other UN Member States.⁵⁴

While the Espoo Convention only imposed the conduct of an EIA, it encouraged the Parties, '[t]o the extent appropriate', to 'endeavour to apply the principles of environmental impact assessment to policies, plans and programmes'.⁵⁵ Further negotiations led to the adoption of the Kiev Protocol on SEA in 2003.⁵⁶ The Kiev Protocol requires that States conduct a SEA for certain plans and programmes.⁵⁷ It outlines a procedure that States must follow whether or not the plan or programme is likely to have such transboundary effects, including the screening plans and programmes,⁵⁸ the scoping and preparation of environmental reports,⁵⁹ and public participation.⁶⁰ It also defines a procedure for transboundary consultations⁶¹ and for the participation of the public of the affected country⁶² applicable when a plan or programme is likely to produce significant transboundary environmental effects. Participation to the Kiev Protocol is opened to all UN Member States,⁶³ although only UNECE Member States have ratified it to date.

The Espoo Convention and its Kiev Protocol contributed, along with UNCLOS, the Protocol on Environmental Protection to the Antarctic Treaty

⁵⁰ Convention on Biological Diversity (adopted 5 June 1992, entered into force 29 December 1993) 1760 UNTS 79, art 14(1)(a).

⁵¹ 'Espoo' Convention on Environmental Impact Assessment in a Transboundary Context (adopted 25 February 1991, entered into force 10 September 1997) 1989 UNTS 309. The UNECE comprises 56 States located in Europe, Northern America and Central Asia.

⁵² *ibid* art 3.

⁵³ *ibid* art 5.

⁵⁴ 'Sofia' Amendment to the Convention on Environmental Impact Assessment in a Transboundary Context (adopted 27 February 2001, entered into force 26 August 2014) UN Doc ECE/MP.EIA/4. This provision of the Amendment will be effective until it enters into force for all the Parties that were Party to the Convention in 2001. See Geneva Declaration (June 2014) UN Doc ECE/MP.EIA/20/Add.3 – ECE/MP.EIA/SEA/4/Add.3, preamble to section B.

⁵⁵ Espoo Convention (n 51) art 2.7.

⁵⁶ 'Kiev' Protocol on Strategic Environmental Assessment to the convention on Environmental Impact Assessment in a Transboundary context (adopted 21 May 2003, entered into force 11 July 2010) 2685 UNTS 140.

⁵⁷ *ibid* art 4.2.

⁵⁸ *ibid* art 5.

⁵⁹ *ibid* arts 6 and 7.

⁶⁰ *ibid* art 8.

⁶¹ *ibid* art 10(1).

⁶² *ibid* art 10(4).

⁶³ *ibid* art 23(3).

and the Convention on Biological Convention, to the crystallization of a new norm of customary international law:⁶⁴ the obligation of States to conduct an EA before approving a proposed activity likely to cause transboundary environmental harm. This new obligation was recognized by the ILC as early as 2001 through the adoption of the Draft Articles on the Prevention of Transboundary Harms from Hazardous Activities, stating that the decision to authorize an activity within the scope of the Draft Articles ‘shall ... be based on an assessment of the possible transboundary harm caused by that activity, including any environmental impact assessment’.⁶⁵

This view was later confirmed by the ICJ. In its 2010 judgment in *Pulp Mills*, the ICJ recognized the existence of ‘a requirement under general international law to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource’.⁶⁶ The Court added that ‘due diligence, and the duty of vigilance and prevention which it implies, would not be considered to have been exercised’ if a State did not undertake an EIA before approving a project with liable to affect transboundary environmental resources.⁶⁷ Yet, the Court stopped short from specifying what this procedure should contain,⁶⁸ in particular, it rejected Argentina’s claim that Uruguay had an obligation to consult the Argentinian population likely to be affected by the proposed activity.⁶⁹

In its 2015 judgment in *Certain Activities*, the ICJ noted again the existence of ‘an obligation to conduct an environmental impact assessment concerning activities carried out within a State’s jurisdiction that risk causing significant harm to other States’.⁷⁰ It stated that this obligation was applicable ‘generally to proposed activities which may have a significant adverse impact in a transboundary context’.⁷¹ The ICJ noted that, where an EA reveals an actual risk of significant transboundary harm, the State planning to undertake the activity is required ‘to notify and consult in good faith with the potentially affected States, where that is necessary to determine the appropriate measures

⁶⁴ On the relations between treaties and international customs, see generally ILC, ‘Draft conclusions on identification of customary international law adopted in first reading’ in *ILC Report at its Seventieth Session*, UN Doc A/73/10 (2018) conclusion 11(1)(b); *North Sea Continental Shelf (Federal Republic of Germany v Netherlands)*, 1969 ICJ Rep 3, para 76; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Croatia v Serbia)*, merits, 2015 ICJ Rep 3, para 87; RR Baxter, *Multilateral Treaties as Evidence of Customary International Law* (1965–1966) 41 BYBIL 275. On their own, the Espoo Convention and its Kiev Protocol do little to suggest the formation of a norm of customary international law, since they remain largely limited to a region (albeit broad) and define obligations on the basis of reciprocity. Yet, these two treaties take place in a context where provisions on EA have been introduced in a number of other treaties of a global scope.

⁶⁵ ILC, ‘Draft Articles on Prevention of Transboundary Harm from Hazardous Activities’ in *ILC Yearbook* (2001) vol II, Pt two, 148.

⁶⁶ See *Pulp Mills* (n 15) para 204.

⁶⁷ *ibid.* See also *Activities in the Area* (n 15) paras 141–150.

⁶⁸ See *Pulp Mills* (n 15) para 205.

⁶⁹ *ibid* para 216.

⁷⁰ *Certain Activities* (n 15) para 101.

⁷¹ *ibid* para 104.

to prevent or mitigate that risk'.⁷² Overall, this judgment confirmed that compliance with the procedural obligation to conduct an EA is to be assessed separately from compliance with the substantive obligation not to cause transboundary environmental harm. In this case, the ICJ concluded that Costa Rica had violated its obligation to conduct an EA in a transboundary context even though no significant transboundary environmental harm had arisen from the realization of the project.⁷³

C. The Significance of Existing Authorities to Climate Change

While *Pulp Mills* and *Certain Activities* regarded transboundary environmental harm affecting the territory of a third State, the obligation to conduct an EIA also applies in relation to activities which could affect areas beyond national jurisdiction. Treaty-based obligations to conduct an EA apply when harm could affect the Antarctic⁷⁴ or the high seas,⁷⁵ and the Stockholm Declaration on the Human Environment defined the no-harm principle as applying not only when damage affects the territory of another State, but also when it affects 'areas beyond the limits of national jurisdiction'.⁷⁶ In 2011, the Seabed Chamber of the International Tribunal on the Law of the Seas (ITLOS) in its Advisory Opinion on *Activities in the Area* recognized that the ICJ's reasoning in a transboundary context in *Pulp Mills* 'may also apply to activities with an impact on the environment in an area beyond the limits of national jurisdiction'.⁷⁷ EA is among the issues that the UN General Assembly decided to defer to the negotiations that it initiated in 2018 towards the adoption of an international legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.⁷⁸

Likewise, it is relatively well accepted that the no-harm principle applies to 'common concerns of humankind'⁷⁹ such as climate change. The obligation for a State to ensure that activities conducted within its jurisdiction do not cause transboundary environmental harm suggests *a fortiori* an obligation to ensure that such activities do not cause harm to the global environment as a whole.⁸⁰ Consistently, the Preamble of the UNFCCC,⁸¹ the International Law Association's Draft Articles on the Legal Principles relating to Climate Change,⁸² the ILC's Draft Guidelines on the Protection of the Atmosphere⁸³

⁷² *ibid* para 104.

⁷³ *ibid* para 229(6) and 220, respectively.

⁷⁴ See (n 48).

⁷⁵ See (n 49).

⁷⁶ 'Stockholm Declaration' (n 41) principle 21. See also 'Rio Declaration' (n 35) principle 2. See also *Nuclear Weapons* (n 42) para 29.

⁷⁷ *Activities in the Area* (n 15) para 148. See also *South China Sea (Philippines v China)*, PCA case No 2013-19, merits, paras 987–993.

⁷⁸ See UNGA Res 72/249 (2017) para 2.

⁷⁹ UNFCCC (n 3) recital 1.

⁸⁰ See discussion in Mayer, 'Place of Customary Norms' (n 8).

⁸¹ See *ibid* recital 9.

⁸² International Law Association, Resolution 2/2014 'Declaration of Legal Principles Relating to Climate Change' (2014) art 7A.

⁸³ 'Draft Guidelines on the Protection of the Atmosphere' (n 8) guideline 3.

and academic analysis⁸⁴ suggest that States have an obligation, under general international law, to prevent excessive GHG emissions within their jurisdiction or under their control.

By contrast, there is little authority regarding the application of the obligation to conduct an EA in relation to common concerns. The UNFCCC only defines a very general commitment for Parties to '[t]ake climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions'.⁸⁵ The Convention on Biological Diversity goes arguably further, in relation to another common concern,⁸⁶ by requiring that its Parties establish EIA procedures.⁸⁷ None of these provisions, however, provides sufficient support, on its own, to the existence of a customary international law obligation to conduct an EA in relation to common concerns.⁸⁸

Nevertheless, the ILC's Draft Guidelines on the Protection of the Atmosphere suggest that 'States have the obligation to ensure that an environmental impact assessment is undertaken of proposed activities under their jurisdiction or control which are likely to cause significant adverse impact on the atmosphere in terms of ... atmospheric degradation'⁸⁹ such as climate change.⁹⁰ The Commentary acknowledges the lack of relevant authority on the obligation to conduct an EA in a global environmental context, but it suggests that precedents developed in a transboundary context could apply '*a fortiori* to those activities potentially causing global atmospheric degradation'.⁹¹ While the Draft Guidelines mention 'intentional large-scale modification of the atmosphere' (ie geo-engineering activities) as an example,⁹² they do not take a clear position on the application of this obligation in relation to activities that involve unintentional and typically smaller-scale degradation of the atmosphere through GHG emissions.

The *a fortiori* argument which forms the core of the ILC's analysis is valid with regard to a general substantive obligation such as the no-harm principle: as States must take measures to prevent transboundary harm, it is to be expected that they should also *a fortiori* take measures to prevent atmospheric degradation, as atmospheric degradation is of a similar nature and generally of greater concern than transboundary harm.⁹³ By contrast, this argument

⁸⁴ B Mayer, 'The Relevance of the No-Harm Principle to Climate Change Law and Politics' (2016) 19 APJEL 79; B Mayer, 'Construing International Climate Change Law as a Compliance Regime' (2018) 7 TEL 115; B Mayer, 'The Applicability of the Principle of Prevention to Climate Change: A Response to Zahar' (2015) 5 Climate Law 1.

⁸⁵ UNFCCC (n 3) art 4.1(f).

⁸⁶ *ibid*, second recital; Convention on Biological Diversity (n 50), fourth recital.

⁸⁷ Convention on Biological Diversity (n 50) 14(1)(a).

⁸⁸ See N Craik, 'Principle 17' in JE Viñuales (ed), *The Rio Declaration on Environment and Development: A Commentary* (Oxford University Press 2015) 451, 458.

⁸⁹ 'Draft Guidelines on the Protection of the Atmosphere' (n 8) Guideline 4.

⁹⁰ *ibid* Guideline 1(c).

⁹¹ *ibid*, commentary under guideline 4, para 6.

⁹² *ibid* guideline 7. See also *ibid*, commentary under guideline 4, para 6.

