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The impact of EU-ETS on the global marine industry and the relevant investment dispute resolutions

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Emission trading is an efficient measure to combat climate change, which is one of the biggest threats to the international community and human health. The shipping industry has previously been considered an energy-saving industry but the growth rate of its emissions far exceeds that of other industries. On 10 May 2023, the EU enacted Regulation (EU) 2023/957, which officially included the shipping industry in the EU-ETS. Therefore, this may lead to investor-state disputes regarding emission trading in the marine industry due to the conflicts between the obligation to combat climate change and the obligation to protect investments of the host states. This has resulted in the breaching of International Investment Agreements. In this context, this study aimed to propose practical recommendations for global marine market practitioners to avoid the potential risks of disputes by reflecting on the existing practice regarding climate change-related investor-state dispute resolutions and identifying the trends and problems of the current dispute resolution mechanism. These included inconsistency in the review standard, inconsistency in the review scope, and broad interpretation by the tribunal. Finally, this study proposed that by setting public purpose and exception clauses in the preambles of the International Investment Agreements and incorporating the specific obligations of the foreign investors and the regulatory power of the hosting states in the drafting stage, the potential risks for disputes regarding the new EU directive in the global marine industry could be effectively reduced.

KEYWORDS

investment dispute resolution, EU-ETS, investor-state arbitration, emission trading mechanism, risks, recommendations

1 Introduction

Climate change can lead to global warming, which is a big threat to the international community and development worldwide. The Paris Agreement, which was adopted under the United Nations Framework Convention on Climate Change (UNFCCC), is an important step and legal instrument in combating climate change (Burns, 2023). The parties have committed to maintain the global average temperature at 2°C above the pre-industrial levels and implement measures to control and limit the increase of the temperature to 1.5°C above the pre-industrial levels (Paris Goals). The Glasgow Climate Pact reinforced the Paris commitment in several aspects on 13 November 2021[1]. According to the 6th Assessment Report of the Intergovernmental Panel on Climate Change, there is an urgency to meet the Paris Goals because climate change can only be controlled through effective and sustained reductions in greenhouse gas emissions, and, to meet the Paris Goals, this process must be completed within one decade.

The shipping industry, when compared with other high energy-consuming industries, is generally considered to be energy-saving, but the growth rate of its carbon emissions and energy consumption has far exceeded that of the other industries (Yang et al., 2023). According to the latest 4th International Maritime Organization Greenhouse Gas Study, greenhouse gas emissions from shipping have increased rapidly due to the continued growth of the shipping trade (IMO, 2020). Thus, shipping decarbonization is an important part of combating climate change and achieving the Paris Goals (Yang et al., 2023).

The European Union Emissions Trading System (EU-ETS) was first established in 2005 and is currently the largest greenhouse gas emissions trading system in the world. The EU-ETS periodically updates the allocation methodology for its allowances and scope (Christodoulou et al., 2021). On 10 May 2023, Regulation (EU) 2023/957 was officially enacted by the European Union (EU), and it officially included the shipping industry and maritime transportation in the EU-ETS system. This directive also provided for monitoring, reporting, and verification of the carbon emissions of additional greenhouse gases. In both the airline and marine industries, the EU-ETS should comply with the common but differentiated responsibilities and respective capabilities principle of the UNFCCC. For instance, in terms of the EU-ETS's inclusion of the airline industry, this indicates that the EU-ETS covers the whole process of the flight, from the departure to the arrival in an EU airport. This results in an additional burden on the airline industry, which has to monitor, report, and verify as an EU member (Gonzales, 2013).

Emissions trading schemes have become a popular and efficient path for achieving the Paris Agreement Goals. By setting a total and maximum carbon emission cap, the market participants are allowed to trade emissions allowances under this cap-and-trade system in the secondary market. The market participant must pay attention and make sure that they have sufficient allowances to cover their emissions from industrial activities, and if not, the emissions must be reduced to fall within the scope of the allowance or they need to buy more allowance units on the secondary market. The growth and internalization of emissions trading schemes offer significant opportunities and challenges for market participants. The growing complexity of emissions trading schemes and markets and the development of relevant policies will inevitably have impacts on industries, which can often lead to commercial and regulatory disputes.

