Climate Change and Investor-State Arbitration:
The Essential Importance of Issues of Compensation and the Calculation of Quantum

Yawen Zheng*

N. Jansen Calamita**

Introduction[1]

An immediate and steep decline of fossil fuel production and usage has been said to be necessary to limit global warming to 1.5°C to 2°C as States have pledged in the Paris Agreement.[2] Accordingly, various States have begun implementing fossil fuel phase-out policies with the purpose of achieving "net-zero" emissions.[3] In response to these policies, investors have begun bringing claims, asserting rights under international investment treaties. For instance, investment treaty claims have already been lodged against the Netherlands for its enactment of legislation to ban coal-fired energy by 2030,[4] and against Italy for its ban on oil and gas development.[5] In these cases, investors are seeking compensation covering not only the amounts they have invested, but also the estimated profits they allege would have been produced over the lifetime of the investment.[6]

Investment treaties are typically silent about the standards of compensation to be used where treaty violations are established, like unlawful expropriations and violations of the fair and equitable treatment standard.[7] As a result, the prevailing approach used by tribunals is to refer to the general

---

* Postdoctoral Fellow, Chinese University of Hong Kong (yawenzheng@cuhk.edu.hk). Postdoctoral Fellow, Centre for International Law, National University of Singapore (from July 2022).

** Head, Investment Law and Policy, Centre for International Law, National University of Singapore; Research Associate Professor (CIL), Faculty of Law, National University of Singapore (n.j.calamita@nus.edu.sg).

[1] The contents of this paper were submitted to the OECD as part of its Public Consultation on Investment Treaties and Climate Change.

[2] SEI and others, 'The Production Gap: Governments' Planned Fossil Fuel Production Remains Dangerously out of Sync with Paris Agreement Limits' (2021).

[3] See Climate Watch, 'Net-Zero Tracker' (2021): www.climate watchdata.org/net-zero-tracker.

[4] Lisa Bohmer, 'The Netherlands Is Facing Its First ICSID Arbitration, as German Energy Giant RWE Makes Good on Earlier Threats', *Investment Arbitration Reporter* (3 February 2021); Lisa Bohmer, 'Uniper Lodges Treaty-Based Claim against the Netherlands' *Investment Arbitration Reporter* (27 April 2021).

[5] 'Updated: Italy's Ban on Oil and Gas Development near Its Coastline Leads to Investment Treaty Arbitration Claim', *Investment Arbitration Reporter* (23 March 2017).

[6] Claire Provost and Matt Kennard, 'The Obscure Legal System That Lets Corporations Sue Countries', *The Guardian* (10 June 2015).

[7] Kyla Tienhaara and Lorenzo Cotula, *Raising the Cost of Climate Action? Investor-State Dispute Settlement and Compensation for Stranded Fossil Fuel Assets* (iied 2020).

international law standard of reparation for internationally wrongful acts, i.e., the "full reparation standard", which requires the responsible State to "wipe out all the consequences of the illegal act" and restore the injured party to the condition in which it would have found itself but for the State's wrongful conduct.[8] This approach has been used by tribunals consistently to justify awarding investors compensation for anticipated revenues (or lost profits),[9] which often vastly exceeds the amounts actually invested in the business.[10] Concerns about standards of compensation and the size of quantum awards are especially salient in the context of investment treaty claims raised by fossil fuel investors. Due to the generally long-term nature of the contracts at issue, and the large sunk costs faced by investors, damages awarded in cases brought by fossil fuel investors generally have been very large. The average amount awarded in known fossil fuel cases exceeds USD 600 million, more than five times the amount in non-fossil fuel cases.[11] While the size of these awards is concerning on its own, they become even more concerning in the context of climate change and investor challenges to net zero policies. Damages awarded in investment arbitrations concerning fossil fuel restrictions can divert millions of dollars from government budgets, and thus significantly exacerbate the budgetary constraints faced by many States seeking to achieve net zero.[12] Moreover, even in cases in which individual States do not face claims or are not required to pay exorbitant arbitral awards to investors, States may nevertheless be discouraged ("chilled") from adopting effective environmental measures to address climate change and achieve their net zero goals.[13]