⁹³ See references cited in (n 80).

does not necessarily work when applied in relation to an instrumental obligation such as the obligation to conduct an EA: it all depends, then, upon the relevance of the tool in relation to the case of greater concern, that is, the relevance of EA as a tool to avoid or reduce the contribution of a proposed activity to global environmental harm. In other words, before concluding that the obligation to conduct an EA applies *a fortiori* in relation to atmospheric degradation, the ILC would need to determine whether and to what extent EA is an effective tool to address atmospheric degradation. As this determination relates to identification of customary international law, it should be done from the perspectives of States. As appears through the next sections, States have progressively accepted EA as a relevant tool for climate change mitigation.

III. THE EMERGENCE OF CA AS AN INTERNATIONAL OBLIGATION

This section suggests that there is an emerging norm of customary international law according to which a State is required to carry out a CA before authorizing a proposed activity likely to contribute significantly to climate change. A norm of customary international law is constituted by the existence of a general practice of States accepted as law.⁹⁴ The first subsection reviews the growing trend in State practice, while the following subsection identifies evidence that this practice has increasingly been accepted as law. More technical questions relating to the scope and modalities of CA and possible objections to the feasibility and relevance of this procedure are discussed in the following section.

A. A Growing State Practice

A general practice, for the purpose of asserting the existence of a norm of customary international law, does not need to be uniform. Rather, as interpreted by the ILC, it should consist in a practice which is 'sufficiently widespread and representative, as well as consistent'.⁹⁵ In most cases, original EA laws did not include specific provisions on climate change mitigation: whether the GHG emissions implied by a proposed activity had to be included in the EA was decided subsequently, through the interpretation of existing legal framework or sometimes their revision. Either way, developments have been slow, often incremental, yet generally steady and unidirectional. Today, the inclusion of consideration for GHG emissions in national EA procedures has become sufficiently widespread, representative and consistent to constitute a prevailing and, arguably, 'general' practice.

⁹⁴ See Statute of the International Court of Justice (adopted 26 June 1945, entered into force 24 October 1945) 3 Bevens 1179, art 38(1)(b); ILC, 'Customary International Law' (n 64) conclusion 2.

⁹⁵ ILC, 'Customary International Law' (n 64) conclusion 8, para 1.

First of all, many EA laws require the assessment of all environmental impacts, in terms which are sufficiently broad to include GHG emissions.⁹⁶ This enabled courts to play an important role in identifying and interpreting a CA requirement in existing EA frameworks. In particular:

- In the United States, the Court of Appeal for the Ninth Circuit in *Center for Biological Diversity v National Highway Traffic Safety Administration* held that a preliminary NEPA assessment of a new fuel economy standard applicable to some vehicles should have assessed the impact of these standards on climate change.⁹⁷
- In the United Kingdom, the Queen's Bench Division confirmed that climate change was a relevant consideration before a local authority could consent to an increase in the capacity or in the number of flights at an airport.⁹⁸
- In New Zealand, the High Court held that a local government could consider the impact of a coal plant on climate change when deciding whether to authorize it.⁹⁹
- In South Africa, the High Court declared that the EIA for a coal-fired power plant should have included a climate change impact assessment.¹⁰⁰
- In Australia, the Civil and Administrative Tribunal of Victoria decided that the EIA of a coal power plant should document the GHG emissions which would result from its operations,¹⁰¹ while the Land and Environment Court of New South Wales required the EIA of a coal mining project to include an assessment of the GHG emissions resulting from the end-use of the coal.¹⁰²
- In Austria, the Federal Administrative Court quashed the administrative approval for the construction of a third runway at Vienna's International Airport on the ground that the project's

⁹⁶ See J Peel, 'Environmental Impact Assessment and Climate Change' in M Faure (ed), *Elgar Encyclopedia of Environmental Law* (Edward Elgar 2016) 348, 251.

⁹⁷ *Center for Biological Diversity v National Highway Traffic Safety Administration*, 538 F.3d 1172 (9th Cir. 2008). See also *Border Power Plant Working Group v. Department of Energy*, 260 F. Supp. 2d 997 (S.D. Cal. 2003); *Mid States Coalition for Progress v Surface Transportation Board*, 345 F. 3d 520 (8th Cir. 2003).

⁹⁸ *Barbone and Ross (on behalf of Stop Stansted Expansion) v Secretary of State for Transport* [2009] EWHC 463; *R. (on the application of Griffin) v Newham London Borough Council* [2011] EWHC 53.

⁹⁹ *Greenpeace New Zealand v Northland Regional Council* [2007] NZRMA 87.

¹⁰⁰ *Earthlife Africa Johannesburg* (n 18).

¹⁰¹ *Australian Conservation Foundation v Latrobe City Council* (2004) 140 LGERA 100, paras 43–47.

¹⁰² *Gray v Minister for Planning and Others* [2006] NSWLEC 720. See generally A Rose, 'Gray v Minister for Planning: The Rising Tide of Climate Change Litigation in Australia' (2007) 29 SydLR 725. See also, more recently, *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7. But see, by contrast, *Coast and Country Association of Queensland Inc. v Smith* [2016] QCA 242 (Queensland).

economic benefits did not outweigh its environmental impact, including on climate change.¹⁰³ This judgment was overturned by the Constitutional Court which, however, agreed that the impact of the project on climate change had to be taken into account.¹⁰⁴

Secondly, national governments have adopted guidelines and lawmakers have revised existing EA procedures in order to establish and clarify a CA requirement. In particular:

- In the United States, following some initiatives at the state level¹⁰⁵ and previous hints at the Federal level,¹⁰⁶ the Council on Environmental Quality (CEQ) issued draft guidance documents on consideration of the effects of climate change and GHG emissions in NEPA reviews in 1997,¹⁰⁷ 2010¹⁰⁸ and 2014,¹⁰⁹ followed by a final guidance in 2016.¹¹⁰ The final guidance was withdrawn by executive order in 2017,¹¹¹ but courts have continued to rely on it,¹¹² or else on the 2014 draft guidance,¹¹³ as persuasive authorities.
- In Canada, a 'general guidance for practitioners' was developed by a federal-provincial-territorial committee in 2003,¹¹⁴ and related

¹⁰³ Bundesverwaltungsgericht (n 19).

¹⁰⁴ Verfassungsgerichtshof 2017 (n 19).

¹⁰⁵ See discussion in MB Gerrard, 'Climate Change and the Environmental Impact Review Process' (2008) 22 *Natural Resources & Environment* 20.

¹⁰⁶ See for instance CEQ, 'Considering Cumulative Effects under the National Environmental Policy Act' (January 1997), mentioning climate change among other cumulative impacts at 7, 9 and 13.

¹⁰⁷ CEQ, 'Draft Guidance Regarding Consideration of Global Climate Change in Environmental Documents Prepared Pursuant to the National Environmental Policy Act' (8 October 1997).

¹⁰⁸ CEQ, 'Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions' (18 February 2010) <<https://ceq.doe.gov/docs/ceq-regulations-and-guidance/20100218-nepa-consideration-effects-GHG-draft-guidance.pdf>>.

¹⁰⁹ CEQ, 'Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews', 69 *Fed. Reg.* 77802 (24 December 2014). See generally JA Wentz, 'Draft NEPA Guidance Requires Agencies to Consider Both GHG Emissions and the Impact of Climate Change on Proposed Actions' (2015) 26 *Environmental Law in New York* 57.

¹¹⁰ CEQ, 'Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews', 81 *Fed. Reg.* 51866 (5 August 2016) <https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_GHG_guidance.pdf>.

¹¹¹ Exec. Order No 13783, 'Promoting Energy Independence and Economic Growth' (28 March 2017) section 3(c). See also CEQ, 'Withdrawal of Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews', 82 *Fed. Reg.* 16576-77 (5 April 2017), confirming that 'the withdrawal of the guidance does not change any law, regulation, or other legally binding requirement'.

¹¹² See *San Juan Citizens Alliance v United States Bureau of Land Management*, 326 F.Supp.3d 1227 at 1243 and note 5 (D. New Mexico 2018).

¹¹³ See *AquAlliance v U.S. Bureau of Reclamation*, 287 F.Supp.3d 969, 1028 and note 31 (E.D. Cal. 2018).

¹¹⁴ The Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment, *Incorporating Climate Change Considerations in Environmental Assessment*:

instruments have since been adopted at the provincial level.¹¹⁵ Furthermore, at the time of writing this article, the Parliament of Canada was in the process of adopting a Government Bill recognizing ‘that impact assessment contributes to Canada’s ability to meet its environmental obligations and its commitments in respect of climate change’.¹¹⁶

- In the EU,¹¹⁷ the Commission has long held that GHG emissions should be documented as part of an EA.¹¹⁸ At the occasion of a review on the implementation of the EU’s EIA directive, however, the Commission noted that the effects of proposed activities on climate change were ‘not adequately identified and assessed within the EIA process’.¹¹⁹ In 2013, the Commission adopted two guidance documents on integrating climate change and biodiversity into, respectively, EIA and SEA.¹²⁰ The following year, the EIA directive was revised with the addition of a requirement that EIA reports document ‘the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions)’.¹²¹

Thirdly, CA has percolated as a practice in some countries in the absence of any judicial precedent or formal legal development. For instance, China’s 2002 EA Law and enforcing regulations contain no reference to climate change,¹²² and there is no authoritative judicial decision on the matter. Nevertheless, two

General Guidance for Practitioners (2003) <https://www.canada.ca/content/dam/canada/environmental-assessment-agency/migration/content/a/4/1/a41f45c5-1a79-44fa-9091-d251ee18322/incorporating_climate_change_considerations_in_environmental_assessment.pdf>.

¹¹⁵ See eg Ministry of the Environment and Climate Change, *Considering Climate Change in the Environmental Assessment Process* (2017) <<https://www.ontario.ca/page/considering-climate-change-environmental-assessment-process>> (Ontario); Regulation on Environmental impact assessment and review procedure of certain projects, D. 287-2018 (2018) G.O. II, 1719A (23 March 2018 Quebec) <<http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=1&file=68135.pdf>>.

¹¹⁶ See Bill C-69, ‘An Act to enact the Impact Assessment Act and the Canadian Energy Regulator Act, to amend the Navigation Protection Act and to make consequential amendments to other Acts’, as passed by the House of Commons on 20 June 2018. As of February 2019, this bill was still being reviewed by the Senate.

¹¹⁷ Although the EU is not a State, it exercises the powers that EU Member States transferred to it, including the power to develop legal requirements on the conduct of EA.

¹¹⁸ See for instance EU Commission, *Guidance on EIA Scoping* (June 2001) 24, noting the need to include consideration for how releases from the project could affect ‘[g]lobal air quality including climate change and ozone depletion’.

¹¹⁹ EU Commission, *Report on the Application and Effectiveness of the EIA Directive* (23 July 2009) COM(2009) 378 final, para 3.5.4.

¹²⁰ See EU Commission, *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment* (2013) <<http://ec.europa.eu/environment/EIA/pdf/EIA%20Guidance.pdf>>; and *Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment* (2013) <<http://ec.europa.eu/environment/EIA/pdf/SEA%20Guidance.pdf>>.

¹²¹ Directive 2014/52 (n 20) Annex IV, para 5(c).