For instance, Koch Industries Inc. v. Canada[2] was a dispute regarding the cancellation of Ontario's cap-and-trade scheme upon the change of government. The claimant was a foreign investor who purchased units that were auctioned by the government of Ontario after it linked with the Quebec-Canada emissions trading scheme in 2018. After the change in government, Ontario announced that its cap-and-trade scheme would be shut down. Investors were harmed as they were left holding potentially valueless assets. In December 2020, Koch Industries Inc. commenced arbitration proceedings against Canada under the North American Free Trade Agreement (NAFTA) and United States-Mexico-Canada Agreement (USMCA) arguing that the regulatory change in Ontario and the cancellation constituted illegal expropriation and other violations of the investor's treatment clauses of NAFTA.

Up to now, scholars' research on carbon emission in marine industry and climate change relevant investment disputes mainly focused on the introduction of international investment law and international climate law, investor-state cases and the view of the courts and tribunals (Akinkugbe and Majekolagbe, 2023), expropriation and national treatment clauses in international investment agreements (Gonzales, 2013; Condon, 2015; Wilensky, 2015; Christodoulou et al., 2021). Chinese scholars' researches mainly focused on ship path planning and reduction of carbon emissions (Xu et al., 2018a, b; Xu and Wang, 2018; Xu et al., 2022; Shu et al., 2023; Xiao et al., 2023; Xu et al., 2023a, b).

The existing literature not only lacks attention and research on the latest progress on EU's new directive on inclusion of shipping industry, the pending or potential cases arising from carbon emission schemes, but also lacks the investigation on practicable recommendations to avoid the risks of future potential disputes (Gan et al., 2022; Chen et al., 2023; Koonce, 2023; Nicholas, 2023). The purpose of the paper is to reflect on the latest EU directive on inclusion of shipping industry into EU-ETS and to analysis the impact on the market participants based on relevant international investment agreements and international investment disputes, and finally propose several practicable recommendations.

1 Regulation (EU) 2023/957 of the European Parliament and the Council of 10 May 2023.

2 ICSID Case No. ARB/20/52.

2 Emerging investment disputes in the carbon market and the potential risks

2.1 Disputes arising from emission trading schemes

In some countries and jurisdictions, tradable emission units under systems like the EU-ETS are not viewed as property rights under the protections of investment law by the courts and tribunals[3]. Consequently, investors in the relevant energy sector have argued that the compensation and permits of hosting states could be a possible breach of International Investment Agreements (Miles, 2013)[4]. Climate change-related investor-state arbitration concerns the hosting states' measures regarding climate change, carbon emissions and allowance, water and energy use restrictions, coastal and construction development prohibitions, and other issues (Miles, 2013).

2.2 No uniform dispute resolution mechanism at the international level

There is currently no dispute resolution institution overseeing disputes that arise from emissions trading. The UNFCCC designed a dispute resolution mechanism to refer disputes to international courts and tribunals. However, this dispute resolution clause has never been invoked by the members in practice and this clause is not compulsory. The Paris Agreement contains a compliance process to assess the national emissions reduction goals. However, neither the UNFCCC nor the Paris Agreement have a legally binding dispute resolution mechanism. Although arbitration institutions have attempted to address climate change-related disputes, considering the complexity and technical issues of cap-and-trade emission disputes, the International Chamber of Commerce (ICC) has created a Task Force on the Arbitration of Climate Change Related Disputes[5]. In the Task Force Report, the ICC recommended that market participants draft and insert tailored arbitration or dispute resolution model clauses into climate change-related IIAs or international contracts to prevent the risk of future disputes in relation to climate change or environment protection issues (Miles and Swan, 2017). Nevertheless, the recommendations are only guidelines and lack legally binding force.