Much attention has been given to the ways in which States might better draft their investment treaties to indicate more clearly the limits of protection granted to investors, especially when the State is exercising its right to regulate for the public good (such as enacting measures to protect the environment). While attention to the formulation of substantive protections in treaties is undoubtedly important, the drafting of new substantive protections – without express reference to issues of compensation and quantum – is insufficient to address the risk States face of massively large awards in favour of investors. Moreover, while new treaty language may help to address claims in the future, it can do little to address the risks posed by the thousands of already existing investment treaties. Accordingly, it is essential that policy makers consider not only how

[8] International Law Commission (ILC), Draft articles on Responsibility of States for Internationally Wrongful Acts, with commentaries - 2001, Art 31.

[9] In the absence of restitution – which almost never takes place in investment treaty arbitration – customary international law obligates the State to compensate the investor for the damage caused by its wrongful acts, which covers "any financially assessable damage including loss of profits insofar as it is established". *Ibid*., Art 36(2).

[10] Jonathan Bonnitcha and Sarah Brewin, 'Compensation Under Investment Treaties' (International Institute for Sustainable Development 2020).

[11] Lea Di Salvatore, 'Investor–State Disputes in the Fossil Fuel Industry' (International Institute for Sustainable Development 2021).

[12] See e.g. UK National Audit Office, 'Achieving Net Zero' (4 December 2020).

[13] Kyla Tienhaara, 'Regulatory Chill in a Warming World: The Threat to Climate Policy Posed by Investor-State Dispute Settlement' (2018) 7 Transnational Environmental Law 229.

investment treaties can be drafted better, but also how current treaties can be rebalanced with respect to damages and compensation to adequately address the risks that States urgently face.

Despite the critical need to address issues of compensation and the calculation of quantum awards in cases involving fossil fuel investments – and climate change policies in particular – there has been relatively little attention given to the issue of compensation in the literature.[14] Accordingly, this note focuses on the problem of compensation and the calculation of quantum, and on the need for States and researchers to examine different approaches which might be used to reduce/limit/control the amount of compensation awarded to investors in investment treaty cases concerning fossil fuel phase-out policies. In the interests of brevity, five heads of inquiry are briefly noted below.

1. Contribution

The first line of inquiry into which research might be undertaken concerns contribution. The principle of contribution is well-recognized in customary international law, which requires that a determination of reparation take into account any "wilful or negligent action or omission" that contributed to the injury.[15] Tribunals have used this doctrine to reduce the amount of compensation awarded to investors in a variety of cases, although not as yet with respect to climate change.[16] In principle, it would seem possible to argue that fossil fuel investors bear some degree of contributory fault for the harm caused by their investments in light of readily available knowledge about, e.g., the adverse impacts of carbon dioxide emissions on climate change. In other words, it might be said that fossil fuel companies should have the expectation for, and bear the risk of, increased climate and decarbonization regulations that affect their investments, especially when the host State is under an obligation arising from international environmental law to reduce carbon emissions. As a result, therefore, the principle of contribution may be seen as a tool to reduce compensation on account of investors' failure to investigate adequately the risks and consequences of their investments.

Some commentators, however, have expressed concern that applying the principle of contribution to the calculation of quantum may encourage tribunals to consider the investor's conduct as an issue relevant to the determination of damage rather than to the claim's merits, thus making tribunals more likely to find treaty violations in the first place.[17] Moreover, given the lack of specific guidance provided in investment treaties, tribunals have noted their wide margin of

[14] But see e.g. Bonnitcha and Brewin (n 9).

[15] ILC (n 7) Art 39.

[16] See e.g. *MTD Equity Sdn. Bhd. v. Chile*, ICSID Case No. ARB/01/7, Award, 25 May 2004 [243]–[246]; *Occidental Petroleum Corp. v. Ecuador*, ICSID Case No. ARB/06/11, Award, 5 October 2012 [687].