¹²² See China, EA Law (n 32); SEA regulation (n 38).

documents among the many issued by the Ministry of Environmental Protection (MEP) to guide the implementation of particular aspects of the EA act imply, almost accidentally, that China's EA should include a CA. One guidance document suggests that technical reviews of EIA reports should consider the feasibility and effectiveness of any measure described in the project which seeks to reduce GHG emissions.¹²³ Another guidance document includes carbon dioxide (but not other GHGs) among the air pollutants to be documented in SEAs.¹²⁴ In practice, it has been reported that about a fifth of SEA reports involve some sort of consideration for GHG emissions, although this rarely amounts to a systematic appraisal.¹²⁵ Scholars have advocated for a reform of China's EA framework towards a more effective and systematic approach of CA.¹²⁶

Fourthly, this general trend was reflected in the practice of international organizations.¹²⁷ The World Bank, for instance, adopted internal rules in August 2016 which require an assessment of the GHG emissions as part of the environmental and social assessment of a project for which support is sought.¹²⁸ This measure was included on the ground that '[e]stimation of project GHGs is part of good international industry practice'.¹²⁹ Other international institutions with various memberships and voting powers have integrated climate change in their safeguard policies, including the Asian Development Bank,¹³⁰ the Asian Infrastructure Investment Bank¹³¹ and the

¹²³ MEP, 建设项目环境影响技术评估导 (Guideline for technical review of environment impact assessment), HJ616-2011 (2011), para 6.3.2.8.

¹²⁴ MEP, 规划环境影响评价技术导则 : 总纲 (Technical Guidelines for Strategic Environmental Assessment: General principles), HJ 130-2014 (2014), A6.

¹²⁵ See Wu Yanan and Ren Jingming, 'Survey and analysis of the status quo of the climate change factors in strategic environmental assessments' (2014) 3 *Annual Meeting of the Chinese Society of Environmental Sciences* 2010-2016; Wu Hao and Zhang Yixin, 关于中国将气候变化因素融入环境影响评价的探讨 (Discussion of China's integration of climate change factors into environmental impact assessment) (2011) 33(9) *Environmental Pollution and Control* 91-5.

¹²⁶ See eg Chen Ying, Wang Yanan and Zhang Zhansheng, 'Suggestions to response to climate change by environmental impact assessment mechanisms innovation' (2016) 41(2) *Environment and Sustainable Development* 17-20; He Xiangbai, 'Integrating Climate Change Factors within China's Environmental Impact Assessment Legislation: New Challenges and Developments' (2013) 9(1) *Law, Environment and Development Journal* 50-67.

¹²⁷ On the relevance of the practice of international organizations to State practice, see ILC, 'Customary International Law' (n 64) conclusion 4, para 2 ('In certain cases, the practice of international organizations also contributes to the formation, or expression, of rules of customary international law'). This is the case, according to the Commentary, where and inasmuch as member States have conferred power upon the international organization, when the practice of the international organization is consonant with that of the member States.

¹²⁸ World Bank, 'Environmental and Social Framework Setting Environmental and Social Standards for Investment Project Financing' (2016) 61, para 16.

¹²⁹ World Bank, 'Review and Update of the World Bank's Safeguard Policies' (4 August 2016) <https://consultations.worldbank.org/Data/hub/files/consultation-template/review-and-update-world-bank-safeguard-policies/en/materials/board_paper_for_es_framework_third_draft_for_disclosure_august_4_2016.pdf> 21, para 59.

¹³⁰ See ADB, Safeguard Policy Statement (June 2009) 16, para 2.

¹³¹ AIIB, 'Environmental and Social Framework' (February 2016) 28.

UNDP.¹³² Consistently, the Equator Principles, which provide an industry benchmark for EA in financial institutions, require consideration for the GHG emissions of activities for which support is sought.¹³³

Yet, while the inclusion of GHG in EA procedures is a clear trend, it is not a universal practice. A few States simply do not have a statutory EA framework at all.¹³⁴ Other, developing States have a statutory framework but lack the resources to implement it consistently.¹³⁵ In yet other jurisdictions, debates on the inclusion of considerations for GHG emissions in EAs do not seem to have sparked off yet. In India, for instance, the ‘Notification’ defining the regulatory framework for the federal EIA procedure leaves it to ad hoc Expert Appraisal Committees to determine the Terms of Reference of the EIA study, which is to ‘address ... all relevant environmental concerns’.¹³⁶ In practice, Terms of Reference generally do not include considerations for GHG emissions, even in the most relevant projects. A petition pending before the National Green Tribunal since 2017, but undecided as of February 2019, seeks to direct the Government to mainstream considerations for climate change mitigation in the EIA Notification.¹³⁷ In Hong Kong, the scope of EIAs is, in practice, confined to a list of issues included in a ‘Technical Memorandum’, which does not include any proxy for the inclusion of transboundary or global environmental concerns.¹³⁸ Here again, the question was never brought to a court, and it has rarely been raised in local debates.¹³⁹ The absence of CA in these and other jurisdictions has more to do with political inertia, hesitancy or, at most, reluctance, than with a deliberate exclusion.

¹³² See UNDP, ‘Social and Environmental Standards’ (2014) 20, para 6.

¹³³ ‘The Equator Principles: A Financial Industry Benchmark for Determining, Assessing and Managing Environmental and Social Risks in Projects’ (June 2013) <http://equator-principles.com/wp-content/uploads/2017/03/equator_principles_III.pdf>.

¹³⁴ Singapore is one of the most prominent examples of a country without any mandatory EA process. See Lye Lin Heng, ‘A Fine City in a Garden: Environmental Law and Governance in Singapore’ [2008] Singapore Journal of Legal Studies 68, 109–12.

¹³⁵ OA Fasina, ‘Environmental Impact Assessment for Oil and Gas Projects: A Comparative Evaluation of Canadian and Nigerian Laws’ (Master dissertation, University of Western Ontario, 2017).

¹³⁶ Ministry of Environment and Forests, ‘Environmental Impact Assessment Notification’ (14 September 2006) 4, para 7.II(i).

¹³⁷ *Pandey v India*, petition filed in 2017, reported by the Sabin Center for Climate Change Law <<http://climatecasechart.com/non-us-case/pandey-v-india/>>.

¹³⁸ See Environmental Impact Assessment Ordinance (1 April 1998) Cap. 499, section 5(6); Environmental Protection Department, ‘Technical Memorandum on Environmental Impact Assessment Process’ (16 May 1997) <<https://www.epd.gov.hk/EIA/english/legis/memorandum/TM.pdf>>.

¹³⁹ See, however, D Gallacher, ‘Climate Change and Environmental Impact Assessment in Hong Kong’ in *Newsletter of the Hong Kong Institute of Environmental Impact Assessment* (June 2017) <http://hkiEIA.org.hk/Portals/0/Newsletter/HKIEIA%20Newsletter_201706.pdf>, 1; B Mayer, ‘Hong Kong’s Outdated Environmental Impact Law Needs to Move with the Times’ in *South China Morning Post* (30 March 2018) A11.

By contrast, at least two States have specifically excluded considerations for GHG emissions from domestic EA frameworks. In 2002, the Environmental Court of New Zealand expressed ‘considerable disquiet about the efficacy, appropriateness and reasonableness’ of a condition for GHG emission limitation or reduction that regional authorities had imposed on a gas-fired power plant.¹⁴⁰ The Court considered that climate change mitigation should be carried out exclusively through national policies as only those could ‘guarantee an efficiency compatible with achieving best social, environmental and economic outcomes’.¹⁴¹ Two years later, this approach was endorsed by a Government Bill amending the Resource Management Act to exclude considerations for ‘the effects on climate change of discharges into air of greenhouse gases’.¹⁴² In the government’s view, this amendment would avoid duplication of efforts and reduce administrative costs, as a national emissions trading scheme would ensure that New Zealand complies with its quantified emissions limitation and reduction commitment under the Kyoto Protocol.¹⁴³ A similar development occurred in Kazakhstan where, in 2011, a statutory reform specifically excluded ‘the impact of greenhouse gas emissions’¹⁴⁴ from the scope of the EAs as the country was establishing a carbon market.

Ironically, even where EAs do not document the adverse effects of GHG emissions, they tend to document the benefits of emission reductions where applicable. In New Zealand, the same amendment to the Resource Management Act allows consideration for the effects of GHG emissions in renewable energy projects to the extent that such project enables a reduction of such emissions.¹⁴⁵ Likewise, in Hong Kong, reduction in GHG emissions was abundantly documented in the EIA reports relating to a small windfarm project¹⁴⁶ and to the conversion of a coal-fired power plant into gas-fired

¹⁴⁰ *Environmental Defence Society v Auckland Regional Council* [2002] NZRMA 492 (EnvC) para 88. See also *Environmental Defence Society Inc. v Taranaki Regional Council*, A184/2002 [2002] NZEnvC 441, para 24.

¹⁴¹ *Environmental Defence Society v Auckland Regional Council* (n 140) para 88.

¹⁴² Resource Management (Energy and Climate Change) Amendment Act 2004, Public Act 2004 No 2, section 3(b)(ii). See also *Greenpeace New Zealand Inc. v Genesis Power Ltd.* [2008] NZS 112, [2009] 1 NZLR 730; *West Coast ENT Inc. v Buller Coal Ltd.* [2013] NZSC 133; and, generally, C Warnock, ‘Global Atmospheric Pollution: Climate Change and Ozone’ in P Salmon and D Grinlinton (eds), *Environmental Law in New Zealand* (Thomson Reuters 2015) 789, 813–17.

¹⁴³ See *Genesis Power Ltd. v Greenpeace New Zealand* [2008] NZRMA 125 (CA), para 40. An emissions trading scheme was established in 2009. See Climate Change Response (Emissions Trading) Amendment Act 2008, Public Act 2008 No 85. The articulation of EAs with market-based mechanisms is discussed below, section IVD.

¹⁴⁴ Environmental Code of the Republic of Kazakhstan 2018, art 39.2(1). This provision was added to the Environmental Code by the Law of the Republic of Kazakhstan No 505-IV (2011), which also provided for a carbon market.

¹⁴⁵ See Resource Management (Energy and Climate Change) Amendment Act 2004 (n 142) section 6, inserting Resource Management Act 1991, Public Act 1991 No 69, section 70A.

¹⁴⁶ See for instance EIA-177/2009, ‘Development of a 100MW Offshore Wind Farm in Hong Kong’ (AEIAR-152/2010, approved 14 May 2010).

power plant with higher carbon efficiency.¹⁴⁷ This selective inclusion of GHG emissions in EAs is inconsistent with EAs' aim of providing complete and objective information. If decision makers in Hong Kong and New Zealand are to take into account the benefits of reductions in GHG emission in the assessment of some proposed activities, it is unclear why they should not also recognize the costs of additional GHG emissions in other proposed activities.

B. An Incomplete Acceptance as Law

Acceptance as law (*opinio juris*) distinguishes a custom from mere usage or habit.¹⁴⁸ As interpreted by the ILC, this requirement is that 'the practice in question must be undertaken with a sense of legal right or obligation'.¹⁴⁹ It is notoriously difficult to establish this subjective element, if only because States are actually composed of many individuals with different beliefs and motivations.¹⁵⁰ It is generally understood, as international courts and tribunals have held in successive cases,¹⁵¹ that States have accepted as law an obligation to carry an EA at least in a transboundary context. The question here is whether States have accepted a similar obligation in the context of a global environmental harm, namely GHG emissions.

Treaties and their interpretation by States can be relevant to identifying acceptance as law, in particular when they are framed not merely as a trade-off between the interests of their parties, but rather as the recognition of a general norm.¹⁵² Yet, treaties provide limited support to the acceptance of EA in the context of climate change as law. Climate change treaties, for instance, do not impose or recognize a mandatory EA procedure. To the contrary, the Preamble of the UNFCCC recognizes 'the principle of sovereignty of States in international cooperation to address climate change'.¹⁵³ Accordingly, the UNFCCC regime has generally been left it for States to determine how best to achieve mitigation outcomes.