2.3 The risks of the regulatory chill of the hosting states

When faced with a conflict between combating climate change and the obligation to protect investors, there is a high possibility that a large amount of compensation will be required. Furthermore, the mere possibility of a suit from the investors can reduce the likelihood that the hosting state will adopt regulatory measures and other measures to address climate change-related issues. This is known as the "regulatory chill" effect (Kim, 2014). This regulatory chill effect will substantially hinder the process of environmental protection.

3 Relevant investment disputes

Cases concerning climate change and carbon emission trading have already appeared in international courts and investment arbitration tribunals, and most cases have appeared in the International Center for Settlement of Investment Disputes (ICSID). Most cases that have been brought to the international courts and tribunals were regarding climate change-related indirect expropriation, fair and equitable treatment, and stabilization clauses (Kim, 2014)[6]. Recently, more climate change-related disputes have come to attention, and hosting states are likely to be liable for a large amount of compensation if the climate change-related regulatory activities infringe on the legitimate expectations of foreign investors (Kim, 2014). The Vattenfall AB v. Federal Republic of Germany case serves as an example[7]. Germany failed to issue a water use permit and carbon emissions for the investment of a coal-fired power plant by Vattenfall, a Swedish energy company. Thus, Vattenfall filed two ICSID cases against the German Federal Government in 2009 and 2012. In 2009, Vattenfall filed an ICSID arbitration against the German Government (Kim, 2014). The 2012 ICSID arbitration concerned the German Government's decision to phase out nuclear energy after the Fukushima nuclear power plant incident[8]. Vattenfall claimed that there was expropriation without compensation and by Germany implementing discriminatory measures, it was also a violation of non-impairment and fair and equitable treatment (Kim, 2014). Vattenfall claimed that the activity that was undertaken by the hosting state had destroyed the value of its investment. Consequently, Germany was required by the tribunal to pay one billion Euros to Vattenfall.

3 Emissions Trading: International Law and Dispute Resolution, British Institute of International and Comparative Law. BIICL.

4 Yackee J and Miles K (2015) The Origins of International Investment Law: Empire, Environment and the Safeguarding of Capital, 33 LAW & Hist. REV. 1023.

5 ICC Task Force on the Arbitration of Climate Change Related Report. Available at: https://iccwbo.org/wp-content/uploads/sites/3/2019/11/icc-arbitration-adr-commission-report-on-resolving-climate-change-related-disputes-english-version.pdf.

6 Kim DJ (2014) Standard of Protection in Investment Arbitration for Upcoming Climate Change Cases, 24 J. ARB. Stu. 33.

7 Vattenfall AB (2011) Vattenfall Europe AG, Vattenfall Europe Generation AG v. Federal Republic of Germany (ICSID Case No. ARB/09/6, 11 March 2011).

8 Vattenfall AB and others v. Federal Republic of Germany (ICSID Case No. ARB/12/12).

4 Risks of violating the obligation to protect investors: protections for the investors under International Investment Agreements

Protection of foreign investors in investment arbitration, such as fair and equitable treatment (FET) and protection from illegal indirect expropriation, are the major principles under international investment law. With the development of economic activities under the climate change process and as states take measures to combat climate change, tensions and conflicts have arisen between the investment protections of foreign investors and the protection of the environment by hosting states. Disputes have arisen due to climate change-related regulations, for example, the Kyoto Protocol mechanisms, the Paris Agreement mechanisms, and the EU-ETS emission trading mechanisms, and measures that have been taken by the hosting states have become an important part of the dispute resolution frameworks and they are frequently mentioned in international courts and tribunals. Thus, it is highly possible that in future investment arbitration cases climate change-related disputes will continue to occur (Kim, 2014).