[17] Bonnitcha and Brewin (n 9).

discretion in apportioning fault.[18] Consequently, even with the application of the principle of contribution, tribunals may still award large amounts of damages.[19] In light of these issues and uncertainties, it worth examining whether further guidance regarding the apportionment of fault can be provided to arbitral tribunals through joint interpretative statements, "softer" multilateral or plurilateral guidelines, or, in future treaties, through express textual direction.[20]

2. International Environmental Obligations

A second line of inquiry concerns the use of States' international environmental obligations as a ground on which to reduce/limit/control the amount of compensation awarded in cases concerning fossil fuel phase-out policies. Giving adequate consideration to States' international environmental obligations in the interpretation and application of standards of compensation is a potentially promising approach to avoid overemphasizing the rights of investors under investment treaties and giving insufficient weight to the rights and obligations of States to act in the public interest. Such an approach is supported by customary international law in Article 31 of the Vienna Convention on the Law of Treaties,[21] which requires the interpretation of treaties to take into account relevant international rules applicable to between the State parties. In the context of climate change, this would include international environmental instruments like the United Nations Framework Convention on Climate Change and the Paris Agreement.

In considering this line of inquiry for possible further work, it warrants noting that States' environmental obligations have only rarely been considered in investment arbitrations relating to the energy sector.[22] Various reasons may be put forward for the reluctance of tribunals to rely on non-investment obligations, e.g., a lack of familiarity with non-investment instruments; concerns about going beyond the tribunal's jurisdictional grant; and uncertainty as to the application of non-derogation clauses in certain treaties,[23] which provide that treaty provisions more favourable to the

---

[18] For example, the damage awarded in *Hulley v. Russia* still amounted to USD 40 billion even after a 25% reduction because of the investor's contributory negligence. *Hulley Enterprises Limited (Cyprus) v. Russia*, UNCITRAL, PCA Case No. 2005-03/AA226, Final Award, 18 July 2014 [7.32]. See also *Occidental Petroleum Corp.* [670].

[19] Additionally, it bears noting that fossil fuel investors may also be able to argue that they have been protected against the risk of regulatory change by long-term contracts with host States, which generally include stabilization clauses guaranteeing the maintenance of legal *status quo* to a certain extent and mandating the payment of compensation for damage suffered from a change in the law. See International Energy Charter, *Handbook on General Provisions Applicable to Investment Agreements in the Energy Sector* (2017).

[20] For example, providing interpretive directions to require tribunals to interpret stabilization clauses in light of changing circumstances, or to reduce compensation in cases involving poor investment decisions, like rejection of the use of technologies to reduce carbon emissions.

[21] Adopted 23 May 1969, entered into force 27 January 1980, 1155 United Nations, Treaty Series 331.

[22] Climate Change Counsel, 'The Energy Charter Treaty, Climate Change and Clean Energy Transition: A Study of the Jurisprudence' (2022). See e.g. *Compañia del Desarrollo de Santa Elena v. Costa Rica*, ICSID Case No. ARB/96/1, Award, 17 February 2000 [71]-[72].

[23] See Moshe Hirsch, 'Conflicting Obligations in International Investment Law: Investment Tribunals' Perspective' in Tomer Broude and Yuval Shany (ed), *The Shifting Allocation of Authority in International Law: Considering*

investor shall prevail over other treaties in the event of a conflict. While such issues and uncertainties can certainly be addressed through careful drafting in new treaties, the conclusion of better treaties in the future does little to address the risks States face today of massively large awards arising out of fossil fuel phase-out policies. As a result, in considering the interface between investment treaty commitments and climate change imperatives, States would do well to consider how to address these issues both with respect to current treaties, e.g., through joint interpretative statements and/or "softer" multilateral or plurilateral guidelines, as well as in future treaties, through express textual direction.