Nevertheless, some provisions in climate change treaties could be taken as expression of a sense of obligation. Thus, the UNFCCC suggests that all Parties should '[t]ake climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions'.¹⁵⁴ A similar language was echoed in the Sustainable Development Goals when the UN General Assembly recognized the need to '[i]ntegrate climate change measures into national policies, strategies and planning'.¹⁵⁵ Other treaty

¹⁴⁷ See for instance EIA-237/2016, 'Additional Gas-fired Generation Units Project' (AEIAR-197/2016, approved 7 June 2016).

¹⁴⁸ ILC, 'Customary International Law' (n 64) conclusion 9, para 2. See generally the references at (n 94).

¹⁴⁹ ILC, 'Customary International Law' (n 64) conclusion 9, para 1.

¹⁵⁰ *ibid* conclusions 11–14.

¹⁵¹ See references cited in notes 66, 67 and 70.

¹⁵² ILC, 'Customary International Law' (n 64) conclusion 10, para 2, and conclusion 11, para 1. See generally the references at (n 64).

¹⁵³ UNFCCC (n 3) recital 10.

¹⁵⁴ *ibid* art 4.1(f).

¹⁵⁵ UNGA Res. 70/1 (2015), goal 13.2.

provisions calling States to take relevant measures appear to imply an obligation to conduct CA if and inasmuch as it is an effective tool for climate change mitigation. Thus, Annex I Parties committed under the UNFCCC to 'adopt national policies and take corresponding measures on the mitigation of climate change',¹⁵⁶ whereas all the Parties to the Paris Agreement are to 'pursue domestic mitigation measures, with the aim of achieving the objectives'¹⁵⁷ of their successive NDCs. On the other hand, no State appears to have mentioned EA in their NDC as a tool for climate change mitigation (although a few States highlighted the need to integrate consideration for climate change adaptation in EAs).¹⁵⁸

Alternatively, the regime of the Espoo Convention could be relevant in assessing acceptance of CA as law. The Espoo Convention itself appears to focus on typical cases of transboundary harm confined to a geographical area. Although the convention includes 'climate' as one of the dimensions of a project's potential impacts,¹⁵⁹ 'transboundary impact' is defined as any impact 'not exclusively of a global nature'.¹⁶⁰ Nonetheless, the Parties to the Espoo Convention are supportive to a broader vision of EIA which may extend to the context of climate change. The Guidance on the Practical Application of the Espoo Convention, adopted by its Parties, suggests, through somewhat of a stretch, that 'activities with linkages to climate change' may be amongst the 'long-range transboundary impacts' to be assessed under the Convention,¹⁶¹ rather than impacts exclusively of a global nature excluded from its scope. By contrast to the Espoo Convention, the Kiev Protocol on SEA, adopted about a decade later, relates to activities likely to have significant environmental effects (including effects on the climate) notwithstanding whether these effects are local, transboundary or global in nature.¹⁶²

Discussions on CA were held under the regime of the Espoo Convention, in particular at the 7th session of the Meeting of the Parties to the Convention and the 3rd session of the Meeting of the Parties to the Protocol held conjointly in Minsk in June 2017. The Convention and Protocol's Secretariat organized a high-level Panel discussion on the role of the two treaties in addressing climate change.¹⁶³ A work plan, adopted at the same meetings, introduced

¹⁵⁶ *ibid* art 4.2(a). See also Kyoto Protocol (n 4) art 2.1.

¹⁵⁷ Paris Agreement (n 5) art 4.2.

¹⁵⁸ By contrast, some biennial reports and national communications under the UNFCCC mention EA as a tool for climate change mitigation. See for instance the UK's Seventh National Communication (December 2017), section 5.4.7; Sweden's third Biennial Report (December 2017), section 3.2.10; Iceland's Seventh National Communication and Third Biennial Report (2018) section 4.2.10.

¹⁵⁹ Espoo Convention (n 51) art 1(vii)

¹⁶⁰ *ibid* art 1(viii).

¹⁶¹ UNECE, 'Guidance on the Practical Application of the Espoo Convention' (2006) UN Doc ECE/MP.EIA/8, para 26.

¹⁶² See Kiev Protocol (n 56) arts 2.7 and 4.1.

¹⁶³ UNECE, 'Report of the Meeting of the Parties to the Convention on its seventh session and of the Meeting of the Parties to the Convention serving as the Meeting of the Parties to the Protocol on

measures to raise awareness, exchange experience and train professionals on the opportunity of integrating climate change in EAs, in particular SEAs.¹⁶⁴ Overall, a meeting of the UNECE Member States at the same occasion outlined a common vision of SEA as ‘a key tool for the development of national climate change action and planning, and for the incorporation of specific climate change mitigation and adaptation measures into regional development and sectoral plans, programmes and policies’.¹⁶⁵ Given the strong prevalence of CA in the practice of the UNECE Member States, further developments in this forum can be anticipated.¹⁶⁶

Some other treaty provisions could also be taken to suggest acceptance of CA as a customary obligation. In particular, it is notable that UNCLOS’s definition of pollution of the marine environment is wide enough to encompass some of the impacts of climate change on the seas, such as warming, acidification and sea-level rise.¹⁶⁷ Accordingly, the obligation of States to assess the potential effects of activities which may cause substantial pollution to the marine environment under Article 206 of UNCLOS may be interpreted as requiring EAs of proposed activities likely to contribute significantly to climate change. Likewise, given the impact of climate change on ecosystems, the provision of the Convention on Biological Diversity on EIA could be interpreted as encompassing GHG emissions.¹⁶⁸

However, rather than treaties, it is arguably the very conduct of States which provides the strongest evidence of a growing acceptance of EA as an obligation in the context of climate change.¹⁶⁹ A distinction needs to be drawn between a

its third session’ (2017) UN Doc ECE/MP.EIA/23–ECE/MP.EIA/SEA/7, <https://www.unece.org/fileadmin/DAM/env/documents/2017/EIA/MOP7/22_12_ece_mp_eia_23_ece_mp_eia_sea_7_eng.pdf> paras 53–62. See also UNECE, ‘Information on panel discussion on the role of the Protocol and the Convention in addressing climate change’ (2017) UN Doc ECE/MP.EIA/2017/INF.10, <https://www.unece.org/fileadmin/DAM/env/documents/2017/EIA/MOP7/REV_1_ECE_MP.EIA.2015.INF.10_Climate_panel_23052017_rev.pdf>.

¹⁶⁴ Decision VII/3–III/3 (2017) UN Doc ECE/MP.EIA/23.Add.1–ECE/MP.EIA/SEA/7.Add.1 <https://www.unece.org/fileadmin/DAM/env/documents/2017/EIA/MOP7/09_02_2018_ECE_MP.EIA_23_Add.1_ECE_MP.EIA_SEA_7_Add.1_eng.pdf>. See also Decision VII/7–III/6 (2017) *ibid.*, para 1(a).

¹⁶⁵ ‘Minsk Declaration’, in UNECE, ‘Decisions and the Declaration adopted jointly by the Meetings of the Parties to the Convention and the Protocol’ (2017) UN Doc ECE/MP.EIA/23.Add.1–ECE/MP.EIA/SEA/7.Add.1, <https://www.unece.org/fileadmin/DAM/env/documents/2017/EIA/MOP7/09_02_2018_ECE_MP.EIA_23_Add.1_ECE_MP.EIA_SEA_7_Add.1_eng.pdf>, para 9.

¹⁶⁶ See B Mayer, ‘Environmental Assessments in the Context of Climate Change: The Role for the UN Economic Commission for Europe’ *Review of European, Comparative & International Environmental Law* (forthcoming).

¹⁶⁷ See UNCLOS (n 48) art 1.1(4), defining pollution of the marine environment as ‘the introduction by man, directly or indirectly, of substances or energy into the marine environment ... which results or is likely to result in such deleterious effects as harm to living resources and marine life ...’. On the impacts of climate change on the marine environment, see generally IPCC (n 1) 40–4.

¹⁶⁸ See (n 50) and accompanying text.

¹⁶⁹ See *Military and Paramilitary Activities in and Against Nicaragua (Nicaragua v US)*, merits, 1986 ICJ Rep 14, para 204 (‘a practice illustrative of belief’). On the relation between treaties and the formation of customs, see references cited (n 64).

conduct adopted by a State in pursuance of its own interests and that adopted in pursuance to what a State views as its duty, possibly against its immediate interests.¹⁷⁰ States pursue no immediate interests by conducting EAs to avoid or reduce the impact of proposed activities on climate change. The adoption of CA procedures in various countries and international organizations cannot be explained by courtesy, comity, political expediency or convenience.¹⁷¹ Efforts to comply with national commitments on climate change mitigation can also be excluded when the State has no quantified commitment,¹⁷² or inasmuch as the GHG emissions which are the object of the CA take place beyond the State's territory (hence outside the geographical scope of the State's quantified commitment),¹⁷³ or beyond the time horizon of any national commitment.¹⁷⁴ Rather, States' conduct generally implies their acceptance of CA as a duty.

A possible difficulty with the identification of an obligation to conduct a CA, as Neil Craik noted, is that of 'determining to which States the duty is owed, and as a result, which States have a right to be notified and be consulted'.¹⁷⁵ In a transboundary context, the obligation to conduct an EA is owed the State likely to be affected.¹⁷⁶ In relation to a common concern such as climate change, where the impact would not specially affect any distinct area, population or State, the obligation to conduct an EA—like the more general obligation to prevent excessive GHG emissions—is as an obligation owed to the international community as a whole (*erga omnes* obligation),¹⁷⁷ and any State has the right to seek the performance of this obligation.¹⁷⁸ Yet, this does not necessarily mean that every State has a right to be notified and to be consulted, as the obligation to notify and to consult another State can be inferred

¹⁷⁰ See *Military and Paramilitary Activities* (n 169) para 208, where the Court notes that the conduct of the United States is 'justified ... on the political level'.

¹⁷¹ ILC, 'Customary International Law' (n 64) commentary under conclusion 9, para 3.

¹⁷² See eg *Mid States Coalition* (n 97).

¹⁷³ See eg *Gray* (n 102).

¹⁷⁴ Initial NDCs do not extend beyond 2030, whereas infrastructure projects often have a much longer life expectancy.

¹⁷⁵ Craik, 'Principle 17' (n 88) 458.

¹⁷⁶ See eg *Pulp Mills* (n 15) and *Certain Activities* (n 15), where the applicant was the State affected.

¹⁷⁷ See *Barcelona Traction, Light and Power Company, Limited*, second phase, ICJ Rep 1970, at 3, para 33; *Questions relating to the Obligation to Prosecute or Extradite (Belgium v Senegal)*, ICJ Rep 2012, at 422, paras 68–69. See also *South China Sea* (n 77) para 927, implicitly accepting that the Philippines has a right to invoke China's alleged non-compliance with its obligation to protect the marine environment without having to evidence any injury; *Whaling in the Antarctic (Australia v Japan: New Zealand intervening)*, ICJ Rep 2014, at 226, where Japan does not seem to have contested that its obligation under the International Convention for the Regulation of Whaling is owed (at least) to all Parties to the Convention, as noted in J Crawford, 'Responsibility for Breaches of Communitarian Norms: An Appraisal of Article 48 of the ILC Articles on Responsibility of States for Internationally Wrongful Acts' in U Fastenrat *et al.* (eds), *From Bilateralism to Community Interest: Essays in Honour of Bruno Simma* (Oxford University Press 2011) 224, 235. But see ILC, 'Customary International Law' (n 64) commentary under conclusion 3, para 4, noting that 'there are different views' on whether the obligation to protect the atmosphere is an *erga omnes* obligation.