4.1 Investor protective clause

Fair and equitable treatment (FET) protection is an absolute protection when compared with other commonly provided protections to foreign investors, such as Most-Favored-Nation and National Treatment. The Most-Favored-Nation clause protects foreign investors at the same level as a third state, and the National Treatment clause protects foreign investors at the same level as the nationals of hosting states. The core concept and element of this treatment is the investor's legitimate expectations. The basic meaning of FET is to require the hosting states to protect the basic and legitimate expectations of foreign investors (Boute, 2012)[9]. In almost all IIAs, FET is a core concept and clause in the protection of foreign investors. This clause is designed to protect individual foreign investors from the government's potential activities that may harm their interests and expectations, and the most important element of FET is the legitimate expectations of the foreign investors against potential regulatory change or activities without procedural due process (Kim, 2014). In Técnicas Medioambientales Tecmed v. United Mexican States[10], the definition of FET was the foreign investor's expectation that the hosting state should act consistently, avoid ambiguity, and be transparent in relationships with foreign investors. The foreign investors had the right to know in advance of any changes in circumstances and regulatory measures and any other relevant rules and regulations that may affect their legitimate interests. In this case, the tribunal particularly paid attention to the promise and conditions that were given by the hosting states at the time of attracting foreign investments (Kim, 2014).

4.2 Expropriation clause

Any initiation and enactment of special or stricter emission standards or climate change policies, for example, the banning of high-carbon products or coal-fired plants, could significantly impact various industries. Regardless of the legitimate public purpose of protecting the environment, investors might argue that regulatory measures taken by hosting states violate the prohibition of expropriation and FET under IIAs (Schill, 2007). Therefore, the number of disputes that have arisen from the expropriation of foreign investments is large because both direct and indirect measures are viewed as expropriation, such as other measures tantamount to expropriation (Schill, 2007).

Expropriation is the government's activity of "taking" an investment, also known as the nationalization of an investment. There are two approaches to determining whether the activities that are conducted by hosting states constitute expropriation. Firstly, the effect-based doctrine covers a wide range of measures that are taken by hosting states, including changes to emissions standards and bans on high-carbon products that might hinder the legitimate expectations of foreign investors. Expropriation is defined as including measures tantamount to expropriation in NAFTA (NAFTA art. 1110). In the Metalclad case, the tribunal defined the expropriation clause as not only covering deliberate, direct, open, and acknowledged takings from investments by the hosting states but also covering indirect takings, including incidental interference with the use of an investment or the use of an investment that deprives the legitimate and reasonable expectations of the economic benefit even if no obvious benefit or interests are gained by the hosting state (Metalclad Corporation v. Mexico)[11]. Additionally, in Phelps Dodge Corp. et al. v. Iran, the legitimate purpose of the takings of the hosting states did not alter the nature of the expropriation (Kim, 2014), and the tribunal stated that reasons and concerns of financial, economic, social, or other legitimate purposes for public interests could not relieve the hosting state of the obligation to compensate the foreign investors for their loss of benefit and failure of legitimate expectations (Phelps Dodge Corp. et al. v. Iran)[12].

Secondly, the purpose-based doctrine is that if the regulatory taking measures by the hosting states are non-discriminatory and for a legitimate public purpose with due process then the investment taking is with due process. In the Methanex case, Methanex as the claimant was a Canadian investor and a manufacturer of the main ingredient of Methyl Tertiary Butyl Ether (MTBE). After MTBE was found to be leaking into human

9 Anatole Boute, Combating Climate Change through Investment Arbitration, 35 FORDHAM INT'l L.J. 613 (2012).

10 Técnicas Medioambientales Tecmed, SA v. United Mexican States (2004) 43 International Legal Mterials 133.

11 Metalclad Corporation v. Mexico, ICSID Case No. ARB (AF)/97/1.

12 Phelps Dodge Corp. et al v. Iran, 10 Iran-US CTR 121, 130 (1986-I).

drinking water in California, the California Government deemed that the water that was contaminated with MTBE posed a threat to public health. Therefore, the California Government decided to phase out the use of MTBE by 2022. Methanex argued that its phasing out deprived its customer base and market in California, and Methanex as the claimant filed a claim under NAFTA against the United States. They argued that the California Government's activity of issuing an executive order to phase out MTBI was regulatory expropriation and breached the FET and national treatment clause. However, the tribunal rejected the claim as it reasoned that a non-discriminative regulation for a legitimate public purpose when enacted with due process should not be deemed as expropriation that breaches the IIA or violates FET. However, there is no precedent in investment arbitration, so this case can only serve as an example of how a public purpose-based measure or regulation could be considered (Kim, 2014).