3. Polluter Pays and Precautionary Principles

A third critical area for consideration regards the use of the polluter pays and precautionary principles and how these principles can be used to rebalance the approach to investor compensation in investment treaty disputes. The issues and opportunities raised by each are addressed in turn below.

a. Polluter Pays Principle

The polluter pays principle requires polluters to internalize the costs of their harmful activities rather than allowing those costs to be externalized onto the community.[24] Under the polluter pays principle, those who pollute must not only make best efforts to restore the precedent equilibrium, but they must also pay for harm caused.[25]

The polluter pays principle is emerging as a recognized principle of international law.[26] Accordingly, the polluter pays principle can be relevant to the settlement of international investment disputes. For example, it would be contrary to the principle of polluter pays if an investor were able to receive compensation for lost future profits without having that quantum adjusted to reflect the environmental costs of those investment activities.[27] Arbitral tribunals have not yet applied the polluter pays principle in their compensation analyses, at least not by name. That said, there are examples of cases in which tribunals have decided to limit the amount of

---

Sovereignty, Supremacy and Subsidiarity (Hart Publishing 2008). For an example of such a provision, see Energy Charter Treaty (signed December 1994, entered into force April 1998) Art 16.

[24] Mizan R Khan, 'Polluter-Pays-Principle: The Cardinal Instrument for Addressing Climate Change' (2015) 4 *Laws* 638.

[25] Flavia Marisi, *Environmental Interests in Investment Arbitration: Challenges and Directions* (Kluwer Law International 2020) 48.

[26] See e.g. International Convention on Oil Pollution Preparedness, Response and Cooperation (adopted 30 November 1990, entered into force 13 May 1995) 1891 UNTS 77 Preamble.

[27] Ole Kristian Fauchald, 'Property and Environmental Protection in Investor – State Arbitration' in Gerd Winter (ed), *Property and Environmental Protection in Europe* (Europa Law Publishing 2015).

compensation owed to the investor in order to account for the environmental effects of the investor's activities.[28]

According to the polluter pays principle, polluters should not only pay for the direct harm caused by their activities, but they should also pay for the costs incurred by the adoption of measures aimed at pollution control and prevention, like the loss incurred by the implementation of fossil fuel phase-out policies, as otherwise the principle would also be frustrated.[29] The application of this aspect of the polluter pays principle, however, can be problematic. It can be difficult, for example, to determine what constitutes environmental degradation, to identify the culpable polluter, and to quantify the costs of harm and remediation, especially when considering the cumulative effects on environment.[30] Scholars have recognized these challenges, although for some a precise and exhaustive accounting of damages and culpability is not the point of the polluter pays principle. Rather, according to Mayer, the principle intends to dissuade polluters from polluting simply by charging some fee instead of requiring them to "pay all the costs in every circumstances".[31] Going forward, research and analysis in this area will need to consider the evident tension between the adjudication of individual investor responsibility on the one hand, and the broader application of the polluter pays principle as a means of achieving an end. Moreover, research will need to address the development of legal principles which can be used to establish a quantum value of environmental impact that an arbitral tribunal could apply to reduce compensation in a given case, e.g., calculations based on the "social cost of carbon", that is, applying "a dollar value to the potential impacts of greenhouse gas emissions" associated with the contribution of their carbon-intensive investment to climate change.[32]

b. The Precautionary Principle

The precautionary principle counsels that the lack of conclusive evidence of harm should not be considered as a sufficient reason for postponing the adoption of environmental measures.[33] Operationally, this means that it is not the State's burden of proof to demonstrate the certainty of environmental harm, but rather it is the burden of the person intending to carry out an activity to show that the activity will be harmless to the environment.[34] Accordingly, potential polluters

[28] See e.g. *Metalclad Corporation v. Mexico*, ICSID Case No. ARB(AF)/97/1, Award, 30 August 2000 [127].

[29] David Hunter and Steve Porter, 'International Environmental Law and Foreign Direct Investment' in Daniel Bradlow and Alfred Escher (ed), *Legal Aspects of Foreign Direct Investment* (Kluwer Law International 1999).

[30] Nicolas de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (Oxford University Press 2002) 75-79.

[31] Benoit Mayer, *The International Law on Climate Change* (Cambridge University Press 2018) 74.

[32] Kyla Tienhaara, Lise Johnson, and Michael Burger, 'Valuing Fossil Fuel Assets in an Era of Climate Disruption', *Investment Treaty News* (20 June 2020).

[33] See Rio Declaration on Environment and Development (12 August 1992) A/CONF.151/26 (Vol. I) Principle 15.