¹⁷⁸ See ILC, 'Draft Articles on Responsibility of States for Internationally Wrongful Acts' ILC Yearbook 2001, vol II (Pt Two) art 48.

from the obligation to conduct an EA only 'where that is necessary to determine the appropriate measures to prevent or mitigate' the risk.¹⁷⁹

To conclude, there appears to be a relatively well-established general practice of States and an increasing acceptance as law in support of a customary obligation to conduct a CA, though it is not clear whether this obligation has yet fully emerged. What continues to hinder a complete recognition of this norm is the difficulty of adapting EA to the particular nature of GHG emissions as a global cumulative environmental harm. Consequently, it is essential to determine whether EA is actually a relevant tool for climate change mitigation.

IV. CONCEPTUALIZING EA AS AN EFFECTIVE TOOL FOR CLIMATE CHANGE MITIGATION

This final section discusses some of the central questions faced when integrating climate change mitigation in EAs. A first subsection discusses the determination of a threshold beyond which GHG emissions are sufficiently 'significant' to justify the conduct of a CA. A second subsection examines what could constitute an appropriate deliberation process in the context of global cumulative impacts. Lastly, a third subsection assesses the ability of EAs to identify pertinent ways to limit or reduce GHG emissions. The discussion of these three questions, supported by a review of State practice, demonstrates the relevance of CA as a tool for climate change mitigation and suggests that a complete acceptance of CA as an obligation under general international law is really just a matter of time.

A. Assessing the Significance of the GHG Emissions Caused by a Proposed Activity

Perhaps the most obvious objection to the use of EA as a tool for climate change mitigation relates to the difficulty of asserting the significance of GHG emissions caused by a given activity.

The question of the significance of an activity's GHG emissions is typically raised in relation to the selection of activities that need to undergo a thorough assessment ('screening' phase of the EA) and to the identification of the issues to be documented ('scoping'). At either stage, the finding that an activity could cause a significant environmental impact calls for additional steps to document this possible impact and consider revisions of the proposed activity to avoid or reduce this impact or additional mitigation measures. The magnitude of the GHG emissions likely to result from a proposed activity should determine the degree of scrutiny that the activity should undergo. Crucially, significance is also to be considered at the decision-making stage, where the impact of the

¹⁷⁹ *Certain Activities* (n 15) para 104.

proposed activity on the climate system is to be taken into account and weighed along with other costs and benefits.

Taken in isolation, a single activity is unlikely to have a measurable impact on planetary systems, as the increase in the GHG concentrations in the atmosphere results from innumerable sources scattered among and within countries. This “drop in the ocean” problem¹⁸⁰ is most obvious with regard to (project-level) EIAs—and this may be one of the reasons why the Minsk Declaration adopted by the Member States of the UNECE promoted the role of SEA to mitigate climate change.¹⁸¹ However, this problem surely concerns most SEAs on plans, programmes and policies as well. Only in a few exceptional cases could a policy be considered to have a more-or-less discernible impact on the entire climate system.¹⁸²

The difficulty of assessing the significance of GHG emissions in a proposed activity is the most common ground for excluding consideration for GHG emissions from EA. An instance amongst many, the Federal Court of Australia in *Anvil Hill* noted that no significant causal relation could be established between the GHG emissions caused by a single coal mine and a measurable increase in global average temperature. On this ground, the Court concluded that the EA did not have to contemplate the impact of the project on the climate system.¹⁸³

Likewise, in New Zealand, the statutory exclusion of GHG emission from the scope of EA has been interpreted on the ground that a single project’s GHG emissions could never be significant: ‘given ... the infinitesimal contribution which any particular project could make, there could be no demonstrable linkage between GHG emissions associated with any particular project and climate change generally’.¹⁸⁴ But, as mentioned above, while a subsequent legislative reform endorsed this reasoning, it also permitted consideration for the benefits of emission reductions arising from renewable energy projects,¹⁸⁵

¹⁸⁰ J Peel, ‘Issues in Climate Change Litigation’ (2011) 2 Carbon and Climate Law Review 15, 16. See also CW Christopher, ‘Success by a Thousand Cuts: The Use of Environmental Impact Assessment in Addressing Climate Change’ (2008) 9 Vermont Journal of Environmental Law 549, 566–8.

¹⁸¹ See (n 165).
¹⁸² Most likely the strategy on power generation annexed to China’s Five-Year Plans. China’s energy sector contributed an estimated 9.5 GtCO₂eq, representing close to a fifth of a total of 48.9 GtCO₂eq global GHG emissions (including land-use change and forestry) in 2014. See World Resource Institute, ‘CAIT Climate Data Explorer’ (2018) <<https://www.wri.org/resources/data-sets/cait-country-greenhouse-gas-emissions-data>>. China’s National Development and Reform Commission (NDRC) conducts some consultations with stakeholders during the drafting of the five-year plan, though no complete EA process. By contrast, neither the US, nor the EU has a unique, centralized energy policy.

¹⁸³ *Anvil Hill Project Watch Association Inc. v Minister for the Environment and Water Resources* [2007] FCA 1480, para 40. See also *Xstrata Coal Queensland Pty Ltd v Friends of the Earth* [2012] QLC 013, para 605.

¹⁸⁴ *Genesis Power Ltd. v Greenpeace New Zealand Inc.* [2007] NZCA 569, [2008] 1 NZLR 803, para 17.

¹⁸⁵ Resource Management (Energy and Climate Change) Amendment Act 2004 (n 142) section 6, inserting Resource Management Act 1991 (n 142) section 70A.

even though the contribution of such projects to climate change mitigation is equally likely to be infinitesimal.

On the other side of the world, a debate arose in relation to the significance of the GHG emissions caused by the Kearl Oil Sands Project in the Canadian Province of Alberta. The 2005 EIA report estimated that the project's operations would cause 3.8 MtCO₂eq per year, representing respectively 1.7 per cent and 0.5 per cent of Alberta and Canada's GHG emissions.¹⁸⁶ In 2007, a Joint Review Panel in charge of making recommendations to the responsible Federal agency under the relevant EA legislation¹⁸⁷ estimated that this impact was not significant and recommended approval of the project.¹⁸⁸ In a subsequent application for judicial review, the Federal Court remitted the matter to the same Panel with the direction of providing a rationale for its conclusion that the project's GHG emissions were not significant.¹⁸⁹ This led the Joint Review Panel to adopt an addendum to its Report where it highlighted the lack of evidence that the project's GHG emissions would have any significant impact on the entire climate system.¹⁹⁰ In June 2008, the relevant authorities approved the project based on the conclusion that it was 'not likely to cause significant adverse environmental effects'.¹⁹¹

The most convincing response to the 'drop in the ocean' problem is arguably to situate it in the context of a broader debate on cumulative effects. Many environmental issues do not occur as the result of any single action, but because of the incremental addition of small impacts by multiple actors.¹⁹² Most EA frameworks require consideration for the activity's cumulative impact, that is, 'the incremental impact of the action when added to other

¹⁸⁶ See Imperial Oil, 'Application for the Kearl Oil Sands Project Mine Development', vol 2 (2005) <http://www.acee.gc.ca/050/documents_staticpost/cearref_16237/KR-0007-2.pdf>, section 4.3, at 4-4.

¹⁸⁷ Canadian Environmental Assessment Act 1992, S.C. 1992, c. 37, section 34(c).

¹⁸⁸ See Joint Panel Review Report, Imperial Oil Resources Ventures Limited Application for an Oil Sands Mine and Bitumen Processing Facility (Kearl Oil Sands Project) in the Fort McMurray Area (27 February 2007) <<https://www.ceaa-acee.gc.ca/052/document-html-eng.cfm?did=26985>>.

¹⁸⁹ *Pembina Institute for Appropriate Development v. Canada (Attorney General)*, 2008 FC 302, 323 FTR 297.

¹⁹⁰ Canadian Environmental Assessment Agency, 'The Government of Canada's Response to the Environmental Assessment Report of the Joint Review Panel on the Kearl Oil Sands Project' (2008) <<http://www.ceaa-acee.gc.ca/052/document-html-eng.cfm?did=26985>>. See also NJ Chalifour, 'Case Comment: A (Pre)Cautionary Tale about the Kearl Oil Sands Decision' (2009) 5 McGill Journal of International Sustainable Development Law 251, 263-4; T Kruger, 'The Canadian Environmental Assessment Act and Global Climate Change: Rethinking Significance' (2009) 47 Alberta Law Review 161.

¹⁹¹ Canadian Environmental Assessment Agency, 'Kearl Oil Sands Project' (2012) <<http://www.acee-ceaa.gc.ca/052/details-eng.cfm?pid=16237>>. Inconsistencies in the determination of the significance of GHG emissions appear common in application of Canada's EA legislation. See T Ohsawa and P Duinker, 'Climate-Change Mitigation in Canadian Environmental Impact Assessments' (2014) 32 Impact Assessment and Project Appraisal 222, 229. See also Bill C-69 (n 116) on the ongoing reform of Canada's EA framework.

¹⁹² See G Hardin, 'The Tragedy of the Commons' (1968) 162 Science 1243.

past, present, and reasonably foreseeable future actions'.¹⁹³ Even though the implementation of such assessments is not always entirely satisfactory,¹⁹⁴ there is at least a broad consensus that EA cannot ignore the incremental contribution of an activity to a broader environmental issue. The effectiveness of EA would be considerably reduced if it was to turn a blind eye to other stress factors affecting the environment in which the proposed activity is to take place. As Judge Betty B Fletcher noted in *Center for Biological Diversity*, '[t]he impact of [GHG] emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct'.¹⁹⁵ The Environment Court of New Zealand once adopted the same position, when it held that, 'since [GHG] emissions all contribute cumulatively to the same global atmosphere, every small contribution makes a difference'.¹⁹⁶ Even though a given activity may only have a minor effect on climate change, human activities are collectively causing tremendous harm: GHG emissions need to be reduced whenever reasonably practical.

Assessing the cumulative effect of an activity's GHG emissions requires, first of all, documentation of the GHG emissions resulting from this activity. A number of methodologies have been developed in recent years to facilitate the documentation of GHG emissions arising from virtually any given activity.¹⁹⁷ The stringency of this assessment should depend on the nature of the activity: strenuous efforts to document GHG emissions which are 'vanishingly small' would serve no useful purpose,¹⁹⁸ but proposed activities which entail massive GHG emissions should attract the most careful scrutiny.¹⁹⁹ In some cases, the Institute of Environmental Management and

¹⁹³ 40 CFR 1508.7 (US). See generally UNEP, *Goals and Principles* (n 25) principle 4(d); Directive 2014/52 (n 20) Annex IV, para 5(c); CEQ, 'Considering Cumulative Effects' (n 106); Cal. Code Regs. tit. 14 sections 15064.4(d), 15064(h)(1).

¹⁹⁴ See generally AJ Sinclair, M Doelle and PN Duinker, 'Looking up, down, and Sideways: Reconciling Cumulative Effects assessment as a Mindset' (2017) 62 *Environmental Impact Assessment Review* 183; J Gunn and BF Noble, 'Conceptual and Methodological Challenges to Integrating SEA and Cumulative Effects Assessment' (2011) 31 *Environmental Impact Assessment Review* 154.

