Regulatory aspects and public international law issues of the construction of cross-border electricity networks

Dr. Kateryna Holzer, World Trade Institute/NCCR Trade Regulation, University of Bern, Switzerland

Draft[1]

1. Introduction

Currently only 32% of the population in sub-Saharan Africa has access to electricity.[2] This not only constrains the realization of fundamental human rights, but also exacerbates the problem of pollution and greenhouse gas (GHG) emissions[3] and undermines efforts to achieve economic development. Paradoxically, energy resources of sub-Saharan Africa are more than sufficient to meet regional needs, not only now but also in the future.[4] A major problem of electrification in the African continent is the lack of electricity infrastructure. Providing electricity at an affordable price to the increasing number of industries and households, ensuring diversification and security of supply, and increasing the share of electricity generated from renewable energy sources require sustained investment in the expansion of electricity networks.[5] Investment is particularly required in the construction of regional interconnections, or cross-border electricity networks, and the establishment of regional power pools enabling electricity flows over long distances and cross-border trade in electricity. The need of construction of cross-border transmission lines is increasing with the development of large-scale hydropower projects in the Democratic Republic of Congo, Cameroon, Ethiopia, Kenya and Mozambique carrying great potential for electricity supply in the whole region of Central and Eastern Africa.

---

[1] Prepared for the presentation at the TRAPCA 10th Annual Trade Conference 'Energy as a determinant of competitiveness' in Arusha on 19-20 November 2015.

[2] Africa Energy Outlook: A FOCUS ON ENERGY PROSPECTS IN SUB-SAHARAN Africa. World Energy Outlook Special Report (IEA, 2014). In Tanzania, the number is even lower. Only about 24% of the mainland Tanzanian population have access to electricity, and only 7% of those living in rural areas. See Electricity Suuply Industry Reform Strategy and Roadmap 2014-2015. Ministry of Energy and Minerals of the United Republic of Tanzania, 30 June 2014, p. 2.

[3] Where there is no electricity, people often rely on highly polluting and unhealthy solid fuels when cooking and heating households, which causes indoor air pollution and premature deaths. See *Climate Change 2014: Mitigation of Climate Change.* Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, p. 1096.

[4] Africa Energy Outlook: A FOCUS ON ENERGY PROSPECTS IN SUB-SAHARAN Africa. World Energy Outlook Special Report (IEA, 2014).

[5] An exception is distributed generation, or generation capacity located near consumption centers, which eliminates the need to transport electricity over long distances through transmission lines. Usually, distributed generation is more expensive than centralised generation but complements the latter at times of peak demand. The same concerns electricity generated from household's solar panels, which does not require transmissions lines to be consumed by households. However, although there are countries with a larger share of solar PV in the electricity sectors (e.g. Italy, Germany and Greece, where solar PV supplies more than 7% of electricity demand), currently solar power meets only 1% of global electricity demand. This is because of still high costs of solar panels. *See http://cleantechnica.com/2015/06/12/solar-power-passes-1-global-threshold/.* Yet, transmission lines are needed to transport electricity generated from big solar power plants on long distances, such as from a planned solar power plant in Kenya.

The role of government and regulation in the construction of regional interconnections and enabling cross-border trade in electricity over long distances is crucial. Only integrated electricity markets and well-designed regulatory frameworks can deliver and maintain cost-effective electricity systems. Interconnected electricity systems, in their turn, can contribute to the objectives of low carbon economy, as 'certain electricity transmission projects of cross-border nature have a potential to integrate large-scale' renewable energy sources'.[6]

This paper explores the challenges related to the regulatory environment for the construction of cross-border electricity transmission links. The paper looks at regulatory aspects and public international law issues of investment and international cooperation related to the construction of cross-border electricity networks. First, it examines the right to construct transmission under the law of the World Trade Organization (WTO), focusing on the transit provisions of Article V of the General Agreement on Tariffs and Trade (GATT) and related obligations under the Agreement on Subsidies and Countervailing Measures (ASCM). Second, it discusses rights and obligations arising from the participation at energy-specific international treaties, such as the non-impediment obligation under Article 7 of the Energy Charter Treaty. Third, it looks at the potential of creating legal guarantees for investors under regional trade and energy-specific agreements. The paper draws on existing case law and the experience with electricity market regulations and energy investment regimes in the European Union.

2. Prospects for development of the world's electricity interconnectors

2.1. The role of electricity transmission lines and interconnectors in energy security and decarbonisation

Electricity transmission lines are cable hardware used for transportation of electricity at very high voltage levels over long distances. Transmission lines are essential for electricity supply, as they enable to transfer electricity at high voltage from power stations to electrical substations, which then distribute electricity to final consumers. Transmission is part of the electricity product life cycle; transmissions costs are included in the price of electricity for the final consumer constituting between 5 and 10% in total electricity costs.[7] Because of large economies of scale, transmission of electricity is a natural monopoly, which is run by a country's transmission system operator (TSO). TSOs usually operate independently of electricity generation and distribution companies.