The tribunal considers the laws at the time when the investment was entered into or attracted into the hosting states and any specific commitment or promises made by the hosting state to the foreign investors at that time (Miles, 2013). Thus, the FET is part of a stable legal business environment (Miles, 2013). In Occidental Exploration and Production Co. v. Republic of Ecuador, it was expressly stated that the stability of the business environment is the essence of FET[13]. This does not imply that the hosting state's climate change-related policy should remain the same and cannot be modified or revised, but it does constrain the policy and decision-making space of the hosting states such that the hosting states have to consider the importance of the regulations and policies and relevant conditions at the time of the entry of the investments. In practice, FET has been frequently invoked by foreign investors to challenge the climate change or emission trade-related policies and regulations of hosting states' governments. This often occurs when their legitimate expectation is frustrated by the climate change-related regulations of hosting states regardless of whether the regulations are necessary for a public purpose, reasonable or not (Kim, 2014).

4.3 Problems with the current investor dispute resolutions

4.3.1 Conflicts between the two obligations of the hosting states in terms of the protection of the environment and the protection of foreign investors regarding the new European Union Emissions Trading System directive

The newly enacted EU-ETS inclusion of the marine industry directive is likely to have various impacts on certain foreign investors due to the potential policies or regulations that may be implemented by hosting states to effectively adapt to the EU-ETS mechanism for the marine industry. In many jurisdictions, over 200 cases were filed by foreign investors over the emission trading mechanism or policies. With the development of the new directive, there are likely to be more disputes arising regarding indirect expropriation, frustration of legitimate expectations, and violation of FET by hosting states in the marine industry. Indirect expropriation and the FET clause are the most cited clauses in investment disputes. Moreover, future challenges may include the lack of specific expertise in emission trading disputes in the marine industry.

4.3.2 The uncertainty of the scope of the investment under protection

With the enactment of the new directive, more IIAs will be tailored to include reference to the inclusion of the shipping industry in the EU-ETS. However, certain clauses in IIAs are not without ambiguity, and the scope of the investment under protection is usually uncertain and needs further negotiation and interpretation by all parties. For example, in the shipping industry, most expropriation clauses in IIAs do not expressly stipulate or define whether the taking of a part of the investment by the hosting state constitutes direct or indirect expropriation. In practice, the changing emission trading policies by hosting states could affect the value in whole or in part of the investments. For instance, the policies or activities by hosting states of phasing out the main business, closing down businesses, or withdrawing the concession of the investors will result in material adverse effects and the whole value of the investment could be lost. The policies or activities of the hosting states, such as increasing the reduction of emissions requirement or putting taxes on carbon emissions, would cause a reduction in revenue and other investment interests, and, therefore, part of the value of the investment would be lost. In investment arbitration and other dispute resolution, both approaches could be deemed as expropriation by the tribunals on a case-by-case basis, and, therefore, there are significant risks for not clarifying the scope of the investment under protection in the drafting or negotiating states of IIAs or other investment contracts that are entered into by markets participants in the marine industry.

Certain trends are encouraging, for instance, most tribunals have adopted the "overall investment and operation doctrine" that identifies the scope of an "investment" as merely the investment itself, not the possible revenue in the future. Thus, if the overall investment is not under threat, the tribunals are reluctant to deem such regulation as expropriation if the regulations are non-discriminatory, include due process, and have a public purpose. In CMS Gas Transmission Co. v. Argentina, even though the stipulation in the IIA defined the scope of the investment to include any rights under law and contract, the tribunal did not recognize the investment as several independent rights, and rights cannot be expropriated independently outside the overall investment as a whole[14]. In contrast to the CMS case, in the Middle East Cement Shipping & Handling Co. v. Egypt case, the tribunal reviewed whether the hosting state's activities deprived

13 Occidental Exploration and Production Co. v. Republic of Ecuador (UNCITRAL, Case No. UN3467, Final Award of 1 July 2004).