¹⁹⁵ *Center for Biological Diversity v NHTSA* (n 97) para 22. This echoed the line of reasoning of Justice Stevens in *Massachusetts v Environmental Protection Agency* (2006) 549 US 497, 524, noting that massive problems such as climate change could not be resolved 'in one fell regulatory swoop', but would require a number of incremental steps. See also *Southern Utah Wilderness Alliance v Burke*, 981 F.Supp.2d 1099, 1110-11 (DC Utah 2013). See generally CW Christopher, 'Success by a Thousand Cuts: The Use of Environmental Impact Assessment in Addressing Climate Change' (2008) 9 *Vermont Journal of Environmental Law* 549, 568-90.

¹⁹⁶ *Environmental Defence Society Inc. v Taranaki Regional Council*, A184/2002 [2002] NZEnvC 441, para 22.

¹⁹⁷ See for instance IPCC, *Guidelines for National Greenhouse Gas Inventories* (5 vol. IGES 2006); The Greenhouse Gas Protocol, 'Policy and Action Standard' (2014) <<https://GHGprotocol.org/sites/default/files/standards/Policy%20and%20Action%20Standard.pdf>>; European Investment Bank, 'Methodologies for the Assessment of Project GHG Emissions and Emission Variations' (version 10.1, 2014) <<http://www.eib.org/en/about/documents/footprint-methodologies.htm>>.

¹⁹⁸ *ibid* para 24.

¹⁹⁹ See CEQ, 'Final Guidance' (n 110) 11, noting that 'the extent of the analysis should be commensurate with the quantity of projected GHG emissions'.

Assessment concedes that a summary qualitative assessment of the source of GHG emissions would be sufficient, although it should be 'robust, transparent and justifiable'.²⁰⁰ A quantified assessment of the GHG emissions likely to result from a proposed activity should only be required when these emissions are likely to exceed a certain threshold. Unsurprisingly, State practice varies considerably regarding the determination of this threshold, which is generally set somewhere between 1 and 100 kilo-tonnes of carbon dioxide equivalent per year.²⁰¹ The duration of the activity ought also to be relevant. Beside absolute levels of emissions, any departure from industry benchmark should also command close scrutiny.

It is also largely understood that the documentation of the GHG emissions entailed by a proposed activity has to have 'a wide scope and a broad purpose'²⁰² in order to shed light on the opportunity to carry out the activity and the possibility of reducing these emissions. In addition to the GHG emissions caused directly by the activity, it is generally accepted that an EA should document the impacts of 'connected actions'²⁰³ which have a 'reasonably close causal relationship' with the project.²⁰⁴ Besides on-site emissions ('scope 1' emissions), indirect GHG emissions resulting from the generation of electricity purchased by the project ('scope 2 emissions') or from any other supporting activities or infrastructure ('scope 3 emissions') may be included in the documentation of the GHG emissions.²⁰⁵ Thus, two US Appeal courts held that the EIAs for the construction of a railway²⁰⁶ and a pipeline²⁰⁷ destined to be used for transportation of fossil fuels should document the GHG emissions which would result from the use of these fossil fuels. Likewise, a US district court found that the EIA for the construction and operation of electricity transmission lines to connect two coal-fired power plants in Mexico with South California's power grid should document the GHG emissions from these power plants.²⁰⁸ The Land and Environment Court of New South Wales, followed by others, held that the EIA of a coalmine

²⁰⁰ Institute of Environmental Management & Assessment (IEMA), 'Climate Change Mitigation & EIA' (2010) <<https://www.iema.net/assets/templates/documents/climate20change20mitigation20and20EIA.pdf>> 2.

²⁰¹ See Craik, 'Comparative Legal Analysis' (n 30), documenting thresholds of significance ranging from 10 to 100 KTCO₂eq/y; and California Environmental Quality Act: Air Quality Guidelines (May 2010), section 2.2, defining the threshold of significance for land-use development projects at 1.1 KTCO₂eq/y.

²⁰² Case C-72/95, *Kraaijeveld and others v Gedeputeerde Staten van Zuid-Holland*, 1996 E.C.R. I-05403, para 31. See also Case C-227/01, *Comm'n v Spain*, 2004 E.C.R. I-08253, para 46.

²⁰³ 40 C.F.R. 1508.25(a) (US).

²⁰⁴ CEQ, 'Final Guidance' (n 110) 13. A decade ago, this consensus was not so clear.

²⁰⁵ See also EU Commission, Guidance on EIA Scoping (n 118) 29. See generally M Burger and J Wentz, 'Downstream and Upstream Greenhouse Gas Emissions: The Proper Scope of NEPA Review' (2017) 41 *HarvEnvtlLRev* 109.

²⁰⁶ See *Mid States Coalition* (n 97).

²⁰⁷ See *Sierra Club v Federal Energy Regulatory Commission*, 867 F.3d 1357 (D.C. Cir.).

²⁰⁸ *Border Power Plant* (n 97).

should consider the GHG emissions from the burning of the coal by third parties.²⁰⁹

In addition, a meaningful assessment of the GHG emissions which would result from a proposed activity should compare these emissions with benchmarks relevant at the scale and in the context of the activity. GHG emissions arising from a given project appear like a ‘drop in the ocean’ when compared with global GHG emissions, but so do its economic benefits in the context of the global economy and in the long history of human civilization.²¹⁰ The same amount of GHG emissions may appear disproportionate when compared with GHG emissions of similar projects, or with the sum of GHG emissions in a region or country. It may also be useful to relate the GHG emissions attributable to an activity with the efforts and resources invested in the same region or country to reduce GHG emissions.²¹¹ For instance, a study commissioned by the Hong Kong Airport Authority showed that the GHG emissions resulting from a single project—the construction of a third runway in Hong Kong’s International Airport—would cancel out two-thirds of the GHG emissions reduction resulting from the region’s mitigation efforts by 2030.²¹²

An EA should, at the very least, ensure that an activity’s GHG emissions are consistent with relevant commitments and targets, in particular the mitigation targets contained in NDCs.²¹³ Thus, the Supreme Court of California held that ‘consistency’ with state-wide emission reduction goals could be a ‘legally permissible criterion’ to determine the significance of GHG emissions arising from the large-scale real estate development project.²¹⁴ Likewise, the High Court of South Africa considered that an assessment of the GHG emissions that a proposed coal-fired power plant would generate was necessary to ensure that the project ‘fit ... South Africa’s peak, plateau

²⁰⁹ *Gray* (n 102) para 33. See also eg *Gloucester Resources Limited* (n 102); *Coast and Country Association* (n 102) para 43; *Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc. v Minister for the Environment & Heritage* [2006] FCA 736, (2006) 232 ALR 510, para 43; *New Acland Coal Pty Ltd. v. Ashman* (No 4) [2017] QLC 24, para 9; *Montana Environmental Information Center v U.S. Office of Surface Mining*, 274 F.Supp.3d 1074, 1099 (DC Montana 2017).

²¹⁰ See eg Peel (n 180) 16, noting that, ‘[b]y casting the relevant basis for the assessment of harm as global, defendants seek to argue that GHG emissions are only a small (and by implication, insignificant) contributor to the broader problem of climate change’.

²¹¹ See eg Ohsawa and P Duinker (n 191); P Byer *et al.*, ‘Climate Change in Impact Assessment: International Best Practice Principles’ (IAIA 2018).

²¹² See Environmental Resources Management, ‘HKIA Carbon Emissions Study’ (2014) 4 (based on attribution of GHG emissions at the place where fuels are purchased). See also Environment Bureau, Hong Kong’s Climate Action Plan 2030+ (January 2017) <<https://www.enb.gov.hk/sites/default/files/pdf/ClimateActionPlanEng.pdf>>.

²¹³ See IEMA (n 200) 1, recommending that EAs ‘give due consideration to how a project will contribute to the achievement’ of legally binding GHG reduction targets. See also CEQ, ‘Final Guidance’ (n 110) 28–9.

²¹⁴ *Center for Biological Diversity v California Department of Fish and Wildlife*, 62 Cal.4th 204, 220–1 (Cal. 2015).

and decline trajectory as outlined in the NDC and its commitment to build cleaner and more efficient than existing power stations'.²¹⁵

However, these two judgments also recognized the complexity of assessing the consistency of a project or programme with an economy-wide goal. California's Supreme Court noted that, as energy efficiency can more easily be reduced in new buildings than by retrofitting existing ones, 'a greater degree of reduction may be needed from new land use projects rather than from the economy as a whole'.²¹⁶ Similarly, the High Court of South Africa ordered the defendants to produce a 'professionally researched climate change impact report'²¹⁷ which would determine whether the project could fit within South Africa's plan to implement its international commitment on climate change mitigation. Other courts noted that compliance with economy-wide targets helped little in the assessment of the significance of the GHG emissions likely to arise from the extension of an airport²¹⁸ or the construction of a stretch of highway.²¹⁹

In any case, national commitments and other national or subnational targets provide a relatively undemanding benchmark for evaluating the GHG emissions arising from proposed activities. It is well-recognized that the sum of current national commitments on climate change mitigation is far from enough to achieve the global objectives of avoiding dangerous interference with the climate system²²⁰ or holding the increase in global average temperature well below 2°C, possibly at 1.5°C.²²¹ It was argued elsewhere that national commitments specifically agreed upon by States, for instance through their NDCs, do not substitute to their obligations under general international law; rather, negotiated instruments under the UNFCCC regime seek to induce incremental steps towards compliance with States' obligation not to cause significant transboundary environmental harm.²²² National commitments surely do not create a right to emit any given quantity of GHG emissions.²²³ In application to their broader obligation to mitigate climate change under general international law, States must do every effort possible to overachieve these targets.²²⁴ Likewise, the ratchet and review mechanism established by the Paris Agreement implies that States must prepare themselves to communicate and achieve further, more ambitious mitigation

²¹⁵ *Earthlife Africa Johannesburg* (n 18) para 90.

²¹⁶ *Center for Biological Diversity v California Department of Fish and Wildlife* (n 214) 226.

²¹⁷ *Earthlife Africa Johannesburg* (n 18) para 91.

²¹⁸ See *Verfassungsgerichtshof 2017* (n 19).

²¹⁹ See *Verwaltungsgerichtshof [Constitutional Court] VwSlg 18189 A/2011*, 24 August 2011 (Austria).

²²⁰ UNFCCC (n 3) art 2 PA (n 5) art 2.1(a). See generally UNEP, *The Emissions Gap Report 2017: A UN Environment Synthesis Report* (2017) <https://wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR_2017.pdf>; UNFCCC decision 1/CP.21 (2015) UN Doc FCCC/CP/2015/10/Add.1, recital 10.

²²² See generally Mayer, 'Compliance Regime' (n 84); and B Mayer, *The International Law on Climate Change* (2018) Ch 13.

²²⁴ Mayer, 'Obligations of Conduct' (n 43).