Transmission lines form an interconnected network, which is used to co-ordinate the supply of electricity aimed at achieving supply's reliability and lowest costs. Interconnecting isolated national electric power systems in cross-border network brings a number of important benefits for countries. First, electricity interconnections increase security of electricity supply.[8] They reduce power interruptions and therefore productivity losses in various economic sectors and improve quality of electricity supply service. They also provide access to power plants located in remote places. Second, they reduce national dependency on imported fossil fuels used for electricity generation inputs and lead to the reduction in the electricity price and increase in

---

[6] K. Gudas (2015), 'Cross-border electricity infrastructures and efficient use of renewable energy sources', Presentation at the World Resources Forum, Davos.

[7] Ralf Dickel, 'Impact of Liberalisation on Investment Performance in the Power Sector', in Janusz Bielecki and Melaku Geboye Desta (eds.) *Electricity trade in Europe: Review of economic and regulatory changes* (Kluwer Law International, 2004), p. 86.

[8] European Commission communication at http://ec.europa.eu/priorities/energy-union/docs/interconnectors_en.pdf.

market efficiency. Lower electricity prices result in the increased competitiveness of domestic producers. Third, interconnected grids are instrumental for decarbonising the energy mix, transition to a low-carbon economy and fight against climate change, for they enable to integrate increasing levels of variable renewables in a more secure and cost-efficient way.

2.2. An overview of the world's current and future cross-border electricity interconnection projects

The development of high-voltage transmission technologies at the beginning of the 20th century allowed the transportation of electricity over long distances.[9] High-voltage transmission lines have been built both overhead and submarine (underground). At present, some of them exceed 2 000 km and they can extend to as far as 6 000 km across the ocean in the future.[10] Large transmission line construction projects are currently underway in Europe, the Mediterranean region, Central and East Asia etc. To name just a few, the European Supergrid project aims to connect wind farms across the Northern Sea with mainland Europe[11]; another EU project is aimed to interconnect electricity systems of the EU and Israel[12]; under the Gobitec project, it is planned to build an interconnector between Mongolia, China, Japan and South Korea to transmit solar power electricity from the Gobi Desert.[13] Feasibility studies are undertaken for the construction of long-distance submarine electricity transmission lines connecting Island with mainland Europe[14] and eventually connecting the North American and European continents through Greenland with its huge wind farm potential.[15] In most of the cases, the projects are aimed at enabling the transmission of electricity from renewable sources (hydropower, solar, wind and geothermal).

In Sub-Saharan Africa, the need of construction of cross-border transmission lines is increasing with the development of large-scale hydropower projects in the Democratic Republic of Congo, Cameroon, Ethiopia, Kenya and Mozambique carrying great potential for electricity supply in the whole region of Central and East Africa. Some interconnector projects are already underway, while others need to mobilize funds for investments.[16]

---

[9] K. Gudas (2015), supra.

[10] S. Chatzivasileiadis, D. Ernst, G. Andersson, The Global Grid, *Renewable Energy*, 2013, vol. 57, pp. 372-383.

[11] See ENTSO-E Network Development Plan at https://www.entsoe.eu/publications/system-development-reports/tyndp/Pages/default.aspx.

[12] The EU will fund the construction of an electricity interconnector between Hadera of Israel and Vasilikos in Cyprus. It will be part of a longer submarine interconnector between Israel, Cyprus and Greece (through Crete) stretching over 1500 km. It will enable electricity transmission to both directions. See http://www.ansamed.info/ansamed/en/news/sections/energy/2014/10/31/energy-eu-fund-for-cyprus-israel-electricity-connection_97e51e83-c45c-4ed5-bc87-c5cfa288b42c.html

[13] See http://documents.rec.org/publications/Perspectives_Issue5_August2012.pdf.

[14] See e.g. the Nordur project at http://www.nordur.org/wb/pages/d/home.php.

[15] S. Chatzivasileiadis, D. Ernst, G. Andersson, 'The Global Grid', *Renewable Energy*, 2013, vol. 57, at 372-383.

[16] *Tanzanian energy sector under the universal principles of the Energy Charter*. Energy Charter Treaty Secretariat, Brussels, July 2015.

As technologies develop and become cheaper[17] and the number of cross-border transmission lines increases in the future, national electricity systems may interconnect in one global electricity grid with a free flow of electricity within the system and full integration of renewables.[18]

3. Importance of a proper regulatory framework for the construction of electricity system interconnectors

3.1. Domestic regulations

The success of large cross-border electricity transmission projects depends on many factors conditions. An important pre-condition for the development of large cross-border transmission systems is the availability of technology, which is still very costly and requires huge investments. [19] Electricity interconnection projects are characterized by large fixed costs and hence large economies of scale. They are long-term investment assets, as investment costs amortize only in 25-30 years. Consequently, they are natural monopolies with high demand for regulatory environment and participation of states or state-regulated private entities. The establishment of a proper regulatory environment is thus another important precondition for realization of cross-border transmission projects. Based on the experience of the EU, which is well advanced in the process of creating a regional single electricity market, a favourable regulatory framework for electricity transmission projects should include structural reforms and liberalization of the electricity market.[20] At the core of these reforms is the requirement of a third-party access and unbundling of electricity life cycle's activities. A third-party access is the key for attracting investments in energy infrastructure, since it allows private investors to participate in the funding of the projects and gain revenues from them. Unbundling usually requires putting generation and transmission in separate legal entities (legal unbundling) or even in separate legal entities with different ownership (ownership unbundling). Unbundling is a very important element of the regulatory system for the development of large transmission systems, since vertical integration of the transmission system operator (TSO) with incumbent generators proves to distort the incentive to invest in new international transmission lines.[21] Setting efficient transmission tariffs, which can serve as a transmission price incentive, is also important for attracting investment in interconnections.[22]

Regarding regulatory incentives, in general, they are very important for attracting investments in energy infrastructure, particularly, for the construction of cross-border interconnections. Regulatory incentives are widely used in the EU to facilitate the achievement of the 10%

---

[17] For example, technologies are already available for storing electricity in the electricity system through grid batteries. See K. Gudas (2015), supra.