14 CMS Gas Transmission Co. v. Argentina, ICSID Case No. ARB/01/8, Award, 2015, para. 263-264.

the value of every single specific value regardless of the impact of the hosting state's activities on the investment as a whole[15]. A similar situation occurred in Eureko v. Poland, where the tribunal recognized that the hosting state's activities deprived the relevant rights and constituted expropriation even without affecting the overall value of the investment as a whole[16].

Overall, regulations that close down businesses or the withdrawal of concession of the investors by hosting states will directly harm the overall investment. Therefore, they may be recognized as expropriation by the tribunals. The cancellation of industry incentive policies and taxation on carbon emissions will not directly impact the investment as a whole. However, it is still possible for the tribunal to consider the investment revenue or the relevant rights as part of the scope of the investment under protection, which would mean that they recognize the policies by the hosting state as expropriation.

4.3.3 The inconsistency in the review standards in practice

When judging whether the activities of hosting states are reasonable climate change policies or IIA breaching activities, the investment dispute resolution practice lacks consistent review standards. For the expropriation clause, some tribunals adopt the effect-based doctrine regardless of the legitimate purpose of the regulations by hosting states to combat climate change and protect the environment, while other tribunals adopt the purpose-based doctrine that prioritizes the obligation to protect the environment as a legitimate purpose, and, therefore, the regulations are not deemed as expropriation of investment. In the South American Silver v. Bolivia case, the government of Bolivia withdrew the mining concession of a foreign investor for the consideration of the protection of the environment and human rights, and the tribunal recognized the environmental protective purpose of the regulation as a legitimate public purpose. However, the effect of such taking was considered to be equivalent to expropriation, and the hosting state needed to compensate the foreign investor[17]. In other cases like the Methanex case and Philip Morris v. Uruguay, the tribunal deemed that the regulations that were implemented by the hosting states were for legitimate environmental protection purposes, were implemented with due process, and were non-discriminatory, and therefore, they were not expropriation. Thus, there is no consistent review standard for tribunals in reference to investment standards, and the precedence of previous review standards is not legally binding for later cases. Additionally, there are no current guidelines or practical steps in the marine industry regarding the emission trading mechanism. The tribunal review issues are merely considered on a case-by-case basis, and the discretion and power of tribunals for interpreting investment scopes and reviewing IIA terms are too broad. This ambiguity and discretion could cause uncertainty and unpredictability in the results of certain investment disputes.

4.3.4 The uncertainty of the scope of the review

Most IIAs and investment treaties lack a specific definition of the FET clause, and the definition and scope of fair and equitable are ambiguous. In investment dispute resolution practices, fair and equitable treatment can include legitimate expectations and non-discriminatory, transparency, and due process requirements. Regarding the legitimate expectations of investors, some tribunals have recognized the general legislation by hosting states as specific and targeted promises to certain investors, such as in the PV Investors v. Spain case[18]. While some other tribunals have not included general legislation in the specific promises that were made to the investors. For example, in the case of Impregilo v. Argentine, the scope of legitimate expectation was limited to the reasonable reliance on the legal stability of the hosting states and that the hosting state will not arbitrarily change laws and regulations without due process. Moreover, the scope of legitimate expectation should not be that the general law of the hosting state should stay the same, and reasonable modification and amendments of the law should not be deemed as a violation of the legitimate expectation of the investors[19]. Tribunals hold different views on other aspects of the scope of review; for instance, some tribunals recognize the scope of legitimate expectation as including the expectation of reasonable stable return and revenue, and the hosting states are obligated to balance the obligation to protect the environment and the obligation to protect the foreign investor. Some tribunals include the proportionality principle test in the scope of the review of legitimate expectation, and if the activities of the hosting states do not pass the proportionality principle test, the hosting state's activities constitute a breach of the FET clause. In SolEs Badajoz v. Spain, the tribunal held the opinion that photovoltaic power plants are a capital-intensive industry with high leverage, and companies have a long capital recovery period before the commencement of operation. Therefore, without public subsidies and other incentive policies, there was no competitive advantage. Thus, if the hosting state sets quotas on subsidies or changes the original subsidy policy, the change in the policy by the hosting state cannot pass the proportionality principle test and, therefore, should be deemed as breaching fair and equitable treatment[20].