²²³ Mayer, 'Compliance Regime' (n 84).

commitment beyond the time-horizon of their present NDC.²²⁵ Therefore, the GHG emissions arising from a project should not escape a careful assessment simply because they are consistent with relevant national commitments on climate change mitigation.²²⁶ Even when a State is already well on the way to achieve its commitments, any reasonable step to reduce GHG emissions further should be considered until the achievement of global mitigation objectives is secured.²²⁷

As an alternative way of evaluating an activity's GHG emissions, some have explored the option of attributing a fixed monetary value to a unit of emissions, as a way to compare the 'cost' of a proposed activity on the climate system with its benefits. Thus, in 2010, several US agencies adopted a document seeking to estimate the 'social cost of carbon' to support regulatory impact analysis under Executive Order 12866.²²⁸ This led a District Court to overturn a project approval on the basis that the NEPA review did not include an economic valuation of the GHG emissions caused by a proposed extension of a coal mine.²²⁹ The difficulty with this approach is that an economic valuation of GHG emissions necessarily relies on a range of shaky assumptions, for instance with regard to the discount rate applicable when assessing the present value of future harms, the valuation of non-economic harms affecting human societies or ecosystems, the treatment of fundamental uncertainties about the responses of planetary systems to GHG emissions, and even the ethical appropriateness of, effectively, putting non-economic values such as life or biological diversity on the market.²³⁰ Likewise, proposed activities often have social or even environmental benefits which do not have a market value. The risk is that a monetarization of the costs and benefits of a proposed activity would displace essential debates from political institutions

²²⁵ See Paris Agreement (n 5) art 4(2).

²²⁶ See Shi-Ling Hsu and R Elliot, 'Regulating Greenhouse Gases in Canada: Constitutional and Policy Dimensions' (2009) 54 McGill Journal of International Sustainable Development Law and Policy 463, 503.

²²⁷ See IEMA (n 200) 1. See also IEMA and Arup, 'EIA Guide to Assessing Greenhouse Gas Emissions' (2017) <<https://www.iema.net/assets/newbuild/documents/IEMA%20GHG%20in%20EIA%20Guidance%20Document%20V4.pdf>> 14.

²²⁸ Interagency Working Group on Social Cost of Carbon, 'Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866' (2010). See also Interagency Working Group on Social Cost of Greenhouse Gases, 'Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866' (2016); and in Canada: Environment and Climate Change Canada, 'Technical Update to Environment and Climate Change Canada's Social Cost of Greenhouse Gas Estimates' (2016).

²²⁹ *High Country Conservation Advocates v U.S. Forest Service*, 52 F.Supp.3d 1174, 1190 (D. Colo. 2014). See however *Western Organization of Resource Councils v. U.S. Bureau of Land Management*, 2018 WL 1475470 at 14 (D. Montana, March 26, 2018), noting that the omission of an economic valuation did not present a clear error of judgment. See also CEQ, 'Final Guidance' (n 110) 32–3, noting that 'NEPA does not require monetizing costs and benefits.'

²³⁰ See eg R Greenspan Bell and D Callan, 'More than Meets the Eye: The Social Cost of Carbon in U.S. Climate Policy, in Plain English' (July 2011) <<http://www.wri.org/publication/more-meets-eye>> 11; W Nordhaus, 'Critical Assumptions in the Stern Review on Climate Change' (2007) 317:5835 *Science* 201; RE Goodin, 'Selling Environmental Indulgences' (1994) 47 *Kyklos* 573.

to expert bodies and, possibly, put a disproportionate emphasis on tangible economic benefits at the expense of a sustainable development.

In conclusion, there is no unique, universally agreed-upon method for determining when the GHG emissions resulting from a proposed activity are significant enough to justify a CA, or even to prevent the approval of the project. The emerging obligation to conduct a CA leaves it largely to States to determine a relevant threshold of significance. Such determination should arguably be made on the basis of national circumstances and taking into account States' common but differentiated responsibilities and national capacities,²³¹ with developed States taking the lead towards more stringent assessments. States are also to decide how best to scope the assessment, including with regard to off-site emissions, and to decide of any appropriate method for the valuation of these emissions and their comparison with other anticipated costs and benefits. This margin of appreciation, however, is not so loose as to render the rule entirely meaningless, and it appears that a hard core of activities—most evidently any projects resulting in more than 100 kilo-tonnes of carbon-dioxide equivalent of on-site greenhouse gas emissions per year—are consistently viewed in most States and under most circumstances as requiring the conduct of a CA.

B. Deliberative Process in the Absence of Direct Harm

Along with an evidence-based assessment of environmental impacts, EA procedures seek to favour a consensual collective decision. In a domestic context, EA laws often promote public participation,²³² which, within the boundaries of a political community, may implement a form of deliberative democracy.²³³ Yet, as Craik noted, '[t]he degree and effectiveness of participation is influenced by the broader culture of openness with which administrative decisions are made in the country in question'.²³⁴ While public participation is a central feature of EA procedures in Western democracies, it often boils down to mere formalities elsewhere.²³⁵ Transposing this component of EA procedures in a transboundary context has appeared problematic.

²³¹ See UNFCCC (n 3) art 3.1; Paris Agreement (n 5) art 4.3.

²³² See eg Directive 2011/92 (n 31) art 6.2; 40 C.F.R. section 1506.6 (2018); China, EA Law (n 32) art 5. See generally Craik, *The International Law of EIA* (n 27) 31.

²³³ See J Habermas, *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy* (1996); H Wiklund, 'In Search of Arenas for Democratic Deliberation: A Habermasian Review of Environmental Assessment' (2005) 23 *Impact Assessment and Project Appraisal* 281.

²³⁴ Craik, 'Comparative Legal Analysis' (n 30).

²³⁵ See Zhao Yuhong, 'Public Participation in China's EIA Regime: Rhetoric or Reality?' (2010) 22:1 *JEL* 89; Cheryl SF Chi, Jianhua Xu and Lan Xue, 'Public Participation in Environmental Impact Assessment for Public Projects: a Case of Non-Participation' (2014) 57 *Journal of Environmental Planning and Management* 1422.

The Espoo Convention and its Kiev Protocol suggest that deliberation should involve a notification of the States likely to be affected by the proposed activity,²³⁶ an offer to enter into consultations²³⁷ and the creation of opportunities for the public in areas likely to be affected in foreign countries to take an active part in the deliberations.²³⁸ Yet, by contrast with the obligations of notification and consultation, the obligation to create an opportunity for the participation of a foreign public is arguably an aspect of the Espoo Convention and its Kiev Protocol which goes beyond customary international law,²³⁹ building upon the particular context of the UNECE,²⁴⁰ in particular the shared democratic tradition of UNECE Member States—or even, in the case of the EU and its direct sphere of influence, broadly harmonized legal systems. Even in this context, the implementation of the provisions of the Espoo Convention and its Kiev Protocol on public participation has been hindered by issues of coordination between the Party of origin and the affected Party, whose respective roles are not clearly defined in the treaties.²⁴¹

Other instruments relating to EA in a transboundary context generally contain less ambitious provisions on deliberations, especially as regards the participation of foreign populations.²⁴² While Principle 19 of the Rio Declaration on Environment and Development relates to notification and consultations, it does not mention public participation in a transboundary context.²⁴³ The UNEP Goals and Principles of EIA of 1987 approach

²³⁶ See Espoo Convention (n 51) art 3.1; Kiev Protocol (n 56) art 10.1.

²³⁷ See Espoo Convention (n 51) art 5; Kiev Protocol (n 56) art 10.3.

²³⁸ See Espoo Convention (n 51) arts 2.6 and 3.8; Kiev Protocol (n 56) art 10.4. See also UNECE, 'Guidance on Public Participation in Environmental Impact Assessment in a Transboundary Context' (2006).

²³⁹ *Contra* A Boyle, 'Developments in the International Law of Environmental Impact Assessments and their Relation to the Espoo Convention' (2011) 20(3) *Review of European Community and International Environmental Law* 227, 231, arguing that the obligation to conduct public consultation established by the Espoo Convention reflects an obligation under customary international law.

²⁴⁰ See 'Aarhus' Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (adopted 25 June 1998, entered into force 30 October 2001) 2161 UNTS 447.

²⁴¹ See for instance UNECE, 'Fifth Review of Implementation of the Convention on Environmental Impact Assessment in a Transboundary Context (2013–2015)' (2017) UN Doc ECE/MP.EIA/2017/9, para 9(b), (c), (e) and (f); UNECE, 'Second review of implementation of the Protocol on Strategic Environmental Assessment (2013–2015)' (2017) UN Doc ECE/MP.EIA/SEA/9, para 9(a) and (d). See generally W Schrage, 'The Convention on Environmental Impact Assessment in a Transboundary Context' in K Bastmeijer and T Koivurova (eds), *Theory and Practice of Transboundary Environmental Impact Assessment* (Brill 2008) 29, 41–3.

²⁴² See for instance Convention on Biological Diversity (n 50) art 14(1)(a), requiring public participation 'where appropriate'; Convention on Wetlands of International Importance especially as Waterfowl Habitat (adopted 2 February 1971, entered into force 21 December 1975), 996 UNTS 245, arts 3.2 and 5, which require notification and assessment but not public participation. See however Antarctic Protocol on Environmental Protection (n 49) Annex I, art 3.3. See K Bastmeijer and R Roura, 'Environmental Impact Assessment in Antarctica' in Bastmeijer and Koivurova (n 241) 175, 189–91.

²⁴³ 'Rio Declaration' (n 35) principle 19. See also *ibid* principle 10, which relates to public participation, but not in a transboundary context.

consultation as a desirable objective rather than a current practice.²⁴⁴ The ILC's Draft Articles on the Prevention of Transboundary Harm elaborate on notification, consultation and public information, but not on public participation.²⁴⁵ The draft of a Global Pact for the Environment does not mention any form of notification, consultation or participation of a foreign public in relation to the obligation of States to conduct an EA.²⁴⁶

Likewise, in a 2010 judgment, the ICJ could find 'no legal obligation to consult the affected populations'²⁴⁷ applicable in the case of *Pulp Mills*. Instead, the Court held that 'it is for each State to determine ... the specific content of an [EIA], having regard to the nature and magnitude of the proposed development and its likely adverse impact on the environment as well as to the need to exercise due diligence in conducting such an assessment'.²⁴⁸ Thus, the ICJ implied that an EA could be conducted in a transboundary context without consultation with, and possibly even without notification of the concerned States.²⁴⁹ In its 2015 judgment in *Certain Activities*, the ICJ clarified that the State conducting an EA in a transboundary context 'is required ... to notify, and consult with, the potentially affected State in good faith, where that is necessary to determine the appropriate measures to prevent or mitigate that risk'.²⁵⁰ This would presumably include circumstances where the harm is unfolding in the affected country in ways that may not be well known in the country of origin and where cooperation can effectively mitigate the harm.

This deliberative process needs to take different forms when applied in the context of climate change. The impact of GHG emissions is not limited to one or several States; all States are affected, though none of them directly. As the consequences of GHG emissions do not depend on the nature of the activity from which they result, notification and consultation in relation to each proposed activity would not be *necessary* to determine measures to prevent or mitigate the harm. States already have various forums where they can express their views on how GHG emissions from other countries affect the global environment and their national interests;²⁵¹ no useful purpose would be served by creating an additional forum to express these same views each time a GHG-intensive activity is under consideration.

As implied by the ICJ judgments in *Pulp Mills* and in *Certain Activities*, consultations with a third State and *a fortiori* the participation of the public affected in another country are not an essential element of an EA procedure

²⁴⁴ UNEP, *Goals and Principles* (n 25) third recital.

²⁴⁵ See ILC, 'Hazardous Activities' (n 65) arts 8, 9 and 13, elaborating on notification, consultations and public information, but not on public participation.

²⁴⁶ See draft of a Global Pact for the Environment (n 36).

²⁴⁷ See *Pulp Mills* (n 15) para 216.

²⁴⁸ *ibid* para 205.

²⁴⁹ See discussion in CR Payne, 'Pulp Mills on the River Uruguay' in (2011) 105 AJIL 94, 100.

²⁵⁰ *Certain Activities* (n 15) para 168 (emphasis added). See also *ibid* para 104.