[18] S. Chatzivasileiadis, D. Ernst, G. Andersson, 'The Global Grid', *Renewable Energy*, 2013, vol. 57, at 372-383. See also Thomas Cottier, Renewable Energy and WTO Law: More Policy Space or Enhanced Disciplines? RELP, 2014, issue 1, pp. 48-49.

[19] It is estimated that the construction of 1 km of high voltage lines of 230 kV with a capacity of 1,000 MW requires from 400,000 to 600,000 USD. See Ralf Dickel, 'Impact of Liberalisation on Investment Performance in the Power Sector', in Janusz Bielecki and Melaku Geboye Desta (eds.) *Electricity trade in Europe: Review of economic and regulatory changes* (Kluwer Law International, 2004), p. 87.

[20] See http://fsr-encyclopedia.eui.eu/unbundling/

[21] See http://fsr-encyclopedia.eui.eu/unbundling/

[22] Ibid.

target for internal electricity market interconnection.[23] The EU uses various policy tools to enable necessary investments in in interconnection. Part of regulatory incentives address issues of lengthy licensing procedures and provide exemptions from some EU internal market rules, including third party access.[24] Another category of regulatory incentives in the EU electricity transmission sector is related to access to the EU funding.[25] The EU legislation also requires national regulatory authorities to set tariffs for the use of energy infrastructure, which would take into account risks associated with the projects, such as the length of time for the investments to be recouped, bearing in mind appropriate depreciation times etc.[26]

3.2. Regional and international regulations

The process of establishment of a global electricity network calls for the internalization of electricity market regulations and the revision and improvement of international legal instruments and institutions dealing with international investment and trade in the electricity sector.[27]Traditionally, the construction of electricity transmission lines has been in the hands of states and fallen within the scope of exclusively national law. One of the earliest attempts to internationalize this regulatory area was made in 1923 with the adoption of the Geneva Convention Relating to the Transmission in Transit of Electric Power (the 'Geneva Convention'). So far, it has been the only adopted multilateral agreement dealing specifically with the construction of cross-border electricity transmission links. Other international agreements covering energy issues, such as the Energy Charter Treaty, the WTO Agreement and the United Nations Convention on the Law of the Sea (UNCLOS), have only an indirect relevance to the development of transmission infrastructure.[28] In general, an international legal framework for investment and trade in the electricity sector is very fragmented and poorly designed to address the issues of construction of transmission networks.

The role of regional agreements concluded in the energy sector is also very important in the realization of cross-border transmission system projects. Regional legal frameworks and regional cooperation are instrumental for the establishment of power pools, the development of regional common markets and the integration of renewable energy sources.[29] Regional cooperation can be promoted through bilateral inter-state agreements in the electricity sector and broader bilateral and regional agreements on economic cooperation, investment and trade (regional trade agreements).

The major problem of the creation of an international legal regime for the construction of cross-border transmission lines is divergence of national norms regarding the organization and investment in the electricity sector. This particularly concerns granting third-party access to

---

[23] See http://ec.europa.eu/priorities/energy-union/docs/interconnectors_en.pdf.

[24] EU Regulation 714/2009.

[25] EU Regulation 1316/2013 establishing the Connecting Europe Facility, OJ L 348, 20.12.2013.

[26] EU Regulation 347/2013 on guidelines for trans-European energy infrastructure, 17.04.2013.

[27] See e.g. Thomas Cottier, Renewable Energy and WTO Law: More Policy Space or Enhanced Disciplines? *RELP*, 2014, issue 1.

[28] The Energy Charter Treaty parties have recently made efforts to adopt the Transit Protocol, which would also apply to the construction of electricity transmission lines but these efforts failed. See section below.

[29] *Climate Change 2014: Mitigation of Climate Change.* Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, pp. 1115-1116.

transmission lines and providing open access rights for foreign suppliers to the national networks. There are also differences in technical and operational standards. Requirements of different national jurisdictions are often conflicting in nature both on substantive and procedural issues.[30] Traditionally, national investment regimes in the energy sector have constrained private investors from making investments in electricity system interconnection projects. Decisions about the construction of new transmission lines could only be taken by vertically-integrated state-owned electricity supply companies, which controlled all stages of electricity supply service – from generation to transmission and distribution of electricity. While the structure of the electricity market has undergone liberalization in many developed countries creating competition in the generation sector and providing third-party access to the transmission process,[31] the situation in many developing countries remains unchanged.[32]The construction and operation of transmission links remains a monopoly of the state run by public-owned electric utilities.

The expansion of electricity networks requires opening of the transmission sector for third party investments, regional coordination of transmission system operators (TSOs) and harmonization of certain areas of regulation among countries (common rules on market opening, network access, taxation of market players etc.). Moreover, they require stable regulatory environment for investment backed by inter-state bilateral, plurilateral and multilateral agreements.