[34] Philippe Sands, *Principles of International Environmental Law* (Cambridge University Press 2018) 234.

should share the burden caused by the risk of future environmental degradation, which includes precautionary measures adopted by the host State to avoid or reduce such risk.[35]

The award in *Bilcon v. Canada* provides a suggestion of how this principle might be applied in investor-state disputes. There, the tribunal rejected the investors' claim for lost profits due to the investors' failure to show that those profits would have materialised given environmental concerns about the project and the possibility that there would be further tightening of environmental regulations in the future.[36] The tribunal's approach thus reduced the valuation of the investment by requiring the investors (i.e., the potential polluters) to bear the risk that the State would take precautionary measures in order to avoid or reduce future environmental harm. In the context of fossil fuel phase-out policies, and the pursuit of net zero, a similar approach might be taken whereby the possibility of regulatory change is treated as one of the general, fundamental risk factors in the valuation of an asset, which can lead to a significant reduction in compensation.[37]

4. **Environmental Counterclaims**

A fourth area for consideration is the expanded use of counterclaims in investor-State arbitration. Historically, the right of respondent States to bring counterclaims in investment arbitration has not been assured, as tribunals have declined jurisdiction on grounds including that the counterclaim was outside the scope of the consent to arbitration,[38] not closely related to the investor's primary claim,[39] or lacked legal basis (express investor obligations).[40] That said, there have been some instances in which States have been successful in raising counterclaims, including in situations involving environmental damage. For instance, in *Perenco v. Ecuador*, Ecuador's counterclaim based on environmental harm caused by the investment was upheld and the compensation awarded to the investor was reduced accordingly.[41]

Investment arbitration can be an important forum to enforce international environmental standards.[42] Indeed, in some cases, it may be the only viable forum available to hold investors

---

[35] Tomoko Ishikawa, 'The Role of the Precautionary and Polluter Pays Principles in Assessing Compensation' (2015) RIETI Discussion Paper Series 15-E-107.

[36] *Bilcon v. Canada*, PCA Case No. 2009-04, Award on Damages, 10 January 2019 [276]-[279].

[37] Ishikawa (n 34).

[38] See e.g. *Spyridon Roussalis v. Romania*, ICSID Case No. ARB/06/1, Award, 7 December 2011 [871]-[872].

[39] See e.g. *Saluka v. Czech Republic*, UNCITRAL, Decision on Jurisdiction over the Czech Republic's Counterclaim, 7 May 2004 [80]-[81].

[40] *Teinver, Transportes de Cercanías and Autobuses Urbanos del Sur v. Argentina*, ICSID Case No. ARB/09/1, Award of the Tribunal, 21 July 2017 [1066]-[1067].

[41] *Perenco Ecuador v. Ecuador and Empresa Estatal Petróleos del Ecuador (Petroecuador)*, ICSID Case No. ARB/08/6, Award, 27 September 2019 [1023].

[42] Francesco Francioni, 'The private sector and the challenge of implementation' in Pierre-Marie Dupuy and Jorge E Viñuales (ed), *Harnessing Foreign Investment to Promote Environmental Protection: Incentives and Safeguards* (Cambridge University Press 2013).

accountable for environmental harm. Domestic courts of the investor's home state may decline jurisdiction due to *forum non conveniens.*[43] Courts may refuse jurisdiction in light of contractual arbitration clauses.[44] Local courts may lack the capacity to deliver prompt and effective justice,[45] and investors, even when brought before local courts, may seek to overturn domestic judgments of liability for environmental harm through the use of investment treaties.[46] In light of these challenges, an increased focus on the potential use of counterclaims, especially in cases involving allegations of environmental harm, is warranted. By providing an avenue for States to be heard on claims of environmental harm caused by the claimant's investment, an effective counterclaims mechanism can serve to rebalance the investment treaty regime and mediate some of the excesses of quantum awards.[47]

Establishing an effective counterclaims mechanism poses challenges for States and researchers to consider. Counterclaims mechanisms can be improved in future treaties of course through careful drafting, but for existing treaties the challenges are trickier, potentially requiring the amendment of arbitral rules and/or jurisdictional provisions in treaties. Future research and discussion can help to inform the development of options to address the challenges posed by existing treaties, for example, by considering the feasibility of joint interpretations by treaty parties; wholesale rule amendments via a multilateral investment court; or "softer" guidance through multilateral statements of intent.