²⁵¹ For instance, one such forum is the Global Stocktake process created under Paris Agreement (n 5) art. 14.

in a transboundary context.²⁵² If public participation is the ‘soul’²⁵³ of the EA in a domestic context, its function is not to ensure the direct representation of all stakeholders haggling for their own interests. EAs are often concerned with purely environmental harm or with harm affecting future generations, neither of which could be directly represented through public participation. Public participation, in this context, seeks to promote a meaningful deliberation among reasonable, well-informed citizens who, looking beyond their own interests, reflect on their vision of the common good.

Thus, in the context of climate change, a deliberative process confined to the State in which jurisdiction the activity is proposed could very well include careful considerations for the impacts of a proposed activity beyond national borders and present generations. Such deliberations could be an opportunity for debates as to whether the benefits of a proposed activity would justify the GHG emissions that it could cause. It could also help ensure that decision-makers let no reasonable step to avoid or decrease GHG emissions unexplored. The circumstances in which these debates take place would differ in every country, reflecting a wide range of political and economic as well as social and cultural circumstances.²⁵⁴ These deliberations would inevitably involve deeply political questions, in particular through arbitrages between alternative activities likely to cause GHG emissions such as—at the risk of oversimplifying—between an airport to provide fast transportation to the few and a coal-fired power plant to provide cheap electricity to the many. CA could thus ensure that the need to decrease and cease excessive GHG emissions is properly conveyed in relevant decision-making processes.

As such, international engagement is arguably less central in EAs in the context of climate change than it is in a transboundary context, where associating affected populations and their national government to the decision-making may help avoiding or mitigating harm. In practice, CA do not generally involve the notification and consultation of foreign governments, let alone the participation of foreign populations. In a rather unique case, Micronesia took advantage of a Czech statute to demand that the Czech Government enter consultations in relation to the latter’s project to renovate a coal-fired power plant in Prunéřov. This intervention invited sufficient public scrutiny to shame the Czech government into altering its project substantially.²⁵⁵ Yet, bilateral consultations do not reflect the global

²⁵² See notes 248 and 250.

²⁵³ Compare with Craik, *The International Law of EIA* (n 27) 31, according to whom public participation is the ‘soul’ of EIA.

²⁵⁴ See ‘World Bank’s Safeguard Policies Review and Update Expert Focus Group on the Emerging Area Climate Change’ (Report) (2013) <https://consultations.worldbank.org/Data/hub/files/meetings/Safeguards_Focus_Group_ClimateChange_MexicoCity_Summary_Final.pdf> 5, noting that benchmarks on GHG emissions ‘should be specific to countries and sectors, responding to their specific needs and circumstances.’

²⁵⁵ A Burke, ‘Federated States of Micronesia v Czech Republic: Greenhouse Emissions as Transboundary Pollution’ (2011) 14 APJEL 203, 210.

and diffuse nature of the harm caused by GHG emissions. Micronesia was not 'affected' by the Pruněřov project in any tangible way.

In comparable situations, States have generally inclined towards giving an opportunity to all States and often their population to access to information about the proposed activity, thus enabling them, at least informally, to express their views. For instance, the EA procedure established under in the Protocol on Environmental Protection to the Antarctic Treaty requires EA reports to be circulated to an intergovernmental committee and to each Party to the Protocol, which, in turn, is to make the report publicly available within its jurisdiction.²⁵⁶ UNCLOS requires its Parties to communicate EA reports 'to the competent international organizations, which should make them available to States,'²⁵⁷ although this treaty does not create any specific mechanism. In practice, these reports are often communicated to regional seas commissions established under regional agreements.²⁵⁸ The Convention on Biological Diversity encourages the conclusion of bilateral, regional or multilateral arrangements for notification, exchange of information and consultations on proposed activities likely to have a significant impact on biological diversity.²⁵⁹

Yet, no agreement established any institutional mechanism for notification and consultations as far as climate change is concerned. By analogy to UNCLOS, a State conducting a CA could take the initiative to communicate a report to a competent international organization such as the UNFCCC Secretariat or UNEP in lieu of notification and to invite the organization to gather views in lieu of consultations. Nevertheless, transnational deliberations would certainly be more effective if an institutional arrangement could be established, for instance in the form of a registry recording CA reports and gathering views by national governments and, possibly, authorized non-governmental organizations. This arrangement would ideally be made through a dedicated treaty, but a non-binding decision under an existing framework—for instance a decision of the Parties to the Espoo Convention—would be sufficient to create an optional institutional framework.²⁶⁰

In conclusion, there is no clear rule on how deliberations are to be conducted in relation to CA. Consultations of the national population is an essential trait of the EA process itself, and, by extension, of the CA. Beyond this, there is little practice and no established rule on how foreign governments are to be notified and consulted, and whether foreign populations are to be provided an opportunity to participate. It is certainly desirable, but probably not required,

²⁵⁶ Antarctic Protocol on Environmental Protection (n 49) annex I, arts 3.3 and 3.4.

²⁵⁷ UNCLOS (n 48) art 205. See also *ibid* art 206. International organizations were viewed as a focal point to avoid the excessive burden of reporting to each and every State.

²⁵⁸ E Blitza, 'Article 205: Publication of Reports' in A Proelss (ed), *United Nations Convention on the Law of the Sea: A Commentary* (Bloomsbury 2017) 1364, 1368 (para 11).

²⁵⁹ Convention on Biological Diversity (n 50) art 14.1(c).

²⁶⁰ See Mayer, 'Environmental Assessments in the Context of Climate Change' (n 166).

that CAs be opened to extraneous interventions, in particular constructive recommendations and offers of financial or technical assistance.

C. Effects on the Final Decisions

EA is about procedure more than about substance. Under most EA laws, a decision-maker, having taken notice of the impacts of a proposed activity on climate change or any other environmental concerns, may nevertheless approve it.²⁶¹ Often, CA makes no difference.²⁶² For example, less than a year after the High Court of South Africa overturned the administrative approval for the construction of the Thabametsi coal-fired power plant in Limpopo on the ground that the EIA had failed to assess foreseeable GHG emissions,²⁶³ a new administrative approval was issued based on a CA of the project.²⁶⁴ While acknowledging that the project would result in significant GHG emissions, the approval authority concluded that such harm ‘were outweighed by the benefit to the country of having the additional energy-generation capacity’.²⁶⁵ Courts typically do not interfere with the administrative appraisal of the opportunity to approve the activity, unless the decision is procedurally flawed or evidently unreasonable.²⁶⁶

On the other hand, one should not expect every single CA to lead to significant changes in the proposed activity. CA are useful even if only a tiny minority of the proposed activities are substantially altered as a result. In rare cases, an assessment of the GHG emissions may tilt the balance and lead decision-makers to withhold approval. More frequently, a CA may suggest conditions on the approval with the view of reducing GHG emissions. In some cases, activities were approved subject to a very general condition, such as the obligation for a project’s proponent to ‘implement all reasonable and

²⁶¹ See Craik, ‘Comparative Legal Analysis’ (n 30).

²⁶² See generally Jeonghwa Yi and T Hacking, ‘Incorporating Climate Change into Environmental Impact Assessment: Perspectives from Urban Development Projects in South Korea’ (2011) 21 *Procedia Engineering* 907; W Wende *et al.*, ‘Climate Change Mitigation and Adaptation in Strategic Environmental Assessment’ (2012) 32 *Environmental Impact Assessment Review* 88; A Enríquez-de-Salamanca *et al.*, ‘Consideration of Climate Change on Environmental Impact Assessment in Spain’ (2016) 57 *Environmental Impact Assessment Review* 31; S Hands and MD Hudson, ‘Incorporating Climate Change Mitigation and Adaptation in Environmental Impact Assessment: A Review of Current Practice within Transport Projects in England’ (2016) 34 *Impact Assessment and Project Appraisal* 330.

²⁶³ *Earthlife Africa Johannesburg* (n 18).
²⁶⁴ See T Carnie, ‘Limpopo’s Coal-Fired Power Station Gets Green Light’, *Business Day* (8 February 2018) <<https://www.businesslive.co.za/bd/companies/energy/2018-02-08-limpopo-coal-fired-power-station-gets-green-light/>>. See also TL Humby, ‘The Thabametsi Case: Case No 65662/16 *Earthlife Africa Johannesburg v. Minister of Environmental Affairs*’ (2018) 30 *JEL* 145.

²⁶⁵ South Africa’s Environmental Affairs Minister Edna Molewa, quoted in Carnie (n 264).

²⁶⁶ In most legal systems, Courts refuse to overturn a decision to approve a project where the EA procedure has been respected and all relevant matters have been properly documented, unless the decision is clearly irrational. In English law, for instance, the test cited for judicial review on substantive grounds is often that of ‘Wednesbury irrationality’, as defined in *Associated Provincial Picture Houses Ltd. v Wednesbury Corporation* [1948] 1 KB 223 (CA).

feasible measures to minimize the release of [GHG] emissions from the [project] site'.²⁶⁷ A review of Canada's practice revealed conditions ranging from the use of best technologies, to the adoption of a detailed GHG emissions management plan.²⁶⁸ Less directly, in anticipation to CA, the proponents of large projects are likely to adopt alternatives which reduce GHG emissions, for instance by using the latest technology available when economically feasible. There is also some evidence that innovative conditions imposed as the result of a CA can promote new ideas which are then endorsed by lawmakers and imposed as a matter of general policy to all similar activities.²⁶⁹

V. CONCLUSION

This article has documented the emergence of a customary international law obligation of States to conduct CA in relation to proposed activities which are likely to result in significant GHG emissions. The diffusion of EA as a tool for climate change mitigation is clearly a desirable development: it makes little doubt that any State is better off if every State conducts EAs to assess the implications of proposed activities for climate change, considering relevant alterations or alternative to proposed GHG-intensive activities, and thus more broadly prompting political deliberations on how important projects, plans, programmes and policies may take part in a long-term low GHG emissions development strategy.²⁷⁰ EAs may contribute to bottom-up awareness-raising, where local authorities often play a leading role, in consultation with civil society organizations and citizens, to think about the many concrete steps that need to be taken in order to decrease and, eventually, cease GHG emissions, as a way to, literally, reinvent the world.

The developments documented in this article showed that the debate on *whether* EAs could be used as a tool for climate change mitigation is gradually turning into a debate on *how* this could best be done. In this respect, a number of thorny questions remain open, for instance regarding the assessment of significance, the method of appraisal or the possibility of opening up deliberations to foreign States or non-State actors. These debates are sparking off simultaneously in multiple countries in similar ways, though often in isolation. This suggests—at the risk of concluding this article on a cliché—that more research is needed to document, analyse and compare the developments that are rapidly taking place around the world in this regard.

²⁶⁷ Planning Assessment Commission of New South Wales, Development Consent, Wilpinjong Extension Project, Application SSD-6764 (2017), condition 19(b).

²⁶⁸ See Ohsawa and Duinker (n 191).

²⁶⁹ See for instance *Hunter Environment Lobby Inc. v Minister for Planning* [2011] NSWLEC 221 and *Hunter Environment Lobby Inc. v Minister for Planning (No 2)* [2012] NSWLEC 40; as well as *Gray* (n 102); and State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 under the Environmental Planning and Assessment Act 1979, section 14(2), Reg 65 of 2007.

²⁷⁰ See Paris Agreement (n 5) art 4.19.

Comparative scholarship could help cross-fertilizing national debates on the modalities of CA and, thus, consolidate State practice towards an effective and consistent use of EA as a tool for climate change mitigation.