4. Application of WTO and Energy Charter Treaty rules to cross-border interconnectors

4.1. WTO rules

The rules of the World Trade Organization (WTO) apply to trade in electricity.[33] However, in practice their application to electricity trade is limited because of the physical constraints of electricity trade due to its dependency on the availability of electricity grids.[34] While focusing on the issues of non-discrimination of imports and able to tackle them, WTO rules are poorly designed to address the practice of export restrictions widespread in energy trade and the

---

[30] It should be noted that there is a certain degree of convergence of national laws applicable to the energy sector among countries. It is particularly true for the oil sector with its common customary rules comprising *Lex Petrolea*. Countries usually follow these rules in their treatment of oil industry operators as they want to decrease uncertainty for investors and create a favorable investment climate. See K. Talus 'Internationalisation of energy law', in K. Talus (eds.) *Research Handbook on International Energy Law* (Edward Elgar, 2014), pp. 9-12.

[31] For example, third parties are allowed to invest in the electricity transmission lines and become eligible for regulated revenues in the EU, Australia and some US states (e.g. Hawaii), subject to certain conditions, such as the obligation to integrate renewable energy into the power production or the contribution to energy security. See K. Gudas (2015), supra.

[32] African countries still restrict participation of third parties in the transmission networks.

[33] K. Holzer et al., Promoting green electricity through differentiated electricity tax schemes, in T. Cottier and I. Espa (eds.) *International Trade in Electricity and the Greening Economy*. World Trade Forum (Cambridge University Press, forthcoming).

[34] There is a discussion in the literature about the status of electricity as a good and as a service. While electricity is listed in the goods' schedules of concessions of WTO members and has already been treated as such in a WTO dispute (Canada-Renewable Energy), electricity is not like a conventional good because it cannot be stored. WTO law experts are therefore inclined to view electricity as a process, where electricity in generation should be treated as a good, while electricity in transmission should be treated as a service. See e.g. Robert Howse (2009).

challenges of development of energy infrastructure associated with the need of investment attraction and investment protection.

The WTO provision, which is most relevant for electricity transmission, is freedom of transit contained in Article V of the WTO's General Agreement on Tariffs and Trade (GATT).[35] GATT Article V obliges WTO members to provide freedom of transit 'via the routes most convenient for international transit'.[36] This article also regulates the imposition of charges for transportation of goods in transit and fees associated with provided services. Transit charges must be 'reasonable'[37] and origin-neutral.[38]

While the issue of transit of energy products has never been the subject of WTO disputes, there seems to be consensus among WTO experts that Article V provisions also apply to transit of energy via fixed infrastructure, including electricity transmission lines.[39] However, the application of these transit provisions to electricity transit raises many questions. A question, for example, has been raised whether the freedom of transit obligation applies not only to governments of WTO members but also to private entities when the energy transit infrastructure is in private ownership.[40] This question resembles the question, which can be asked in relation to standards, which amount to technical barriers to trade (TBT). The question is whether a government can be deemed responsible for discriminatory standards set by private entities, e.g. supermarkets. While there is no case law, which can give an answer to this question, we consider it likely that government could be found liable for WTO-inconsistent acts of private entities, particularly in the area of transit infrastructure, which is highly regulated and controlled by governments.

Even of greater relevance for the development of electricity interconnectors is the question of whether the GATT Article V transit obligation implies not merely an obligation to ensure freedom of transit through existing energy transport infrastructure in a transit country but also an obligation to ensure the availability (including construction) of such an infrastructure or, at

---

[35] GATT Art. V:2 reads: "There shall be freedom of transit through the territory of each contracting party, via the routes most convenient for international transit, for traffic in transit to or from the territory of other contracting parties. No distinction shall be made which is based on the flag of vessels, the place of origin, departure, entry, exit or destination, or on any circumstances relating to the ownership of goods, of vessels or of other means of transport.

[36] In *Colombia - Ports of Entry*, the only WTO dispute so far that dealt with GATT Art. V interpretation, it was explained that 'a Member is not required to guarantee transport on necessarily any or all routes in its territory, but only on the ones ''most convenient'' for transport through its territory'. See WTO Panel Report, Colombia – Indicative Prices and Restrictions on Ports of Entry (Colombia – Ports of Entry), WT/DS366/R, 20 May 2009, para 7.401.

[37] GATT Art. V:4.

[38] GATT Art. V:5.

[39] See e.g. Yanovich Alan, 'WTO Rules and the Energy Sector, in Y. Selivanova, Regulation of Energy' in Y. Selivanova (ed.), *Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Charter* (Kluwer Law International BV, 2011), pp. 26-27; M. Cossy, 'Energy Transport and Transit in the WTO', in J. Pauwelyn (ed.), Global Challenges at the Intersection of Trade, Energy and the Environment (Geneva: The Graduate Institute, 2010), p. 115. It should also be noted that Ukraine has undertaken freedom of transit obligation, also with respect to energy, in its WTO accession protocol.