15 Middle East Cement Shipping & Handling Co. v. Egypt, ICSID Case No. ARB/99/6, Award, paras. 144, 107.

16 Eureko v. Poland, UNCITRAL, Partial Award, 2005, para. 145.

17 South American Silver v. Bolivia, PCA Case No. 2013-15, Award, 2018, para. 619.

18 PV Investors v. Spain, PCA Case No. 2012-14, Final Award, 2020, paras. 601-611.

19 Impregilo v. Argentine, ICSID Case No. ARB/07/17, Award, 2011, para. 291.

20 SolEs Badajoz v. Spain, ICSID Case No. ARB/15/38, 2019, paras. 458, 415, 459, 462.

4.3.5 The absence of exception clauses in International Investment Agreements

Exception clauses serve to protect the public interests of hosting states regarding international investments. However, in IIAs between China and Korea, Japan, Holland, Germany, the UK, and Switzerland, the exception clause was absent. In IIAs between China and France and Singapore, the wording of the exception clause did not cover any grounds for the exemption of measures to protect the public interest by the hosting states.

5 Recommendations

As the conflict between the obligation to protect the environment and the obligation to protect investments intensifies, the climate change-related emission trading disputes have an impact on environmental, economic, and social dimensions. Some of the climate change-related investment dispute settlements have required a large amount of compensation by the hosting states to implement the protection of the environment and reduce greenhouse gases, which hinders achieving the Paris Goals. With the development of the emission trading mechanism that includes the shipping industry in the EU-ETS, the international community is implementing measures to achieve the Paris goals. However, it will inevitably trigger more disputes in the marine industry. Therefore, a balance between the environmental, economic, and social dimensions is needed.

5.1 Including public purpose and exception clauses in the preamble of International Investment Agreements

The basic interpretation rule under international law is that according to Article 31 of the Vienna Convention on Law of Treaties, a treaty shall be interpreted in good faith and the ordinary meaning should be given to the terms of the treaty in their context and in light of the treaty's object and purpose. The context for the interpretation of the treaty shall comprise not only the text but also its preamble and annexes[21]. In the practice of investment dispute resolution, when interpreting IIAs, such as an international treaty or international contract, the object and purpose that are enshrined in the preamble of the treaty always serve as a basis for the interpretation. By incorporating more public interest-oriented stipulations in the preambles, including an environmental protection purpose, sustainable development, and the protection of human rights and securities, it will be more practicable to strike a balance between the obligations when the tribunal reviews and interprets IIAs. This could provide a safety net for the protection of the environment.

As in the Methanex case, non-discriminatory public purpose-based regulations with due process and good faith by hosting states that comply with the Paris Goals and Kyoto Protocol should not be considered illegal expropriation. Therefore, the incorporation of sustainable development goals and practical steps and model clauses for addressing climate change into the drafting and negotiations of an investment contract or treaty should be considered. In investor-state investment scenarios, sustainable development and climate change exceptions should also be included, and the drafter and market participants can also consider including an efficient dispute settlement mechanism in the investment treaties and investor-state contracts (Kim, 2014).

5.2 Stipulating the regulatory power of the hosting state

Although the hosting states have two conflicting obligations, the current IIAs only reflect one of the obligations of protecting the investors, and the legitimate and reasonable regulatory power of the hosting state to consider the need to protect the public purpose is not reflected. The Comprehensive Economic and Trade Agreement stipulates a relevant clause in the chapter on investment and regulation measures, which recognizes the hosting state's regulatory power to regulate for legitimate public interests, including public health, safety, environmental protection, and social and cultural diversity[22]. The United States-Korea Free Trade Agreement (FTA) Article 20.10 states that when there is a conflict between an obligation to protect the environment and an obligation under the agreement, the members shall make efforts to strike a balance between the two obligations. This should be conducted without hindering the efforts taken to fulfill the environmental protection obligation unless the regulation by the hosting state is intended to limit the investment. This article prioritizes the regulatory power and obligation to protect the environment of the hosting state over the investor's rights under the FTA.