5. Looking Ahead: Redrafting Investment Treaties to Control Compensation Awards

As noted at the outset, the most pressing concern faced by States with respect to investment treaties and fossil-fuel phase out programs is the potential for claims and exorbitant awards under the thousands of already existing investment treaties (which do not contain language addressing investor compensation or broader concerns regarding the State's right to regulate). That said, while it is essential for States to consider ways in which to address the issues raised under these older treaties, it is of course also essential for States ultimately to replace these older treaties with new treaties containing provisions which better reflect their intended balance of rights and obligations.

In this respect, it bears giving to note to some as yet experimental treaty practices which seek to address specifically concerns about large awards in investment arbitration. For instance, the SADC

---

[43] See e.g. *In Re Union Carbide Corp. Gas Plant Disaster*, 634 F. Supp. 842 (S.D.N.Y. 1986).

[44] See e.g. BBC News, 'Court ends Newmont civil case' (15 November 2005).

[45] See Debayan Roy, 'SC to begin hearing in Bhopal gas tragedy: All you need to know about 36-yr-old case', *The Print* (11 February 2020). See also Marc Galanter, 'Legal Torpor: Why So Little Has Happened in India After the Bhopal Tragedy' (1985) 20 *Texas International Law Journal* 273.

[46] See e.g. Jarrod Hepburn, 'Chevron v. Ecuador Award Analysis: Tribunal Considers Final Questions of Jurisdiction and Surveys Evidence of How Ecuadorian Environmental Trial Was (Mis)conducted', *Investment Arbitration Reporter* (9 September 2018).

[47] Kyla Tienhaara, *The Expropriation of Environmental Governance: Protecting Foreign Investors at the Expense of Public Policy* (Cambridge University Press 2009) 268.

Model Bilateral Investment Treaty requires compensation to reflect "an equitable balance between the public interest and interest of those affected",[48] and the Revised Investment Agreement for the COMESA Common Investment Area allows compensation to reflect aggravating conduct of investors or their failure to seek to mitigate damage.[49] Moreover, some commentators have proposed other options for investment treaty reform to limit the amount of damage, like capping compensation at the total expenditure actually incurred by the investor, requiring compensation to be determined according to the law of the host State,[50] and choosing the lesser between the loss suffered by the investor and the gain the host State has obtained from the investment.[51] Other proposals address fossil fuel investments specifically, for example, by excluding access to investment arbitration for investments in fossil fuels,[52] and by providing specialized approaches to the valuation of investments in fossil fuels to take into account their "stranded" character.[53] The feasibility and effectiveness of these proposals are worth further exploring.

6. Concluding Remarks

Compared to investment treaty provisions delimiting substantive protections, or provisions addressing the procedures of investor-State dispute settlement, the approach to compensation and quantum in investor-State arbitration has been understudied by States and researchers. Now, however, as States face a global imperative of reducing carbon emissions and phasing out fossil fuels, the issue of compensation in investor-State arbitration looms large. Not only may large awards of compensation have severe impacts on government budgets and capacities to deliver needed public goods, but even in cases in which individual States do not face claims or are not required to pay exorbitant arbitral awards to investors, the spectre of such awards may nevertheless discourage some States from pursuing environmental measures necessary to achieve their net zero goals.[54] These are timely and important issues ripe for consideration by all stakeholders in the international investment treaty regime.

[48] Southern African Development Community, 'SADC Model Bilateral Investment Treaty Template with Commentary' (July 2012).

[49] Art 20 (3).

[50] Bonnitcha and Brewin (n 9).

[51] Emma Aisbett and Jonathan Bonnitcha, 'A Pareto-Improving Compensation Rule for Investment Treaties' (2021) 24(1) *Journal of International Economic Law* 181.

[52] Tienhaara (n 12).

[53] Bonnitcha and Brewin (n 9).

[54] Kyla Tienhaara, 'Regulatory Chill in a Warming World: The Threat to Climate Policy Posed by Investor-State Dispute Settlement' (2018) 7 *Transnational Environmental Law* 229.