[40] It is because the WTO Agreement puts obligations and creates a liability only on the part of its contracting parties, which are governments. See M. Cossy, 'Energy Transport and Transit in the WTO', in J. Pauwelyn (ed.), *Global Challenges at the Intersection of Trade, Energy and the Environment* (Geneva: The Graduate Institute, 2010), p. 115.

least, an obligation to be cooperative (e.g. by giving a permission) in creating such an infrastructure, which is necessary for transit of energy goods. This remains an open question.

On the one hand, it could be suggested that states dependent on transit in their economic survival and development can claim this right.[41] In this context, attempts have been made by WTO law commentators to examine ways for systemic interpretation of the GATT transit obligations, based on principles of general international law, so that to secure access to energy infrastructure, including construction of fixed networks.[42] Vitaliy Pogoretskyy, for example, argues that the broad language of GATT Art. V:2 'allows transcending GATT's interpretation to general international law, outside the WTO legal system.'[43] Accordingly, the principles of effective right and economic cooperation can have an indirect bearing on third-party access and capacity establishment so that the lack of adequate energy transit facilities does not exempt a transit State from its obligation to operationalize the principle of freedom of transit in GATT Article V:2. This means that WTO members have to engage in meaningful cooperation with a view to giving effect to freedom of transit.[44] At the same time, such a broad interpretation of Article V:2 would require political will among WTO members, which is very unlikely.[45]

On the other hand, it is difficult to argue that GATT Article V creates a positive obligation for WTO members to ensure necessary infrastructure for transit of foreign goods. It would be a too far-reaching conclusion in light of the generally accepted principle of sovereignty of states. Based on the state sovereignty, building transit infrastructure on territories of sovereign states is at absolute discretion of states, which is a predominant view in the literature.[46] In fact, there is no right to freedom of transit under customary international law. This is a right solely established by bilateral agreements between states. [47]

That said, it is unlikely that, based on customary international law, freedom of transit can be interpreted as far as creating an obligation of states to provide their territories for the construction of energy transportation infrastructure or to give allowance for investments in such an infrastructure. In sum, GATT Article V does not regulate the establishment of capacity for energy transportation and thus plays no role in the promotion of cross-border electricity networks.

Provisions of the WTO Agreement related to subsidies (the Agreement on Subsidies and Countervailing Measures), services (the General Agreement on Trade in Services), investment measures (the Agreement on Trade-related Investment Measures) and government

---

[41] Lothar Ehring and Yulia Selivanova, 'Energy Transit', in in Y. Selivanova (ed.), Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Charter (Kluwer Law International BV, 2011), p. 81, concluding that that 'the issue of construction of new transit capacity is not tackled by the GATT 1994'.

[42] See, e.g., Vitaliy Pogoretskyy (2013), 'Freedom of transit and the principles of effective right and economic cooperation: Can systemic interpretation of GATT Article V promote energy security and the development of an international gas market? *JIEL*, 16 (2), pp. 313-352.

[43] Ibid., p. 351.

[44] Ibid.

[45] Ibid.

[46] See e.g. Lothar Ehring and Yulia Selivanova, 'Energy Transit', in in Y. Selivanova (ed.), Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Charter (Kluwer Law International BV, 2011), p. 81, concluding that that 'the issue of construction of new transit capacity is not tackled by the GATT 1994'.

[47] Ibid., pp. 51-52.

procurement (the Agreement on Government Procurement) have similarly little relevance for the development of cross-border electricity transmission systems. They define policy space, which is available for governments to regulate, support and participate in the construction of transmission lines.[48] However, they do not create rights for third parties to establish electricity system interconnectors and thus they cannot support the development of cross-border electricity networks.

4.2. Rules of the Energy Charter Treaty

The Energy Charter Treaty is an international agreement, which promotes cross-border cooperation in energy and sets forth a legal regime for cross-border energy trade and investment. The ECT has so far been the only legally binding treaty specific to energy. Generally based on WTO rules, the ECT goes beyond these rules, especially in the issues of energy transit. What makes the ECT particularly relevant in the context of the construction of new electricity transmission lines is an obligation (albeit surmountable) of its contracting parties not to place obstacles for the construction of missing energy transit capacities, as well as its regime of investment protection in the energy sector enforceable by its own dispute settlement.

Rules on transit are fixed in Article 7 of ECT that explicitly applies to transport facilities, the definition of which includes high-voltage electricity transmission grids and lines (Art. 7.5). ECT Article 7 contains generally all the freedom of transit and non-discrimination rules for transit found in GATT Article V. It particularly requires ECT parties to take 'necessary measures' to facilitate the transit of energy. Paragraph 2 further stipulates that ECT contracting parties 'shall encourage relevant entities to co-operate in … (b) the development and operation of Energy Transport Facilities serving the Areas of more than one Contracting Party; (d) facilitating the interconnection of Energy Transport Facilities'. Paragraph 4 additionally requires that '(i)n the event that Transit of Energy Materials and Products cannot be achieved on commercial terms by means of Energy Transport Facilities the Contracting Parties shall not place obstacles in the way of new capacity being established', except when the establishment of new capacities does not comply with environmental, safety, technical or other applicable requirements.