5.3 Including the obligation of the investors in International Investment Agreements

Investors are likely to be in a stronger position in investment dispute resolutions, and the tribunal is likely to decide in favor of the investors to protect them against unfair activities by the hosting states. Therefore, foreign investors rarely breach the IIAs and bear legal liabilities. Nevertheless, the investors do have an obligation to conduct a thorough due diligence investigation before their investment and have the legal obligation of reasonable conduct during the operations. By including investor's obligations that align

21 VCLT, article 31.

22 CETA, article 8.9 (1).

with environmental, social, and governance and corporate social responsibility concepts in the IIAS, it could assist with regulating investor's investment activities and promote the environmental protection process. In the USMCA articles 14.17 and 14.6, the incorporation of international standards into the internal policy of the investment is encouraged, including the Organization for Economic Cooperation and Development guidelines. These standards include labor protection, environmental protection, gender equality, human rights protection, indigenous people protection, and anti-corruption[23].

5.4 Preventive measures for investment disputes

Based upon the policy practices of Spain Italy and Netherland, governments are facing potential huge amount of penalty for non-compliance of the carbon emission policies. By improving the compliance of the marine industry and materializing the legitimate expectations of investors, potential disputes could be prevented at an early stage. Thus, additional measures should be taken to prevent and reduce potential investment disputes. Relevant preventive measures include but are not limited to, shortening the industrial incentive policy implementation or realization period and lower the investors' expectations and reliance on the national incentive policy. For example in the case of Spain, the original incentive policy in 2007 was to grant 25 years of favorable treatment to investors, but with the change of market circumstances, from 2007 to 2013, the incentive policy had been adjusted for several times and caused several potential disputes in this regard (Liu and Kong, 2022). Providing more time as a buffer zone before totally phasing out certain productions or closing down of business. Additionally, hosting states should gain awareness of the importance of procedural justice, hearings, investigations, and other due process measures before the implementation of a certain policy that might cause disputes.

6 Conclusions

To address the global environmental crisis that is caused by climate change, the international community has implemented many measures to reduce greenhouse gases. The newly enacted EU directive of including the shipping industry in the EU-ETS is an example. However, as the conflict between the environmental, economic, and social dimensions has intensified, many disputes have arisen. This was the first study on emission trading mechanisms and their impact on the marine industry that considered the investment dispute resolution perspective. This study provided a comprehensive overview of the emission trading mechanism, including the new EU directive and the previous investment disputes. We found that the clause that protects the investors against expropriation and protects the investor's legitimate expectations is highly likely to lead to investment disputes. Some of the problems with investment dispute resolutions include conflicts between the two obligations of the hosting state, namely the protection of the environment and the protection of foreign investors, the uncertainty of the scope of the investment under protection, the inconsistency in the review standards in practice, and the uncertainty of the scope of the review. To prevent potential disputes, several effective measures can be taken, such as stipulating public purpose and exception clauses in the preamble of IIAs, establishing the regulatory power of the hosting state, and including the obligation of investors in IIAs. This article proposed several practical recommendations to improve IIAs and provide advice to reduce and avoid potential disputes from emission related investments in the future. The limitation of this paper is lacking of sufficient research and investigation on particular cases of International Tribunal for the Laws of Sea (ITLOS), which is a tribunal set specifically for disputes arise from sea. The direction of future research would be focus on the comprehensive research on the specific cases from ITLOS and specific national policies based on state practices.

23 USMCA, article 14.17, 14.6.

Author contributions

WW: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. YZ: Project administration, Writing – review & editing. YL: Resources, Supervision, Writing – review & editing. YC: Resources, Visualization, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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