The ECT formulation of the freedom of transit makes this right more effective, allowing for the interpretation that governments will have little excuse not to authorize and support the construction of new energy transport facilities if investors are willing to pay for the construction and if, as provided in paragraph 5(a) of Article 7, this construction does not endanger the security or efficiency of transit country's energy systems.[49] The problem with making the freedom of transit obligation under the ECT a fully effective right lies in the relative discretion of the state to decide when the construction of transit facilities could present the risk for its security or efficiency of its energy system.[50] Moreover, according to paragraph 9 of Article 7, ECT contracting parties may have discretion regarding the type of

---

[48] For instance, WTO subsidy rules impose constraints for government support measures in the form of direct funding or tax exemptions if they cause adverse effects for foreign competing industries or linked to current or future exports. See ASCM Art. 1-3, 6. However, in many cases these constraints for government support can be circumvented, so long as electricity networks fall within the meaning of 'general infrastructure'. See *EC – Large Civil Aircraft*, AB report.

[49] Lothar Ehring and Yulia Selivanova, 'Energy Transit', in Y. Selivanova (ed.), Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Charter (Kluwer Law International BV, 2011), pp. 84-86.

[50] Ibid.

energy transport facilities they want to allow for the construction in their territory. In any case, the choice of transit facilities for construction and the treatment of transit itself (including transit fees) must be non-discriminatory with respect to the ownership, origin and destination of energy products in transit. It should also be mentioned that paragraph 7 of Article 7 provides for conciliation of disputes arising out of transit.[51] It is however limited to disputes over already launched transit and does not cover cases of refusal of granting transit.

More specific rules applicable to transit could have been provided by the Energy Transit Protocol - a treaty, which was negotiated among ECT parties but which has difficulties with being adopted.[52] It would introduce the rules, which would 'facilitate the construction, expansion, extension, reconstruction, and operation of Energy Transport Facilities used for Transit'.[53] The draft Energy Transit Protocol contains an obligation of a contracting party to ensure a transparent and non-discriminatory procedure for the authorization of the construction of energy transport facilities. [54]Had it been adopted, this agreement would have provided a more effective and practical system of rights and obligations of states and private investors with respect to the establishment of new energy transit facilities, including electricity transmission lines. Currently, these rights and obligations remain intentions.

Energy law experts recognize the importance of the Energy Charter Treaty in attracting investment in the energy sector.[55] The scope of investment protection under the ECT is quite broad. It includes both direct and portfolio investment associated with a wide range of economic activities in the energy sector, such as the energy exploration, extraction, refining, production, transmission, distribution, trade etc.[56] However, ECT parties have no legally binding commitments regarding the non-discriminatory treatment of investments at the pre-investment stage, i.e. the stage when investments have to get authorization.[57] The legally binding non-discrimination commitments were undertaken by ECT contracting parties only

---

[51] The state-to-state conciliation procedure on transit under Art. 7 can arguably be conducted in parallel to the investor-state dispute settlement procedure under Art. 26, as discussed below. On energy trade matters, the ECT state-to-state dispute settlement procedures are available only if at least one of the parties to a dispute is a non-WTO member. If all parties to a dispute are WTO members, to resolve their dispute over trade issues they have to go to the WTO dispute settlement. Compared to the WTO dispute settlement procedures, dispute resolution under the ECT is exposed to a greater political influence, as ECT panel reports must be adopted by three-fourth of voting ECT parties at a charter conference and at least a simple majority of ECT parties must support the panel's decision. It does not foresee an appeal stage either. See Y. Selivanova, 'The Energy Charter and the International Energy Governance', in Y. Selivanova (ed.), Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Charter (Kluwer Law International BV, 2011), p. 379.

[52] Negotiations ended in 2011 without signing.

[53] Art. 2 of draft Energy Transit Protocol.

[54] Also, various safeguards are foreseen to prevent the interruption of transit.

[55] See e.g. E. Sussman 'The Energy Charter Treaty's Investor Protection Provisions: Potential to Foster Solutions to Global Warming and Promote Sustainable Development, *OGEL*, 2008, 6(3), p. 2.

[56] See ECT Art. 1(5) and (6).

[57] This stage of investment was meant to be covered by a follow-up Supplementary Treaty. See Y. Selivanova, 'The Energy Charter and the International Energy Governance', in Y. Selivanova (ed.), Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Charter (Kluwer Law International BV, 2011), p. 383. It should be noted that the ECT proclaims the principle of sovereignty over natural resources and thus its parties are free to choose the structure and ownership of their energy sector, including whether to provide access to foreign investors or not.

for already established investments (the post-investment stage).[58] This commitment extends also to state-owned enterprises. Under Part III of the ECT, the contracting parties undertook investment protection commitments that include a commitment to accord to investments of investors of other ECT parties fair and equitable treatment and the treatment no less favorable than that required by international law, including treaty obligations (Art. 10). ECT parties are also obliged not to impair investors in their management, maintenance, use enjoyment and disposal by imposing unreasonable or discriminatory measures (Art. 10). The ECT forbids expropriation (or its equivalence), unless it is in the public interest, not discriminatory, carried out under due process of law or accompanied by the payment of prompt, adequate and effective compensation (Art. 13). The ECT parties are also obliged to guarantee the free transfer on investment funds (Art. 14).

The crown of the ECT investment protection regime is its investor-state dispute settlement, provided under Article 26. An investor in transit facilities can initiate the dispute settlement procedure.[59] This involves cases of nationalization or expropriation of transit facilities and impairment of investment management, maintenance, use, enjoyment and disposal by unreasonable or discriminatory measures. Investors can bring complaints to the domestic courts of the host state, to any previously agreed dispute settlement procedures (including those under bilateral investment treaties) or to international arbitration (the ICSID, under the UNCITRAL arbitration rules and the Arbitration Institute of the Stockholm Chamber of Commerce).[60]

Finally, under the newly adopted declaration called the International Energy Charter (IEC), countries from five continents agreed to facilitate the realization of infrastructural projects aiming to provide global and regional energy security.[61]IEC fell short, however, to establish investment mechanisms and provide guidance and rules for the construction of cross-border interconnectors. Despite these shortcomings and the fact that the IEC is non-binding, the IEC has made an important step forward to an international energy agreement on a wide range of energy issues including the development and liberalisation of international trade in energy, the development of efficient energy markets, the promotion and protection of energy investments, access to and development of energy sources, nuclear safety, energy efficiency and environmental protection.

5. The role of regional and bilateral agreements

The development of cross-border interconnectors depends on the energy cooperation between neighboring countries. Bilateral and plurilateral cooperation is especially important in the absence of an international energy agreement dealing with the challenges of development of cross-border interconnectors. The gap in international rules and mechanisms can be filled by provisions of regional inter-state energy-specific or trade and investment agreements (regional trade agreements, RTAs).

---

[58] ECT Art. 10.

[59] Lothar Ehring and Yulia Selivanova, 'Energy Transit', in Y. Selivanova (ed.), Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Charter (Kluwer Law International BV, 2011), p. 95.

[60] ECT Art. 26(2). It should be noted that 37% of all complaints brought under the ICSID Convention from 1972 till 2012 were related to energy. See K. Talus 'Internationalisation of energy law', in K. Talus (eds.) *Research Handbook on International Energy Law* (Edward Elgar, 2014).

[61] IEC was signed in June 2015 by over 65 countries. See http://www.energycharter.org/process/international-energy-charter-2015/

5.1. US and EU energy cooperation with third countries under RTAs

One of the first RTAs to deal with trade-related issues of energy with a dispute settlement-based enforcement mechanism was the North American Free Trade Agreement (NAFTA), a free trade agreement (FTA) concluded between the US, Canada and Mexico. NAFTA contains a separate chapter on energy with provisions that go beyond WTO rules (WTO-plus).[62] For instance, besides the prohibition of quantitative restrictions, they prohibit the use of export duties, as well as dual pricing practice that benefit domestic consumers. Moreover, the use of exceptions foreseen for legitimate public policy objectives cannot result in a complete interruption of energy exports from one party to another party.[63] Yet, NAFTA provisions on energy do not cover issues of the development of cross-border electricity network and access to energy infrastructure. In this respect, similar to the Energy Charter Treaty, which acknowledges state sovereignty over energy resources, NAFTA Article 601 confirms full respect for the Constitutions of the parties, which automatically sets limits to the regulatory leverage of the FTA with respect to energy trade and investment in general and the establishment of energy infrastructure in particular.[64]

An energy chapter is also envisaged in the Transatlantic Trade and Investment Partnership (TTIP), an FTA, which is currently under negotiation between the EU and the US.[65] Energy negotiations under TTIP are motivated by the lack of international disciplines on trade in energy and raw materials and the challenges that the EU is currently facing in terms of energy security due to the recent geopolitical developments.[66]The conclusion of an FTA between the EU and the US is expected to result in liberalization of the US energy export regime lifting export restrictions for oil and gas and launching supplies of the US liquefied shale gas to Europe.[67] The EU has also proposed to negotiate rules on transit of electricity through transmission networks, including third-party access and regulatory control of an independent regulator.[68]

TTIP is also aimed to facilitate cooperation in the area of renewable energy, which would support the implementation of relevant projects.[69] This can be of direct relevance for the

---

62. NAFTA Chapter 6 on "Energy and Basic Petrochemicals." Dec. 17, 1992, 32 I.L.M. 289 (1993), https://www.nafta-sec-alena.org/Home/Legal-Texts/North-American-Free-Trade-Agreement.

63. Ibid., Art. 605.

64. See Energy Charter Treaty Art. 18 and NAFTA Art. 601, respectively.

65. Initial EU Position Paper on Raw Materials and Energy, July 2013, http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc_151624.pdf. On the potential of TTIP to address challenges of low-carbon development, see K. Holzer and T. Cottier, 2015: Addressing Climate Change under Preferential Trade Agreements: Towards Alignment of Carbon Standards under the Transatlantic Trade and Investment Partnership. *Global Environmental Change*, special issue, http://www.sciencedirect.com/science/article/pii/S0959378015000850.

66 I. Espa and K. Holzer, 2015: Negotiating an energy deal under TTIP: Drivers and impediments to US shale exports to Europe. *Denver Journal of International Law and Policy*, 43(4).

67 Ibid. See also Zach Carter & Kate Sheppard, *Read The Secret Trade Memo Calling For More Fracking And Offshore Drilling*, HUFFINGTON POST (May 19, 2014), http://www.huffingtonpost.com/2014/05/19/trade-fracking_n_5340420.html.

68 Initial EU Position Paper on Raw Materials and Energy, July 2013, http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc_151624.pdf.

69 Ibid.

development of cross-border interconnectors, whose primary objective is the integration of renewable energy sources. It should be mentioned that cooperation on the development of energy networks and interconnectors is foreseen under many EU FTAs, whose parties agree to support modernization and establishment of new electricity transmissions lines and their interconnection with the EU electricity system.[70]

5.2. Potential of regional cooperation of Sub-Saharan African countries on the development of cross-border electricity interconnectors

Driven by the need to enhance electrification, ensure stability of functioning of national electricity systems and take advantage of excess energy available abroad, a number of power pools have been established on the African continent in the last decades. In the Sub-Saharan region, they include the Southern African Power Pool (SAPP), the West African Power Pool (WAPP), the East African Power Pool (EAPP) and the Central African Power Pool (CAPP).[71] The establishment of the SAPP[72] and the EAPP,[73] which coordinate electric utility companies of their member states, was particularly aimed to facilitate cross-border flows (trade) of electricity in Southern and Eastern Africa and contribute to the integration of renewable energy sources in the region.[74]These regional initiatives in the energy sector are backed by RTAs, previously concluded among countries of the region. Member States of the South African Development Community (SADC) adopted a regional energy integration policy, an integral part of which is the implementation of regional electricity transmission projects for electricity trade within the region.[75] Tanzania, for instance, aims to purchase 200 MW of electricity through the Zambia-Tanzania-Kenya (ZTK) power interconnector project, where Zambia's national grid is already interconnected in SAPP. The ZTK project involves the construction of a 1600 km electricity transmission line, which will connect the three countries.[76]Another interconnector is planned between Ethiopia, Kenya and Tanzania within the EAPP.

The implementation of such cross-border electricity interconnector projects requires firm commitments of governments of involved states, financial support of international donors (the

---

[70] See e.g. Art. 57 of the EC-Tunisia Economic Partnership Agreement (EPA). Similar provisions are contained in the EC-Israel FTA, which have been materialized in a large project on the construction of an electricity interconnector between Greece and Israel connecting the Mediterranean islands of Cyprus and Crete. Similarly, the EU EPAs with Balkan states, such as Albania, Macedonia, Montenegro and Serbia, as well as the EU association agreements with Moldova and Ukraine support the development of the European Energy Community aimed at the integration of electricity systems of non-EU European states with that of the EU, foreseeing the import of the EU energy policy into non-EU countries and the construction of interconnectors, where necessary. See https://www.energy-community.org/portal/page/portal/ENC_HOME/ENERGY_COMMUNITY.

[71] *Climate Change 2014: Mitigation of Climate Change.* Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, p. 1116.

[72] SAPP was established in 2012. Its member states are Angola, Botswana, Lesotho, Democratic Republic of Congo, Mozambique, Malawi, South Africa, Swaziland, Zimbabwe, Zambia, Tanzania and Namibia.

[73] EAPP is comprised of Tanzania, Kenya, Uganda, Burundi, Rwanda, Ethiopia and South Sudan.

[74] *Climate Change 2014: Mitigation of Climate Change.* Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, p. 1116.

[75] See *Tanzanian energy sector under the universal principles of the Energy Charter*. Energy Charter Treaty Secretariat, Brussels, July 2015, p. 36.

[76] Ibid., pp. 36-37.

World Bank, the African Development Bank etc.) and mobilization of private investments.[77] The latter requires coordination of national energy policies and eventual harmonization of laws and technical and environmental requirements in the energy sector under specific inter-state agreements. Regional cooperation must also address issues of structural reforms of electricity markets, including opening of the electricity transmission sector to third parties, and establishment of attractive investment regimes with regulatory incentives in the transmission sector.[78]

6. Conclusions

Government regulations play a crucial role in the construction of cross-border interconnectors and the enabling of electricity trade over long distances. Only integrated electricity markets and well-designed regulatory frameworks can deliver and maintain cost-effective electricity systems. The creation of proper regulatory environment faces the challenge of divergence in the electricity sector organization, energy market structure and regulation of energy resources at a national level.

Internationalization of energy regulations, while currently driven by internationalization of energy markets, is constrained by national sovereignty over natural resources and, consequently, by the right of states to determine the ownership of their energy resources and the structure of their energy sectors. It is therefore no surprise that existing multilateral agreements have little influence on the development of cross-border electricity infrastructure. The WTO Agreement with its freedom of transit provision contained in the GATT falls short of creating rights for third parties to establish electricity system interconnectors and fails to support the development of cross-border electricity networks. The Energy Charter Treaty, a more specific international agreement on energy, goes beyond WTO rules and provides protection for investors. However, even this agreement does not set rules on the construction and operation of electricity transmission links and does not provide a guaranteed right for third parties to participate in the establishment of cross-border electricity networks.

Regional cooperation under regional trade agreements and specific energy-related bilateral and plurilateral agreements can fill the gaps in the multilateral legal framework for energy with respect to the development of energy infrastructure. Harmonization of energy legislation at a regional level should be based on the liberalization of the transmission sector, which foresees the opening of this sector for third parties' participation. Third parties should be given the possibility to participate at the development and implementation stages of cross-border interconnector projects. The realization of these projects should also be backed by various regulatory incentives.

---

[77] African power pools are financed through different sources, including member contributions, levies raised on transactions in the pools and loans, donations and grants from donor countries and multilateral development banks. See *Climate Change 2014*, supra, p. 1116.

[78] Ralf Dickel (2004), supra.